

CWPPRA

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT TASK FORCE MEETING

AGENDA

October 7, 2021, 9:30 a.m.

Location:
Virtual-WebEx

Documentation of Task Force meetings (including minutes, attendance records, PowerPoint Presentations, and meeting binders) may be found at:
<http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA.aspx>

Tab Number

Agenda Item

- 1. Decision: Adoption of Minutes for the May 6, 2021 Task Force Meeting (Sarah Bradley, USACE)** Ms. Sarah Bradley will present the minutes from the last Task Force meeting. Task Force members may provide suggestions for additional information to be included in the official minutes.
- 2. Report: Status of CWPPRA Program Funds and Projects (Jernice Cheavis, USACE)** Ms. Jernice Cheavis will provide an overview of the status of CWPPRA accounts and available funding in the Planning and Construction Programs.
- 3. Report: Outreach Committee Report (Lauren Leonpacher, USGS)** Ms. Lauren Leonpacher will provide the Outreach Committee report.
- 4. Report: Coastwide Nutria Control Program – Annual Report (Jennifer Manuel, LDWF)** Ms. Jennifer Manuel with the Louisiana Department of Wildlife and Fisheries will present an annual report on the Coastwide Nutria Control Program (LA-03b).
- 5. Report/Decision: 2021 CWPPRA Report to Congress (Kaitlyn Carriere, USACE)** USACE will provide a report on the development of the 2021 Report to Congress and the Task Force will consider the Technical Committee’s recommendation to approve the final draft.
- 6. Report: Status of Unconstructed Projects (Kaitlyn Carriere, USACE)** The P&E Subcommittee will report on the status of unconstructed CWPPRA projects. There were three projects that were considered for “critical watch.”
 - a. Critical-watch unconstructed projects:**
 - South Grand Chenier Marsh Creation (ME-20)
 - North Catfish Lake Marsh Creation (TE-112)

- Island Road Marsh Creation and Nourishment (TE-117)

7. **Decision: CWPPRA Standard Operating Procedures (SOP) Update/Revisions (Kevin Roy, USFWS)** USFWS will present the requested changes and revisions to the scope change procedures in the CWPPRA SOP for Task Force approval based on the Technical Committee's recommendation.
8. **Report/Decision: Development of the Support Programmatic Project for Signage (Kent Bollfrass, CPRA)** Mr. Kent Bollfrass will provide an update on the development of a support programmatic project for signage. The Task Force will consider the Technical Committee's recommendation to approve the project.
 - a. CPRA and NRCS request the Task Force considers the Technical Committee's recommended approval of the Ten-Year Support Programmatic Project for Signage; \$2,767,206.00
 - b. CPRA and NRCS request the Task Force considers the Technical Committee's recommended approval of the first three years of incremental funding for Support Programmatic Project for Signage; \$703,878.00
9. **Decision: Request for a 20-Year Project Life Extension for Replace Sabine Refuge Water Control Structures at Hog Island Gully, West Cove, and Headquarters Canal (CS-23) Project (Kevin Roy, USFWS)** USFWS and CPRA propose a 20-year project life extension for CS-23. A formal assessment of costs and benefits has been completed and the results will be presented. The Task Force will consider the Technical Committee's recommendation to approve the project life extension request.
10. **Decision: Request for a Change in Scope for the PPL23 – Island Road Marsh Creation and Nourishment (TE-117) Project (Patrick Williams, NMFS)** NMFS and CPRA request approval of a change in scope for the Island Road Marsh Creation and Nourishment (TE-117) Project. A scope change is required due to a decrease in benefits by more than 25% from the Phase 0 Candidate. The Task Force will consider the Technical Committee's recommendation to approve the change in scope request.
11. **Decision: Request for a Transfer of Approved O&M to Approved Monitoring for Four Mile Canal Terracing and Sediment Trapping (TV-18) Project (Cece Linder, NMFS or Leigh Anne Sharp, CPRA)** NMFS and CPRA request Task Force approval based on the Technical Committee's recommendation to transfer \$19,354 from the approved Operations and Maintenance budget to the approved Monitoring budget for the Four Mile Marsh Creation and Terracing (TV-18) Project. Funds are needed for two years of CRMS photography analysis deemed important for final reporting for this project. Incremental funding approval for the final monitoring increment will be made in a motion later in this agenda. This action does not represent an overall budget increase to the Project. It would reduce the Project's Operations and Maintenance budget to \$1,654,507 and increase the Project's Monitoring budget to \$198,634.
12. **Decision: Request for the Monitoring and O&M Budget Increases for Brady Canal Hydrologic Restoration (TE-28) Project (Todd Folse, CPRA)** NRCS and CPRA

request a \$114,024.21 Monitoring budget increase and a \$43,789.00 Operations and Maintenance budget increase to reconcile past expenditures in advance of financial closeout. The Task Force will consider the Technical Committee's recommendation to approve the budget increase requests.

13. Decision: Request for a One-Year Time Extension and O&M Budget Increase for Bayou Chevee Shoreline Protection (PO-22) Project (Barry Richard, CPRA)

USACE and CPRA request a one-year time extension and \$81,786.00 budget increase to install 15 navigation warning signs with lights along the length of the project as recommended by USCG and to complete project closeout. The Task Force will consider the Technical Committee's recommendation to approve the budget increase and time extension requests.

14. Decision: Annual Request for Incremental Funding for FY24 Administrative Costs for Cash Flow Projects (Jernice Cheavis, USACE)

The U.S. Army Corps of Engineers will request funding approval in the amount of \$80,954 for administrative costs for cash flow projects beyond Increment 1. The Task Force will consider the Technical Committee's recommendation and vote to approve the request for funding.

15. Decision: Request for Funding for the CWPPRA Program's Technical Services (Michelle Fischer, USGS)

The U.S. Geological Survey (USGS) and CPRA are requesting funding for technical services for the CWPPRA program in the amount of \$216,546. The Task Force will consider the Technical Committee's recommendation and vote to approve the request for a budget increase and funding for technical services in the amount of \$216,546.

16. Decision: Request for Operation and Maintenance (O&M) Incremental Funding (Kent Bollfrass, CPRA)

The Task Force will consider and vote to approve requests for total FY24 O&M incremental funding in the amount of \$4,607,388.00 and O&M budget increases in the total amount of \$124,797.00

a. PPL 9+ Projects requesting approval for FY24 O&M incremental funding in the total amount of \$2,486,543.00 for the following projects:

- Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
Incremental Funding Request: \$114,958.00
- Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
Incremental Funding Request: \$6,272.00
- Little Lake Shoreline Protection/ Dedicated Dredging Near Round Lake (BA-37)
Incremental Funding Request: \$4,064.00
- Pelican Island and Pas La Mer to Chaland Pass (BA-38)
Incremental Funding Request: \$14,842.00
- Bayou Dupont Sediment Delivery System (BA-39)
Incremental Funding Request: \$8,342.00
- Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)

- Incremental Funding Request: \$7,968.00
- Cameron-Creole Grand Bayou Marsh Creation (CS-54)
Incremental Funding Request: \$25,382.00
- Coastwide Nutria Control Program (LA-03b)
Incremental Funding Request: \$2,091,073.00
- Coastwide Vegetative Planting Project (LA-39)
Incremental Funding Request: \$5,278
- Freshwater Introduction South of Highway 82 (ME-16)
Incremental Funding Request: \$16,297.00
- Rockefeller Refuge Gulf Shoreline Protection (ME-18)
Incremental Funding Request: \$29,899.00
- Grand Lake Shoreline Protection (ME-21)
Incremental Funding Request: \$8,744.00
- South Grand Chenier Marsh Creation (ME-22)
Incremental Funding Request: \$9,364.00
- Bayou Bonfuca Marsh Creation (PO-104)
Incremental Funding Request: \$67,839.00
- West Bell Pass Barrier Headland Restoration (TE-52)
Incremental Funding Request: \$4,202.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
Incremental Funding Request: \$12,604.00
- Cole's Bayou Marsh Restoration (TV-63)
Incremental Funding Request: \$42,120.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
Incremental Funding Request: \$5,424.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
Incremental Funding Request: \$11,871.00

b. PPL 1-8 Project requesting approval for FY24 O&M incremental funding in the total amount \$2,120,845.00 and budget increases in the total amount of \$124,797.00 for the following projects:

- Naomi Outfall Management (BA-03c)
Budget Increase Amount: \$88,636.00
Incremental Funding Request: \$88,636.00
- Barataria Waterway West Bank Protection (BA-23)
Budget Increase Amount: \$36,161.00
Incremental Funding Request: \$36,161.00
- Cameron Creole Maintenance (CS-04a)
Incremental Funding Request: \$1,848,047.00
- Black Bayou Hydrologic Restoration (CS-27)
Incremental Funding Request: \$22,426.00
- Bayou Chevee Shoreline Protection (PO-22)
Incremental Funding Request: \$81,786.00
- Brady Canal Hydrologic Restoration (TE-28)
Incremental Funding Request: \$43,789.00

17. Decision: Request for Monitoring Incremental Funding (Kent Bollfrass, CPRA)

The Task Force will consider and vote to approve requests for FY24 incremental funding in the total amount of \$11,768,859.21.

a. PPL 9+ Projects requesting approval for FY24 incremental funding in the total amount of \$1,454,590.00 for the following projects:

- Barataria Basin Landbridge Shoreline Protection (BA-27c)
Incremental Funding Request: \$19,038.00
- Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
Incremental Funding Request: \$218,434.00
- Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
Incremental Funding Request: \$105,378.00
- Pelican Island and Pas La Mer to Chaland Pass (BA-38)
Incremental Funding Request: \$143,088.00
- Bayou Dupont Sediment Delivery System (BA-39)
Incremental Funding Request: \$3,714.00
- Lake Hermitage Marsh Creation (BA-42)
Incremental Funding Request: \$2,207.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
Incremental Funding Request: \$28,937.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
Incremental Funding Request: \$188,168.00
- Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
Incremental Funding Request: \$3,597.00
- Delta Management at Fort St. Phillip (BS-11)
Incremental Funding Request: \$119,461.00
- Black Bayou Culverts Hydrologic Restoration (CS-29)
Incremental Funding Request: \$41,730.00
- Coastwide Nutria Control Program (LA-03b)
Incremental Funding Request: \$118,922.00
- Coastwide Vegetative Planting Project (LA-39)
Incremental Funding Request: \$67,565
- Bayou Bonfouca Marsh Creation (PO-104)
Incremental Funding Request: \$2,005.00
- Raccoon Island Shoreline Protection and Marsh Creation (TE-48)
Incremental Funding Request: \$62,936.00
- Whiskey Island Back Barrier Marsh Creation (TE-50)
Incremental Funding Request: \$86,772.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
Incremental Funding Request: \$19,729.00
- Cole's Bayou Marsh Restoration (TV-63)
Incremental Funding Request: \$222,909.00

b. PPL 1-8 Project requesting approval for FY24 incremental funding in the total amount of \$314,269.21 for the following projects:

- Cameron Creole Maintenance (CS-04a)

Incremental Funding Request: \$108,631.00

- Sabine Refuge Marsh Creation, Increment 4 and 5 (CS-28-4)

Incremental Funding Request: \$91,614.00

- Brady Canal Hydrologic Restoration (TE-28)

Incremental Funding Request: \$114,024.21

- c. Coastwide Reference Monitoring System (CRMS) requesting approval for FY24 incremental funding in the total amount of \$10,000,000.00

- Coastwide Reference Monitoring System (LA-30)

Incremental Funding Request: \$10,000,000.00

18. Announcement: Dates of Upcoming CWPPRA Program Meeting (Sarah Bradley, USACE) Technical Committee Meeting will be held December 9, 2021 at 9:30 a.m.

19. Announcement: Scheduled Dates of Future Program Meetings (Sarah Bradley, USACE)

December 9, 2021	9:30 a.m.	Technical Committee	TBD
January 2022	9:30 a.m.	Task Force	TBD

*Dates are subject to change. Please check back with lacoast.gov for the latest calendar.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
TASK FORCE MEETING

OCTOBER 7, 2021

ADOPTION OF MINUTES FOR THE MAY 6, 2021 TASK FORCE MEETING

For Decision:

Ms. Sarah Bradley will present the minutes from the last Task Force meeting. Task Force members may provide suggestions for additional information to be included in the official minutes.

BREAUX ACT
Coastal Wetlands Planning, Protection and Restoration Act

TASK FORCE MEETING
06 May 2021

Minutes

I. INTRODUCTION

Colonel Stephen Murphy convened the 103rd meeting of the Louisiana Coastal Wetlands Conservation and Restoration Task Force. The meeting began at 9:30 a.m. on May 6, 2021, via WebEx virtual meeting platform. The agenda is shown as Enclosure 1. The Task Force was created by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA, commonly known as the Breaux Act), which was signed into law (PL 101-646, Title III) by President George Bush on November 29, 1990.

II. ATTENDEES

The attendance record for the Task Force Meeting is presented as Enclosure 2. The Task Force members acknowledged their presence as follows:

Col. Stephen Murphy (USACE), Chairperson
Mr. Bren Haase (CPRA, for the State of Louisiana)
Mr. Troy Hill (EPA, Region 6) sitting for Charles Maguire
Mr. Chad Kacir (NRCS, for the U.S. Department of Agriculture)
Mr. Chris Doley (NOAA Fisheries Service, for the U.S. Department of Commerce)
Mr. Jeffery Weller (USFWS, for the U.S. Department of Interior)

III. OPENING REMARKS

Col. Murphy introduced himself, and performed roll call of Task Force members. He invited opening comments from the agency representatives; none were proffered except for the eager anticipation of eventually meeting in person. Col. Murphy personally commented to iterate statistically the ecological and economic imperatives of Louisiana's coastal wetland restoration efforts for the nation. He highlighted the acreage created and the investment made by the CWPPRA Program over its 30-year history. He acknowledged a recent change of policy, which now allows the USACE to submit projects for consideration through this process.

IV. AGENDA and MINUTES

Col. Murphy asked if the Task Force had any changes to make to the agenda; none were proffered.

Col. Murphy asked for a motion to accept the agenda. Mr. Kacir made the motion, which was seconded by Mr. Hill; the motion carried without dissent.

Col. Murphy reviewed procedures for public participation within this virtual format. Throughout these proceedings, Alice Kerl, USACE, managed any virtual public comments, and confirmed in sound checks whether or not public comments were proffered.

Agenda Item #2 – Announcement: Retirement of Dr. Sasser, CWPPRA Academic Advisory Group (AAG) Chairman (Sarah Bradley, USACE)

Col. Murphy announced the retirement of Dr. Charles Sasser, who has served on the AAG since the inception of the CWPPRA program. Ms. Bradley provided an overview of the role of the AAG within the CWPPRA program, which is to work with the Planning and Evaluation (P&E) Subcommittee to provide support for the Environmental & Economic and Monitoring workgroups as a scientific augment to the process of screening, developing, and ranking candidate and demonstration projects. Dr. Sasser is current chair of the CWPPRA AAG, having served in that capacity since 2014; he is expected to retire this year. Mr. Erick Swenson will serve as acting chair through PPL-31, at which point a permanent replacement will be named. Ms. Bradley presented a list of all current AAG members.

Col. Murphy invited comments from the Task Force members. Mr. Doley offered his congratulations and gratitude for Dr. Sasser's seminal contributions in wetland ecology. Mr. Doley, Mr. Kacir, Mr. Hill and Mr. Haase spoke similarly, each expressing their appreciation of Dr. Sasser's work on behalf of the CWPPRA Program, and their fond experiences of and good wishes for Dr. Sasser in his retirement. Dr. Sasser was not available for comment. No public comments were proffered.

V. TASK FORCE DECISIONS

Agenda Item #3 – Decision: Adoption of Minutes for the January 22, 2021 Task Force Meeting (Sarah Bradley, USACE)

In lieu of reading them, Ms. Bradley reminded attendees that the minutes been sent to the agencies for review and edits. The revised version is presented in Task Force binders. Ms. Bradley invited questions or comments from the Task Force; with none proffered, she recommended adoption of the 22 January 2021 Task Force meeting minutes.

Col Murphy called for any opposition to adopt the minutes as presented; none was proffered. He declared the minutes formally adopted.

Agenda Item #9 – Report/Decision: 2021 CWPPRA Report to Congress (Kaitlyn Carriere, USACE)

Ms. Carriere began with the reminder that a Report to Congress is required by law every 3 years to demonstrate the efficacy of CWPPRA projects. As is typical, the USACE leads the multi-agency effort; this report is similar in format, structure and length as the 2018 report. The first draft of the 2021 report has been provided in the Task Force meeting binders. It was sent to the P&E Subcommittee on March 8, 2021 for review and comment. Ms. Carriere stated that comments have been received from all agencies, but have thus far not been “substantial”. Approval is being sought to proceed with technical content editing, and subsequently with graphic design elements. Another review is anticipated in August; ultimately a request for approval of the final draft is expected during fall (2021) proceedings.

Col. Murphy called for questions or comments from the Task Force. Mr. Doley commented on the timeliness of the document, as well as its context, as it relates to ongoing discussions within the current administration regarding coastal resiliency.

Col. Murphy called for questions or comments from the public; none were proffered.

Col. Murphy called for a motion to accept the recommended path forward for the Report to Congress. Mr. Hill made the motion, which Mr. Doley seconded; the motion carried without dissent.

Agenda Item #11 -- Report/Decision: Upcoming 20-Year Life Projects (Kaitlyn Carriere, USACE)

Ms. Carriere began with a brief review of the review process, whereby the P&E subcommittee determines a path forward for projects at year 15 of their 20-year life. A recommended path forward to cover what happens at or after year 20, may include such actions as a project transfer or extension, and project closeout with or without a cost increase.

She provided a brief verbal review and an abbreviated slide presentation, highlighting the location, features and performance for the projects below, each of which has an end-of-life date within the next five to six years:

- a. Projects requesting approval for project closeout with no additional cost increase:

BS-11	Delta Management at Fort St. Phillip	FWS	14-Dec-26
ME-22	South White Lake Shoreline Protection	COE	29-Aug-26
TV-13a	Oaks/Avery Canal Hydrologic Restoration	NRCS	11-Oct-22

Ms. Carriere then listed and acknowledged projects that have reached their end of life (since the May 2020 Task force meeting) and either have been, or are expected to be closed out: TE-27, BA-02, BA-23, and PO-06.

Col. Murphy called for questions or comments from the Task Force and the public. None were proffered.

Col. Murphy called for a motion to accept the Technical Committee's recommendation for the paths forward for project closeout with no additional cost as presented. Mr. Haase made the motion, which Mr. Doley seconded; the motion carried without opposition.

Stanley Aucoin, CPRA, was called upon to present the following (single) request:

- a. Projects requesting approval for a cost increase contingent upon CWPPRA workgroup review, a 5 year extension, and subsequent closeout:

TV-04	Cote Blanche Hydrologic Restoration	NRCS	15-Dec-18
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Mr. Aucoin reviewed the project location, original goals, and construction and maintenance history. This is a PPL-3 project, originally constructed in 1999. Today's request is based on several features (at specific locations within the project area) that require one final maintenance event – i.e. repositioning of rock, additional bolstering of rock or sheet pile weirs, or complete removal of features that have been ineffective and have now become navigational hazards. In addition, maintenance will be required at one location for U.S. Coast Guard-mandated signage.

Mr. Aucoin hereby requested transfer of unused Monitoring funds in the amount of \$45,603 to the O&M budget, an O&M budget increase of \$606,922 to prepare for the final maintenance event (i.e. E&D and land rights acquisition), and a further O&M budget increase of \$4,178,478 to implement the final maintenance event upon workgroup review and approval. A five-year extension for completion of the work was also requested.

Col. Murphy called for questions or comments from the Task Force and the public. None were proffered.

Col. Murphy called for a motion to approve the Technical Committee's recommendation for the path forward for TV-04 project closeout with additional cost as presented. Mr. Kacir made the motion, which Mr. Hill seconded; the motion carried without opposition.

Mr. Roy was called upon to present the final recommendation/ request:

c. Projects pursuing project extension through formal evaluation:

CS-23	Sabine Refuge Structure Replacement (Hog Island)	FWS	10-Sept-23
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Mr. Roy began his review of this PPL-3 project, which was constructed in 2003, and consists of three automated water control structures. The structures were placed at Headquarters Canal, West Cove Canal and Hog Island Gully on the Sabine National Wildlife Refuge for the purpose of controlling water and salinity levels in the project area. Mr. Roy reviewed project performance, which (regarding water levels) has not been successful; flooding has been observed in all years except 2011 and 2014, and there seems to be an inundation of fresh water into the desired brackish marsh. He reminded attendees of the recent (September 2020) increase in O&M funding for a canal cleanout event to facilitate water delivery to the structures, and for an operations contract to provide intensive management of water levels. Mr. Roy explained the decision matrix and graphic representation of water and salinity levels since project inception; other options (project close-out, project transfer) were also reviewed. Mr. Roy provided cost/benefit justification and a preliminary cost estimate to extend O&M and Monitoring for this project beyond its 20-year life.

Col. Murphy called for questions or comments from the Technical Committee and the public. None were proffered.

Col. Murphy called for a motion to approve the request for a 20-year project extension on CS-23 through formal evaluation. Mr. Weller made the motion, which Mr. Lezina seconded; the motion carried without opposition.

Agenda Item #12 -- Decision: Request for a One Year Time Extension and Budget Transfer of Approved Monitoring to Approved O&M for Fritchie Marsh Restoration (PO-06) Project (Barry Richard, CPRA)

Barry Richard, CPRA, was called to present the request. Without a power point, he simply made the formal request to approve the Technical Committee recommendation of a one-year time extension, and the transfer of \$100,000.00 from Monitoring to O&M to facilitate completion of project close out. He explained that a final culvert cleanout would be performed before LDOTD assumes responsibility.

Col. Murphy called for questions or comments from the Task Force and the public. None were proffered.

Col. Murphy called for a motion to accept the Technical Committee's recommendation for the PO-66 project extension and transfer of funds within the budget as presented. Mr. Kacir made the motion, which Mr. Lezina seconded; the motion carried without opposition.

Agenda Item #13 – Decision: Request for a Transfer of Approved O&M to Approved Monitoring for Non-Rock Alternatives to Shoreline Protection Demonstration (LA-16) Project (Tommy McGinnis, CPRA)

Tommy McGinnis presented the request for approval of a simple transfer of funds (\$5,243.49) from O&M to Monitoring in order to reconcile the budget for project closeout.

Col. Murphy called for questions or comments from the Task Force and the public. None were proffered.

Col. Murphy called for a motion to approve the Technical Committee's recommendation for the transfer of funds within the budget as presented. Mr. Kacir made the motion, which Mr. Lezina seconded; the motion carried without opposition.

Agenda Item #14 – Decision: FY21 Planning Budget Approval, including the PPL 32 Process, and Presentation of FY22 Outreach Budget (Process, Size, Funding, etc.) (Sarah Bradley, USACE)

On behalf of the P&E Subcommittee Ms. Bradley introduced the following items for Task Force consideration:

She began with a request for Task Force approval of the Technical Committee recommendation of the PPL 32 process (which is based on loss-loss rates and is unchanged from last year.)

- a. Technical Committee recommendation to approve the PPL 32 Process includes selecting four nominees (each) in the Barataria and Terrebonne Basins; three projects (each) in the Breton Sound and Pontchartrain Basins; two nominees (each) in the Mermentau, Calcasieu/Sabine, and Tech/Vermilion Basins; one nominee in the Atchafalaya Basin, and one Coastwide Project.

Col. Murphy called for questions or comments from the Task Force and the public about the PPL 32 process; none were proffered.

Col. Murphy called for a motion to approve the Technical Committee's recommendation for the PPL 32 process as presented. Mr. Doley made the motion, which Mr. Weller seconded; the motion carried without opposition.

Kathy Ladner, USGS, was called upon to present the Technical Committee recommendation to approve the FY22 Outreach Committee Budget, which is unchanged from previous years.

- b. The Technical Committee recommendation is to approve the FY20 Outreach Committee Budget in the amount of \$452,113.

Col. Murphy called for questions or comments from the Task Force and the public regarding the Outreach budget; none were proffered.

Col. Murphy called for a motion to accept the FY22 Outreach Committee budget in the amount of \$452,113. Mr. Hill made the motion, which Mr. Kacir seconded; the motion carried without dissent.

Ms. Cheavis was asked to present the FY22 planning budget noting the deletion of a line item for the Report to Congress.

- c. The Technical Committee recommends the approval the FY22 Planning Budget (which includes Outreach Committee Budget) in the amount of \$5,008,132.

Col. Murphy called for questions or comments from the Task Force and the public regarding the Planning Budget; none were proffered.

Col. Murphy called for a motion to accept the Technical Committee recommendation for the FY22 Planning Budget in the amount of \$5,008,132. Mr. Weller made the motion, which Mr. Doley seconded; the motion carried without opposition.

VI. INFORMATION

Agenda Item #4 – Report: Status of CWPPRA Program Funds and Projects (Jernice Cheavis, USACE)

Ms. Jernice Cheavis, USACE, presented an overview of the status of CWPPRA funds as follows: The fully funded total program estimate since its inception through PPL 1 – 30 is \$3.149 billion. Total projected state and federal sources of funding (through FY21) for all authorized projects in addition to projected Department of the Interior (DOI) funds is \$2.130 billion. A potential gap of \$1.019 billion remains if the Program were to construct all projects to date. Current Task Force-approved funding for projects in Phase I, Phase II and O&M totals \$2.256 billion. Authorized funding obligated to each agency for approved projects in all phases currently totals \$1.921 billion.

A request for funding (a budget increase of \$606,922) for the Cote Blanche Hydrologic Restoration Project (TV-04) is on the agenda. Total available program funding as of January 2021 is \$12,661,338. If the budget increase were approved, the Construction Program balance would be \$12,054,416 at the close of today's proceedings.

The annual request for approval of the FY21 Planning Program budget is also on the agenda. A total of \$597 has been carried over from FY20. In light of this unusually low carry-over, agencies were asked to close-out excess FY20 funds, and are effectively returning \$270,639 to the Planning Activities budget. Added to that is the expected allocation of \$5,000,000 for Planning activities, resulting in an available total of \$5,271,236. An approval request for FY22 Planning and Outreach is expected later in these proceedings, the funding of which totals \$5,008,132. If approved, a balance of \$263,104 would carry over.

Ms. Cheavis then presented a pie chart summarizing projects as follows: CWPPRA has authorized 229 projects through PPL-30. There are 126 active projects including 29 in Phase 1 Engineering and Design, 17 in Phase 2 Construction, 75 projects that have been completed and are now in Operations, Maintenance and/ or Monitoring phase, and 5 support projects. Additionally, CWPPRA has completed 39 projects (i.e. reached the 20-year life mark), deauthorized 49 projects, transferred 10 projects, and placed 5 in the inactive category.

Col. Murphy called for questions or comments from the Task Force and the public; none were proffered.

Agenda Item #5 – Report: Electronic Votes and Approvals (Sarah Bradley, USACE)

Ms. Bradley began with a brief explanation of the rationale for electronic voting; she then presented results for the most recent electronic votes as follows:

On April 13, 2021, Technical Committee clarified and approved the recommended 20-year life path forward of TV-04, the details of which will be presented for Task Force consideration in Agenda Item #11.

On April 28, 2021 the Technical Committee voted for a second time to determine whether or not the Wave Robber Demonstration project would move forward in the PPL-31 process. The project received a tie vote during the April 1, 2021 Technical Committee proceedings. Further cost information was requested at that time, and was provided for the second vote. The second vote also resulted in a tie. Therefore, the project will not move forward.

Col. Murphy called for questions or comments from the Task Force and the public; none were proffered.

Agenda Item #6 – Report: Construction Update (Sarah Bradley, USACE)

Ms. Bradley introduced the CWPPRA agency representatives who provided the following reports on a few projects that are currently under construction.

Kevin Roy (USFWS) presented a status update for the Northwest Turtle Bay Marsh Creation and Nourishment project (BA-125). The project is located in Jefferson Parish on a landmass separating Little Lake from Bayou Perot and Bayou Rigolettes. It is adjacent to a previously constructed CWPPRA project – BA-36. The base project consists of two marsh creation cells, and originally sought to restore and/or nourish 791 acres. An electronic vote in March 2020 resulted in the approval of project expansion after a favorable bid was received. The expansion plans include an additional 315 acres of marsh creation and 2,600 LF of bank protection along the Harvey Cut. Construction was completed in the eastern cell in August 2020 and in the western cell in October 2020. Construction of the expansion areas was completed in March 2021; the installation of articulated concrete mats (ACM) was completed in April 2021. Thus, construction for the project is complete; final inspection is scheduled. Total construction costs were about \$19.6 million of a \$23.7 million budget. Mr. Roy provided photographic evidence of project progress (30-40% vegetative re-growth after one growing season), and pointed out various project features.

Ron Boustany (NRCS) provided an update for Cameron-Creole Freshwater Introduction (CS-49), beginning with a review of project features. The primary project feature is a freshwater introduction structure, which will allow water to flow southward from the GIWW into the project area. Over 8,000 LF of rock dike is intended to support the proposed structure and protect the associated bank along the GIWW. Earthen terraces within the outfall area of the water inlet are designed to capture nutrients and sediment, and promote marsh accretion. Vegetative plantings along the westernmost edge of the project area have occurred in an effort to mitigate hurricane damage. The entire project area consists of 22,000 acres located south of the

GIWW, west of Highway 27 at the Gibbstown Bridge. Project construction has commenced; as of this presentation 139,000 LF of terraces have been built, and were not significantly damaged by recent hurricanes. An opportunity exists to increase/extend terraces into gaps (left by the removal of a power line), and will occur at no additional cost. Vegetative planting on the terraces has commenced. Construction of the rock dike is complete. Construction of the freshwater introduction structure has commenced. Expected cost of construction is \$9.3 million.

Jennifer Smith (NOAA Fisheries) gave an update for the Cameron Meadows Marsh Creation and Terracing (CS-66) project, which was approved for Phase 2 funding in January 2017. After revisions in June 2020 a Notice to Proceed (NTP) was issued in August of 2020; the project is subject to a 400-day contract period. Located between the Sabine National Wildlife Refuge and the Gulf of Mexico, the project includes a pipeline corridor that extends from the Gulf, under Hwy 82, and into the marsh creation area. Construction of the pipeline corridor is nearly complete; the culvert under Hwy 82 is complete. Containment dike construction around the 303-acre marsh creation cell is complete. Dredging is scheduled to begin in September 2021; construction within the marsh creation cell will continue through 2021. Terrace construction (4 acres) has commenced; May 2021 is the estimated completion date there. Ms. Smith provided pictorial evidence of progress. Current construction cost is \$32.1 million.

Ms. Smith continued with a status update for the Bayou De Cade Ridge and Marsh Creation (TE-138) project. The project was approved for Phase 2 funding in January 2019; the NTP was issued in September 2020 and is subject to a 500-day contract period. The project is located south of Houma, LA, westward of Lake De Cade, adjacent to Bayou De Cade. It consists of an 11,133 LF earthen ridge feature along the bayou and temporary earthen dikes within the 437-acre marsh creation area. The earthen ridge and dikes are nearly complete and the dredge pipeline is currently being installed; dredging is expected to commence mid May 2021. At a cost of about \$8.3 million, construction is set for completion by the end of January 2022.

Ms. Bradley closed the Construction Report presentations, with an acknowledgment of the presenters, and an appreciation for the photographic representations therein. Col. Murphy concurred.

Col. Murphy called for questions or comments from the Task Force and the public. None were proffered.

Agenda Item #7 – Report: Public Outreach Committee Report (Kacie Wright, USGS)

Col Wingate called upon Ms. Kacie Wright to present the Outreach Committee report. Ms. Wright introduced herself as the Media Specialist sitting in for the Outreach Coordinator. She provided an overview of outreach activities for the time period of January 2021 – April 2021, highlighting the opportunities for virtual public participation as follows:

The Public Outreach Committee launched a pilot program to provide wetland-themed placemats into three strategically located restaurants. The purpose is to garner awareness of and interest in Louisiana's coastal environment. As response to the placemats is gauged, more will be made available to more restaurants; the placemats will be made available both in print and downloadable format.

The inaugural Youth Wetlands Writing Contest (established in honor of Jennifer Ritter-Guidry) has been conducted. More than 261 entries were received from K-12

students. Winners are to be announced through the month May 2021 via CWPPRA social media; photos and videos of participants reading their entries will be viewable. Ms. Wright acknowledged all corporate and NGO partners on this project, which acted as judges and provided awards for the contest.

The most recent “How-To...” info-graphic was highlighted in NOAA’s *Coastal Communicators* newsletter. The info-graphic provided information regarding the process of submitting project proposals at the Regional Planning Team (RPT) meetings, thus encouraging public participation in the CWPPRA Program.

Ms. Wright presented a list of webinars and virtual meetings recently attended by outreach staff.

Recent electronic and social media efforts focused on Women of the Wetlands in honor of Women’s History Month; that effort reached over 40,000 people, 7,500 of whom “engaged” in the post. Upcoming social media outreach will include new info-graphics, informal educational facts, short wetland videos as “meditation minutes”, all intended to encourage audience engagement.

Ongoing partnerships and projects include the development of classroom resources (specifically interactive *Webquests* and 360° Virtual Field Trips), which will be introduced in teacher workshops over the summer. Work with the National Parks Service in Thibodaux, LA will result in a display (during the month of June) entitled “*I Remember*” alongside the Smithsonian “*Waterways*” exhibit.

The upcoming State of the Coast conference is scheduled for June 4-6, 2021, which will be a virtual event. The event provides a platform to convey the intent, work and success of the CWPPRA Program.

Additionally, Ms. Wright introduced new Outreach Committee personnel, highlighting the experience and credentials of each. Ms. Lauren Leonpacher is expected to be named Outreach Coordinator with a start date of June 7, 2021. Ms. Christine Hidalgo will serve as Educational Consultant primarily to assist in the development of the *WebQuests*. Finally, Ms. Guidry presented contact information for herself and the Outreach staff.

Col. Murphy complimented Ms. Wright on the presentation, and praised the innovation and energy of the Outreach team. He extended a welcome to the new Outreach staff.

Col. Murphy called for questions or comments from the public. One was proffered about obtaining the placemats in another area of the state. Ms. Wright responded affirmatively, reiterating that once the pilot phase of the project is assessed, an expanded distribution of the placemats across the coast will likely occur.

Col. Murphy called for questions or comments from the Task Force. Mr. Doley expressed his favorable impression of the activities presented, and his confident anticipation of future endeavors.

Agenda Item #8 – Report: Coastwide Reference Monitoring System (CRMS) Report (Sarai Piazza, USGS)

Ms. Sarai Piazza was called upon to provide the update on CRMS services, which she did as follows:

Ms. Piazza began with a review of post-hurricane accretion data. Accretion (sediment deposition) varied across the gulf, but in some areas was higher than ever

documented. Because, however, accretion does not always result in long-term land elevation change; future accretion data analysis will demonstrate how sediment is redistributed within the system through natural processes.

Ms. Piazza provided a few examples of the color-matrix land change maps from the 2018 land change analysis, which is in its final stages of review before publication. She interpreted the graphics (land gain and/ or loss) depicting data that was collected at five points in time from 2005-2018.

She presented high-resolution photographic maps indicating land percentages by site, and land change rates by site.

Heretofore the CRMS program has relied on high-resolution aerial photography for its land change analyses. The next aerial flight is being contracted for the fall of 2021; the final budgeted flight is anticipated in 2024. The USGS is investigating the feasibility of utilizing satellite constellations to obtain land/water imagery, which it can do at no cost (but with certain data use restrictions.) A test case will be conducted this fall in conjunction with the aerial photography to compare and refine satellite imagery processing. Results will be shared with all CWPPRA agencies so that plans for future land/water imagery can be devised.

Ms. Piazza also announced the possibility of expanding the CRMS real-time data collection capacity with cellular telemetry feeds, although many logistical details must be considered.

The next coastwide vegetation survey via helicopter is set to begin in the next few weeks in partnership with LDWS and LSU. Data will be published on the USGS ScienceBase repository and on the CRMS website. A coastwide elevation survey will be conducted and update in the summer and fall of 2021.

The CRMS program was recently highlighted in a podcast produced by the USGS Ecosystem Mission Area; Ms. Piazza provided a link to view that podcast.

Col. Murphy called for questions or comments from the Task Force. Mr. Haase spoke of the importance of CRMS data as it relates to all coastal endeavors, and urges continued support for the program. He also expressed appreciation to the CRMS staff for its recent “roadshow” to educate and update CPRA staff about the CRMS program.

Col. Murphy called for questions or comments from the public. None were proffered.

Agenda Item #10 – Report: Status of Development of the Support Programmatic Project for Signage (Kent Bollfrass, CPRA)

Mr. Kent Bollfrass provided an update on the development of a new CWPPRA support project to address the maintenance of existing/remaining navigational aids associated with projects that have reached the end of their 20-year life span, and have no budgetary access for navigation aids. The content of this report is heavily based on CPRA field office experience (the entity currently responsible for navigational aids and signage within a project’s life-span, and within its operational budget). Mr. Bollfrass detailed the rationale for developing the budget on a ten-year perspective, and presented a flow chart to illustrate how preliminary annual cost estimates were derived. Mr. Bollfrass gave the Task Force an annualized program budget estimate from year 2022--2031 that included the estimated number of projects likely to be enrolled. He pointed out that the number of projects served by this program would continue to increase, as more projects enter their end-of-life period (past their 20-year active stage). The numbers presented have not been reviewed by any workgroup(s), and are subject to inherent project uncertainties (i.e.

navigational aid removal, project extension) and land rights issues. He stressed the need for program flexibility as all scenarios cannot be anticipated with certainty. A federal sponsor for this program has not been determined, nor has contractual framework for ongoing maintenance been developed (although the latter may be modeled on/ included in existing maintenance contracts.) Future budget requests (anticipated in fall 2021 proceedings) are envisioned as a 10-year fully funded budget, followed by an initial 3-year incremental request; subsequent annual requests throughout the program would allow for effective, flexible implementation. Finally, (and as an aside) Mr. Bollfrass summarized efforts to provide NOAA Nautical Data Branch with relevant CWPPRA project information in order to update NOAA Navigational charts.

Col. Murphy called for questions or comments from the Task Force. Mr. Doley spoke with appreciation of the thorough effort thus far to develop this program in a dynamic landscape and as more projects reach their post-20-year stage, and the thoughtfulness of the presentation.

Col. Murphy called for questions or comments from the public. None were proffered.

Agenda Item #15 – Report/ Decision: Selection of Ten Candidate Projects to Evaluate for PPL 30 (Kevin Roy, FWS)

Mr. Roy was called upon to announce the ten (of twenty-two nominated) projects selected as PPL 32 candidates for Phase 0 analysis at the April 2021 the Technical Committee meeting. He summarized each project (location, features, net acreage and estimated cost) as listed below:

Region	Basin	PPL 31 Candidates	Agency
2	Barataria	Southeast Golden Meadow Marsh Creation	FWS
2	Barataria	Grand Bayou Ridge and Marsh Restoration - Increment 2	FWS
2	Breton Sound	Spanish Lake - Grand Lake Marsh Creation	FWS
4	Calcasieu-Sabine	East Cove Marsh Creation	NRCS
3	Terrebonne	Port Fourchon Marsh Creation	EPA
3	Terrebonne	Jug Lake Marsh Creation and Terracing	NMFS
2	Barataria	Northeast Turtle Bay Marsh Creation Extension	NRCS
4	Mermentau	Southeast Pecan Island Marsh Creation	NRCS
4	Calcasieu-Sabine	Mud Lake South Marsh Creation	EPA
3	Terrebonne	West Louisiana Highway 1 Marsh Creation	NMFS

Col. Murphy called for questions or comments from the Task Force regarding the ten Phase 0 candidate projects. Col. Murphy acknowledged the efforts of the workgroups, as well as local, state, federal & university participation in the development of candidate project nominees. Mr. Doley echoed that sentiment and noted the scale and cost of each project.

Col. Murphy called for questions or comments from the public. None were proffered.

Agenda Item #16 -- Additional Agenda Items

Col. Murphy called for any additional agenda items; none were proffered.

VII. REQUEST FOR PUBLIC COMMENTS

Col. Murphy called for any additional public comments; none were proffered.

VIII. CLOSING

A. **Announcement: Date of Upcoming CWPPRA Program Meeting (Sarah Bradley, USACE)**

The next Technical Committee meeting is scheduled for September 2, 2021 at 9:30 a.m.

B. **Announcement: Scheduled Dates of Future Program Meetings**

September 2, 2021	9:30 a.m.	Technical Committee Meeting	TBD
October 7, 2021	9:30 a.m.	Task Force	TBD
December 2, 2021	9:30 a.m.	Technical Committee Meeting	TBD

**subject to change*

Ms. Bradley pointed out that in-person venues will be announced if permissible; in the event that meetings can be convened physically, a virtual component shall be maintained to maximize public participation.

Col. Murphy thanked those in attendance, and offered commendation and gratitude for those involved in the orchestration of this virtual meeting.

C. **Adjournment**

Col. Murphy called for a motion to adjourn today's proceedings. Mr. Hill made the motion, which Mr. Lezina seconded. The motion carried without dissent and at 12:01 p.m. the meeting was adjourned.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

STATUS OF CWPPRA PROGRAM FUNDS AND PROJECTS

For Report:

Ms. Jernice Cheavis will provide an overview of the status of CWPPRA accounts and available funding in the Planning and Construction Programs.

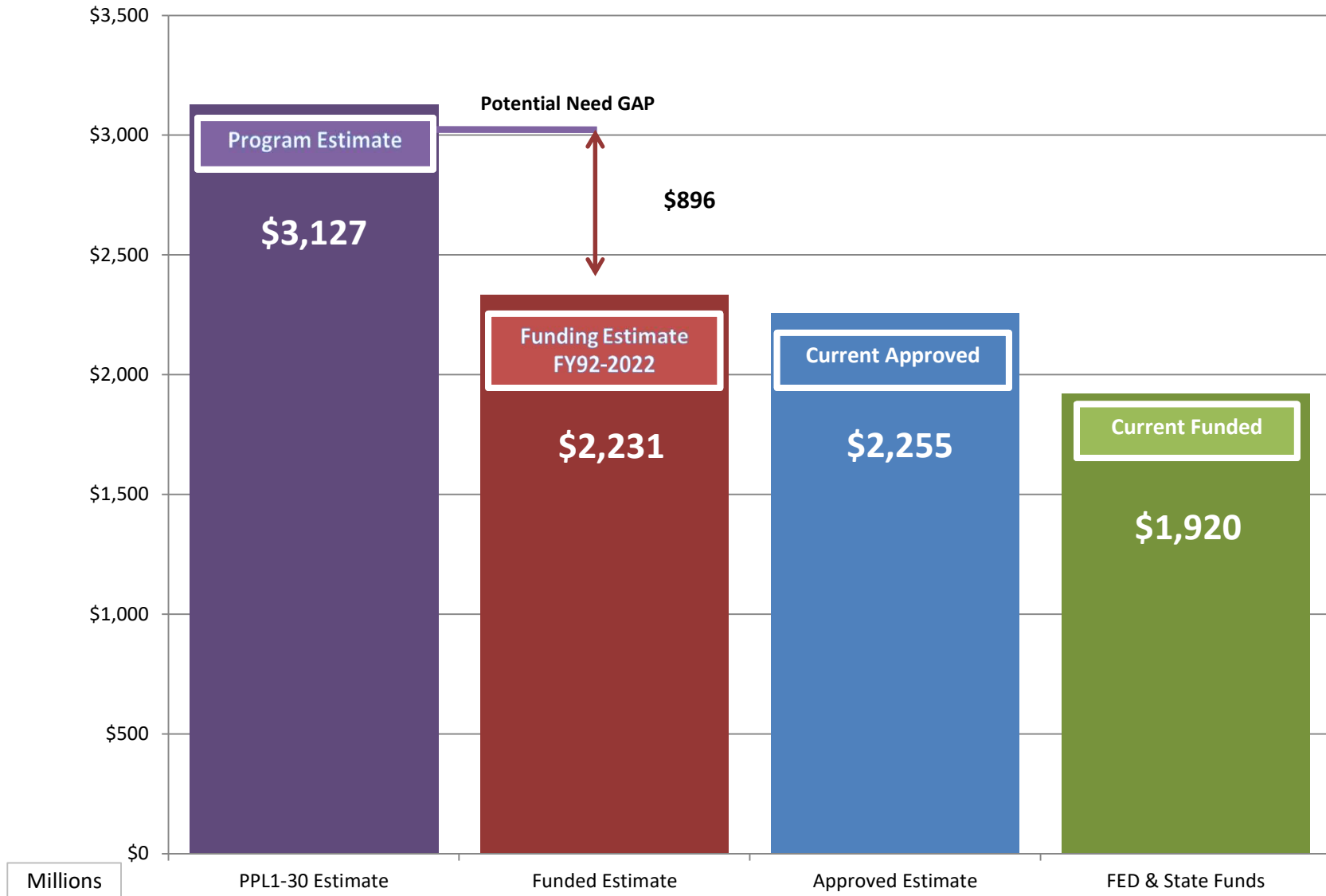
Status of CWPPRA Program Funds & Projects

Jernice P. Cheavis

October 2021

Task Force Electronic Vote

CWPPRA CONSTRUCTION PROGRAM



CWPPRA PROGRAM BUDGET INCREASES

Program Estimate (PPL 1-30)

\$3,127,089,636

Support Projects

Construction Program Technical Services	\$216,546
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TOTAL:	\$216,546
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Project Budget Increases

Programmatic Signage Support Project	\$2,767,206
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Sabine Refuge Water Control Structures Replacement (CS-23)	\$9,142,079
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Brady Canal Hydrologic Restoration (TE-28)	\$157,813
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Bayou Chevee (PO-22)	\$81,786
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FY23 O&M Requests	\$124,797
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FY23 Monitoring Requests	\$0
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TOTAL:	\$12,273,681
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NEW PROGRAM ESTIMATE: \$3,139,579,863

CONSTRUCTION PROGRAM FUNDING REQUESTS

Available Funds

Carried in From May 2021 Task Force Meeting	\$12,054,416
FY21 DOI Funds Estimate (Construction)	\$85,826,062
TOTAL:	\$97,880,478

Total Requests

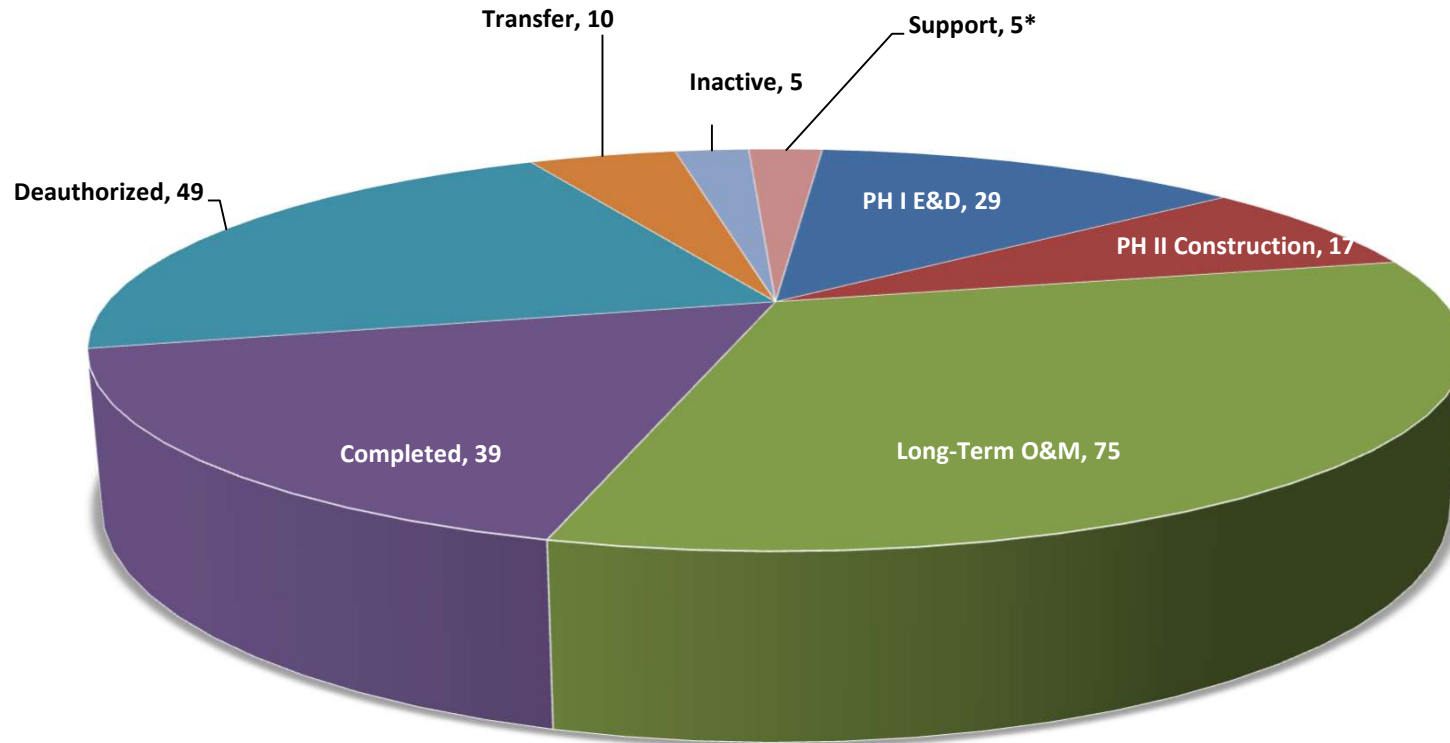
Programmatic Signage Support Project	(\$703,878)
COE Administrative Funding Requests	(\$80,954)
Construction Program Technical Services	(\$216,546)
FY24 Operation & Maintenance	(\$4,607,388)
FY24 Monitoring	(\$11,768,859)
TOTAL:	(\$17,377,625)

REMAINING BALANCE:	\$80,502,853
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CWPPRA PROJECT STATUS

TOTAL CWPPRA PROJECTS: 229

ACTIVE PROJECTS: 126



***(1) CRMS (2) Monitoring Contingency Fund (3) Storm Recovery Procedures (4) Construction Program Technical Services (5) Wetland Conservation Plan**

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

OUTREACH COMMITTEE REPORT

For Report:

Ms. Lauren Leonpacher will provide the Outreach Committee report.



**Public Outreach Committee
Report to the CWPPRA Task Force
April 19, 2021 to September 24, 2021**

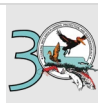
REPORTING PERIOD HIGHLIGHTS

- CWPPRA's "I Remember..." Exhibit was displayed alongside the Smithsonian Water/Ways Exhibit at the Jean Lafitte National Historical Park & Preserve: Wetlands Acadian Cultural Center in Thibodaux from May 29 through July 3, 2021. The two exhibits were then displayed in the Grand Isle Community Center in Grand Isle, LA from July 10 through August 21, 2021. Between both locations, attendance far exceeded the Smithsonian-mandated 700-person minimum.
- Lauren Leonpacher and Kacie Wright shared CWPPRA's coastal wetland education products to teachers at LDWF's WETshop Educator Seminar at the Grand Isle Fisheries Research Lab on July 11-16, 2021. The 20 teachers in attendance will go on to teach over 500 students about Louisiana's coastal wetlands.
- For National Park and Recreation Month in July 2021, CWPPRA celebrated the recreational opportunities Louisiana wetlands offer by way of Wildlife Management Areas and State Parks. In addition, restoration efforts in proximity to recreation areas were highlighted to emphasize the importance of preserving these ecosystems. The 9 unique social media posts reached over 2600 people through CWPPRA social media channels, and approximately 350 people engaged in CWPPRA's #RestorationToRecreation posts through clicks, likes, shares, and comments!
- The Watermarks360 Virtual Field Trip: Caminada Island is well under way! Film crews visited Caminada on July 28-30, 2021 to obtain footage of the structural and ecological components of the barrier island. Although impacts of Hurricane Ida have caused a slight setback in progress, this project is expected to be released by the first quarter of 2022.
- CWPPRA's educational content is available on a new platform! CWPPRA Outreach materials can now be downloaded for free from Teachers Pay Teachers, an online marketplace for original educational content. Approximately 85% of PreK-12 teachers in the US have accounts on this site. Since going live on August 23, 2021, we've already had over 450 page visits and 125 downloads!

- Four new WebQuests have been released with several more under development! These engaging activities are geared toward students in grades 5-9 and are aligned to the Next Generation Science Standards (NGSS) and Louisiana Student Standards for Science (LSSS). In these activities, students use resources such as WaterMarks publications and CWPPRA Outreach videos to explore and explain phenomena such as saltwater intrusion, differences in restoration methods, and the ecologic and economic value of Louisiana wetlands.
- CWPPRA Wetland Adventure Restaurant Placemats are now available in Phil's Marina Café in Slidell, Coterie in New Orleans, Southern Pearl in Baton Rouge, and Mendez's in Lafayette. These coloring-sheet placemats highlight Louisiana's coastal wetlands and the importance of coastal restoration to both locals and visitors to Louisiana.
- The CWPPRA Public Outreach Committee met virtually on July 28, 2021. The Committee discussed upcoming products, the printing of new materials, the 2021 CWPPRA Dedication event, and the farewell of Adele Swearingen from NRCS.
- Scott Wilson, Lauren Leonpacher, and Kacie Wright attended the virtual Gulf of Mexico Alliance (GOMA) Mid-Year meeting on September 21-23, 2021 to collaborate with partners on monitoring habitat resources, as well as current coastal wetland educational ventures and outreach initiatives.
- 155 media articles referenced LAcoast.gov, CWPPRA, CWPPRA Projects, or Coastal Issues in Louisiana.

ELECTRONIC MEDIA/NATIONAL AND INTERNATIONAL OUTREACH

- **LAcoast.gov** website statistics from April 19 to September 24, 2021:
 - ♦ Successful requests: 5,473,242
(includes pages, videos, maps, and graphics)
 - ♦ Successful requests for pages: 3,365,046
 - ♦ Data transferred: 1.73 terabytes
 - ♦ Average data transferred per day: 11.20 gigabytes
 - ♦ CWPPRA Newsflash subscribers: 1,868
- WaterMarks subscribers (as of 9/24/21): 6,804
- CWPPRA Social Media Information (as of 9/20/21):
 - ♦ Facebook Likes: 2,573
 - ♦ Facebook Follows: 2,918
 - ♦ Twitter Followers: 849
 - ♦ Instagram: 491
- Daily requests and information distributions April 19 to September 24, 2021.
 - ♦ Responding to requests for information/material/photos by telephone, email, Teachers Pay Teachers, LAcoast.gov: 292
 - ♦ CWPPRA Newsflashes: 10
 - ♦ LAcoast.gov LUCC posted calendar events: 44



OUTREACH ACTIVITIES

Presentations, Exhibits, Workshops, Field Trips, Meetings, and Conferences

- September 21-23, 2021: Gulf of Mexico Alliance's Mid-Year Meeting
- September 15-16: Department of Interior's Fundamentals of Structured Decision Making course through the USFWS National Conservation Training Center
- August 26, 2021: CWPPRA PPL31 WVA Meeting
- August 5, 2021: BTNEP Management Conference #96
- July 28, 2021: CWPPRA Public Outreach Committee Meeting
- July 23, 2021: CWPPRA WebQuest Development Meeting
- July 21, 2021: CPRA July Board Meeting
- July 15, 2021: Gulf of Mexico Alliance's Paddle the Gulf Outreach Working Group Call
- July 15, 2021: BA-171 Filming Meeting with CPRA, EPA, Caillouet Land, Wisner Foundation, and Great Lakes Dredge & Dock
- July 14, 2021: LaNERR Site Development Committee Meeting #6
- July 6, 2021: Installed CWPPRA "I Remember" exhibit display alongside Smithsonian Water/Ways in Grand Isle, LA
- July 2, 2021: WaterMarks360 Script Meeting
- June 21-23, 2021: Virtual Mississippi River Institute
- June 10, 2021: Gulf of Mexico Alliance's Human Benefits of Nature Team Meeting
- June 3, 2021: Smithsonian Water/Ways and CWPPRA "I Remember..." Exhibit Opening Ceremony in Thibodaux, LA
- June 2-4, 2021: Exhibited at the State of the Coast Conference
- June 2, 2021: State of the Coast Sponsorship Reception
- May 19, 2021: CPRA May Board Meeting
- May 18-20, 2021: Exhibited at State of the Coast – Restoration on the Half Shell event
- May 13, 2021: LaNERR Site Development Meeting
- May 6, 2021: CWPPRA Task Force Meeting
- CWPPRA continues outreach via social media. Staff continues to update the CWPPRA Facebook page, Instagram, and Twitter. The LAc coast.gov website is updated as needed to include new content, CWPPRA Newsflash news releases, and media updates.
- Webinars
 - August 26, 2021 – USGS WARC Science Seminar: Coastal Wetland Ghost Forests
 - July 29, 2021 – NOAA's Office of Coastal Management: Designing Science for Coastal and Ocean Decision Making
 - July 23, 2021 – USGS Friday's Findings: Supersized: Coastal Wide Scale Wetland Monitoring to Support Large Scale Restoration in America's Delta
 - July 20, 2021 – NOAA's Office of Coastal Management: Economic Guidance for Coastal Management Professionals

Partnerships / Regional Outreach / Product Development

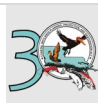
- National Park and Recreation Month in July 2021
 - 9 unique social media posts highlighting CWPPRA projects on or near state parks, national wildlife refuges, and wildlife management areas in the state of Louisiana.



- Fact Sheets
 - Worked with federal and state project managers to keep CWPPRA project fact sheets updated and uploaded to LaCoast.gov.
- Monthly Newsletter
 - Sent at the beginning of each month through CWPPRA Newsflash (June, July, August, September, and October for this reporting period).
- CWPPRA Wetland Adventure Restaurant Placemats created to highlight Louisiana's coastal wetlands and the importance of coastal restoration to both locals and visitors to Louisiana. Working with Phil's Marina Café in Slidell, Coterie in New Orleans, Southern Pearl in Baton Rouge, and Mendez's in Lafayette to pilot the project.
- Collaborating with the Bayou Teche Museum to showcase both Smithsonian *Water/Ways* and CWPPRA *I Remember* exhibits in October-November, 2021.
- Partnership established with Acadiana Center for the Arts on collaborative art and outreach exhibit featuring Brandon Ballengee's exhibits and CWPPRA outreach materials from October to January 2022.
- Creating a Louisiana Environmental Education Book Display in collaboration with several area partners (SeaGrant, Acadiana Master Naturalists, BTNEP, Acadiana Native Plant Project) to be piloted in the Lafayette Public Library System and then established throughout Louisiana libraries.
- Virtual *WaterMarks360 Virtual Field Trip: Caminada Island* with coastal curriculum and STEM experiments in development with partnership from Fletcher Technical College
- Coordinated CWPPRA Public Outreach Committee Working Group meetings for current LACoast Website evaluation and new website development
- Coordinated CWPPRA Public Outreach Committee Working Group meetings for 2021 Fall Dedication Ceremony: Planning Committee

Ongoing Partnerships

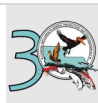
- Wetland and Aquatic Research Center, USGS
- Audubon Louisiana
- Louisiana Iris Society
- Greater New Orleans Iris Society
- AOC Community Media
- Louisiana Environmental Education Commission
- Louisiana Environmental Education Association
- LSU Sea Grant
- LSU AgCenter
- Louisiana Department of Wildlife and Fisheries
- LUMCON



- BTNEP
- GOMA Environmental Education Network
- Restore or Retreat
- Coastal Community Resiliency Studio, UL Lafayette
- SwampBase – Evangeline Area Council Boy Scouts of America
- Atchafalaya National Heritage Area
- Bayou Vermilion District
- Meraux Foundation/Docville Farms
- LASOAR
- UL Lafayette Office of Sustainability
- Louisiana Travel Association
- Bayou Culture Collaborative
- Louisiana Folklife Program, Louisiana Office of Cultural Development
- GOMA Embrace the Gulf
- Keep Louisiana Beautiful
- C-LEARN Leadership Council
- Council on the Development of French in Louisiana (CODOFIL)
- Coalition to Restore Coastal Louisiana (CRCL)
- Hilliard University Art Museum
- Central Creativity
- Fletcher Technical College
- Louisiana Endowment for the Humanities
- South Louisiana Wetlands Discovery Center
- UL Press
- Acadiana Native Plant Project
- Acadiana Master Naturalists
- Acadiana Center for the Arts

Placement of CWPPRA Educational Materials / Publications

- Academy of Sacred Heart and Berchmans Academy, Grand Coteau, LA
- Grand Coteau Elementary, Grand Coteau, LA
- USFWS Migratory Bird and Science Applications, Atlanta, GA
- RPT Meetings in Lake Charles, Morgan City and Lacombe, LA
- NOAA, Baton Rouge, LA
- Coalition to Restore Coastal Louisiana, Baton Rouge, LA
- EPA, Dallas, TX
- BTNEP, Thibodaux, LA
- Koupal Communications, Pierre, SD
- Louisiana Sea Grant College Program, Baton Rouge, LA
- U.S. Fish and Wildlife Service, Lafayette, LA
- USGS National Wetland and Aquatic Research Center, Lafayette, LA
- Louisiana Department of Wildlife and Fisheries, Lafayette, LA
- Lafayette Convention and Visitors Commission, Lafayette, LA
- Swamp Base, Henderson, LA
- Estuarine Habitats and Coastal Fisheries Lab, Lafayette, LA



- Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA
- Atchafalaya Basin Welcome Center, Henderson, LA
- West Baton Rouge Museum, Port Allen, LA
- Historic New Orleans Collection, New Orleans, LA
- Tulane River and Coastal Center, New Orleans, LA
- The Backpacker, Lafayette, LA
- Sugarwolf Exchange, Lafayette, LA
- Beausoleil Bookstore, Lafayette, LA
- Vermilionville, Lafayette, LA
- Pack & Paddle, Lafayette, LA
- Spoonbill Watering Hole & Restaurant, Lafayette, LA
- Mendez's Restaurant, Lafayette, LA
- Southern Pearl Restaurant, Baton Rouge, LA

Scheduled Upcoming Events, Workshops, Trainings, Presentations, and Meetings

Note: Events are subject to schedule and venue changes, and CWPPRA Outreach Team attendance is based on federal safety mandates at the time of the event.

- September 28-October 1, 2021 – ASBPANational Coastal Conference, New Orleans, LA
- October 13-15, 2021 – Virtual 2021 Climate Leadership
- October 16, 2021 – Shake Your Trail Feather Festival and Paddle Trip, Breaux Bridge, LA
- October 16, 2021 – Exhibit Opening: “I Remember..” & Smithsonian Water/Ways, New Iberia, LA
- October 20, 2021 – CPRA Board Meeting
- November 1-30, 2021 – CWPPRA's Virtual Dedication Celebration
- December 2, 2021 – CWPPRA Technical Committee Meeting

Media Coverage referencing LAcoast.gov, CWPPRA, CWPPRA Projects, or Coastal Issues April 19, 2021 to September 24, 2021.

Date	Title	Source of Article	Author
09/20/2021	A year after Laura, Lake Charles may finally receive disaster aid. Now comes the hard part	The Advocate	Mike Smith
09/20/2021	James Carville: Louisiana passed a major test during Hurricane Ida's onslaught	The Advocate	James Carville
09/19/2021	Three weeks after Ida toppled tombs in Ironton's cemetery, caskets remain scattered across the community	NOLA.com	Halle Parker
09/17/2021	First rehabilitated birds released after being oiled at Phillips 66's Alliance refinery	NOLA.com	Mark Schleifstein
09/16/2021	Entergy continues to whittle down Louisiana, Lafourche outages as areas in south Lafourche get restoration	Lafourche Gazette	Casey Gisclair
09/16/2021	Explainer: How wetlands can help buffer Louisiana storms	Associated Press	Michael Phillis, Suman Naishadham, and Travis Loller



09/16/2021	As Nicholas stalls over Louisiana, three potential storms are crowding the Atlantic	USA Today	John Bacon
09/16/2021	As Nicholas dissipates, two more named storms could develop this weekend	The Washington Post	Matthew Cappucci
09/16/2021	Senator Bill Cassidy: The infrastructure bill better prepares us for future hurricanes	Beauregard Daily News	U.S. Senator Bill Cassidy
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05/04/2021	Bayou Ducros, Bayou Terre aux Boeufs projects get boost	Dredging Today	Eldin Ganic
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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

COASTWIDE NUTRIA CONTROL PROGRAM – ANNUAL REPORT

For Report:

Ms. Jennifer Manuel with the Louisiana Department of Wildlife and Fisheries will present an annual report on the Coastwide Nutria Control Program (LA-03b).

Coastwide Nutria Control Program 2020 - 2021

**Nutria Harvest and Distribution 2020-2021
and
A Survey of Nutria Herbivory Damage in Coastal Louisiana 2021**



***Funded by Coastal Wetlands, Planning, Protection, and Restoration Act through
the Natural Resources Conservation Service and the Coastal Protection and
Restoration Authority**

**Conducted by: Coastal and Nongame Resources
Louisiana Department of Wildlife and Fisheries**

**As part of the Coastwide Nutria Control Program*
CWPPRA Project (LA-03b)**

**Submitted by: Jennifer Manuel & Jason Waller
July 1, 2021**

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Section 1

Nutria Harvest Distribution for 2020-2021

Introduction

The nutria (Myocastor coypus) is a large semi-aquatic rodent indigenous to South America. The first introduction of nutria to North America occurred in California in 1899; however, it was not until the 1930's that additional animals were introduced in seven other states primarily for fur farming. These fur farms failed during the Second World War as a result of poor pelt prices and poor reproductive success. After the failures of these fur farms, nutria were released into the wild. Seventeen states in the US now have feral nutria populations.

The Gulf Coast nutria population originated in Louisiana in the 1930's from escapes and releases from nutria farms. Populations first became established in the western coastal portion of the state and then later spread to the east through natural expansion coupled with stocking. During the mid-1950's, muskrat populations were declining, nutria had little fur value, and serious damage was occurring in rice fields in southwestern Louisiana and sugarcane fields in southeastern Louisiana; farmers complained about damage to crops and levee systems, while muskrat trappers blamed the nutria for declining numbers of muskrats. In 1958, the Louisiana Legislature placed the nutria on the list of unprotected wildlife and created a \$0.25 bounty on every nutria killed in 16 south Louisiana parishes, but funds were never appropriated.

Research efforts were initiated by the federal government in the southeastern sugarcane region of the state to determine what control techniques might be successful. This research conducted by the U.S. Fish and Wildlife Service during the 1960's examined movements in relation to sugarcane damage and recommended shooting, trapping, and poisoning in agricultural areas. Ted O'Neil, Chief of the Fur and Refuge Division, Louisiana Department of Wildlife and Fisheries (LDWF), believed that the problem could only be solved through the development of a market for nutria pelts. A market for nutria developed slowly during the early 1960's and by 1962 over 1 million pelts were being utilized annually in the German fur trade. The nutria became the backbone of the Louisiana fur industry for the next 20 years, surpassing the muskrat in 1962 in total numbers harvested. In 1965, the state legislature returned the nutria to the protected list. As fur prices showed a slow rise during most of the 1970's and early 1980's, the harvest averaged 1.5 million pelts and complaints from agricultural interest became uncommon. From 1971 through 1981 the average annual value of the nutria harvest to the coastal trappers was \$8.1 million. The nutria harvest in Louisiana from 1962 until 1982 remained over 1 million annually. The harvest peaked in 1976 at 1.8 million pelts worth \$15.7 million to coastal trappers (Figure 1).

The nutria market began to change during the early 1980's. In 1981-1982, the nutria harvest dropped slightly below 1 million. This declining harvest continued for two more seasons; then in the 1984-1985 season, the harvest jumped back up to 1.2 million. During the 1980-1981 season, the average price paid for nutria was \$8.19. During the 1981-1982 season, the price dropped to \$4.36 and then in 1982-1983, the price dropped to \$2.64. Between the 1983-1984 season and the 1986-1987 season, prices fluctuated between \$3.00 and \$4.00. Then in 1987-1988 and again in 1988-1989 prices continued to fall (Figure 1). From 1982 through 1992 the average annual value of the nutria harvest was only \$2.2 million. Between 1988-1989 and 1995-1996 the number of nutria harvested annually remained below 300,000 and prices remained at or below a \$3.00 average.

Due to a strong demand for nutria pelts in Russia in both 1996-1997 and in 1997-1998, 327,286 nutria were harvested at an average price of \$4.13 and 359,232 nutria were harvested at an average price of \$5.17 during those seasons respectively. In September 1998, the collapse of the Russian economy and general instability in the Far East economies weakened the demand for most wild furs including nutria. The demand for nutria pelts in Russia declined quickly due to the devaluation of the Russian ruble. During the 1998-1999 trapping season, pelt values fell to \$2.69 and harvest decreased to only 114,646, less than one-third of the previous year. During the 1999-2000 trapping season there was virtually no demand for nutria pelts. The harvest decreased to 20,110 nutria. This was, by far, the lowest nutria harvest on record since the mid-1950's. The number of nutria harvested in 2000-2001 trapping season increased to 29,544. The value of nutria pelts decreased to \$1.75 during the 2001-2002 season, prompting another decrease in harvest to 24,683 nutria. The nutria fur market has never recovered.

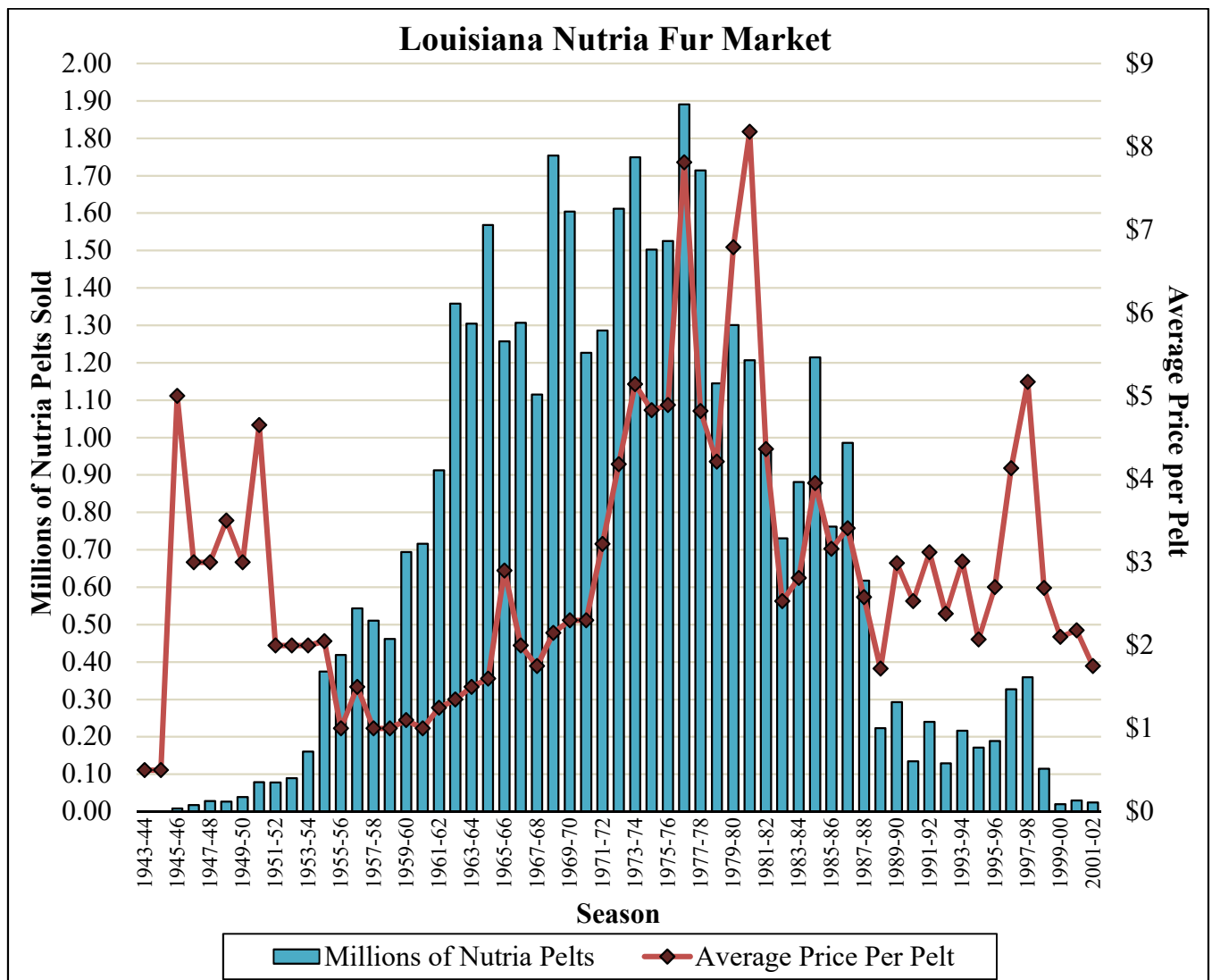


Figure 1. Louisiana fur market 1943 – 2002 (the season prior to CNCP implementation).

During the strong market period for nutria pelts, there were no reports of wetland damage caused by nutria. However, before the market developed and after the market declined, reports of marsh vegetation damage from land managers became common. Such complaints began in 1987 and became more frequent during the early 1990's. In response, the Fur and Refuge Division of the Louisiana Department of Wildlife and Fisheries (LDWF) initiated limited aerial survey flights, particularly in

southeastern Louisiana. Survey flights of Barataria and Terrebonne basins were conducted during the 1990's, with initial support from Barataria-Terrebonne National Estuary Program (BTNEP) and later support from Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). From 1993 to 1996 these flights showed acres of damage increasing from approximately 45,000 to 80,000 acres within the basins. The first CWPPRA funded coastwide survey, conducted in 1998, showed herbivory damage areas totaling approximately 90,000 acres. By 1999 this coastwide damage had increased to nearly 105,000 acres. This rapid and dramatic increase in damaged acres prompted LDWF to pursue funding for the Coastwide Nutria Control Program (CNCP) in January 2002.

The project is funded by the CWPPRA through the Natural Resources Conservation Service (NRCS) and the Coastal Protection and Restoration Authority (CPRA) with the LDWF as the lead implementing agency. Task one requires LDWF to conduct an annual aerial survey to evaluate the herbivory damage caused by nutria. Task two of the CPRA and LDWF Interagency Agreement No. 2511-02-29 for the CNCP requires LDWF to conduct general project operation and administration. LDWF is required to 1) conduct and review the registration of participants in the CNCP; 2) establish collection stations across coastal Louisiana; 3) count valid nutria tails and present participants with a receipt/voucher; 4) deliver tails to an approved disposal facility and receive documentation that ensures the nutria will be properly disposed of and shall not leave the facility; and 5) process and maintain records regarding participants, number and location where tails were collected. Task 3 requires LDWF to provide incentive payments to program participants and task 4 requires LDWF to provide a report regarding the distribution of the harvest by township.

The program area is coastal Louisiana bounded to the north by Interstate-10 from the Texas state line to Baton Rouge, Interstate-12 from Baton Rouge to Slidell, and Interstate-10 from Slidell to the Mississippi state line. The project goal is to significantly reduce damage to coastal wetlands attributable to nutria herbivory by removing 400,000 nutria annually. This project goal is consistent with the Coast 2050 common strategy of controlling herbivory damage to wetlands. The method chosen for the program is an incentive payment to registered trappers/hunters for each nutria tail delivered to established collection centers. Initially, registered participants were given \$4.00 per nutria tail. To encourage participation, the payment was increased to \$5.00 per tail in the 2006-2007 season and \$6.00 before the 2019-2020 season.

Methods

The application for participation in the CNCP was developed in July 2002 but is reviewed annually and updated as needed. It was made available through the LDWF offices and the www.nutria.com website. Past participants were automatically sent an application in September of 2020. In order for a participant to be qualified, the individual must complete the application, obtain written permission from a landowner or land manager with property in the program area, complete a W-9 tax form and provide LDWF with a complete legal description of the property to be hunted or trapped. A map outlining the property boundaries was an added requirement of participants beginning with the 2003-2004 season. Once an applicant was accepted, the participant was mailed information on the program's regulations, collection sites for nutria tails, contact information and a CNCP registration card.

Coastal Environments Inc. (CEI) was selected as the contractor to develop and maintain the program database, collect nutria tails, and distribute incentive payment checks to participants for tail harvests. The contract with CEI, which began with the 2002-2003 season, was extended to include the 2003-2004 through 2006-2007 seasons, with the option to renew for 3 years thereafter. CEI was awarded the contract again in 2010, 2015 and again in 2020. All were three year contracts with the option to renew

an additional two years. Tail collection sites were originally established at Rockefeller Refuge, Abbeville, Berwick (Morgan City), Houma, and Luling. Slidell and St. Bernard has since been added. Collections were made once a week at most sites except Abbeville and Rockefeller were by appointment only, Slidell and St. Bernard were scheduled biweekly. Rockefeller was removed as a collection site for the 2020-2021 season due to the extensive damage caused by both Hurricanes Laura and Delta.

Louisiana's open trapping season began on November 20, 2020. Nutria tail collections began November 23, 2020 and were scheduled to continue through April 9, 2021, which was 1 week after the season closed. Collections were made utilizing a 16 foot by 8 foot trailer containing a freezer, sorting table and desk. Participants reported to the collection site of their choice, presented their nutria control program registration card, and presented their tails to a CEI representative.



One CEI representative conducted an exact count of the nutria tails, which was then verified with the participant to ensure they were in agreement. At that time, the counted tails were placed into a plastic garbage bag labeled with the participant's CNCP registration number and the number of tails contained in that bag. Another CEI representative filled out a voucher on a tablet PC for the number of tails delivered, checking to make sure the mailing address of the participant was correct. The participant was asked a wide range of questions including method of take, location of take, and method of disposal (Figure 17). When complete, the voucher was signed using a stylus by the participant who would also indicate on a detailed map of their lease the location or locations where the nutria were harvested. The CEI representative would use a stylus to draw a polygon around the indicated area in a mapping program and save an electronic copy of the completed voucher. A copy of the voucher was printed and given to the participant. LDWF personnel conducted random audits of collected tails to ensure accuracy in counting and incentive payments.



The information on the voucher was transferred electronically to the CEI main offices via an FTP site for analysis and quality control. The data transfer occurred at the end of each collection day. Collected tails were transported to the BFI waste storage facility in Sorrento, Louisiana, at the end of each collection week or more frequently if necessary. The CEI representative checked in at a guard station

where the vehicle containing the tails was weighed. The vehicle was also weighed when exiting the disposal site in order to calculate the exact amount of waste deposited at the facility. The tails were deposited into a biohazard waste pit under supervision of a BFI employee. The number of bags disposed, as well as weight deposited, was recorded on a receipt given to the CEI representative. Copies of the receipts for all disposals made were supplied to LDWF.

The digitized vouchers and maps went through a rigorous QA/QC process each week which would end with the data being compiled and sent in a weekly report to LDWF detailing each transaction, including digital maps exported from ArcMap 10.4 of that week's trapped/hunted areas. Each Monday morning, after receiving a weekly report and bill, LDWF sent a payment to CEI for the amount of tails collected and services rendered. CEI in turn sends participants checks through the mail for the amount of tails turned in. After the conclusion of the season, CEI provided LDWF with all the transaction information for the entire season from November to March. This final report contains information recorded on the vouchers, the digitized trapped/hunted area, the nutria control program database and an ArcMap project map with related information.

Results and Discussion

Participant Totals

We registered a total of 448 participants in the program for the 2020-2021 season. A total of 312,118 nutria tails worth \$1,872,708 in incentive payments were collected from 284 active participants. The fewest number of tails turned in by a single participant was 11 and the greatest number of tails by a single participant was 27,209. Approximately 35% of active participants turned in 800 or more tails (Figure 2A). Of the 99 participants who turned in 800 or more tails, 14% turned in more than 4,000 tails (Figure 2B).

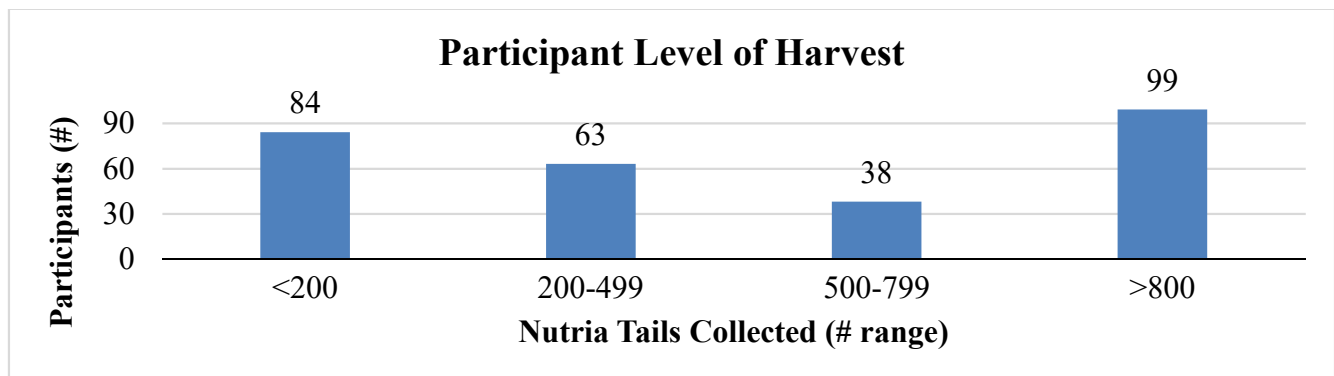


Figure 2A. Participant level of harvest for all 284 active participants.

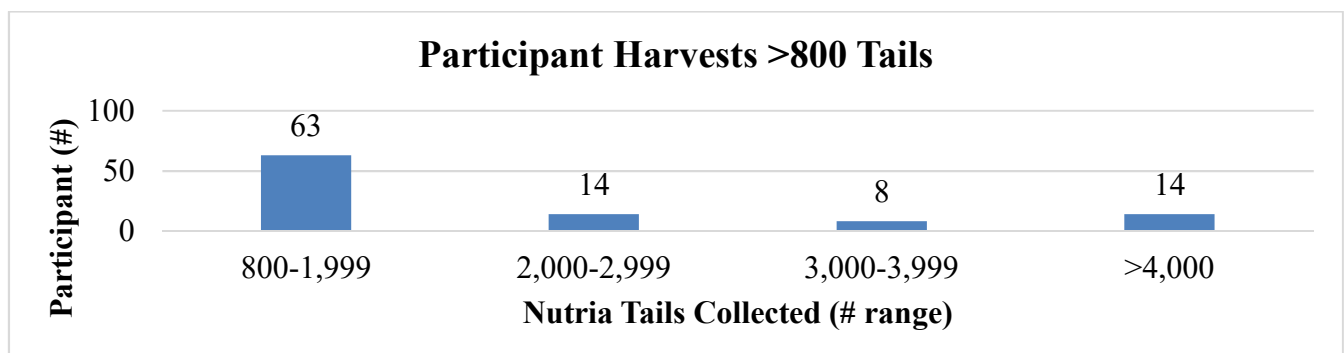


Figure 2B. Participant level of harvest for the 99 participants who harvested more than 800 tails.

Harvest by Month

The 2020-2021 trapping season began November 20th, 2020 and continued through March 31st, 2021. Eighty-eight thousand five hundred and eighty-five (88,585) tails were collected in the month of January making it the most active month of the season (Figure 3).

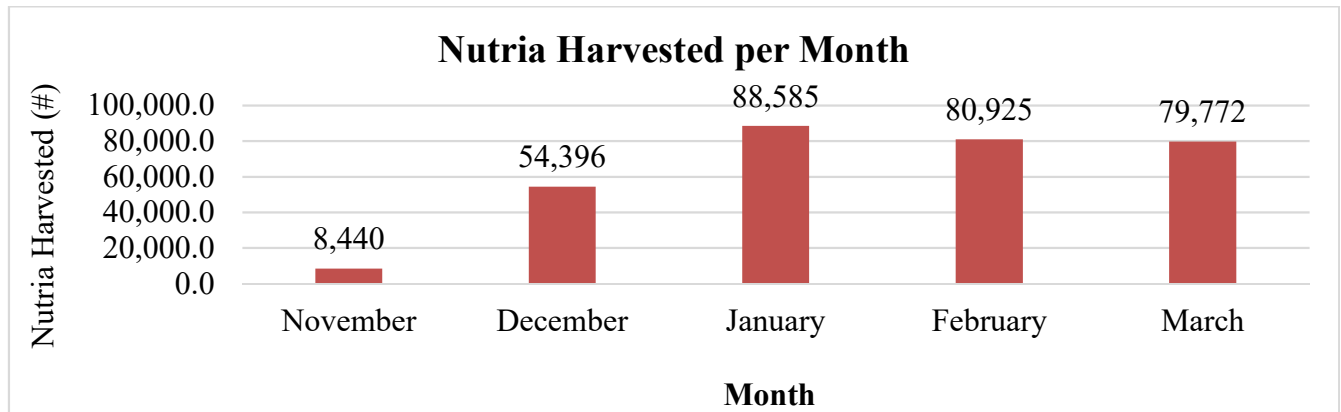


Figure 3. CNCP nutria harvest per month.

Harvest by Marsh Type

Harvest data were classified by marsh type: Fresh Marsh; Intermediate Marsh; Brackish Marsh; Salt Marsh; Swamp; and Other. The category Other includes developed properties and agricultural areas. During the 2020-2021 season, 36% of nutria were harvested from Fresh Marsh, followed by Swamp (22%), Intermediate (9%), Brackish (16%), Salt (13%), and Other (4%; Figure 4). During the first 15 seasons, we reported harvests for a category called Open Water, which were leases having more acres of open water than land acres. We eliminated Open Water during the 2016-2017 season because that category was too vague and instead these harvests are included in the marsh type category that comprised the most land acres within the lease area.

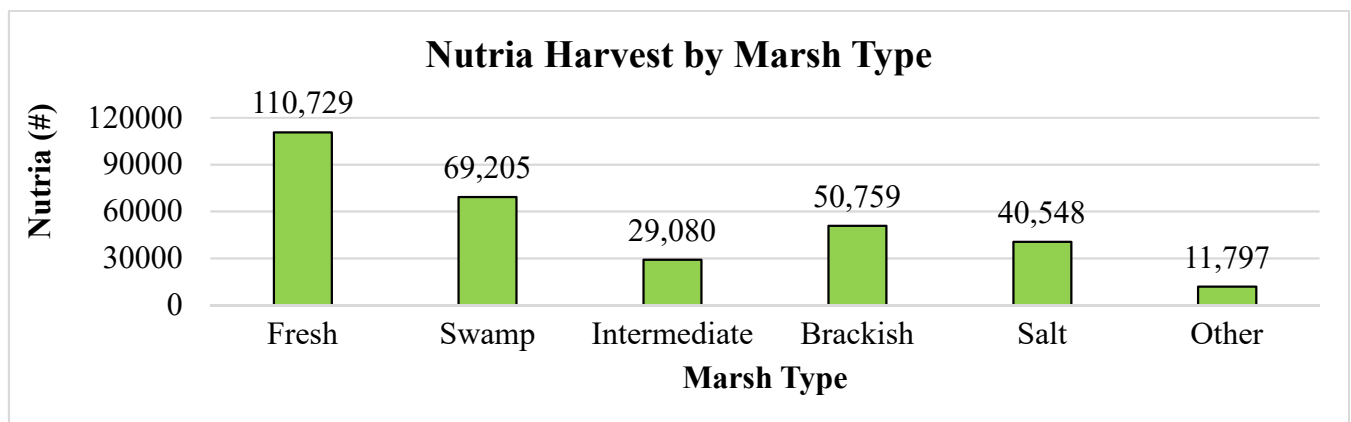


Figure 4. CNCP nutria harvest by marsh type.

Method of Take

During collection transactions, program participants indicated their method of take: trapped; shot with rifle; or shot with shotgun. The predominant method of take used in the 2020-2021 season was shooting with a rifle (Figure 5).

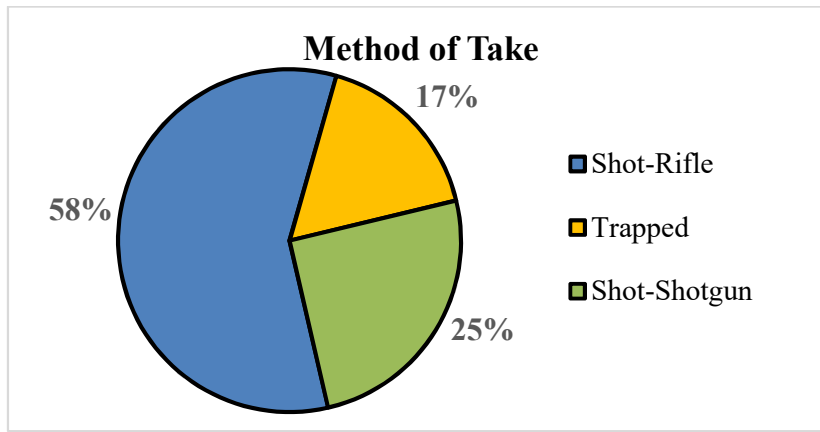


Figure 5. Method of take.

Harvesting with a rifle is the most common method of take used in all marsh types (Figure 6).

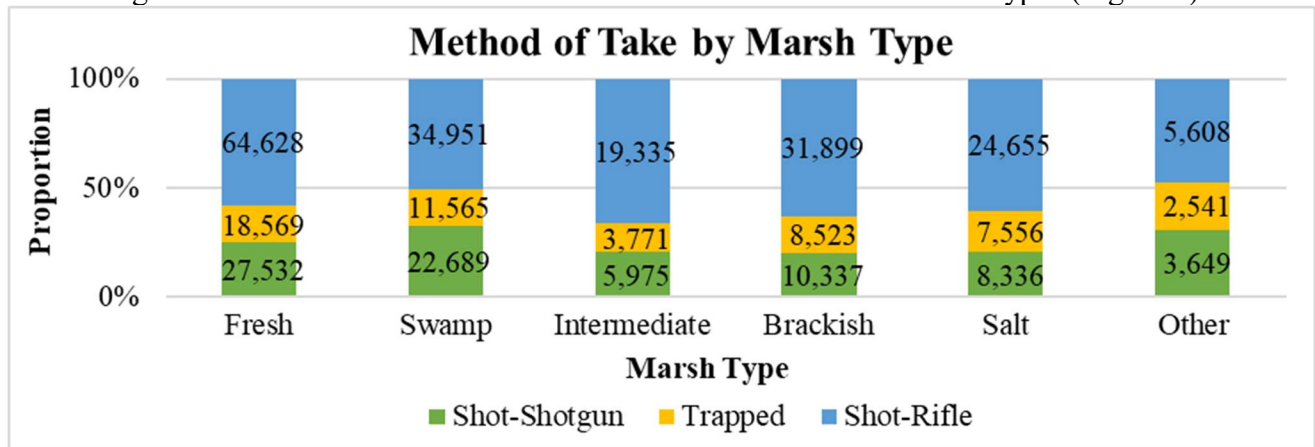


Figure 6. Method of take within each marsh type.

Carcass Use/Disposal

Use or method of disposal for nutria carcasses was recorded for each participant transaction. Overall, 1% of the nutria harvested were kept as whole carcasses, of which no hides or meat were sold. The remaining 99% of nutria carcasses were disposed of by approved methods, which include burying carcasses, placing carcasses in heavy overhead vegetation, or sinking the carcasses in the water (Table 1). All interested participants were supplied a fur buyer/fur dealer list to encourage the use of animals for the fur and meat.

Marsh Type	Whole Carcass	Hide	Meat	Abandoned-Buried	Abandoned-Vegetation	Abandoned-Waterway
Fresh	1,018	0	0	80,793	13,090	15,829
Swamp	967	0	0	58,889	3,296	6,053
Intermediate	91	0	0	17,985	1,196	9,808
Brackish	267	0	0	39,330	2,249	8,913
Salt	190	0	0	27,178	11,669	1,509
Other	313	0	0	10,369	860	256
Total	2,846	0	0	234,544	32,360	42,368

Table 1. CNCP nutria carcass use or disposal. The total number within each category was estimated from percentages reported by participants.

Harvest by Parish

Nineteen parishes were represented in the 2020-2021 season of the CNCP, with nutria harvests ranging from 1,150 to 62,617 nutria. Plaquemines Parish reported the highest number of tails with 62,617 followed by Terrebonne, St. Mary Parishes, and Jefferson Parishes with 60,750, 46,572, and 26,137 tails respectively (Figure 7).

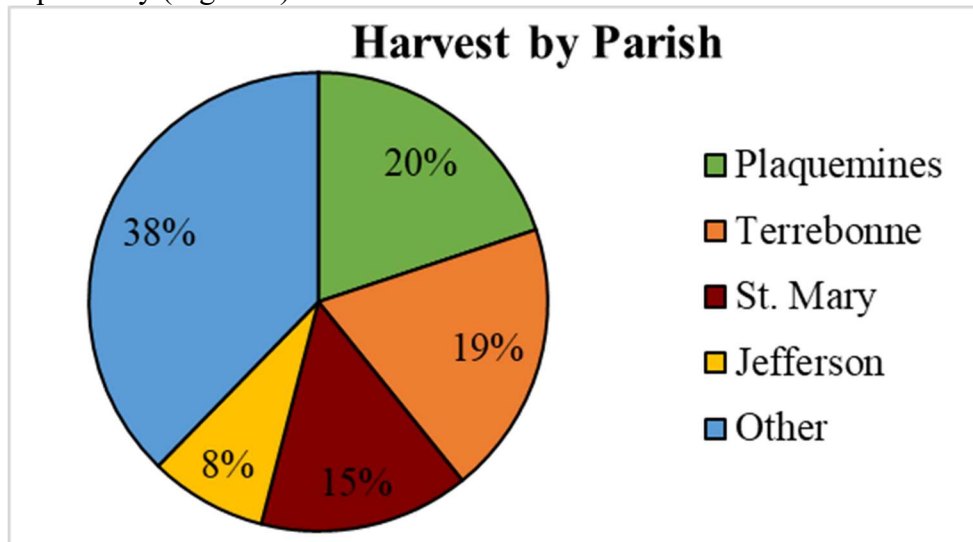


Figure 7. CNCP harvest by parish.

Section 2

A SURVEY OF NUTRIA HERBIVORY DAMAGE IN COASTAL LOUISIANA IN 2021

Introduction

Herbivory damage was noticed in the late 1980's by landowners and land managers when the price of fur dropped and the harvest of nutria all but ceased. The LDWF was contacted to investigate the problem. The first region wide aerial survey became possible because of the interest and concern of many state and federal agencies, coastal land companies and, in particular, funding provided by BTNEP. The objectives of the aerial survey were to: (1) determine the distribution of damage along the transect lines as an index of region wide damage, (2) determine the severity of damage as classified according to a vegetative damage rating, (3) determine the abundance of nutria by the nutria relative abundance rating (4) determine the species of vegetation being impacted and (5) determine the status of recovery of selected damaged areas (Linscombe and Kinler 1997).

Helicopter surveys were flown in May and December 1993 and again in March and April 1996 across the Barataria and Terrebonne Basins. During the December 1993 survey, 90 damaged sites were observed with more than 15,000 acres of marsh impacted along the transects with an estimated 60,000 acres across the study area. In 1996, a total of 157 sites were observed. The damage observed along the transect lines increased to 20,642 acres, and an extrapolated acreage of 77,408 acres across the study area. (The extrapolated coastwide estimate is derived by multiplying the observed acres by 3.75 to account for area not visible from the transect lines.) All of the 1993 sites were evaluated again in 1996, but only 9% showed any recovery. Clearly, the trend identified was a continued increase in both the number of sites and the extent of nutria damage in the Barataria and Terrebonne Basins.

In 1998, the first coastwide nutria herbivory survey was flown, as part of the Nutria Harvest and Wetland Demonstration Program (LA-03a). A total of 23,960 acres of damaged wetlands were located at 170 sites along the survey transects, with an extrapolated coastwide estimate of 89,850 acres. In 1999, the damage increased to 27,356 acres located at 150 sites, with an extrapolated coastwide estimate of 102,585 acres. In 2000, the damage slightly decreased to 25,939 acres located at 132 sites, with an extrapolated coastwide estimate of 97,271 acres. In 2001, the damage decreased to 22,139 acres located at 124 sites, with an extrapolated coastwide estimate of 83,021 acres. In the 2002 survey, which was the first survey funded as part of the CNCP and the survey which preceded implementation of the CNCP incentive payments, the damage decreased again, but only slightly to 21,185 acres located at 94 sites, with an extrapolated coastwide estimate of 79,444 acres. During the 2003 survey, a total of 84 sites had some level of vegetative damage and covered a total of 21,888 acres, with an extrapolated coastwide estimate of 82,080 acres. In summary, the coastwide estimates of nutria herbivory damage prior to implementation of the CNCP incentive payments (from 1998 to 2003) ranged from 79,444 to 102,585 acres.

Vegetative damage caused by nutria has been documented in at least a dozen Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) project sites in the Barataria and Terrebonne Basins. Nutria herbivory is only one of many factors causing wetlands loss, but the additional stress placed on the plants by nutria herbivory may be very significant in CWPPRA projects sites and throughout coastal Louisiana.

The previous extrapolated estimates of 79,444 to 102,585 acres of marsh damaged was conservative because only the worst sites (most obvious) can be detected from aerial surveys; the actual number of acres being impacted was certainly higher. When vegetation is removed from the surface of the marsh, as a result of over grazing by nutria, the very fragile organic soils are exposed to erosion through tidal action and/or storms. If damaged areas do not revegetate quickly, they may become open water as tidal scour removes soil and thus lowers elevation. This is evident as the damaged sites that converted to open water over the last five years have been in the intermediate and brackish marsh types. Frequently the plant's root systems are also damaged, making recovery through vegetative regeneration very slow.

In an effort to create an incentive for trappers and hunters, the CNCP was implemented. Task number 1 of the LDNR and LDWF Interagency Agreement No. 2511-02-29 for the CNCP requires LDWF to conduct annual coastwide aerial surveys during spring/summer to document the current year's impact of nutria herbivory. Survey techniques followed Linscombe and Kinler (1997), and CNCP funded surveys, have been conducted each spring from 2003 to present. Results were analyzed and the numbers of acres impacted or recovered were determined.

Methods

The 2021 coastwide nutria herbivory survey began on April 12th and concluded on April 27th. Eight days of flying was conducted over the two and half weeks with breaks, as needed, for poor weather conditions. North-South transects were flown throughout the fresh, intermediate, and brackish marshes of coastal Louisiana. Annually, a total of 155 transects (covering 2,354.7 miles) are surveyed for damage. The transects were spaced approximately 1.8 miles apart, starting at the swamp-marsh interface and continuing south to the beginning of the salt marsh. Due to low nutria population density, salt marsh habitat was not included in the survey and neither were swamp and other (developed areas and agricultural land) because nutria damage in these habitats cannot be reliably identified from the helicopter. Depending upon visibility and vegetative conditions, an altitude of 200-300 feet was considered optimum. At this altitude, vegetative damage was identifiable and allowed for a survey transect width of about 1/4 mile on each side of the helicopter. Flight speed was approximately 80 mph. Two observers were used to conduct the survey, each positioned on opposite sides of the helicopter. In addition to locating vegetative damage, one observer navigated along the transect line and the other observer recorded all pertinent data.



When vegetative damage was identified, the helicopter landed at the site and the following information was recorded:

- 1) Location of each site was determined by recording latitude and longitude utilizing GPS equipment. A real time differential corrected (WAAS Enabled) GPS (Garmin GPSmap 696) was utilized to allow for accurate location of damaged sites. The software GPSGate Splitter was used in conjunction with

ArcView 10.2 run on a field laptop to determine the size of each damage site, by logging polygons using stream digitizing with the GPS equipment.

- 2) The abundance of nutria sign was placed in one of the following nutria relative abundance rating (NRAR) categories: **(0) no nutria sign visible, (1) nutria sign visible, (2) abundant feeding, or (3) heavy feeding.**
- 3) The extent of damage to the vegetation was placed in one of the following vegetative damage rating categories: **(0) no vegetative damage; (1) minor vegetative damage** which is defined as a site containing feeding holes, thinning vegetation and some visible soil; **(2) moderate vegetative damage** which is defined as a site that has large areas of exposed soil and covers less than 50% of the site; **(3) severe vegetative damage** which is defined as a site that has more than 50% of the soil exposed; or **(4) converted to open water.**
- 4) The dominant plant species were identified and recorded for damaged areas, recovering areas and in the adjacent areas.
- 5) The age of damage and condition is determined by considering feeding activity and vegetation condition. The age of damage and condition was placed in one of the following categories: **(0) recovered, (1) old recovering, (2) old not recovering, (3) recent recovering, (4) recent not recovering, or (5) current (occurring now).**
- 6) The prediction of vegetative recovery is made considering feeding activity, age of damage and the extent of damage. The prediction of vegetative recovery by the end of 2021 was characterized by one of the following categories: **no recovery (0), full recovery (1), partial recovery (2) or increased damage (3).**
- 7) The number of nutria observed at each site was recorded.

In addition to searching for new damaged sites, all previously identified damaged sites were revisited to assess extent and duration of damage or to characterize recovery. All data were entered into a computer for compilation. Damaged site locations are provided on the attached herbivory map and a data summary in Appendix B.

Results and Discussion

There were 25 nutria damage sites observed during the 2021 vegetative damage survey. The damage sites observed included 23 sites from the 2020 survey with two new sites recorded. Of the 25 sites, two were identified as recovered and the remaining 23 will be checked again in 2022 (Figure 8).

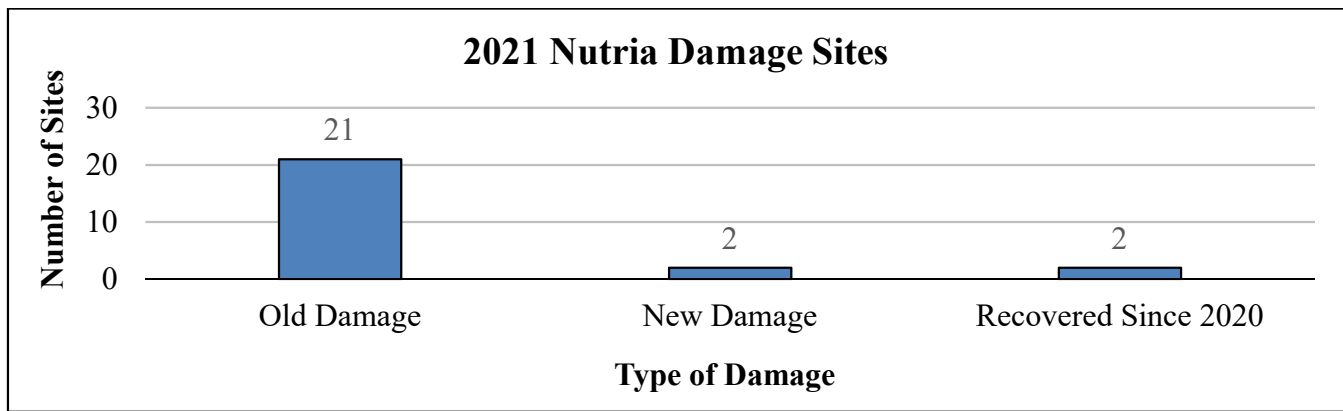


Figure 8. 2021 vegetation survey damage sites located along transect lines.

Nutria Damage

The following discussion details the 23 sites that had observable nutria damage during the 2021 survey (Appendix A). A total of 2,250 acres along transects, extrapolated to 8,436 acres coastwide were identified as impacted by nutria feeding activity. This represents approximately a 37% decrease in acres impacted by nutria since 2020 (3,593 acres, extrapolated 13,474 acres coastwide.) There were 6 damage sites documented during the 2020 survey that have since partially converted to open water with a total of 707 observed acres converted (Figure 12 and Tables 10A-10C). This conversion to open water accounts for much of the decrease in damaged acres from the previous year while two sites were marked as recovered for a total of 163 recovered acres. One of the sites (site 445) marked as recovered had no visible nutria sign but did have significant damage from feral hogs adjacent to the site.

Damage by Parish

Four parishes were observed to have damage in 2021. Most of the observed damaged acres were in Terrebonne Parish (1,971ac; 19 sites), followed by St. Mary Parish (162ac; 4 sites), Cameron Parish (36ac, 1 site), and St. Charles Parish (80ac, 1 site; Figure 9).

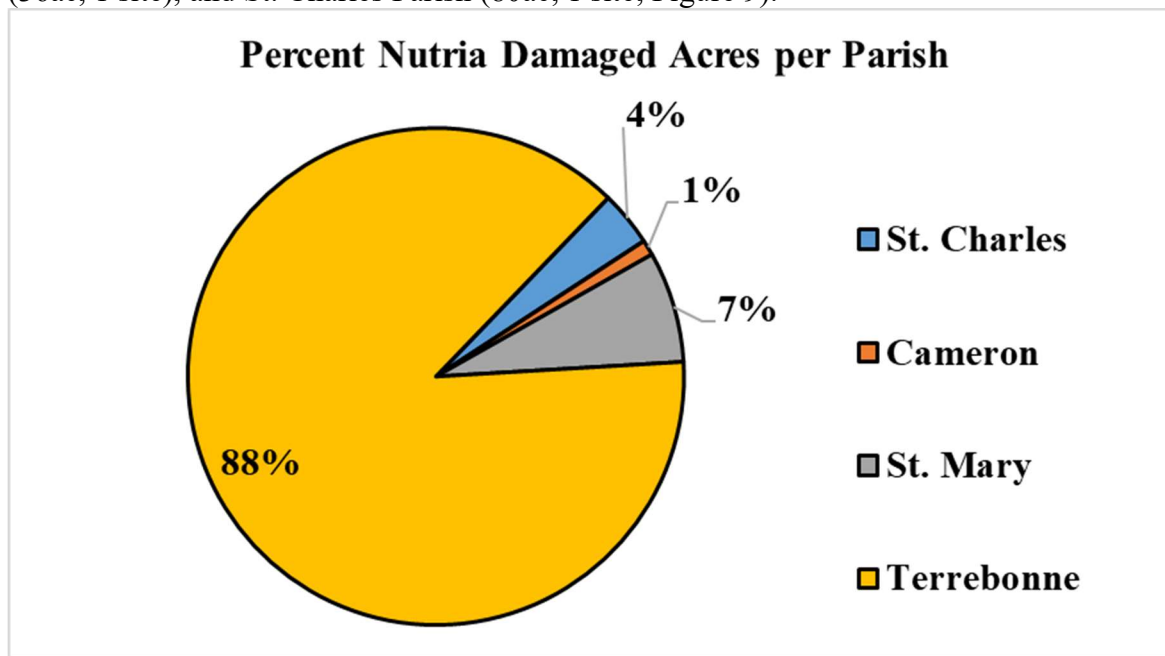


Figure 9. 2021 vegetation survey damaged acres by parish.

Damage by Marsh Type

Marsh type, based on Vegetation types as determined in coastal Louisiana in 2013 (Sasser, Visser, Mouton, Linscombe, and Hartley 2014), was recorded for each damage site (Figures 10A-10C).

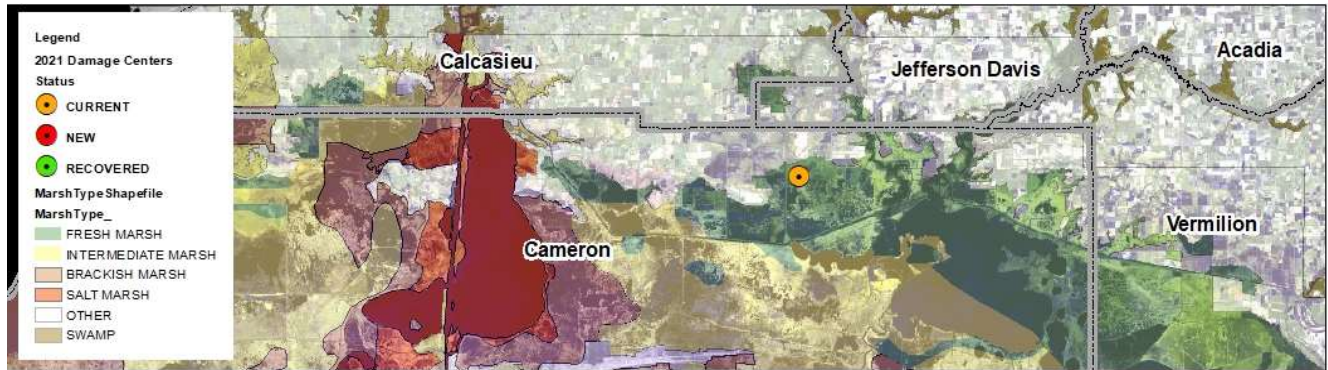


Figure 10 A. 2021 Vegetation survey damage centers. 1 damage site in Cameron Parish.

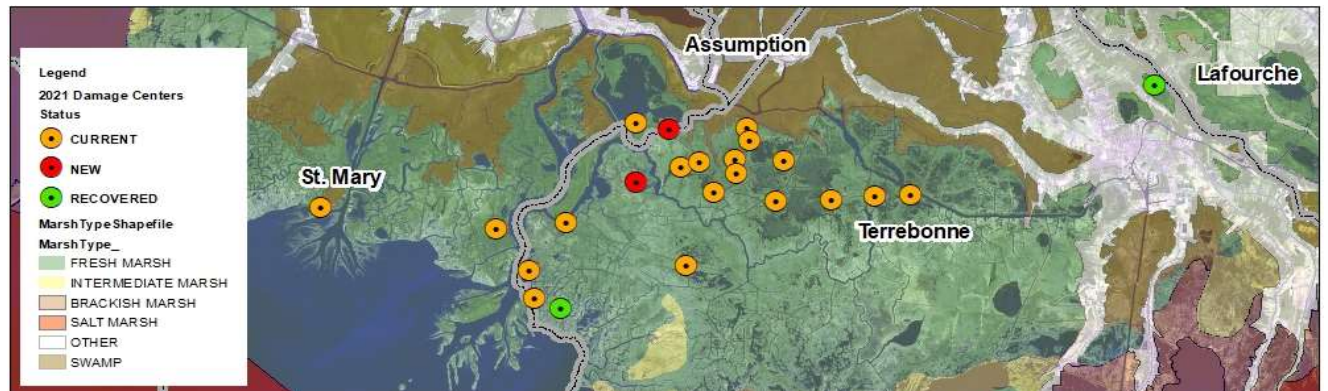


Figure 10 B. 2021 Vegetation survey damage centers. 4 sites in St. Mary and 19 sites in Terrebonne Parish.



Figure 10 C. 2021 Vegetation survey damage centers. 1 site in St. Charles Parish. All observed sites damaged by nutria herbivory were located in fresh water marsh. The typical vegetation impacted in fresh marsh was *Eleocharis* spp., *Hydrocotyle* spp, and *Bidens laevis*.

Nutria Relative Abundance Rating

A nutria relative abundance rating (NRAR) was used to quantify the abundance of nutria at each site. Categories include: (0) no nutria sign visible, (1) nutria sign visible, (2) abundant feeding sign, and (3) heavy feeding sign; sites converted to open water are not given a NRAR (Figure 11.)

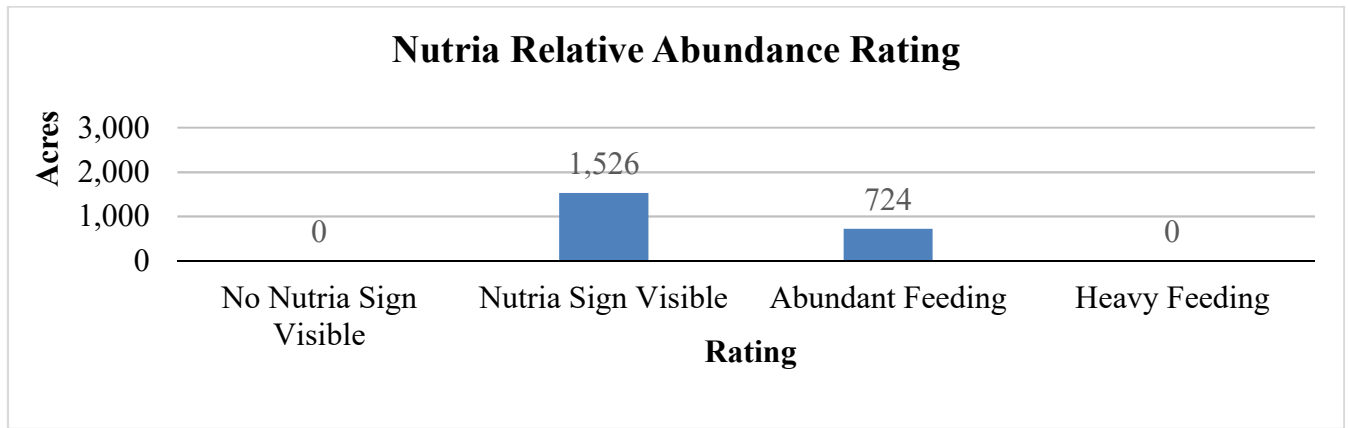


Figure 11. Nutria relative abundance ratings for 2021 nutria damaged sites.

Vegetative Damage Rating

Vegetative damage was also evaluated at each site. A rating system was developed to quantify nutria vegetative damage. The vegetative damage rating (VDR) has five categories: (0) no vegetative damage, (1) minor vegetative damage, (2) moderate vegetative damage, (3) severe vegetative damage, (4) converted to open water (Figure 12).

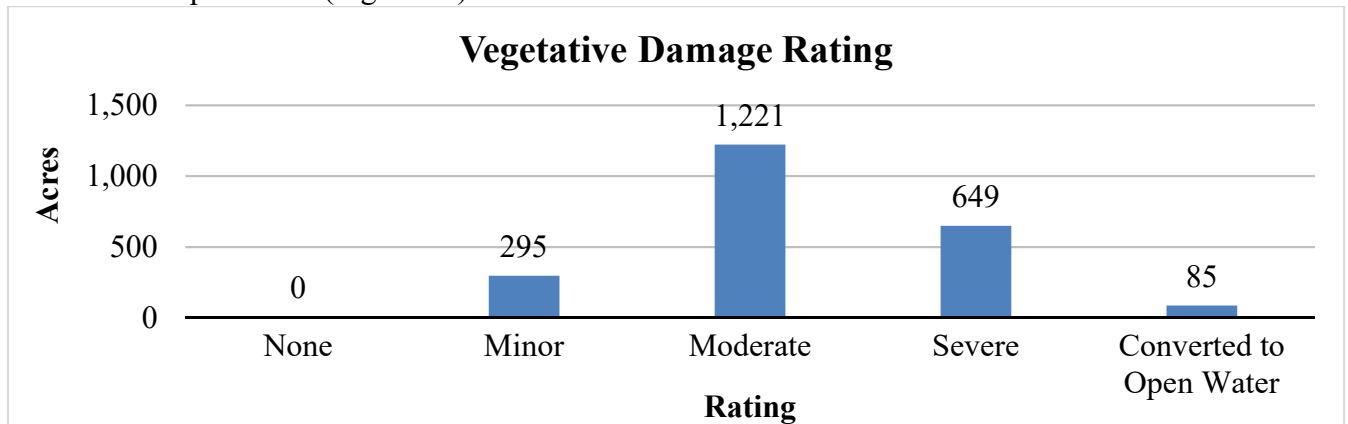


Figure 12. Vegetative damage ratings for 2021 nutria damaged sites. Does not include acres from partial sites converted to open water or recovered acres.

Age of Damage Rating

Categories for the age of damage and condition rating include: (0) recovered, (1) old damage-recovering, (2) old damage not recovering, (3) recent damage-recovering, (4) recent damage-not recovering, and (5) current damage (Figure 13).

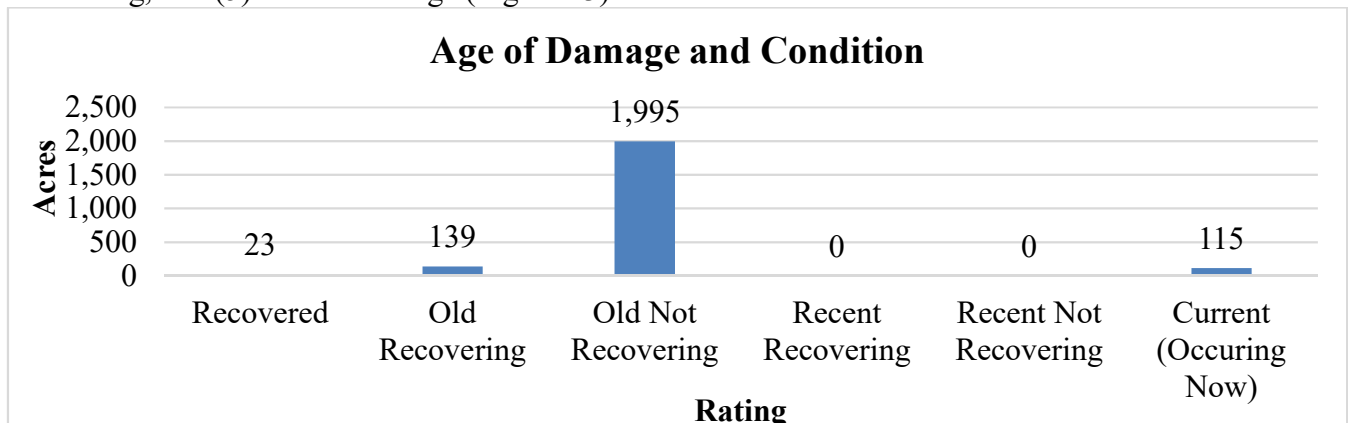


Figure 13. Age of damage and condition of 2021 nutria damaged sites. Includes recovered acres.

Prediction of Recovery

For each site with current damage, the degree of recovery by the end of the 2021 growing season was predicted. These categories include: (1) full recovery, (2) partial recovery, (3) increased damage and (4) no recovery predicted (Figure 14).

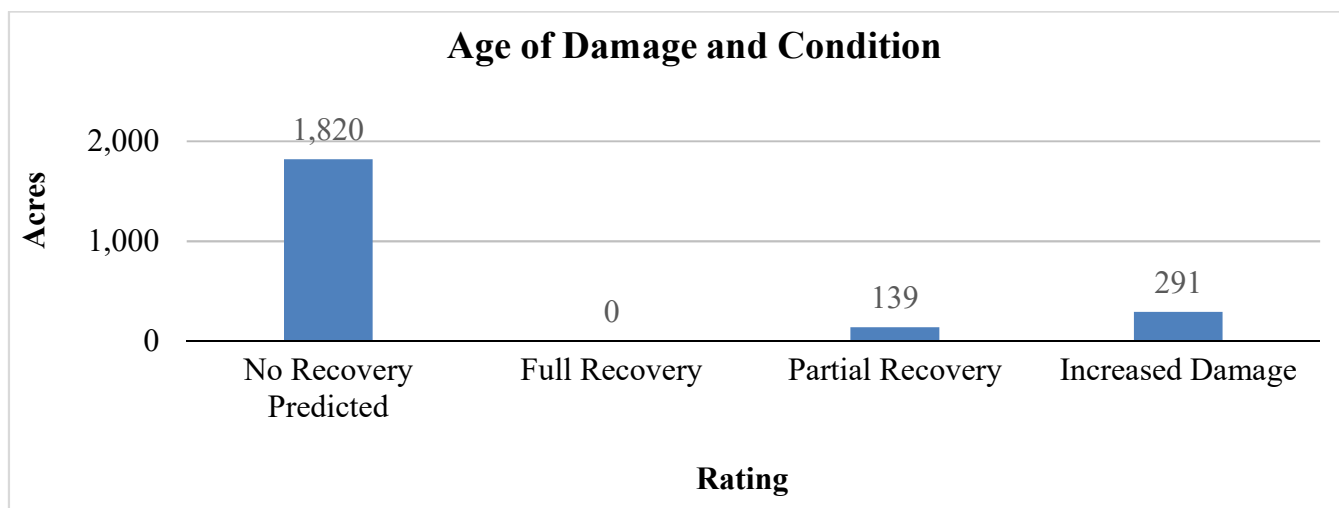


Figure 14. Prediction of recovery by the end of the growing season for the 2021 nutria damaged sites.

Conclusions

The 2021 vegetative damage survey yielded a total of 2,250 acres of nutria damage along transect lines. When extrapolated to the entire program area, an estimated 8,436 acres were impacted coastwide at the time of survey. When compared to the 2020 survey (3,654 acres, extrapolated to 13,702 acres coastwide), there was approximately a 37% decrease in the number of damaged acres. The decrease in damage is likely due to the acres converted to open water and to a smaller extent, the recovery of two sites. The above average hurricane season of 2020 may have also affected the size and location of damage sites.

The 2020-2021 season saw a return to harvest levels that topped 300,000 nutria collected. This may be a result of Covid-19 shutdowns which affected the income of many people and virtually stopped all group activities. The number of active participants increased from 259 in 2019-2020 to 284 in 2020-2021. Total days spent in the field by participants also increased from 7,226 to 8,566 while the average days spent in the field by each participant stayed roughly the same at approximately 8 days.

Due to the distance between survey lines, all areas impacted by nutria herbivory could not be identified. Additionally, there were areas along survey lines where nutria activity was observed but marsh conditions did not warrant a damage classification (i.e., nutria present but no damage observed or damaged areas <1ac are too small to record). Only the most obvious impacted areas were detected and recorded so the total impact of nutria is likely underestimated.

Section 3

Summary of Results (2002-2021) and Adaptive Management

In total, 5,898,924 nutria have been harvested from coastal Louisiana through 19 seasons of the CNCP. Throughout much of the CNCP, seasonal nutria tail collection, which is how we determine harvest, has ranged between 300,000 and 400,000. From the beginning of the CNCP through 2011, estimated coastwide nutria damage declined nearly every year and then from 2011-2017, the damaged areas stabilized between 4,000 and 6,500 acres. Unfortunately, nutria harvest during the 2016-2017 and the 2017-2018 seasons was 216,059 and 170,471, respectively, which is substantially lower harvest than years prior. Subsequently, estimated coastwide nutria damage increased from 5,866 acres in 2017 to 16,424 acres in 2018. Harvest during the 2018-2019 season was higher (223,155) than the previous 2 seasons, but still lower than the average annual harvest which is 310,378 tails (Figure 15). Although the total damaged acres decreased from 16,424 in 2018 to 14,652 in 2019, the number of damage sites increased from 21 to 25 and approximately 910 acres were converted to open water. For the 2019-2020 season, the incentive payment was increased from \$5.00 to \$6.00. The increased payment had the desired affect with harvest increasing to 245,865. For the 2020-2021 season, harvest increased to 312,118 which is close to the 19-year average annual harvest. Nutria damage has declined, however, access to the areas with high nutria density remains difficult. Some private land companies are considering allowing the use of airboats outside of recreational hunting seasons to give participants more opportunity.

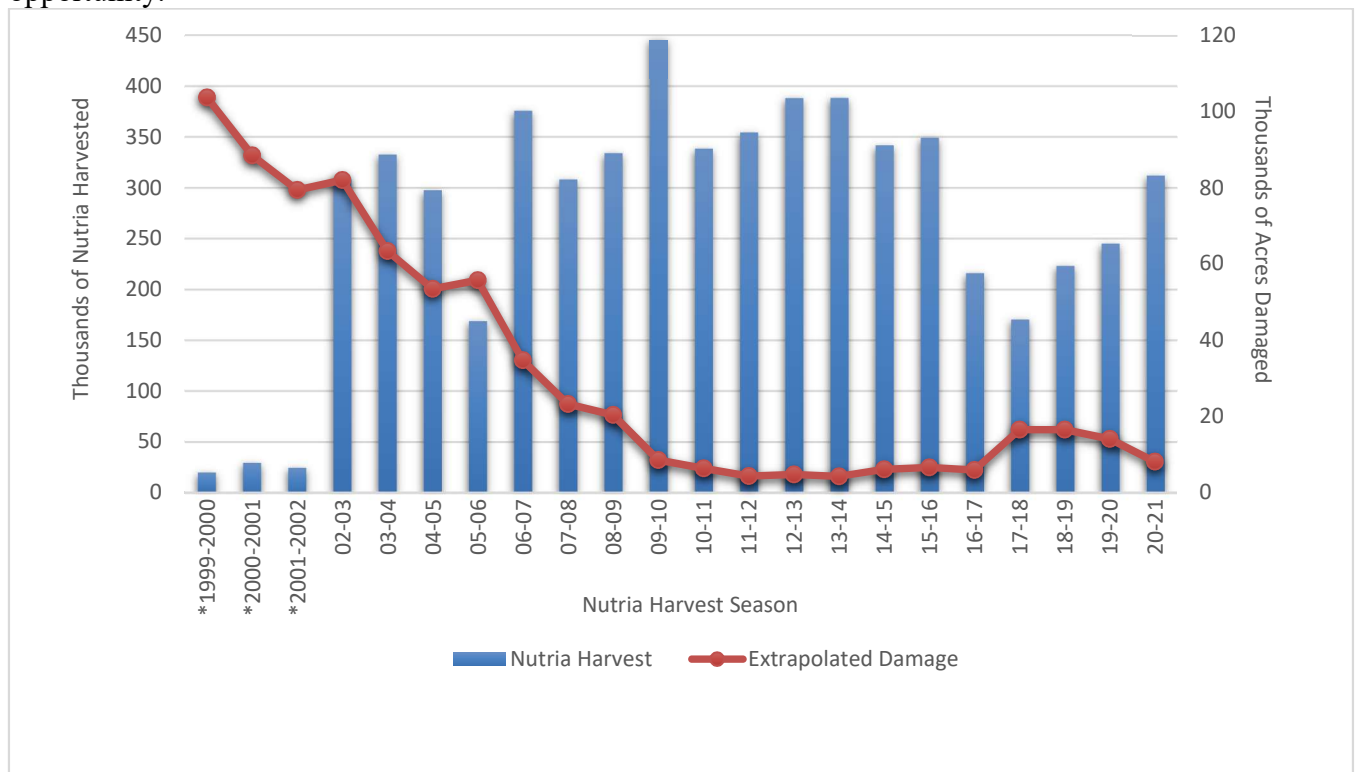


Figure 15. Nutria harvest and coastwide nutria herbivory damage. The graph includes the three years prior to the start of the program (1999-2002). The low harvest during the 2005-2006 season is attributed to the coastwide disruptions caused by Hurricane Katrina in August 2005.

Prior to implementation of CNCP incentive payments, nutria harvest was below 30,000 per season and coastwide nutria damage ranged between 79,000 and 98,000 acres (Table 2). Throughout 19 seasons of

CNCP, nutria harvest has ranged from 168,843 to 445,963 (an average of 310,378) and coastwide nutria damage decreased to a range of 4,181 to 8,475 acres for 2010-2017, and has ranged from 8,436 to 16,424 acres in the last three years (Table 3).

Harvest Season	Nutria Harvested	Year of Survey	Herbivory Damage (acres)
1999-2000	20,110	2000	97,271
2000-2001	29,544	2001	83,021
2001-2002	24,683	2002	79,444

Table 2. Nutria harvest and herbivory damage in years prior to CNCP.

Harvest Season	Nutria Harvested	Total Incentive Payments	Year of Survey	Herbivory Damage (acres)
2002-2003	308,160	\$1,232,640	2003	82,080
2003-2004	332,596	\$1,330,384	2004	63,398
2004-2005	297,535	\$1,190,140	2005	53,475
2005-2006	168,843	\$675,372	2006	55,755
2006-2007	375,683	\$1,878,415	2007	34,665
2007-2008	308,212	\$1,541,060	2008	23,141
2008-2009	334,038	\$1,670,190	2009	20,333
2009-2010	445,963	\$2,229,815	2010	8,475
2010-2011	338,512	\$1,692,560	2011	6,296
2011-2012	354,354	\$1,771,770	2012	4,233
2012-2013	388,160	\$1,940,800	2013	4,624
2013-2014	388,264	\$1,941,320	2014	4,181
2014-2015	341,708	\$1,708,540	2015	6,008
2015-2016	349,235	\$1,746,175	2016	6,496
2016- 2017	216,052	\$1,080,260	2017	5,866
2017-2018	170,471	\$852,355	2018	16,424
2018-2019	223,155	\$1,115,775	2019	14,652
2019-2020	245,865	\$1,541,190	2020	13,702
2020-2021	312,118	\$1,872,708	2021	8,436
Total	5,898,924	\$30,117,603		

Table 3. Nutria harvest and herbivory throughout 19 seasons of the CNCP.

Adaptive Management

The low nutria harvest throughout the 2016-2017, 2017-2018, and 2018-2019 seasons resulted in increased nutria damage throughout coastal Louisiana. Responses to participant surveys mailed during the summers of 2017 and 2018 indicated that raising the amount of the incentive payment would increase participation and nutria harvest. The increased payment did help increase harvest, but it is not the only factor that influences harvest. Other factors such as overall hunter participation, weather, and

degradation of marsh habitat that may result in less land to take nutria or decreased access for hunters are also factors in total harvest. These latter factors are more difficult to mitigate and will continue to present a challenge for CNCP managers. For the 2020-2021 season, an increase in harvest may have been a result of Covid-19 shutdowns and it is impossible to know if this level of harvest will continue into next season as the shutdowns end and groups activities return.

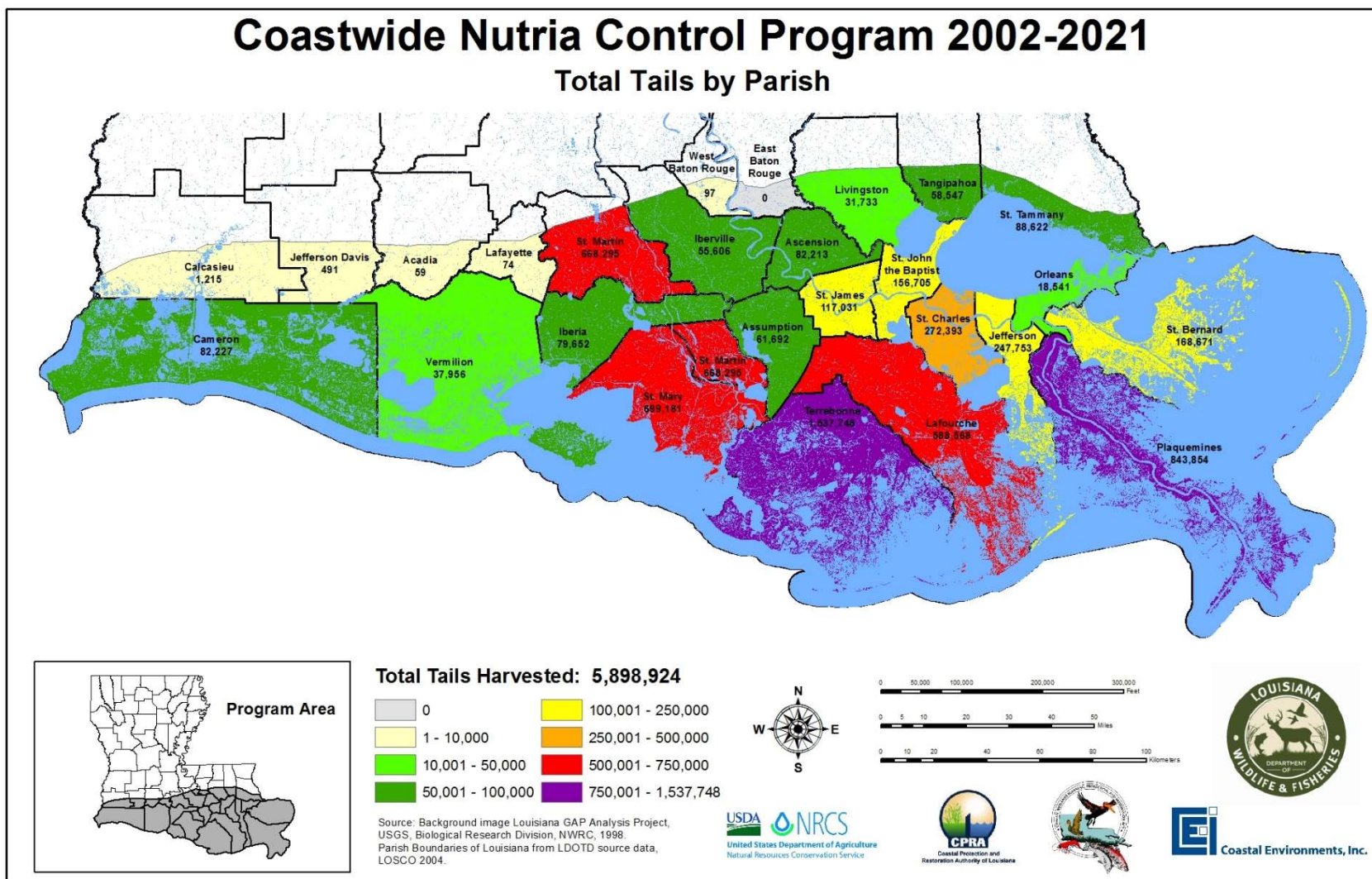


Figure 16. Total nutria harvest by Parish during 19 seasons of CNCP.

RNCP #: Transaction #: Date:

Participant Name: Number of tails accepted:

Transaction Information
 Number of tails rejected:
 Reason for rejection: (check all that apply)
☐ short ☐ spoiled
☐ other (specify)

Method of Tail Collection (Take): (check all that apply)
☐ Trapped %
 # of days trapped avg # of traps/day
☐ Shot, rifle %
☐ Shot, shotgun %
 # of days hunted # of hunters
 Retrieval Rate % Total Days

Month of Tail Collection:
☐ Nov % ☐ Feb %
☐ Dec % ☐ Mar %
☐ Jan % ☐ Apr %

Disposal of carcass: (check all that apply)
☐ Took whole carcass %
 Hide % Meat %
☐ Buried %
☐ Left in overhead vegetation %
☐ Left in waterway %
☐ Night Hunt %

Additional Notes: (optional)

Figure 17. Screenshot of the digital datasheet used by Coastal Environments Inc. during the tail collections.

Appendix A.
A Comparison of Seasons 1-19
(2002-2021)

PARISH	2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008	
	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage
Acadia	0	-	0	-	0	-	0	-	0	-	0	-
Ascension	2,710	0.88%	5,474	1.65%	1,855	0.62%	1,678	0.99%	2,226	0.59%	1,957	0.63%
Assumption	3,128	1.02%	814	0.24%	427	0.14%	2,307	1.37%	2,095	0.56%	3,863	1.25%
Calcasieu	143	0.05%	374	0.11%	447	0.15%	58	0.03%	19	0.01%	19	0.01%
Cameron	7,851	2.55%	8,701	2.62%	16,592	5.58%	3,744	2.22%	1,725	0.46%	649	0.21%
East Baton Rouge	0	-	0	-	0	-	0	-	0	-	0	-
Iberia	1,412	0.46%	1,960	0.59%	3,516	1.18%	3,014	1.79%	18,910	5.03%	6,119	1.99%
Iberville	0	-	1,567	0.47%	5,551	1.87%	2,360	1.40%	9,172	2.44%	2,105	0.68%
Jefferson	20,529	6.66%	24,896	7.49%	11,019	3.70%	2,875	1.70%	10,405	2.77%	11,299	3.67%
Jefferson Davis	121	0.04%	85	0.03%	175	0.06%	110	0.07%	0	-	0	-
Lafayette	39	0.01%	25	0.01%	10	0.00%	0	-	0	-	0	-
Lafourche	28,852	9.36%	51,736	15.56%	32,362	10.88%	24,668	14.61%	28,038	7.46%	25,473	8.26%
Livingston	2,631	0.85%	357	0.11%	910	0.31%	1,921	1.14%	1,250	0.33%	695	0.23%
Orleans	597	0.19%	0	-	537	0.18%	0	-	575	0.15%	1,333	0.43%
Plaquemines	63,208	20.51%	86,720	26.07%	38,984	13.10%	1,816	1.08%	5,815	1.55%	41,072	13.33%
St. Bernard	5,769	1.87%	13,344	4.01%	4,337	1.46%	0	-	291	0.08%	4,150	1.35%
St. Charles	11,169	3.62%	12,672	3.81%	15,843	5.32%	13,807	8.18%	18,690	4.97%	18,271	5.93%
St. James	95	0.03%	487	0.15%	2,837	0.95%	4,912	2.91%	7,111	1.89%	9,604	3.12%
St. John the Baptist	18,450	5.99%	6,137	1.85%	8,391	2.82%	6,384	3.78%	15,786	4.20%	6,728	2.18%
St. Martin	11,425	3.71%	15,039	4.52%	31,608	10.62%	15,903	9.42%	113,629	30.25%	54,726	17.76%
St. Mary	26,004	8.44%	16,277	4.89%	20,908	7.03%	21,023	12.45%	34,693	9.23%	34,210	11.10%
St. Tammany	4,638	1.51%	3,756	1.13%	5,167	1.74%	1,423	0.84%	2,067	0.55%	4,356	1.41%
Tangipahoa	1,245	0.40%	745	0.22%	564	0.19%	826	0.49%	1,843	0.49%	2,323	0.75%
Terrebonne	92,831	30.12%	72,846	21.90%	81,012	27.23%	57,756	34.21%	99,433	26.47%	78,934	25.61%
Vermilion	5,313	1.72%	8,584	2.58%	14,481	4.87%	2,258	1.34%	1,813	0.48%	326	0.11%
West Baton Rouge	0	-	0	-	0	-	0	-	97	0.03%	0	-
Total	308,160	1	332,596	1	297,535	1	168,843	1	375,683	1	308,212	1

Table 4. Nutria harvested by parish seasons 1-19, Coastwide Nutria Control Program.

PARISH	2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014	
	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage
Acadia	0	-	0	-	0	-	0	-	59	0.02%	0	-
Ascension	7,029	2.10%	7,049	1.58%	3,435	1.01%	0	-	0	-	7,889	2.03%
Assumption	1,093	0.33%	2,930	0.66%	3,244	0.96%	3,582	1.01%	6,302	1.62%	7,904	2.04%
Calcasieu	0	-	0	-	0	-	0	-	0	-	0	-
Cameron	1,245	0.37%	1,177	0.26%	1,076	0.32%	413	0.12%	174	0.04%	1,446	0.37%
East Baton Rouge	0	-	0	-	0	-	0	-	0	-	0	-
Iberia	978	0.29%	1,206	0.27%	286	0.08%	1,384	0.39%	5,360	1.38%	12,157	3.13%
Iberville	231	0.07%	6,065	1.36%	886	0.26%	1,688	0.48%	3,062	0.79%	3,046	0.78%
Jefferson	12,515	3.75%	11,506	2.58%	5,945	1.76%	6,178	1.74%	16,152	4.16%	10,244	2.64%
Jefferson Davis	0	-	0	-	0	-	0	-	0	-	0	-
Lafayette	0	-	0	-	0	-	0	-	0	-	0	-
Lafourche	48,252	14.45%	39,564	8.87%	37,137	10.97%	37,415	10.56%	47,723	12.29%	42,061	10.83%
Livingston	444	0.13%	2,186	0.49%	738	0.22%	0	-	0	-	3,405	0.88%
Orleans	656	0.20%	1,756	0.39%	2,279	0.67%	1,238	0.35%	1,006	0.26%	929	0.24%
Plaquemines	42,212	12.64%	69,294	15.54%	80,241	23.70%	71,879	20.28%	22,171	5.71%	21,808	5.62%
St. Bernard	13,965	4.18%	3,543	0.79%	29,278	8.65%	27,053	7.63%	4,073	1.05%	5,201	1.34%
St. Charles	21,215	6.35%	27,221	6.10%	16,069	4.75%	10,830	3.06%	14,347	3.70%	14,164	3.65%
St. James	8,990	2.69%	19,226	4.31%	9,167	2.71%	15,450	4.36%	14,455	3.72%	5,443	1.40%
St. John the Baptist	10,189	3.05%	6,642	1.49%	9,447	2.79%	2,678	0.76%	6,832	1.76%	3,237	0.83%
St. Martin	44,972	13.46%	63,619	14.27%	23,551	6.96%	36,562	10.32%	40,356	10.40%	54,027	13.92%
St. Mary	34,811	10.42%	67,631	15.17%	43,533	12.86%	45,859	12.94%	64,386	16.59%	58,229	15.00%
St. Tammany	5,680	1.70%	8,855	1.99%	6,562	1.94%	6,417	1.81%	1,217	0.31%	1,485	0.38%
Tangipahoa	4,974	1.49%	267	0.06%	448	0.13%	141	0.04%	1,864	0.48%	4,637	1.19%
Terrebonne	74,587	22.33%	106,226	23.82%	65,190	19.26%	85,587	24.15%	138,305	35.63%	130,952	33.73%
Vermilion	0	-	0	-	0	-	0	-	316	0.08%	0	-
West Baton Rouge	0	-	0	-	0	-	0	-	0	-	0	-
Total	334,038	1	445,963	1	338,512	1	354,354	1	388,160	1	388,264	1

Table 4 (Continued). Nutria harvested by parish seasons 1-19, Coastwide Nutria Control Program.

PARISH	2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020	
	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage	Nutria Harvested	Percentage
Acadia	0	-	0	-	0	-	0	-	0	-	0	-
Ascension	16,013	4.69%	4,693	1.34%	1,777	0.82%	1,353	0.79%	1,537	0.90%	2,245	0.91%
Assumption	7,603	2.22%	3,096	0.89%	2,372	1.10%	1,555	0.91%	1,886	1.11%	927	0.38%
Calcasieu	0	-	0	-	0	-	154	0.09%	0	-	0	0.00%
Cameron	2,848	0.83%	2,607	0.75%	2,534	1.17%	5,805	3.41%	13,835	8.12%	7,531	3.06%
East Baton Rouge	0	-	0	-	0	-	0	-	0	-	0	-
Iberia	7,296	2.14%	4,516	1.29%	2,514	1.16%	1,683	0.99%	2,469	1.45%	1,761	0.72%
Iberville	1,076	0.31%	2,930	0.84%	419	0.19%	2,379	1.40%	4,122	2.42%	6,350	2.58%
Jefferson	12,855	3.76%	12,239	3.50%	20,025	9.27%	11,060	6.49%	13,695	8.03%	8,277	3.37%
Jefferson Davis	0	-	0	-	0	-	0	-	0	-	0	-
Lafayette	0	-	0	-	0	-	0	-	0	-	0	-
Lafourche	29,190	8.54%	31,810	9.11%	18,249	8.45%	10,388	6.09%	19,458	11.41%	14,418	5.86%
Livingston	1,279	0.37%	0	0.00%	1,879	0.87%	1,538	0.90%	2,539	1.49%	4,281	1.74%
Orleans	485	0.14%	1,103	0.32%	1,077	0.50%	334	0.20%	163	0.10%	2,702	1.10%
Plaquemines	23,883	6.99%	46,672	13.36%	33,684	15.59%	29,474	17.29%	39,657	23.26%	62,380	25.37%
St. Bernard	5,410	1.58%	12,939	3.70%	11,094	5.13%	3,533	2.07%	3,729	2.19%	11,141	4.53%
St. Charles	16,355	4.79%	13,685	3.92%	11,602	5.37%	5,626	3.30%	7,350	4.31%	11,707	4.76%
St. James	769	0.23%	7,651	2.19%	3,005	1.39%	2,226	1.31%	2,600	1.52%	3,646	1.48%
St. John the Baptist	3,394	0.99%	18,412	5.27%	6,351	2.94%	6,416	3.76%	5,717	3.35%	12,334	5.02%
St. Martin	50,392	14.75%	50,202	14.37%	9,838	4.55%	14,746	8.65%	13,263	7.78%	9,991	4.06%
St. Mary	40,045	11.72%	28,585	8.19%	32,102	14.86%	26,869	15.76%	31,257	18.34%	27,963	11.37%
St. Tammany	1,481	0.43%	9,562	2.74%	5,244	2.43%	2,020	1.18%	2,331	1.37%	5,442	2.21%
Tangipahoa	6,758	1.98%	4,894	1.40%	2,998	1.39%	1,331	0.78%	3,387	1.99%	7,290	2.97%
Terrebonne	114,373	33.47%	93,301	26.72%	48,411	22.41%	40,581	23.81%	51,960	30.48%	45,208	18.39%
Vermilion	203	0.06%	341	0.10%	877	0.41%	1,400	0.82%	2,201	1.29%	271	0.11%
West Baton Rouge	0	-	0	-	0	-	0	-	0	-	0	-
Total	341,708	1	349,235	1	216,052	1	170,471	1	223,155	1	245,865	1

Table 4 (Continued). Nutria harvested by parish seasons 1-19, Coastwide Nutria Control Program.

PARISH	2020-2021	
	Nutria Harvested	Percentage
Acadia	0	-
Ascension	1,775	0.72%
Assumption	1,150	0.47%
Calcasieu	0	0.00%
Cameron	2,249	0.91%
East Baton Rouge	0	-
Iberia	3,484	1.42%
Iberville	4,384	1.78%
Jefferson	26,137	10.63%
Jefferson Davis	0	-
Lafayette	0	-
Lafourche	22,059	8.97%
Livingston	4,406	1.79%
Orleans	1,771	0.72%
Plaquemines	62,617	25.47%
St. Bernard	9,905	4.03%
St. Charles	11,747	4.78%
St. James	3,818	1.55%
St. John the Baptist	11,490	4.67%
St. Martin	14,882	6.05%
St. Mary	46,572	18.94%
St. Tammany	10,912	4.44%
Tangipahoa	12,010	4.88%
Terrebonne	60,750	24.71%
Vermilion	0	0.00%
West Baton Rouge	0	-
Total	312,118	1

Table 4 (Continued). Nutria harvested by parish seasons 1-19, Coastwide Nutria Control Program.

PARISH	2002-2003			2003-2004			2004-2005			2005-2006		
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun
Acadia	0	0	0	0	0	0	0	0	0	0	0	0
Ascension	0	2,306	404	0	4,093	1,381	100	1,678	80	470	908	300
Assumption	284	2,786	58	47	767	0	188	106	134	1,454	711	143
Calcasieu	0	143	0	0	374	0	213	24	212	57	1	0
Cameron	3,611	4,210	30	4,974	3,639	89	5,779	8,961	1,877	1,362	583	1,799
Iberia	0	1,353	59	636	1,324	0	1,286	1,310	926	1,215	449	1,350
Iberville	0	0	0	717	850	0	4,348	1,211	0	1,156	622	582
Jefferson	5,869	14,094	566	12,991	11,835	70	6,286	4,307	443	2,234	477	164
Jefferson Davis	121	0	0	82	0	0	158	16	0	109	1	0
Lafayette	19	10	10	0	25	0	0	10	0	0	0	0
Lafourche	11,807	16,826	219	28,516	22,780	440	12,221	18,212	1,977	9,213	11,050	4,598
Livingston	0	2,631	0	0	336	21	0	911	0	0	1,921	0
Orleans	287	219	91	0	0	0	538	0	0	0	0	0
Plaquemines	9,899	52,933	376	34,683	51,302	735	18,121	20,642	280	343	843	630
St. Bernard	2,877	2,892	0	5,412	7,783	149	727	3,617	0	0	0	0
St. Charles	2,099	8,706	364	2,801	9,543	329	1,279	13,958	631	1,863	10,915	1,029
St. James	48	47	0	97	350	40	32	2,752	57	278	4,239	395
St. John the Baptist	1,505	11,132	5,813	2,517	2,200	1,420	2,971	4,788	645	2,165	3,488	538
St. Martin	1,497	9,593	335	5,784	8,790	465	10,684	9,703	11,269	4,137	5,355	6,412
St. Mary	11,073	14,849	82	6,616	9,619	42	9,700	10,798	442	9,266	11,202	554
St. Tammany	3,088	1,529	21	2,687	1,069	0	2,692	2,483	0	533	800	90
Tangipahoa	335	894	16	577	169	0	35	530	0	142	638	46
Terrebonne	46,761	45,317	753	44,419	26,335	2,092	31,730	45,893	3,512	28,132	25,577	4,047
Vermilion	2,370	2,729	214	5,119	3,435	30	5,580	7,900	572	1,075	1,182	0
West Baton Rouge	0	0	0	0	0	0	0	0	0	0	0	0
Total	103,550	195,199	9,411	158,675	166,618	7,303	114,668	159,810	23,057	65,204	80,962	22,677

Table 5. Method of take by parish for seasons 1-19, Coastwide Nutria Control Program. Totals may not be exact due to reporting of percentages.

PARISH	2006-2007			2007-2008			2008-2009			2009-2010		
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun
Acadia	0	0	0	0	0	0	0	0	0	0	0	0
Ascension	0	2,008	218	0	1,905	52	217	6,751	61	338	6,712	0
Assumption	354	686	1,056	634	2,944	285	85	933	75	546	1,916	469
Calcasieu	19	0	0	19	0	0	0	0	0	0	0	0
Cameron	347	902	477	509	70	70	1,060	128	55	1,174	0	0
Iberia	6,695	4,635	7,580	3,623	1,248	1,247	258	524	196	932	274	0
Iberville	4,907	460	3,860	754	508	843	103	0	128	4,051	1,670	344
Jefferson	4,731	5,568	106	3,901	6,456	943	4,185	8,146	184	3,164	8,202	140
Jefferson Davis	0	0	0	0	0	0	0	0	0	0	0	0
Lafayette	0	0	0	0	0	0	0	0	0	0	0	0
Lafourche	12,260	11,460	4,259	9,701	11,425	4,345	32,373	13,324	2,555	21,796	16,310	1,458
Livingston	0	1,250	0	0	695	0	0	444	0	460	1,726	0
Orleans	575	0	0	1,333	0	0	656	0	0	1,658	71	27
Plaquemines	3,200	2,554	61	30,093	10,609	0	21,394	19,372	1,447	25,379	43,480	436
St. Bernard	146	146	0	4,071	79	370	9,790	4,131	43	3,177	240	126
St. Charles	6,637	9,401	2,652	3,607	13,366	1,298	6,111	14,036	1,068	7,712	18,593	916
St. James	203	6,439	469	425	9,128	51	597	7,862	531	572	17,805	849
St. John the Baptist	4,223	9,215	2,348	2,323	3,834	572	1,490	8,372	327	2,856	3,776	10
St. Martin	39,972	35,737	37,920	27,937	17,123	9,666	21,134	17,512	6,326	43,341	12,952	7,326
St. Mary	12,810	19,997	1,886	10,783	21,304	2,123	13,357	18,480	2,974	13,026	51,170	3,435
St. Tammany	1,452	529	86	1,736	2,216	404	3,377	1,848	456	2,604	4,945	1,307
Tangipahoa	542	1,189	113	563	1,760	0	321	4,530	124	0	267	0
Terrebonne	36,867	51,357	11,209	28,055	45,000	5,879	25,846	46,139	2,602	40,669	62,264	3,292
Vermilion	1,174	494	145	262	65	0	0	0	0	0	0	0
West Baton Rouge	0	97	0	0	0	0	0	0	0	0	0	0
Total	137,114	164,124	74,445	130,329	149,735	28,148	142,354	172,532	19,152	173,455	252,373	20,135

Table 5 (continued). Method of take by parish for seasons 1-19, Coastwide Nutria Control Program. Totals may not be exact due to reporting of percentages.

PARISH	2010-2011			2011-2012			2012-2013			2013-2014		
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun
Acadia	0	0	0	0	0	0	18	41	0	0	0	0
Ascension	0	3,107	0	0	0	0	0	0	0	368	7,482	39
Assumption	327	2,520	407	1,003	2,449	129	1,249	4,844	210	2,113	5,251	539
Calcasieu	315	0	0	0	0	0	0	0	0	0	0	0
Cameron	0	72	0	413	0	0	174	0	0	1,446	0	0
Iberia	1,103	46	89	222	1,163	0	1,602	2,862	896	5,579	5,906	671
Iberville	150	348	42	404	727	558	1,014	1,680	368	1,546	1,368	132
Jefferson	494	4,059	109	1,655	4,496	27	2,630	11,349	2,173	2,389	7,796	59
Jefferson Davis	1,872	0	0	0	0	0	0	0	0	0	0	0
Lafayette	0	0	0	0	0	0	0	0	0	0	0	0
Lafourche	0	23,326	43	9,573	27,574	267	11,260	33,137	3,326	9,924	31,266	870
Livingston	13,713	738	0	0	0	0	0	0	0	985	2,420	0
Orleans	0	115	0	1,202	36	0	1,006	0	0	929	0	0
Plaquemines	2,162	67,649	557	25,139	46,498	241	8,347	13,641	182	6,265	15,449	95
St. Bernard	12,021	11,489	12	16,226	10,826	0	1,214	1,276	1,584	3,228	1,974	0
St. Charles	17,764	10,155	671	2,425	8,240	165	2,473	9,748	2,125	3,806	9,587	771
St. James	5,225	9,016	115	0	15,417	33	157	13,199	1,099	32	5,410	0
St. John the Baptist	35	5,922	327	1,366	1,312	0	397	6,401	35	510	2,645	82
St. Martin	3,191	11,902	1,548	11,596	17,696	7,269	12,270	19,881	8,205	15,574	33,631	4,822
St. Mary	10,115	36,334	246	7,450	36,295	2,113	13,393	44,951	6,042	6,503	46,810	4,917
St. Tammany	6,928	2,947	899	4,817	1,123	477	579	588	50	1,312	174	0
Tangipahoa	2,711	398	0	0	142	0	0	1,205	659	2,211	2,426	0
Terrebonne	50	31,676	8,499	32,570	45,238	7,782	57,953	64,349	16,002	39,868	82,356	8,728
Vermilion	24,953	0	0	0	0	0	130	186	0	0	0	0
West Baton Rouge	0	0	0	0	0	0	0	0	0	0	0	0
Total	103,129	221,819	13,564	116,061	219,232	19,061	115,866	229,338	42,956	104,588	261,951	21,725

Table 5 (continued). Method of take by parish for seasons 1-19, Coastwide Nutria Control Program. Totals may not be exact due to reporting of percentages.

PARISH	2014-2015			2015-2016			2016-2017			2017-2018		
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun
Acadia	0	0	0	0	0	0	0	0	0	0	0	0
Ascension	551	15,259	202	257	4,226	209	159	1,505	112	184	947	221
Assumption	1,088	5,555	959	1,263	1,117	716	41	1,996	335	1,107	281	167
Calcasieu	0	0	0	0	0	0	0	0	0	118	0	36
Cameron	2,848	0	0	2,607	0	0	2,310	224	0	5,008	545	252
Iberia	3,464	3,148	684	1,321	2,854	341	60	1,394	1,060	427	656	599
Iberville	229	809	39	0	2,420	510	63	136	220	1,297	783	299
Jefferson	2,913	9,481	462	3,228	8,590	421	5,188	11,403	3,435	2,581	7,464	1,015
Jefferson Davis	0	0	0	0	0	0	0	0	0	0	0	0
Lafayette	0	0	0	0	0	0	0	0	0	0	0	0
Lafourche	7,737	21,453	0	7,820	23,783	207	6,352	11,177	720	4,115	6,145	128
Livingston	0	1,279	0	0	0	0	192	1,587	99	194	1,106	238
Orleans	485	0	0	1,045	58	0	1,077	0	0	283	50	0
Plaquemines	6,570	17,193	120	12,362	33,110	1,200	6,052	25,136	2,496	4,518	20,482	4,474
St. Bernard	4,346	1,064	0	7,828	4,995	116	7,028	3,892	175	1,825	1,580	128
St. Charles	3,592	12,659	104	2,682	9,047	1,956	4,772	6,205	626	774	3,844	1,008
St. James	133	635	0	790	6,059	802	264	2,550	191	303	1,563	361
St. John the Baptist	1,055	2,226	113	3,794	13,511	1,107	1,043	5,280	28	1,274	3,880	1,263
St. Martin	20,118	25,891	4,384	23,973	22,706	3,523	5,562	2,002	2,274	4,196	5,405	5,145
St. Mary	6,003	29,024	5,019	1,363	24,494	2,729	6,029	20,622	5,450	6,618	17,099	3,152
St. Tammany	1,282	69	131	726	8,229	607	1,142	1,092	3,010	1,092	928	0
Tangipahoa	28	6,731	0	23	4,870	0	784	2,185	29	238	955	138
Terrebonne	36,381	65,519	12,471	21,032	57,978	14,291	12,517	25,830	10,064	10,134	23,602	6,846
Vermilion	101	101	0	73	268	0	159	718	0	134	1,241	26
West Baton Rouge	0	0	0	0	0	0	0	0	0	0	0	0
Total	98,924	218,096	24,688	92,186	228,316	28,733	60,794	124,934	30,324	46,421	98,555	25,495

Table 5 (continued). Method of take by parish for seasons 1-19, Coastwide Nutria Control Program. Totals may not be exact due to reporting of percentages.

PARISH	2018-2019			2019-2020			2020-2021		
	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun	Trap	Rifle	Shotgun
Acadia	0	0	0	0	0	0	0	0	0
Ascension	274	1,234	29	638	1539	68	338	1116	321
Assumption	644	1,143	98	113	716	98	329	444	378
Calcasieu	0	0	0	0	0	0	0	0	0
Cameron	13,314	521	0	6956	509	66	2249	0	0
Iberia	518	1,187	765	334	1391	36	497	351	2636
Iberville	1,077	2,545	501	693	5325	332	390	1768	2226
Jefferson	4,650	6,236	2,809	3574	4514	189	5311	16100	4726
Jefferson Davis	0	0	0	0	0	0	0	0	0
Lafayette	0	0	0	0	0	0	0	0	0
Lafourche	7,575	11,329	553	3504	10519	395	7006	12581	2472
Livingston	536	1,959	43	1088	3028	165	896	2526	984
Orleans	75	88	0	0	2702	0	0	1559	213
Plaquemines	4,846	24,351	10,460	1784	39530	21066	4779	40263	17575
St. Bernard	767	2,789	173	2909	7221	1012	494	9411	0
St. Charles	2,283	4,972	95	3603	7867	238	3257	7538	953
St. James	454	2,112	33	1035	2500	111	482	2822	514
St. John the Baptist	1,486	4,231	0	1896	9191	1247	1217	7387	2886
St. Martin	5,833	3,442	3,987	3060	5147	1784	1968	4695	8219
St. Mary	6,345	20,505	4,406	5435	19437	3091	8076	30071	8426
St. Tammany	1,059	1,187	85	116	2777	2549	1473	4046	5393
Tangipahoa	1,078	1,942	367	1497	5230	563	1579	7114	3317
Terrebonne	6,777	30,073	15,110	9458	21974	13776	12186	31286	17278
Vermilion	415	1,578	209	23	248	0	0	0	0
West Baton Rouge	0	0	0	0	0	0	0	0	0
Total	60,006	123,426	39,723	47,715	151,365	46,785	52,524	181,077	78,517

Table 5 (continued). Method of take by parish for seasons 1-19, Coastwide Nutria Control Program. Totals may not be exact due to reporting of percentages.

Year	Number of Sites Surveyed	Number of Sites with Current Damage	Number of Sites Converted to Open Water	Sites with Vegetative Recovery
2002	108 ¹	86	8	12
2003	100	81	3	16
2004	93	68	1	24
2005	78	47	2	29
2006	52	31	9	12
2007	34	23	3 (partial sites)	11 ²
2008	23	16	1 (partial site)	6
2009	24	19	1 (partial site)	5 ²
2010	20	11	0	9
2011	11	10	0	1
2012	12	11	0	1
2013	14	12	0	2
2014	13	11	0	2
2015	12	11	0	1
2016	10	10	4 (partial sites)	0
2017	17	16	5 (partial sites)	1
2018	25 ^{1,3}	21	6 (partial sites)	2
2019	25	25	11 (partial sites)	0
2020	25	23	7 (partial sites)	2
2021	25	23	6 (partial sites)	2

Table 6. Status and number of nutria herbivory sites surveyed from 2002 to 2021.

¹ Two sites could not be evaluated due to high water.

² Total includes 1 site with partial recovery.

³ Two separate sites from previous season merged together to form single site

PARISH	2002		2003		2004		2005		2006	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Terrebonne	41	12,951	34	12,521	27	7,679	18	4,541	14	7,340
Lafourche	8	1,222	7	610	5	381	2	127	0	0
Jefferson	17	3,003	10	1,805	9	1,718	7	1,383	5	874
Plaquemines	10	882	13	2,540	7	2,494	7	1,850	7	1763
St. Charles	6	768	6	1,266	9	2,564	6	4,690	5	3249
Cameron	0	0	0	0	0	0	0	0	1	233
St. Bernard	6	921	5	918	5	1,035	4	882	4	1,004
St. John	0	0	1	20	2	111	2	240	2	241
Iberia	0	0	0	0	0	0	1	158	0	0
St. Tammany	4	752	2	360	0	0	0	0	0	0
Orleans	2	686	2	962	0	0	0	0	0	0
St. Mary	0	0	0	0	0	0	0	0	0	0
Vermilion	0	0	4	886	5	924	2	389	1	76
Jefferson Davis	0	0	0	0	0	0	0	0	1	88
St. John the Baptist	0	0	0	0	0	0	0	0	0	0
Total	94	21,185	84	21,888	69	16,906	49	14,260	40	14,868¹

Table 7. Number of nutria damaged sites and acres damaged along transects by parish in coastal Louisiana, 2002 - 2021.

¹This figure represents acres damaged along transects only. Actual damage coastwide is approximately 3.75 times larger than the area estimated by this survey.

²This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

³These figures include acres from sites that were partially converted to open water.

PARISH	2007		2008		2009		2010		2011	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Terrebonne	12	5,915	12	3,768	10	3,162	10	2,241	9	1,591
Lafourche	2	328	2	338	2	207	1	19	1	88
Jefferson	3	177 ²	2	69	1	29	0	0	0	0
Plaquemines	0	0	1	11	1	9	0	0	0	0
St. Charles	4	2,216 ²	5	2,215 ²	4	1,895	0	0	0	0
Cameron	1	167	0	0	1	120	0	0	0	0
St. Bernard	1	225 ²	0	0	0	0	0	0	0	0
St. John	0	0	0	0	0	0	0	0	0	0
Iberia	0	0	0	0	0	0	0	0	0	0
St. Tammany	0	0	0	0	0	0	0	0	0	0
Orleans	0	0	0	0	0	0	0	0	0	0
St. Mary	0	0	0	0	0	0	0	0	0	0
Vermilion	0	0	0	0	0	0	0	0	0	0
Jefferson Davis	1	81	0	0	0	0	0	0	0	0
St. John the Baptist	1	135	1	70	0	0	0	0	0	0
Total	25	9,244²	23	6,471²	19	5,422	11	2,260	10	1,679

Table 7 (Continued).

Number of nutria damaged sites and acres damaged along transects by parish in coastal Louisiana, 2002 - 2021.

¹This figure represents acres damaged along transects only. Actual damage coastwide is approximately 3.75 times larger than the area estimated by this survey.

²This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

³These figures include acres from sites that were partially converted to open water.

PARISH	2012		2013		2014		2015		2016	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Terrebonne	10	1033	10	1212	9	1078	10	1586	10	1716
Lafourche	1	96	0	0	0	0	0	0	0	0
Jefferson	0	0	0	0	0	0	0	0	0	0
Plaquemines	0	0	0	0	0	0	0	0	0	0
St. Charles	0	0	0	0	0	0	0	0	0	0
Cameron	0	0	0	0	0	0	0	0	0	0
St. Bernard	0	0	0	0	0	0	0	0	0	0
St. John	0	0	0	0	0	0	0	0	0	0
Iberia	0	0	0	0	0	0	0	0	0	0
St. Tammany	0	0	0	0	0	0	0	0	0	0
Orleans	0	0	0	0	0	0	0	0	0	0
St. Mary	0	0	2	21	2	37	1	16	1	16
Vermilion	0	0	0	0	0	0	0	0	0	0
Jefferson Davis	0	0	0	0	0	0	0	0	0	0
St. John the Baptist	0	0	0	0	0	0	0	0	0	0
Total	11	1,129	12	1,233	11	1,115	11	1,602	11	1,732²

Table 7 (Continued).

Number of nutria damaged sites and acres damaged along transects by parish in coastal Louisiana, 2002 - 2021.

¹This figure represents acres damaged along transects only. Actual damage coastwide is approximately 3.75 times larger than the area estimated by this survey.

²This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

³These figures include acres from sites that were partially converted to open water.

PARISH	2017		2018		2019		2020		2021	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Terrebonne	13	1,283	17	3,578	18	3,319	19	3,456	19	1,971
Lafourche	0	0	0	0	0	0	0	0	0	0
Jefferson	1	174	0	0	0	0	0	0	0	0
Plaquemines	0	0	0	0	0	0	0	0	0	0
St. Charles	1	72	1	504	1	93	1	49	1	81
Cameron	1	35	2	74	2	117	1	39	1	36
St. Bernard	0	0	0	0	0	0	0	0	0	0
St. John	0	0	0	0	0	0	0	0	0	0
Iberia	0	0	0	0	0	0	0	0	0	0
St. Tammany	0	0	0	0	0	0	0	0	0	0
Orleans	0	0	0	0	0	0	0	0	0	0
St. Mary	0	0	1	224	4	378	2	110	4	162
Vermilion	0	0	0	0	0	0	0	0	0	0
Jefferson Davis	0	0	0	0	0	0	0	0	0	0
St. John the Baptist	0	0	0	0	0	0	0	0	0	0
Total	16	1,564²	21	4,380²	25	3,907	23	3,654	25	2,250

Table 7 (Continued).

Number of nutria damaged sites and acres damaged along transects by parish in coastal Louisiana, 2002 - 2021.

¹This figure represents acres damaged along transects only. Actual damage coastwide is approximately 3.75 times larger than the area estimated by this survey.

²This figure includes 2,553 acres of marsh previously impacted by nutria that was likely converted to open water in Plaquemines and St. Bernard Parishes due to tidal scour from Hurricane Katrina.

³These figures include acres from sites that were partially converted to open water.

MARSH TYPE	2002		2003		2004		2005		2006		2007	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Fresh	41	11,593	36	10,871	37	10,565	26	9,811	23	11,273	21	8,842
Intermediate	39	7,416	31	8,086	25	5,128	19	3,789	16	3,421	3	298
Brackish	14	2,176	17	2,931	7	1,213	4	660	1	174	1	104
Total	94	21,185	84	21,888	69	16,906	49	14,260	40	14,868	251	9,244¹

Table 8. Number of nutria damaged sites and acres damaged, by marsh type along transects in coastal Louisiana during 2002 to 2021; numbers include sites converted to open water.

¹ Total includes sites that were partially converted to open water.

MARSH TYPE	2008		2009		2010		2011		2012		2013	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Fresh	21	6,127	17	5,384	11	2,260	10	1,679	11	1,129	12	1,233
Intermediate	2	44	2	38	0	0	0	0	0	0	0	0
Brackish	0	0	0	0	0	0	0	0	0	0	0	0
Total	23	6,471¹	19	5,422	11	2,260	10	1,679	11	1,129	12	1,233

Table 8 continued.

MARSH TYPE	2014		2015		2016		2017		2018		2019	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	SITES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Fresh	11	1,115	11	1,602	11	1,716	15	1,390	21	4,380	25	3,907
Intermediate	0	0	0	0	0	0	0	0	0	0	0	0
Brackish	0	0	0	0	0	0	1	174	0	0	0	0
Total	11	1,115	11	1,602	11	1,716	16	1,564	21	4,380	25	3,907

Table 8 continued.

MARSH TYPE	2020		2021	
	NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES
Fresh	23	3,654	23	2,250
Intermediate	0	0	0	0
Brackish	0	0	0	0
Total	23	3,654	23	2,250

Table 8 continued. Number of nutria damaged sites and acres damaged, by marsh type along transects in coastal Louisiana during 2002 to 2021; numbers include sites converted to open water.

¹ Total includes sites that were partially converted to open water.

NUTRIA RELATIVE ABUNDANCE RATING	2002		2003		2004		2005		2006		2007	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
No nutria sign visible	21	5,990	23	5,972	13	3,569	12	2,992	4	519	2	73
Nutria sign visible	31	4,379	26	3,562	29	6,040	28	6,748	26	11,223	12	3,402
Abundant feeding	17	4,198	19	6,682	19	5,251	4	4,113	1	573	5	1,495
Heavy feeding	17	5,568	14	5,599	7	2,026	1	273	0	0	4	3,658
Total	86	20,135	81	21,815	69	16,886	47	14,126	31	12,315	23	8,628

Table 9. Number of nutria damage sites and acres damaged by revised nutria relative abundance rating in coastal Louisiana during 2002 to 2021; numbers do not include sites converted to open water.

NUTRIA RELATIVE ABUNDANCE RATING	2008		2009		2010		2011		2012		2013	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
No nutria sign visible	0	0	0	0	0	0	0	0	0	0	0	0
Nutria sign visible	13	2,234	6	517	0	0	1	139	3	117	6	198
Abundant feeding	8	3,522	8	1,169	7	640	9	1,540	8	1,012	6	1,035
Heavy feeding	2	415	5	3,736	4	1,620	0	0	0	0	0	0
Total	23	6,171	19	5,422	11	2,260	10	1,679	11	1,129	12	1,233

Table 9 continued.

NUTRIA RELATIVE ABUNDANCE RATING	2014		2015		2016		2017		2018		2019	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	SITES	SITES	ACRES	SITES	ACRES	SITES	ACRES
No nutria sign visible	0	0	0	0	0	0	0	0	0	0	0	0
Nutria sign visible	2	22	3	59	7	581	14	1,136	13	2,084	19	2,149
Abundant feeding	9	1,093	7	741	6	1,077	3	429	7	2,134	6	1,758
Heavy feeding	0	0	1	802	1	74	0	0	1	161	0	0
Total	11	1,115	11	1,602	3193	1,732	3193	1,564	21	4,380	25	3,907

Table 9 continued.

NUTRIA RELATIVE ABUNDANCE RATING	2020		2021	
	NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES
No nutria sign visible	0	0	0	0
Nutria sign visible	21	2,659	20	1,526
Abundant feeding	2	995	3	724
Heavy feeding	0	0	0	0
Total	23	3,654	23	2,250

Table 9 continued. Number of nutria damage sites and acres damaged by revised nutria relative abundance rating in coastal Louisiana during 2002 to 2021; numbers do not include sites converted to open water.

VEGETATIVE DAMAGE RATING	2002		2003		2004		2005		2006		2007	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
No vegetative damage	1	30	0	0	0	0	0	0	0	0	0	0
Minor vegetative damage	28	3,498	26	8,732	35	6,675	34	8,070	21	7,621	17	4,021
Moderate vegetative damage	44	13,156	41	9,221	29	9,536	12	5,905	9	4,581	6	4,607
Severe vegetative damage	13	3,451	14	3,862	4	675	1	151	1	113	0	0
Converted to open water	8	1,050	3	73	1	20	2	134	9	2,553	3 ¹	616 ¹
TOTAL	94	21,185	84	21,888	69	16,906	49	14,260	40	14,868	26¹	9,244¹

Table 10. Number of nutria damage sites and number of acres by the vegetative damage rating in coastal Louisiana 2002 to 2021.

¹ Total includes sites that were partially converted to open water.

VEGETATIVE DAMAGE RATING	2008		2009		2010		2011		2012		2013	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
No vegetative damage	0	0	0	0	0	0	0	0	0	0	0	0
Minor vegetative damage	17	5,402	15	5,102	11	2,260	10	1,679	11	1,129	7	285
Moderate vegetative damage	5	640	4	320	0	0	0	0	0	0	3	726
Severe vegetative damage	1	129	0	0	0	0	0	0	0	0	2	222
Converted to open water	1 ¹	300 ¹	1 ¹	90	0	0	0	0	0	0	0	0
TOTAL	24¹	6,471¹	20¹	5,512	11	2,260	10	1,679	11	1,129	12	1,233

Table 10 continued.

VEGETATIVE DAMAGE RATING	2014		2015		2016		2017		2018		2019	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
No vegetative damage	0	0	0	0	0	0	0	16	0	0	0	0
Minor vegetative damage	8	898	9	772	2	39.93	10 ¹	850 ¹	12 ¹	1,832 ¹	12 ¹	834 ¹
Moderate vegetative damage	3	217	2	830	6 ¹	558 ¹	5 ¹	540 ¹	11 ¹	1,472 ¹	9 ¹	1,701 ¹
Severe vegetative damage	0	0	0	0	3	1134	1	174	2 ¹	208 ¹	9 ¹	1,379 ¹
Converted to open water	0	0	0	0	4 ¹	125 ¹	5 ¹	76 ¹	6 ¹	867 ¹	11 ¹	910 ¹
TOTAL	11	1,115	11	1,602	15¹	1,857¹	16¹	1,656¹	31¹	4,380¹	41¹	4,824¹

Table 10 continued.

VEGETATIVE DAMAGE RATING	2020		2021	
	NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES
No vegetative damage	2	168	2	162
Minor vegetative damage	12	1474	5	295
Moderate vegetative damage	8	1122	12	1221
Severe vegetative damage	2	995	5	649
Converted to open water	1	260	1	85
TOTAL	25	4,019²	25	2,412²

Table 10 continued. Number of nutria damage sites and number of acres by the vegetative damage rating in coastal Louisiana 2002 to 2021.

² Total includes sites that were partially converted to open water and recovered acres.

AGE OF DAMAGE AND CONDITON RATING	2002		2003		2004		2005		2006		2007	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Recovered	12	1,119	16	1,674	24	6,049	29	4,169	13 ¹	1,341 ¹	11 ¹	1,783 ¹
Old Recovering	51	7,694	51	14,382	53	12,338	39	10,878	21	9,429	14	5,011
Old Not Recovering	31	11,449	17	5,375	5	2,898	2	656	4	1,519	5	2,874
Recent Recovering	0	0	0	0	1	35	1	10	0	0	0	0
Recent Not Recovering	0	0	0	0	0	0	0	0	1	285	0	0
Current Damage	4	992	13	2,058	9	1,615	5	2,582	5	1,082	4	743
Total	98	21,254	97	23,489	92	22,935	76	18,295	44¹	13,656¹	34¹	10,411¹

Table 11. Number of nutria damage sites by age of damage and condition rating in coastal Louisiana in 2002 to 2021.

¹ Total includes sites that were partially recovered.

AGE OF DAMAGE AND CONDITON RATING	2008		2009		2010		2011		2012		2013	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Recovered	6	736	5 ¹	673 ¹	9	1,914	1	62	1	36	2	96
Old Recovering	15	3,852	16	5,321	10	2,198	5	1,270	8	1,033	1	29
Old Not Recovering	3	1,914	2	57	0	0	4	224	1	53	8	1,168
Recent Recovering	0	0	0	0	0	0	0	0	0	0	0	0
Recent Not Recovering	0	0	0	0	0	0	0	0	0	0	0	0
Current Damage	5	405	1	44	1	62	1	185	2	43	3	36
Total	29	6,907	23¹	6,095¹	20	4,174	11	1,741	12¹	1,165¹	14¹	1,329¹

Table 11 continued.

AGE OF DAMAGE AND CONDITON RATING	2014		2015		2016		2017		2018		2019	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Recovered	2	34	1	23	0	0	1	16	0	0	0	0
Old Recovering	7	259	3	60	3	109	4	307	2	87	1	93
Old Not Recovering	3	833	7	1,481	8	1,624	6	481	7	1,687	9	2,068
Recent Recovering	0	0	0	0	0	0	1	35	0	0	1	79
Recent Not Recovering	0	0	0	0	0	0	0	0	0	0	4	715
Current Damage	1	23	1	61	0	0	5	740	12	2,606	9	952
Total	13¹	1,149¹	12¹	1,625¹	11¹	1,732¹	17¹	1,580¹	21¹	4,380¹	25¹	3,907¹

Table 11 continued.

AGE OF DAMAGE AND CONDITON RATING	2020		2021	
	NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES
Recovered	2	168	0	23
Old Recovering	3	117	3	139
Old Not Recovering	12	2335	19	1995
Recent Recovering	2	111	0	0
Recent Not Recovering	4	338	0	0
Current Damage	2	753	2	115
Total	25	3,822¹	25	2,272¹

Table 11. Number of nutria damage sites by age of damage and condition rating in coastal Louisiana in 2002 to 2021.

¹ Total includes sites that were partially recovered.

PREDICTION OF RECOVERY BY END OF GROWING SEASON	2002		2003		2004		2005		2006		2007	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Full Recovery	7	919	8	4,238	10	338	6	443	4	828	2	350
Partial Recovery	59	13,950	64	14,497	50	13,440	36	10,073	27	11,487	21	8,278
Increased Damage	5	1,086	6	1,646	6	2,811	5	3,610	0	0	0	0
No Recovery Predicated	15	4,180	3	1,434	2	297	0	0	0	0	0	0
TOTAL	94	21,185	84	21,888	69	16,906	49	14,260	31	12,315	23	8,628

Table 12. Number of nutria damage sites and acres damaged, by prediction of recovery rating in coastal Louisiana in 2002 to 2021.

PREDICTION OF RECOVERY BY END OF GROWING SEASON	2008		2009		2010		2011		2012		2013	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Full Recovery	1	80	2	1,588	2	84	0	0	0	0	0	0
Partial Recovery	22	6,091	16	3,543	9	2,176	10	1,679	11	1,129	3	665
Increased Damage	0	0	1	291	0	0	0	0	0	0	9	568
No Recovery Predicated	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	23	6,171	19	5,422	11	2,260	10	1,679	11	1,129	12	1,233

Table 12 continued.

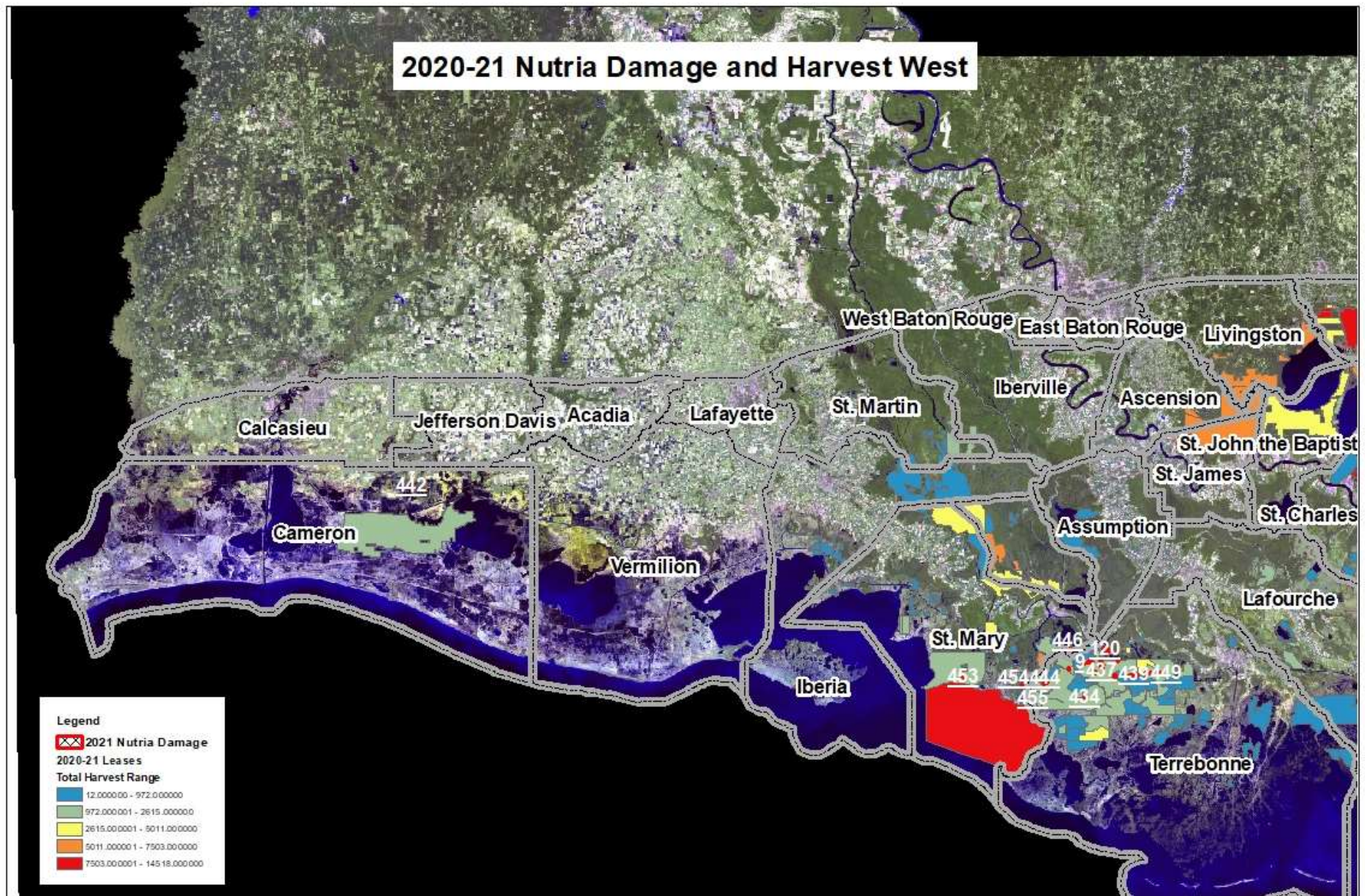
PREDICTION OF RECOVERY BY END OF GROWING SEASON	2014		2015		2016		2017		2018		2019	
	NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES	SITES	ACRES
Full Recovery	0	0	1	16	7	1,550	3	107	1	35	0	0
Partial Recovery	2	22	3	61	0	0	1	122	6	506	7	711
Increased Damage	9	1,093	7	1,525	3	109	1	159	5	1,305	2	279
No Recovery Predicated	0	0	0	0	1	74	12	1,176	9	2,533	16	2,917
TOTAL	11	1,115	11	1,602	11	1,732	17	1,564	21	4,379	25	3,907

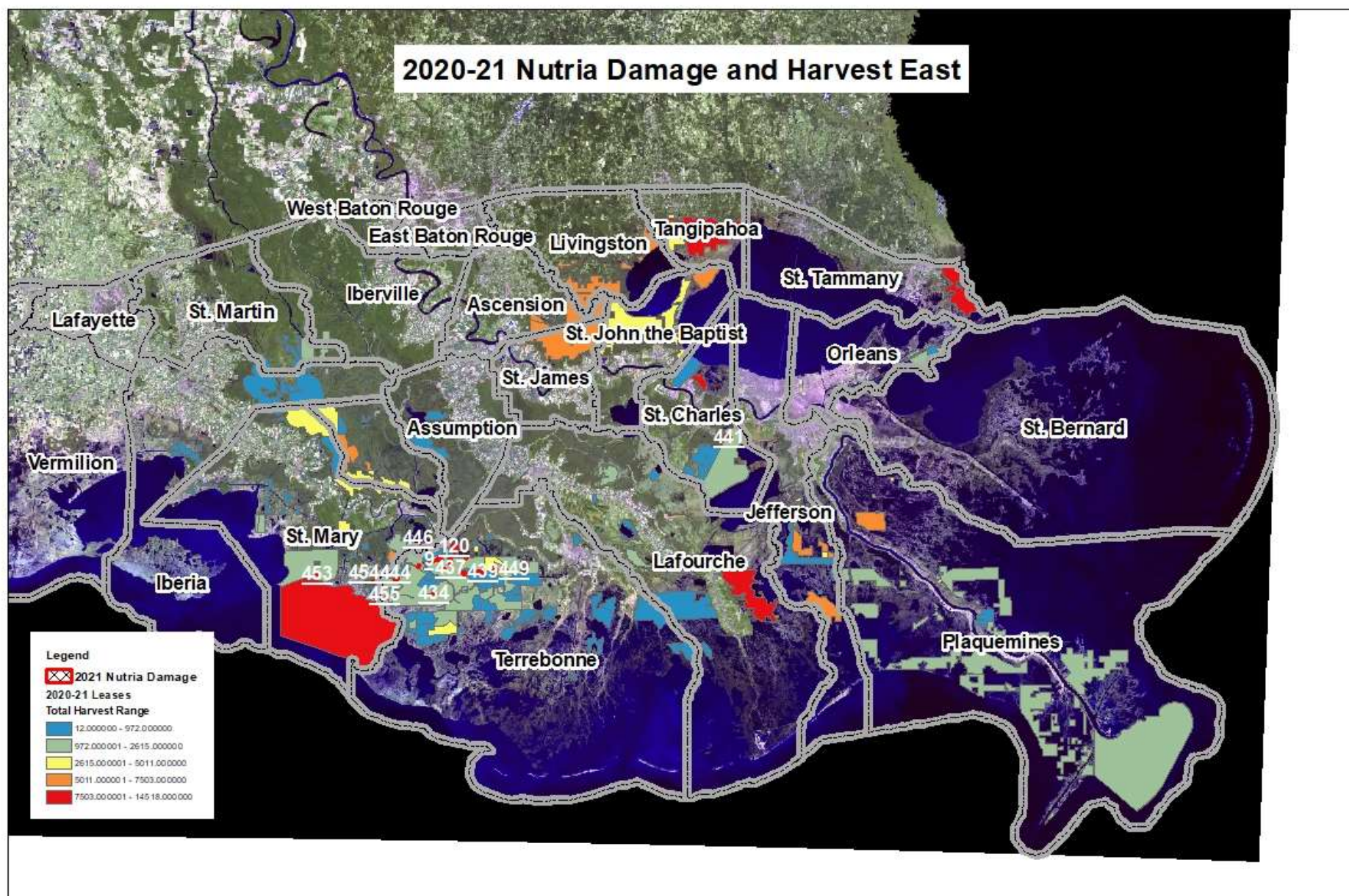
Table 12 continued.

PREDICTION OF RECOVERY BY END OF GROWING	2020		2021	
	NUMBER OF		NUMBER OF	
	SITES	ACRES	SITES	ACRES
Full Recovery	0	0	0	0
Partial Recovery	5	220	3	139
Increased Damage	0	0	2	291
No Recovery Predicated	18	3434	18	1820
TOTAL	23	3,654	23	2,250

Table 12 continued. Number of nutria damage sites and acres damaged, by prediction of recovery rating in coastal Louisiana in 2002 to 2021.

APPENDIX B.
2021 Nutria Vegetative Damage Sites





SITE NUMBER	Parish	Transect	MARSH TYPE	LATITUDE	LONGITUDE	DAMAGE TYPE	SECONDARY DAMAGE	2021 DAMAGE ACRES	ACRES TO OPEN WATER	NRAR	VDR	AGE OF DAMAGE & CONDITION
9	Terrebonne	22C	Fresh	29.575838	-91.1245	Nutria		69.46		1	2	2
17	Terrebonne	23	Fresh	29.547511	-91.0391	Nutria		112.20	178.75	1	2	2
120	Terrebonne	22B	Fresh	29.607951	-91.0644	Nutria		370.19		2	2	2
400	Terrebonne	22A	Fresh	29.580372	-91.1076	Nutria		182.66		1	2	2
418	Terrebonne	23C	Fresh	29.581312	-91.0313	Nutria		18.36	31.84	1	2	2
434	Terrebonne	22A	Fresh	29.495469	-91.1196	Nutria		61.44		1	2	2
436	Terrebonne	22A	Fresh	29.555105	-91.0946	Nutria		102.09		1	2	2
437	Terrebonne	22B	Fresh	29.570249	-91.0745	Nutria		268.69	293.77	2	3	2
438	Terrebonne	22B	Fresh	29.581777	-91.0761	Nutria		60.75	130.08	1	3	2
439	Terrebonne	23C	Fresh	29.548758	-90.9886	Nutria		205.98	43.6	1	3	2
441	St. Charles	29	Fresh	29.876434	-90.2918	Nutria		80.41		1	1	1
442	Cameron	7b	Fresh	29.991869	-92.9471	Nutria		36.21		1	1	1
443	Terrebonne	21C	Fresh	29.468502	-91.2563	Nutria	Duck	32.42		1	1	2
444	Terrebonne	21A	Fresh	29.530036	-91.2279	Nutria		80.38		1	2	2
445	Terrebonne	21A	Fresh	29.459514	-91.2323	Nutria	Hog	0.00		0	1	2
446	St. Mary	22	Fresh	29.612098	-91.1648	Nutria		71.38		1	2	2
447	Terrebonne	22B	Fresh	29.597072	-91.0629	Nutria		84.61		1	4	2
448	Terrebonne	23B	Fresh	29.551822	-90.9493	Nutria		84.82		2	2	2
449	Terrebonne	24	Fresh	29.552676	-90.9172	Nutria		43.81	29.34	1	3	2
450	Terrebonne	26B	Fresh	29.642878	-90.6982	Nutria		0.00		0	0	0
453	St. Mary	19B	Fresh	29.542392	-91.4492	Nutria		22.42		1	1	1
454	St. Mary	21	Fresh	29.524644	-91.2909	Nutria		22.33		1	2	2
455	Terrebonne	21C	Fresh	29.491009	-91.2607	Nutria		123.65		1	1	2
456	St. Mary	22C	Fresh	29.606744	-91.1344	Nutria		45.56		1	2	5
457	Terrebonne	22	Fresh	29.562888	-91.1649	Nutria		69.74		1	3	5

Table 13. 2021 Nutria Vegetative Damage Sites. Nutria relative abundance rating (NRAR): (0) no nutria sign visible, (1) nutria sign visible, (2) abundant feeding sign, and (3) heavy feeding sign; sites converted to open water are not given a NRAR. Vegetative damage rating (VDR): (0) no vegetative damage, (1) minor vegetative damage, (2) moderate vegetative damage, (3) severe vegetative damage, (4) converted to open water. Age of damage and condition: (0) recovered (1) Old recovering (2) old not recovering (3) recent recovering (4) recent not recovering (5) current (occurring now). Prediction: (0) no recovery predicted (1) full recovery (2) partial recovery (3) increased damage.

2021 NUTRIA VEGETATIVE DAMAGE SURVEY

DATE: _____

SITE # _____

PHOTOGRAPHYNEW SITE Y N

FRAME# _____

TRANSECT# _____

TIME start: _____

MARSH TYPE _____

TIME finish: _____

NOTES:

LOCATION DESCRIPTION**NUTRIA RELATIVE ABUNDANCE**

ON TRANSECT # _____

RATING

EAST OF TRANSECT _____

___ NO NUTRIA SIGN VISIBLE (0)

WEST OF TRANSECT _____

___ NUTRIA SIGN VISIBLE (1)

LAT: _____

___ ABUNDANT FEEDING (2)

LON: _____

___ HEAVY FEEDING (3)

NUTRIA SIGHTED _____

DAMAGE TYPE

___ DAMAGE NOT RELATED TO NUTRIA

___ DAMAGE - STORM

___ DAMAGE - MUSKRAT

___ DAMAGE - NUTRIA

___ DAMAGE - OTHER _____

___ SUBJECT TO TIDAL ACTION: Y N**VEGETATIVE DAMAGE RATING**

___ NO VEG DAMAGE (0)

___ MINOR VEG DAMAGE (1)

___ MODERATE VEG DAMAGE (2)

___ SEVERE VEG DAMAGE (3)

___ CONVERTED TO OPEN WATER (4)

PLANT SPECIES	COMMON NAME	seen?	PLANT SPECIES	COMMON NAME	seen?
Alternanthera philoxeroides	alligatorweed		Juncus spp.	rushes	
Aster spp.	asters		Ludwigia spp.	water primrose	
Bacopa spp.	water hyssop/bacopa		Lythrum lineare	purple loosestrife	
Bidens laevis	smooth beggar's tick		Panicum hemitomon	maidencane	
Cephalanthus occidentalis	button bush		Pluchea spp.	camphorweed	
Colocasia esculenta	elephant-ear		Sagittaria spp.	bulltongue/wapato	
Decodon spp.	water willow/loosestrife		Scirpus spp.	3-cornered grass/bullrush	
Distichlis spicata	saltgrass		Spartina alterniflora	oystergrass	
Eichhornia crassipes	water hyacinth		Spartina patens	wiregrass	
Eleocharis cellulose	gulfcoast spikerush		Typha spp.	cattail	
Eleocharis parvula	dwarf spikerush				
Hydrocotyle spp.	pennyworts				
Iris virginica	blue flag iris				

AGE OF DAMAGE AND CONDITION

___ RECOVERED (0)

___ OLD RECOVERING (1)

___ OLD NOT RECOVERING (2)

___ RECENT RECOVERING (3)

___ RECENT NOT RECOVERING (4)

___ CURRENT (OCCURRING NOW) (5)

PREDICTION OF RECOVERY BY END OF**GROWING SEASON**

___ NO RECOVERY PREDICTED (0)

___ FULL RECOVERY (1)

___ PARTIAL RECOVERY (2)

___ INCREASED DAMAGE (3)

_____ CHECK NEXT YEAR

CODES FOR NUTRIA HERBIVORY SURVEY DATA

¹Marsh Type

Fresh	F
Intermediate	I
Brackish	B

²Nutria Relative Abundance Rating

No Nutria Sign Visible	0
Nutria Sign Visible	1
Abundant Feeding Sign	2
Heavy Feeding	3

³Vegetative Damage Rating

No Vegetative Damage	0
Minor Vegetative Damage	1
Moderate Vegetative Damage	2
Severe Vegetative Damage	3
Converted To Open Water	4

⁴Age of Damage and Condition

Recovered	0
Old Recovering	1
Old Not Recovering	2
Recent Recovering	3
Recent Not Recovering	4
Current (Occurring Now)	5

⁵Prediction of Recovery by End of 2021 Growing Season

No Recovery Predicted	0
Full Recovery	1
Partial Recovery	2
Increased Damage	3

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

2021 CWPPRA REPORT TO CONGRESS

For Report/Decision:

USACE will provide a report on the development of the 2021 Report to Congress and the Task Force will consider the Technical Committee's recommendation to approve the final draft.

**Coastal Wetlands
Planning, Protection
and Restoration Act
(CWPPRA)**



**The 2021
Evaluation Report
to the U.S. Congress
on the Effectiveness
of Coastal Wetlands
Planning, Protection
and Restoration
Act Projects**

CWPPRA Report to the U.S. Congress

- 2021 Report
 - 24 Pages
 - USACE: Main Author
 - EPA: Graphic Design
- Final Review and Comment
 - Technical Committee: Requested August 11th
 - Task Force: September 16th

2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection, and Restoration Act Projects

1. Report/Decision

The final draft has been developed and sent out to the Technical Committee for review on 11 August 2021. Several comments have been incorporated and the document is provided in the binder materials. USACE will request a Technical Committee recommendation for the Task Force to approve the final report.

2. Roles and Responsibilities

- **USACE:** Main Author and Technical Editor
- **EPA:** Graphic Designer, Support – Project Info
- **USGS:** Support - Project and Basin Level Info
- **NRCS:** Printer, Support – Project Info
- **NMFS:** Support – Project Info
- **FWS:** Support – Project Info
- **CPRA:** Support – Project Info

3. Planning Budget

Task No. 31300

Prepare 2021 Evaluation Report (Report to Congress)

Approved in May 2020

USACE	\$5,500
USFWS	\$4,500
NWRC	\$75,000
CPRA	\$2,100
EPA	\$2,100
NRCS	\$2,500
NMFS	\$2,500
Other	\$800
Total	\$95,000

Allocated in April 2021

USACE	\$20,000
USFWS	\$1,500
USGS	\$10,657
CPRA	\$1,500
EPA	\$15,000
NRCS	\$6,600
NMFS	\$2,500
Remaining	\$37,243
Total	\$95,000

4. Timeline

Kickoff Mtg

November 2020

First draft development

November 2020 — March 2021

~~-Select projects to highlight~~

~~November — February 2021~~

~~-Basin write-ups~~

~~November — February 2021~~

~~-Draft Intro, Benefits, Resiliency, Conclusion~~

~~November — December 2020~~

~~-Reach out to P&E for project info/pics~~

~~February 2021 (two weeks)~~

~~-Consolidate into 1st draft~~

~~February 2021 (one week)~~

Review #1

March 2021

~~-P&E Committee Review~~

~~(one week)~~

~~-Address Comments~~

~~(two weeks)~~

Present first draft at TC meeting

April 2021

Review #2

April 2021

~~-TF Review~~

~~(two weeks)~~

~~-Address Comments~~

~~(two weeks)~~

Present first draft at TF meeting

May 2021

Technical Editing

May 2021

Graphic Design/Layout

June — July 2021

Review #3

August 2021

~~-TC Review~~

~~(two weeks)~~

~~-Edits~~

~~(two weeks)~~

Present final draft at TC meeting

September 2021

Review #4

September - October 2021

~~-TF Review~~

~~(two weeks)~~

~~-Edits~~

~~(two weeks)~~

TF Approval of final draft

October 2021

Submittal for Print

October 2021

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)



The 2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands Planning, Protection and Restoration Act Projects

Louisiana Coastal Wetlands Conservation and Restoration Task Force. 2021. The 2021 Evaluation Report to the U.S. Congress on the Effectiveness of Coastal Wetlands, Planning, Protection and Restoration Act Projects.

Map images provided by the U.S. Geological Survey Wetland and Aquatic Research Center.

Cover image by U.S. Fish and Wildlife Service - CWPRA South Lake Lery Shoreline and Marsh Restoration (BS-16) Project

CWPPRA Mission Statement

Louisiana continues to face an unprecedented collapse of its entire coastal ecosystem and the vital economic activity and unique culture that it supports. Over the past 30 years, the Louisiana Coastal Wetlands Conservation and Restoration Task Force (Task Force) has fulfilled its role under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) by implementing a science and engineering based program that extensively engages stakeholders and the public and serves as the Nation's model for effective and efficient coastal restoration. To secure the future of Louisiana's coast, the Task Force and stakeholders must share a common vision, one that aligns with State and national priorities.



Documentation

This report is submitted by the Task Force in accordance with CWPPRA, Title III of Public Law 101-646. This report fulfills the CWPPRA mandate, which requires a report to the U.S. Congress every 3 years on the effectiveness of Louisiana's coastal wetland restoration projects.

Acknowledgements

The Task Force wishes to thank Governor of Louisiana, John Bel Edwards, the Louisiana Legislature, the Federal Louisiana Delegation, and the U.S. Congress for their support of this crucial program.



CWPPRA at work. Members of the CWPPRA workgroups set out on their annual visits in the field to collect valuable data necessary to develop successful wetland restoration projects.

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Introduction

Louisiana's coastal zone is home to approximately 37 percent of all coastal marshes and 45 percent of all intertidal coastal marshes in the lower 48 States, but annually, Louisiana is losing 80 percent of the entire nation's coastal wetlands. Since the 1930s, coastal Louisiana has lost more than 1,860 square miles (1.2 million acres), an area more than 25 times larger than Washington, D.C (Couvillion and others, 2017).

The dire need to restore and protect Louisiana's coastal wetlands has been clearly established and our ability to sustain the ecological and economic health of the Louisiana coastal zone is largely dependent upon coastal restoration and protection activities. Louisiana's wetlands provide a variety of benefits that serve the Nation across an array of economic sectors. Because of these benefits, the coastal wetland loss crisis in Louisiana is considered a matter of national concern.

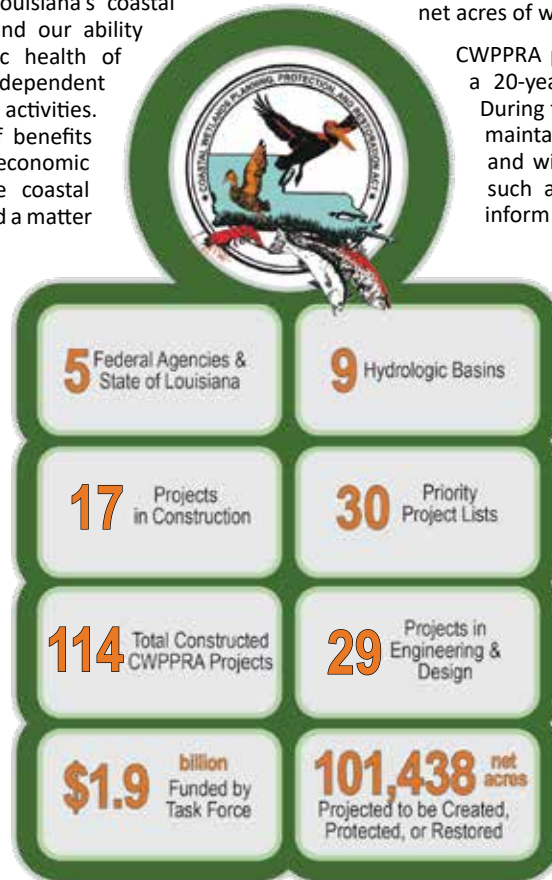
Congress recognized the ongoing severe coastal wetland losses in Louisiana and the increasing impacts on locally, regionally, and nationally important resources when it established the CWPPRA in 1990 (Public Law 101-646, Title III). As part of CWPPRA, Congress established and directed the Task Force to prepare, annually update, and implement a list of Louisiana coastal wetland restoration projects. Consistent with Louisiana's Comprehensive Coastal Master Plan, which charts Louisiana's coastal restoration over 50 years, these projects provide for the long-term conservation of wetlands and dependent fish and wildlife populations.

Between 1990 and 2021, CWPPRA has constructed, or funded for construction, projects to protect and restore close to 101,438 net acres (158 square miles) of Louisiana's coastal wetlands. As of

August 2021, 114 projects have been constructed, 17 are currently under construction, and 29 are in engineering and design. Between 2019 and 2021, the Task Force approved 11 new projects for Phase 1 – Engineering and Design. During that same period, the Task Force authorized six projects for Phase 2 – Construction, which are expected to result in 2,643 net acres of wetlands. Several projects have also completed construction during that time frame, restoring and creating 2,115 net acres of wetlands in total (Table 1, page 3).

CWPPRA projects are typically planned and designed for a 20-year lifespan following construction completion. During that timeframe, the project will be operated and maintained to ensure effectiveness and overall success and will be monitored for environmental parameters, such as land change and emergent vegetation, and inform future operation and maintenance activities.

CWPPRA monitoring data provide vital information to evaluate not only the CWPPRA projects, but also other restoration programs and the state of the coast in general. The monitoring data collected through the CWPPRA Program are used to select, prioritize, and design nearly all coastal restoration projects. Since 2007, the Coastwide Reference Monitoring System (CRMS), primarily funded by CWPPRA and the State of Louisiana, has provided critical baseline ecological data to inform coastal restoration and disaster response activities throughout Louisiana's four ecologic regions. These regions cover nine hydrologic basins: Calcasieu-Sabine, Mermentau, Teche-Vermilion, Atchafalaya, Terrebonne, Barataria, Mississippi River Delta, Breton Sound, and Pontchartrain. The following sections provide net acres benefitted and an example of a constructed project in these basins, demonstrating the effectiveness of CWPPRA to address land loss in Louisiana's coastal wetlands.



Louisiana Fisheries

35 million pounds of blue crabs are caught in Louisiana more than any other state

2nd highest commercial fishing landings in the U.S.

Louisiana commercial fisheries generated nearly **\$303.7 million** in 2019

No. 1 in oyster production valued at \$45.5 million in 2019

Over **40%** of the Nation's menhaden catch is landed in Louisiana

2019 Statistics NOAA Fisheries, Fisheries Statistics Division Accessed 02-08-21

Table 1. Total net acres projected to be created, protected, or restored for projects in engineering and design, construction, and projects constructed from 2019 to 2021*. Total net acres for engineering and design: 3,617; construction: 2,643; constructed: 2,115. (CWPPRA Environmental Workgroup, 2021)

Project Name	Project Number	Priority Project List	Acres
Breton Landbridge Marsh Creation (West)	BS -38	28	372
East Delacroix Marsh Creation and Terracing	BS-37	28	314
Grand Bayou Ridge and Marsh Restoration	BA-217	28	336
Long Point Bayou Marsh Creation	CS-85	28	332
Bay Raccourci Marsh Creation and Ridge Restoration	TE-156	29	343
East Catfish Lake Marsh Creation and Shoreline Protection	TE-157	29	248
Phoenix Marsh Creation - East Increment	BS-42	29	297
North Delacroix Marsh Creation and Terracing	BS-41	29	294
Reggio Marsh Creation and Hydrologic Restoration	BS-43	30	484
Bay Raccourci Marsh Creation Increment II	TE-146	30	290
Phoenix Marsh Creation – West Increment	BS-44	30	307
New Orleans Landbridge Shoreline Stabilization and Marsh Creation	PO-169	24	167
Bayou Decade Ridge Restoration and Marsh Creation	TE-138	26	378
Labranche East Marsh Creation	PO-75	19	715
West Fourchon Marsh Creation and Nourishment	TE-134	24	304
Labranche Central Marsh Creation	PO-133	21	668
Mid Breton Landbridge Marsh Creation and Terracing	BS-32	27	411
Lost Lake Marsh Creation and Hydrologic Restoration	TE-72	19	452
Cameron Creole Watershed- Grand Bayou Marsh Creation	CS-54	20	476
Oyster Bayou Marsh Restoration	CS-59	21	433
Cole's Bayou Marsh Restoration	TV-63	21	340
Rockefeller Refuge Gulf Shoreline Stabilization	ME-20	11	414
Projects authorized for Phase 1 Engineering and Design from 2019-2021 Projects authorized for Phase 2 Construction from 2019-2021 Projects constructed from 2019-2021			

*The CWPPRA Environmental Workgroup uses Wetland Value Assessments (WVA) to analyze and determine potential benefit acres for a CWPPRA project over the length of its 20-year life span. It is important to distinguish between WVAs acres of benefit, which can include multiple types of benefit, and reported land area benefit acreages. The land change dynamics acreage numbers for each basin in this report are derived from a comparison between pre-construction and post-construction land change rates assessed via satellite imagery.

CWPPRA Benefits to Fish and Wildlife

Benefits analyses developed by the CWPPRA Environmental Workgroup estimate that 101,438 acres of protected and created coastal wetlands can be attributed to CWPPRA in its first 30 years. Those restored swamps, marshes, and barrier islands/headlands and associated open-water habitats provide foraging, nesting, breeding, wintering, refuge, and nursery habitat for a myriad of coastal fish and wildlife. This includes threatened and endangered, at-risk, and rare species, as well as commercially and recreationally valuable species and State and national fish and wildlife trust resources.

Habitats restored through CWPPRA have aided in the delisting of our national symbol, the bald eagle, and the Louisiana State bird, the brown pelican, from the endangered species list. Located along the Mississippi and Central Flyways, coastal Louisiana provides wintering habitat for more than 5 million waterfowl and habitat for Neotropical migrant birds. Appendix 2 lists some of the threatened and endangered, and at-risk/rare species found in the Louisiana coastal zone. The appendix also contains the waterfowl, mammals, reptiles, amphibians, and commercially and recreationally important fisheries benefitted by CWPPRA projects.

Many economically important saltwater fishes and crustaceans spawn in nearshore and offshore waters of the Gulf of Mexico (e.g., blue crab, red drum, Gulf menhaden, shrimp, and spotted seatrout) but post-larval species and juveniles depend on natural and restored estuarine habitats in Louisiana for foraging and nursery areas. The estuarine-dependent, post-larval, and juvenile fisheries species contribute to the estuarine food web and some serve as prey for predators and highly migratory species (such as jacks, tuna, billfishes and sharks).

Louisiana's coastal wetlands also provide habitat for the commercial trapping of the American alligator and furbearers (e.g., muskrat, mink, and otter) and natural areas for tourist activities, such as bird watching, boating, swimming, and hiking.



CPRA



CPRA

Saving Wetlands *Helps Threatened & Endangered Species*

CWPPRA is rebuilding wetlands to protect these species. Beach and marsh habitat are created with dredged material. New plants in these wetlands take root and provide food and shelter for fish and wildlife.



Louisiana is home to **32** threatened or endangered species.

16 species reside in coastal zone habitats.

101,438 acres of wetlands are projected to be protected, created, or restored. More than 351,000 acres are projected to be enhanced by CWPPRA projects.

CWPPRA Supports Coastal Resiliency

Our national economy benefits greatly from Louisiana's coastal wetlands. Economic activity in Louisiana's coastal zone includes oil and gas production, shipping commerce, commercial fisheries, oyster production, and fur harvesting. Coastal Louisiana employs 939,000 people annually, earning almost \$46 billion (NOAA OCM 2018). This equates to over \$120 billion on gross domestic product (NOAA OCM 2018). Due to wetland loss, however, coastal Louisiana and the economic activity it produces is vulnerable to subsidence, sea level rise, and storm impacts.

Louisiana experienced a record-breaking hurricane season in 2020. Five named storms made landfall in the State, of which, three were hurricanes. Hurricanes Laura and Delta arrived in southwestern Louisiana six weeks apart. Laura, the strongest category four hurricane to make landfall in Louisiana since 1956, is one of the strongest hurricanes on record to make landfall in the U.S. At category two strength, Hurricane Delta made landfall in nearly the same location as Hurricane Laura. Hurricane Zeta then impacted southeastern Louisiana less than three weeks later as a category two hurricane. Collectively, over \$20 billion in estimated damages resulted due to the impacts of the five named storms (NOAA NCEI 2021). According to post-storm assessments, CWPPRA marsh creation sites, terraces, and shoreline protection features fared well, while some water control features sustained some storm damage.

Coastal restoration projects, such as those constructed through the CWPPRA Program, provide a buffer to coastal communities and critical infrastructure that are of national economic importance. Continued wetland loss without further action will impact the Louisiana coastal region's ability to recover quickly after future devastating storm events. The CWPPRA Program not only restores the coast but strengthens and supports economic and coastal resiliency by identifying coastal areas with increasing land loss rates and executing land building projects in those areas.



GOES-16 geocolor visible image of Hurricane Laura nearing peak intensity on August 26, 2020.

NOAA/NESDIS/STAR



Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

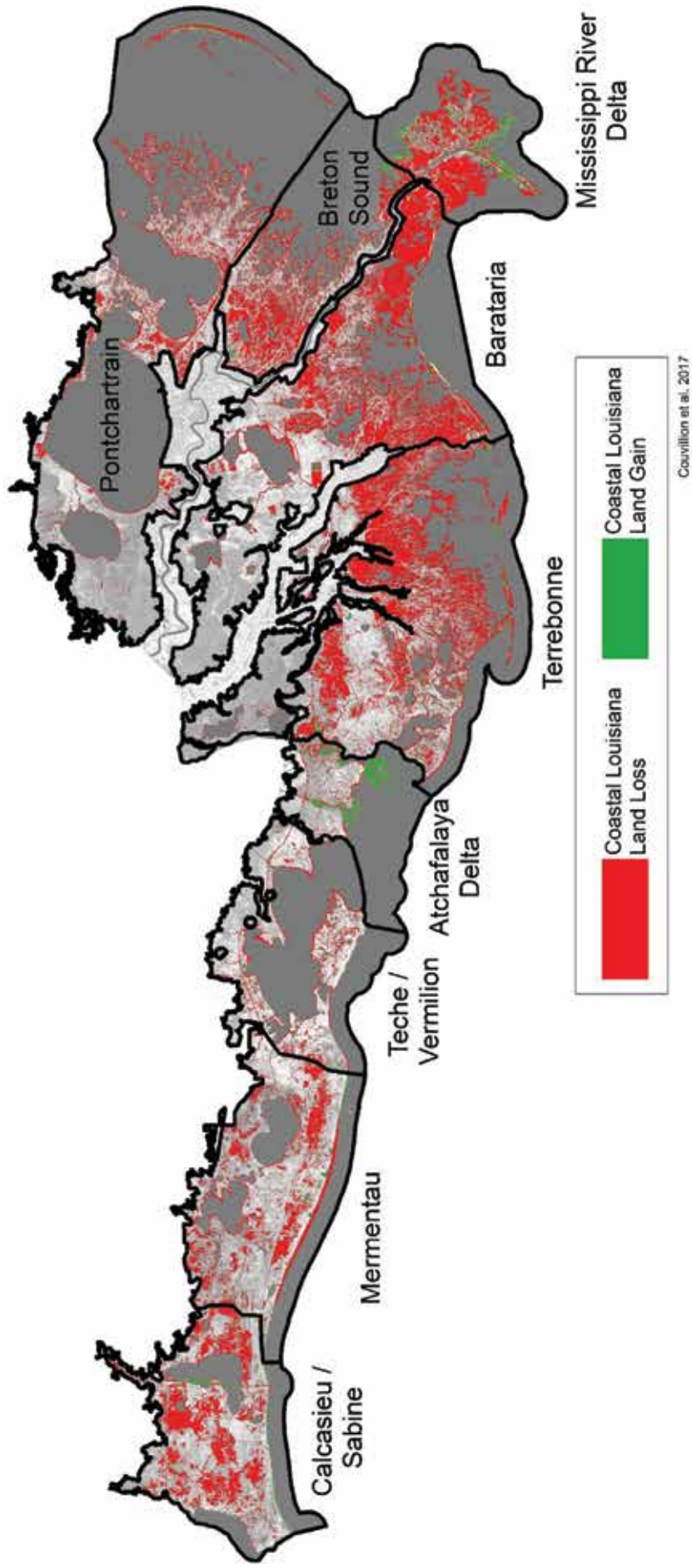
CWPPRA projects provide protection to critical infrastructure. LaBranche Central Marsh Creation (PO-133) was recently combined with LaBranche East Marsh Creation (PO-75) and approved for construction in early 2020. The combined project will provide a protective buffer to Interstate 10, the region's primary hurricane evacuation route.



Gulf Coast Air Photo & Coastal Dredging Company, Inc.

CWPPRA projects provide protection to coastal communities. The Northwest Turtle Bay Marsh Creation (BA-125) project consists of approximately 700 acres of marsh created with dredged material from Turtle Bay or Little Lake. Roughly six to seven miles to the northeast are the towns of Lafitte and Jean Lafitte, fishing communities rich in culture and located in the middle of the Barataria estuary.

Coastal Louisiana Land Loss



CALCASIEU-SABINE BASIN

Land Change Dynamics

Calcasieu-Sabine Basin is the western most basin in Louisiana. It is bordered on the west by Texas and extends eastward to Grand Lake. It contains vast expanses of coastal marshes spanning from saline to freshwater environments. Major water bodies include Calcasieu and Sabine Lakes and navigation channels important to the local economy, such as the Calcasieu Ship Channel and the Gulf Intracoastal Waterway (GIWW).

The Calcasieu-Sabine Basin experienced the highest rates of wetland loss prior to the 1970s (average -2,348 acres/year, -9.5 km²/year); however, rates have slowly decreased since that time, except for hurricane-induced losses in 2005 and 2008. Rates of wetland loss have ranged from a net loss of 2,470 acres/year (~10 km²/year) at the peak of wetland loss rates, to an estimate of 494 acres/year (~2 km²/year) most recently (Couvillion et al. 2017). The major causes of land loss in this basin are saltwater intrusion, subsidence, and storms. Calcasieu-Sabine Basin was in the direct path of two hurricanes in 2020. The wetland impacts of land change and wetland health are still under investigation.

In the Calcasieu-Sabine Basin, constructed marsh creation, terracing, and shoreline protection features, similar to the project highlighted below, have contributed approximately 7,788 acres (+/- 1230 acres) of net land area benefit, either from new land built or land sustained from project inception through 2020. The land area benefits from CWPPRA projects in this basin have continued to increase through time. This increasing benefit includes land building as additional projects have been constructed, but the land sustaining effects of CWPPRA projects in this basin have been significant. Land sustained (land that would have been lost in the absence of restoration activities), accounts for approximately half of the land area benefit in this basin (Figure 1).

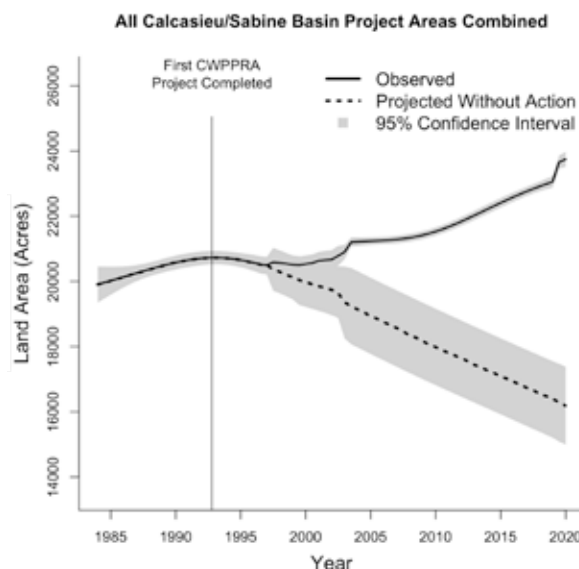


Figure 1. Cumulative land area change analyses for all constructed CWPPRA projects in Calcasieu-Sabine basin.

\$149 Million Expended
21 Projects Constructed

4 Projects in Engineering & Design
3 Projects in Construction



Figure 2. An aerial image of the CS-22 project along the GIWW

Clear Marais Bank Protection (CS-22) Project

Constructed in 1997, the CS-22 project extends along the north bank of the GIWW between the Alkali Ditch and Goose Lake (Figure 2). The freshwater marshes of the project area are threatened by saltwater intrusion and marsh loss from breaches in the GIWW shoreline due to increased tidal action and boat wakes. Approximately 35,375 linear feet of rock dike was constructed along the north bank of the GIWW as a shoreline protection feature to protect and hydrologically isolate the Clear Marais freshwater wetlands north of the GIWW.

Overall, from 1997-2015, the project shoreline gained an average of 3.97 feet/year (Miller and Guidry 2016). The reference area, in comparison, was losing an average of -1.13 feet/year prior to 2013 when Calcasieu Parish constructed a rock dike using Coastal Impact Assistance Program funding that tied into the western end of the CS-22 project. Visual

observation indicates vertical accretion of the wetland area at many locations between the foreshore rock dike and the shoreline, especially where the vegetation has grown contiguous with the rock dike.

Land/water analysis data shows the project is gaining land in recent years after remaining stable from 2000 to 2010. The project has been gaining land at a rate of nearly three acres/year, on average, since construction. Prior to construction, the trend was negative, reflecting the loss of shoreline without the protection of the rock dike.

MERMENTAU BASIN

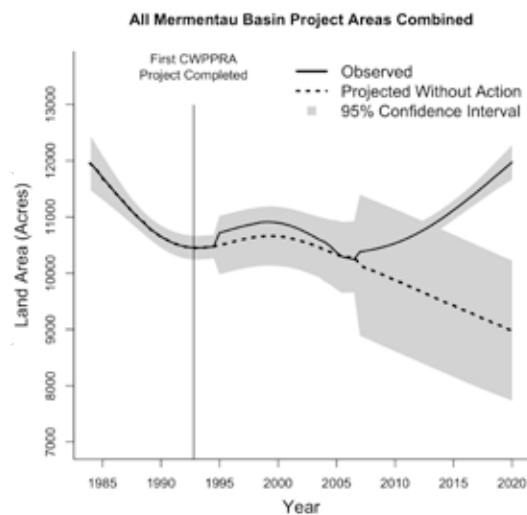


Figure 3. Cumulative land area change analyses for all constructed CWPPRA projects in Mermentau basin.

inception through 2020. In this basin, much of the land area benefits attained prior to 2005 were, at least ephemerally, lost due to Hurricane Rita. However, many of those project areas recovered, and as new projects were built, land area benefit has continued to increase. Additionally, land sustained accounts for a large portion of the land area benefit in this basin (Figure 3).

Land Change Dynamics

Mermentau Basin is located in the eastern portion of the Chenier Plain between Calcasieu-Sabine and Teche-Vermilion Basins. The Mermentau Basin can be divided into two sub-basins. The Lakes sub-basin is between two transportation features - the GIWW to the north and Louisiana Highway (LA Hwy) 82 to the south. LA Hwy 82 runs atop and between the Grand Chenier-Pecan Island ridge complex. The Chenier sub-basin lies between this ridge complex and the Gulf of Mexico. About 18 percent (128,200 acres) of the basin lands are publicly owned as Federal refuges and State wildlife management areas (Mouledous and Sharp 2016).

In terms of total area, Mermentau Basin experienced approximately 120,000 acres (~488 km²) of wetland loss from 1932 to 2016, and a change rate averaging -1,470 acres/year (-5.95 km²/year) (Couvillion et al. 2017). The two sub-basins suffer from distinctly different hydrologic problems. The most critical wetland problem in the Lakes sub-basin is excessive flooding due to numerous blockages of drainage outlets that increase water levels and prolong flooding. The higher water levels may also be responsible for shoreline erosion in this area (Mouledous and Sharp 2016). The same blockages to the north also reduce freshwater inputs into the Chenier sub-basin in the south, facilitating saltwater intrusion.

Shoreline protection features, like those in the project highlighted below, have effectively reduced or halted shoreline erosion in their project locations. Shoreline protection and terracing projects in Mermentau Basin have attributed to approximately 3,166 acres (+/- 1319 acres) of net land area benefit via new land built or land sustained from project

\$74 Million Expended
10 Projects Constructed

2 Projects in Engineering & Design
1 Project in Construction

Freshwater Bayou Canal Bank Stabilization (ME-13) Project

The ME-13 project area encompasses 1,169 acres of intermediate and brackish marsh along the west bank of Freshwater Bayou Canal (FBC) between its confluence with North Prong Belle Isle Bayou Canal and Six-mile Canal in Vermilion Parish, Louisiana. The marshes of the project area are adversely affected from the west by the influence of prolonged periods of elevated water levels from the Grand/White Lake system, and from the east by tidal scour and saltwater intrusion associated with erosion of the spoil banks along the west bank of FBC. In 1998, approximately 23,193 linear feet of rock dike was constructed as a shoreline protection feature to protect surrounding marshes.

The shoreline protection provided by the rock dike in the project area has been effective in reducing shoreline erosion where crown elevation is maintained. While there is evidence of erosion in the project area, the rates are very low. Overall from 1998-2014, the project shoreline erosion rates were around -0.61 feet/year (Barrilleaux and Guidry 2010). The unprotected reference area, in comparison, lost an average of -9.03 feet/year of shoreline. The ME-13 project area has increased in overall land acreage since construction.



Figure 4. The shoreline protection provided by the rock dike in the ME-13 project area has been effective in reducing shoreline erosion and has increased overall land acreage since construction.

TECHE-VERMILION BASIN

Land Change Dynamics

The Teche-Vermilion Basin contains roughly 300,000 acres (1,214.1 km²) of wetlands and is located in the central coastal zone. East Cote Blanche Bay, West Cote Blanche Bay, and Vermilion Bay are dominant features in the basin that influence the hydrology of the area. Marsh Island, another important feature on the landscape, serves as a barrier to reduce the influence of the more saline waters of the gulf on the marshes to the north. This barrier helps maintain the marshes in Teche-Vermilion as mostly fresh, intermediate, and brackish, with few saline marshes near the gulf.

The Teche-Vermilion Basin experienced one of the smaller net wetland area losses of the nine coastal basins with approximately 36,800 acres (149 km²) lost between 1932 and 2016 (Couvillion et al. 2017). Factors affecting wetland change in this basin include shoreline erosion, change in hydrologic conditions, storm impacts, and herbivory. Teche-Vermilion Basin follows a similar pattern to that of the coastwide trend of loss rates increasing to a peak in the late 1970s, followed by a reduction in loss rates since that time. The most recently published analyses indicate the wetland area change rate in Teche-Vermilion has turned positive in recent years. However, the impacts of the 2020 hurricane season may impact these trends.

Terracing, hydrologic restoration, marsh creation, and shoreline protection projects have had positive impacts on the landscape of the Teche-Vermilion Basin. Excluding hydrologic restorations, CWPPRA projects in this basin have collectively contributed approximately 1,388 acres (+/- 435 acres) of net land area benefit via new land built or land sustained from project inception through 2020. Though land area in the collective project areas in Teche-Vermilion Basin is relatively unchanged from the construction of the first CWPPRA project, the land sustaining effect of CWPPRA projects is evident (Figure 5). In the absence of these projects, projections indicate substantially more wetland loss would have been observed in these portions of Teche-Vermilion Basin.

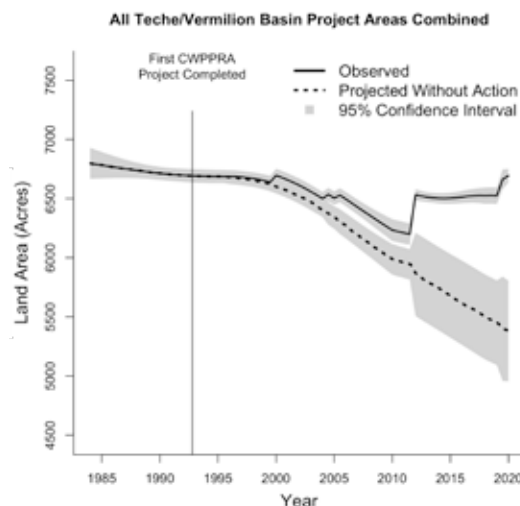


Figure 5. Cumulative land area change analyses for all constructed CWPPRA projects in Teche-Vermilion basin.

\$52.7 Million Expended

11 Projects Constructed

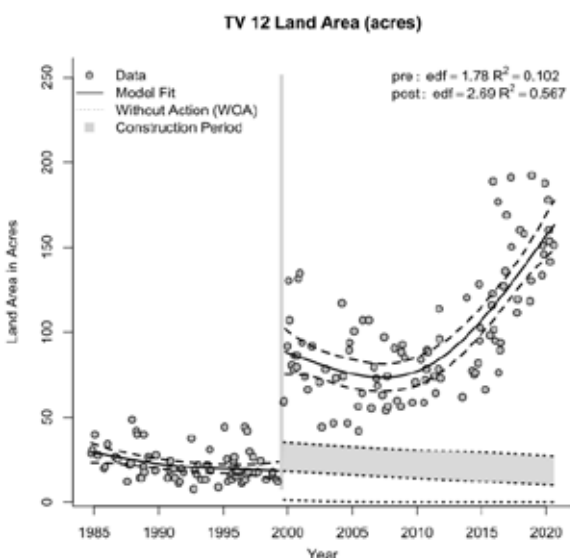


Figure 6. TV-12 land area change analyses.

¹Little Vermilion Bay Sediment Trapping (TV-12) Project

Constructed in 1999, this project was designed to enhance the amount of wetlands created by natural deposition of sediments being carried by the GIWW and FBC into Little Vermilion Bay. The objectives were to enhance the amount of wetlands created by natural sediment deposition through the dredging of distributary channels, protect the existing wetlands by reducing wave energy by the creation of terraces, create emergent marsh on terrace and on newly deposited soils, and to encourage colonization by submerged aquatic vegetation between and around terraces.

The constructed terraces were very effective at creating emergent marsh habitat, starting below 20 acres in 1998 and nearing or surpassing 200 acres as of 2020 with continued growth expected (Figure 6). The terraces quickly vegetated, through plantings and natural recruitment, and the rate of sedimentation increased post construction. Most of the inter-terrace areas transitioned from distributary channels and shallow bay bottom (≤ -6 ft to -2 ft NAVD) to intermittently exposed tidal flat soon after construction (Wood et al 2016). Leveraging synergies, tidal flats created by sediments trapped by the terrace field were planted by CWPPRA's Coastwide Vegetation Planting Project (LA-39) and since transitioned to marsh. As of 2020, the combined efforts of both projects in the one location have resulted in an emergent marsh area that is double the original area of terrace construction.

¹Data points in Figure 6 and other similar graphs through this report represent observed land area on specific dates. In the figure, construction completion is shown with a vertical grey bar. The model fit represents a pre-and post-construction period of land area change with a 95 percent confidence interval shown by dashed lines. In the case of Figure 6, if TV-12 wasn't constructed, the projected conditions of land area change would have followed a negative trend, as shown by the dotted line with grey shading.

ATCHAFALAYA BASIN

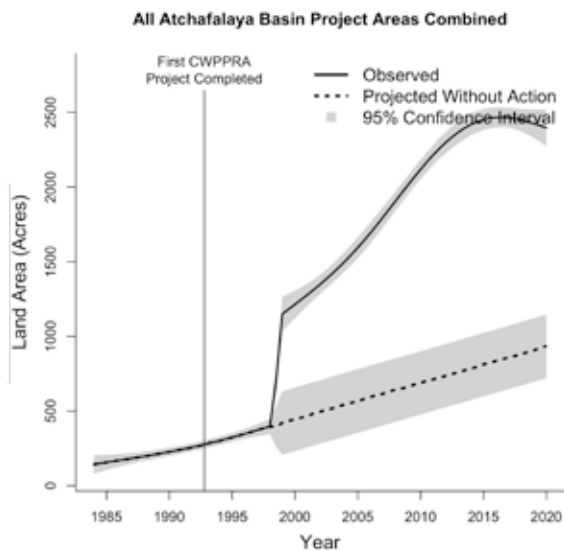


Figure 7. Cumulative land area change analyses for all constructed CWPPRA projects in Atchafalaya basin.

projects in this basin (AT-02 and AT-03) have contributed approximately 1,421 acres (+/- 258 acres) of wetlands to the area collectively via new land built or land sustained from project inception through 2020. These projects consist of beneficial use of dredge material (BUDMAT). In these restoration projects, the material from dredging to maintain navigation in the Atchafalaya River channel was used to create wetlands in the Atchafalaya Delta. Project benefits have continued to increase through time as a result of recurring BUDMAT activities, as well as natural sedimentation contributing to the land building effects of these projects.

Land Change Dynamics

The Atchafalaya Basin is located in the central part of the coastal zone, west of the Terrebonne Basin (Figure 7). Major water features in the basin include the Lower Atchafalaya River, Wax Lake Outlet, and Atchafalaya Bay. Fresh marsh, wetland scrub-shrub, and forested wetlands are the dominant wetland habitats. The most distinct geomorphologic feature of the Atchafalaya Basin are the two rapidly prograding deltas - the Atchafalaya River Delta and the Wax Lake Outlet Delta. Subaerial delta growth in the Atchafalaya Bay began in the early 1970s and subsequent spring floods have supported continued delta expansion (Falcini et al. 2012, Carle et al. 2015, Gasparini and Yuill 2020).

The Atchafalaya Basin is unique among the coastal basins because it has a growing delta system with nearly stable wetlands. Wetland loss is minor in the areas north of Atchafalaya Bay when compared to the other basins. According to Couvillion et al. (2017), the basin experienced more than 4,000 acres (~16 km²) of net wetland gain since 1932. Annual land change rates early in the study period showed a negative trajectory. However, following the opening of the Wax Lake Outlet in 1942, sediment deposition increased, and a subaerial active delta emerged after the flood of 1973. These factors positively influenced the Atchafalaya Basin's land change rates. Atchafalaya Basin wetlands are likely to be sustainable into the future due to the high rates of river sedimentation that they receive during flooding events.

Because this basin has experienced net wetland gain for the last 50 years, it has not been a major focus for wetland restoration projects. However, two CWPPRA

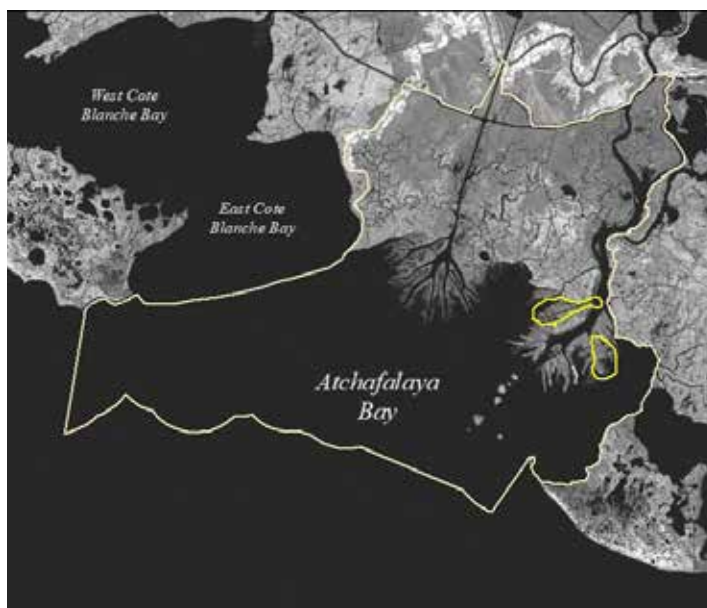


Figure 8. Atchafalaya Sediment Delivery (AT-02) and the Big Island Mining (AT-03) Projects.



Figure 9. Fresh marsh, wetland scrub-shrub, and forested wetlands are the dominant wetland habitats in the Atchafalaya Basin.

\$10.9 Million Expended

2 Projects Constructed

TERREBONNE BASIN

Land Change Dynamics

The Terrebonne Basin consists of marshes and a network of old distributary ridges left by an abandoned delta complex. It experiences high subsidence due to the unconsolidated sediments that are dewatering and compacting. The basin is also known for the series of narrow, low-lying barrier islands at its border with the Gulf of Mexico. These islands serve as the first line of defense against tropical storms. The Terrebonne Basin is dominated by marsh (approximately 574,000 acres; 2,322.9 km²), but also supports swamp habitat (approximately 155,000 acres; 627.3 km²).

Terrebonne Basin has experienced the greatest decrease in wetland area, with approximately 321,730 acres (1,302 km²) of net loss since 1932 (Couvillion et al. 2017). The basin experienced higher annual change rates in the late 1970s to early 1980s, with gradually decreasing loss rates since that time. Land change in the Terrebonne Basin is attributed to subsidence, sediment deficit, saltwater intrusion along navigation canals, historic oil and gas activity, habitat switching due to prolonged high water levels (swamp/fresh marshes) and natural deterioration of barrier islands.

Restoration activities in the Terrebonne Basin include marsh creation, shoreline protection, hydrologic restoration and barrier island restoration. Excluding hydrologic restorations, CWPBRA projects in the Terrebonne Basin have collectively contributed approximately 5,494 acres (+/- 1636 acres) of net land area benefit via new land built or land sustained from project inception through 2020. Both land building and land sustaining effects of CWPBRA projects in this basin have continued to increase through time (Figure 10).

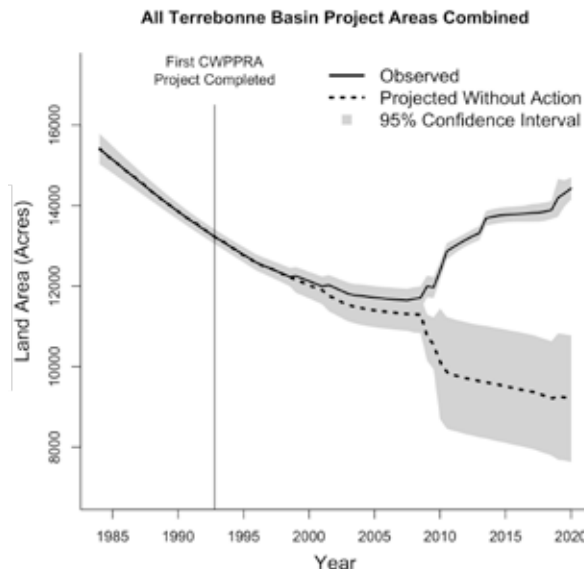


Figure 10. Cumulative land area change analyses for all constructed CWPBRA projects in Terrebonne basin.

\$301 Million Expended
26 Projects Constructed

5 Projects in Engineering & Design
2 Projects in Construction

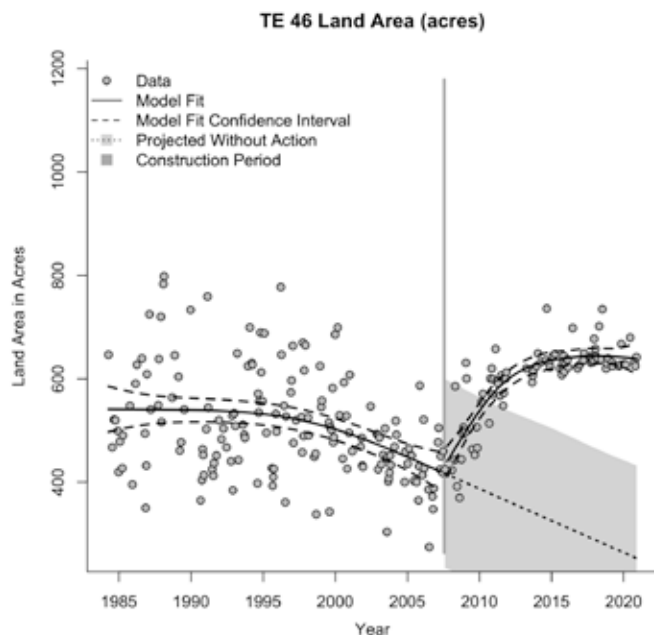


Figure 11. TE-46 land area change analyses.

West Lake Boudreaux Shoreline Protection and Marsh Creation (TE-46) Project

The TE-46 project was completed in fall 2009. The project consists of three segments of foreshore rock dike with corresponding marsh creation areas that parallel the northwestern rim of Lake Boudreaux. Land loss in this area is due to a combination of natural processes and anthropogenic alterations, including sediment starvation from the construction of a dam across the head of Bayou Lafourche at Donaldsonville in 1904, subsidence, saltwater intrusion, and shoreline exposure to wind-generated wave energy, most notably from major hurricanes.

The project features were designed to reduce shoreline erosion and to create additional marsh along the northwest shoreline of Lake Boudreaux while protecting shallow aquatic grass beds adjacent to the shoreline. Approximately 12,447 linear feet of rock dike, 220 acres of marsh creation, one 150 linear foot choke-down structure, and 24,553 linear feet of earthen containment were constructed.

Land/water analysis using aerial imagery indicates that the project has been successful at reducing shoreline erosion and increasing land area. The shoreline behind the foreshore rock dike slightly prograded one-year post-construction at a rate of 0.03 feet/year (0.01 m/year). Based upon the 2012 post-construction land/water analysis, there were 484 acres of

land inside the project boundary, while the creation cells contained a total of 215 acres of land (USGS/NWRC 2013). The decreasing land area between 2005 and 2008 is likely due to the impacts from several powerful tropical systems. A marked upward trend occurred when project construction was completed in 2009. Since 2011, the land area within the project has been relatively stable.

BARATARIA BASIN

Land Change Dynamics

Barataria Basin is located to the south-southwest of New Orleans. The eastern border of the basin is the Mississippi River and the western border is near Bayou LaFourche. It contains vast expanses of forested and herbaceous wetlands spanning from saline to freshwater environments.

Barataria Basin has experienced the second greatest land loss of the nine basins in coastal Louisiana, with a net loss of approximately 277,000 acres (1,120.0 km²) of wetlands since 1932. Rates of wetland loss have ranged from a net loss of approximately 6,178 acres/year (25.0 km²/year) at the peak of wetland loss rates, to a loss of 210 acres/year (0.8 km²/year) most recently (Couvillion et al. 2017). Wetland loss within the basin is attributed to a combination of natural and anthropogenically-influenced factors, including sea level rise, subsidence, shoreline erosion, herbivory, and human development, such as channelization and levee construction. Tropical storm impacts are also a major contributor to wetland loss in the basin. The wetland impacts of the record breaking 2020 season are still under investigation.

Excluding hydrologic restorations, CWPBRA projects have collectively contributed to approximately 7,866 acres (+/- 914 acres) of net land area benefit via new land built or land sustained from project inception through 2020. Projects in Barataria consist of marsh creation, shoreline protection, and barrier island restoration projects. The benefits from these projects have continued to increase through time. This increasing benefit is the result of additional project construction and the land-sustaining effects of projects such as shoreline protections, which continue to reap rewards (Figure 12).

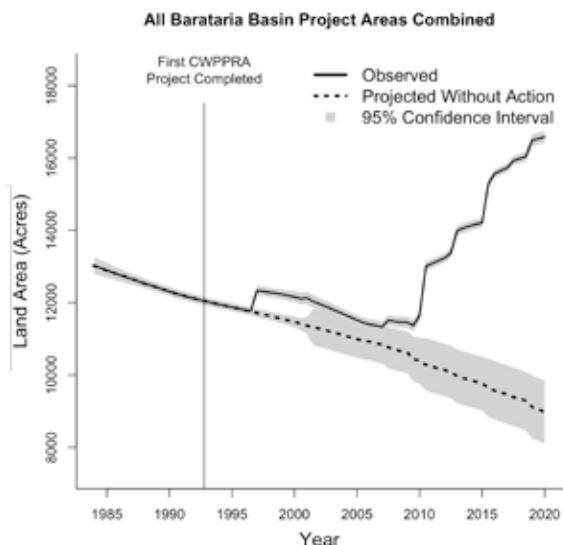


Figure 12. Cumulative land area change analyses for all constructed CWPBRA projects in Barataria basin.

\$444 Million Expended
21 Projects Constructed

4 Projects in Engineering & Design
2 Projects in Construction

Bayou Dupont Sediment Delivery Marsh Creation #3 and Terracing (BA-164) Project

The BA-164 project is the third in a series of neighboring marsh creation projects that are increasing coastal resiliency in a region that has suffered from significant marsh loss. The project is located on the west bank of the Mississippi River in the Barataria Basin; it is adjacent to the first CWPBRA Bayou Dupont project (BA-39) and also synergistic with the nearby hurricane protection levee system. Construction of the BA-39 project was completed in May 2010, and this project has since demonstrated how Mississippi River sediment can be used to create sustainable marsh habitat. The BA-164 project has two components, a 144-acre marsh creation area that was constructed using sediment dredged from the river and 14 terraces totaling 9,679 linear feet that were constructed using sediment dredged from within the project area (Figure 13). Successful construction of these components and development of an emergent, intermediate marsh habitat are the primary goals of the project. An additional 128 acres of marsh were constructed adjacent to the BA-164 marsh creation area using the Coastal Impact Assistance Program and state surplus contingency funds from the Long Distance Sediment Pipeline (LDSP) project (BA-0043-EB), (Figure 13). The LDSP was used to deliver sediment dredged from the Mississippi River to the shallow, primarily open water project sites for marsh construction. Construction of the marsh creation areas was completed in September 2016, while construction of the terraces was completed in June 2017.

Intermediate and freshwater emergent marsh and scrub-shrub vegetation species have rapidly colonized the BA-164 marsh creation area. While the marsh creation area was allowed to completely self-vegetate, the terraces were planted to enhance early natural stabilization and protection. While early in its project life, vegetation data indicate that BA-164 can be expected to continue development into a mature, stable marsh habitat that will provide ecological benefits well into the future.

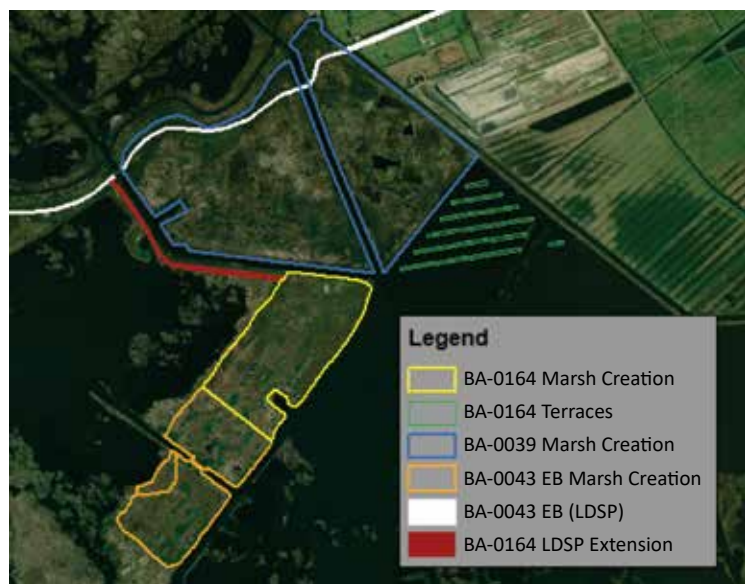


Figure 13. BA-164 Project Area.

MISSISSIPPI RIVER DELTA

Land Change Dynamics

The Mississippi River Delta Basin is located in the southeast of Louisiana's coastal zone on the edge of the Gulf of Mexico's continental shelf. Major water bodies include the mainstem Mississippi River, South Pass, and Pass a Loutre, all of which are directly connected to the Gulf of Mexico. Water and sediment from 32 states and 2 Canadian Provinces pass through the Mississippi River Delta. Its bird's foot configuration is characteristic of alluvial deposition in deep water. In this configuration large volumes of sediment are required to create land area; consequently, land is being lost in this delta more rapidly than it is being created. However, the basin contains expanses of fresh and intermediate marshes.

Similar to other hydrologic basins, the Mississippi River Basin has experienced a net decrease in wetland area from 1932 to 2016. The total wetland area of the basin has decreased by 92,665 acres (375.0 km²). As a percentage of the 1932 area, the basin has experienced the greatest percentage decrease in wetland area of approximately -55 percent of total area (Couvillion et al. 2017). The Mississippi River Delta Basin has experienced a reduction in wetland loss rate since the 1960s, reaching a point of wetland gain for portions of the 1990s, only to be followed by a negative trend due to the effects of Hurricane Katrina in 2005 (Barras, 2006). The major causes of land loss in this basin are subsidence and compaction. Unlike other areas of coastal Louisiana, the Mississippi River Delta has a relative abundance of inflowing fresh water and sediments. Despite the availability of these resources, the overall growth of emergent delta has been truncated. In the present position, the Mississippi River deposits sediments into much deeper water than has been the case historically. These unconsolidated sediments are highly susceptible to compaction, reducing the life span of emergent wetlands.

This basin contains three hydrologic restoration/crevasse management projects and one marsh creation demonstration project. Restoration projects in the Mississippi River Delta Basin are thought to have contributed to an estimate of approximately 4,971 acres (+/- 873 acres) of net land area benefit collectively via new land built or land sustained from project inception through 2020. Project areas were projected to remain relatively stable in the absence of project construction in this basin, due in large part to the sediment deposition provided by the Mississippi River. However, the crevasse management projects, which operate in some ways similar to sediment diversions, have led to increasing land building in these areas (Figure 14).

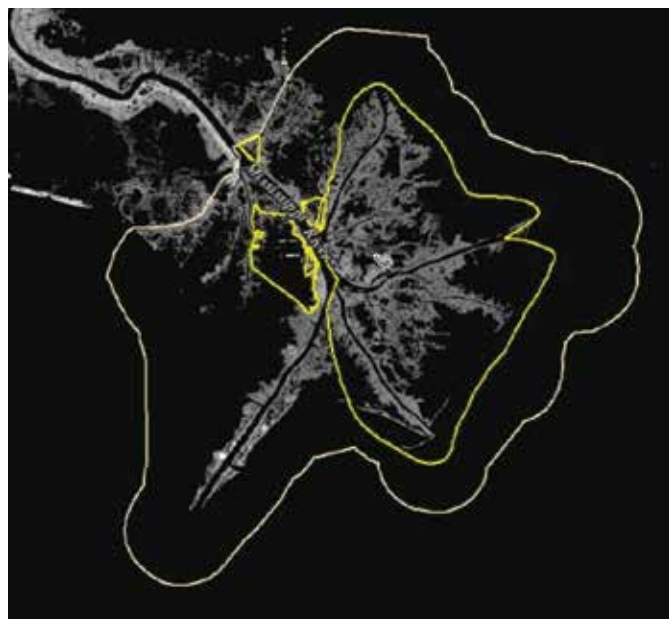


Figure 15. There are four CWPPRA projects in the Mississippi River Delta.

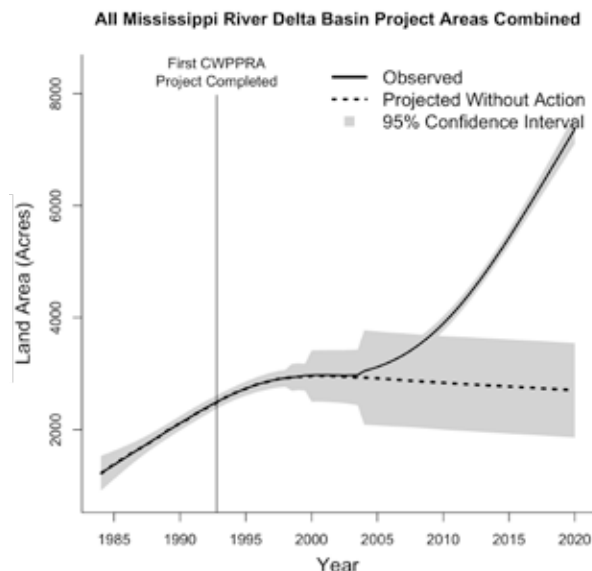


Figure 14. Cumulative land area change analyses for all constructed CWPPRA projects in Barataria basin.



Figure 16. A view towards the southwest at the entrance of the West Bay Sediment Diversion (MR-03). A mature network of distributary channels weaves through naturally formed and engineered features in West Bay that are no longer distinguishable. Equipment staged at the diversion's entrance prepares to distribute dredged material to various parts of the system.

\$53.3 Million Expended

4 Projects Constructed

BRETON SOUND BASIN

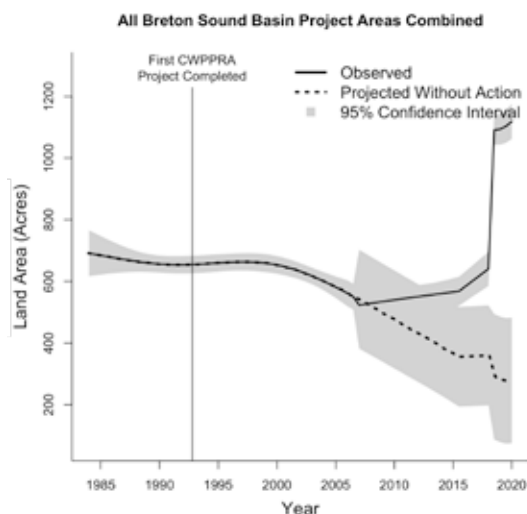


Figure 17. Cumulative land area change analyses for all constructed CWPPRA projects in Breton Sound basin.

Land Change Dynamics

Breton Sound Basin is located in the southeast of Louisiana's coastal zone, east of New Orleans. Major water bodies that influence the Breton Sound are the Mississippi River, Bayou Terre aux Boeufs, and Lake Lery. The southern portion of the basin is directly connected to the Gulf of Mexico. The marshes in the basin transition from saline near the gulf, to fresh north of Lake Lery.

Breton Sound Basin experienced a net decrease of 105,267 acres (426.0 km²) in wetland area from 1932 to 2016. In the basin, loss rates have increased since the late 1970s, but in recent years, the rate of land loss is decreasing (Couvillion et al. 2017). The major causes of land loss in this basin are sediment deprivation, saltwater intrusion, and shoreline erosion. Hurricane Katrina, 2005, was a major source of land loss in the basin. However, excluding those hurricane effects, CWPPRA marsh creation and terracing projects have contributed to an estimated net land area benefit of approximately 860 acres (+/- 212 acres) either from new land built or land sustained, from project inception through 2020. This benefit is the result of two constructed projects, (1) Delta Management at Fort St. Philip (BS-11), which consists of terracing and crevasse management and (2) South Lake Lery Shoreline and Marsh Restoration (BS-16), a shoreline protection and marsh creation project. While land-area benefit was initially slow to be realized after the construction of BS-11 in 2006, the eventual land building and sustaining effects of the crevasse management and terraces has led to approximately 260 acres of benefit by 2020. The marsh creation benefits of BS-16, beginning in 2016, are much more evident as a dramatic spike in land area in Figure 17.

Recent planning efforts to address the basin's wetland loss include the approval of seven marsh restoration projects that, once built, will create a land bridge across the upper basin. While these are still in engineering and design, they demonstrate the synergistic approach to restoration that CWPPRA strives to accomplish.

\$37.7 Million Expended
3 Projects Constructed

7 Projects in Engineering & Design
1 Project in Construction

South Lake Lery Shoreline and Marsh Restoration (BS-16) Project

Completed in 2017, the BS-16 project is located within the Breton Sound hydrologic basin. Prior to construction, the project area had experienced tremendous loss of emergent wetlands, which was exacerbated by Hurricane Katrina in 2005. The purpose of the BS-16 project was to restore historic marsh conditions by re-establishing the shoreline of Lake Lery and by creating new emergent wetlands.

Mechanically dredged material was excavated from near shore water bottoms and used to restore 35,831 linear feet of the Lake Lery shoreline through the creation of a shoreline berm, resulting in the creation of approximately 55 acres of wetlands. Additionally, hydraulically dredged bottom sediments from Lake Lery were pumped into shallow open water and fragmented marsh areas to create approximately 496 acres of intermediate marsh in five marsh creation areas. Additional dredged material was deposited in several shallow, open water areas behind the marsh creation areas, creating and nourishing additional marsh. Final acreages will be quantified after land/water analysis of aerial photography takes place. Immediately following construction, the shoreline berm was planted with smooth cordgrass and California bulrush to help prevent erosion. Additional plantings are planned to address ongoing erosion concerns for portions of the project area.

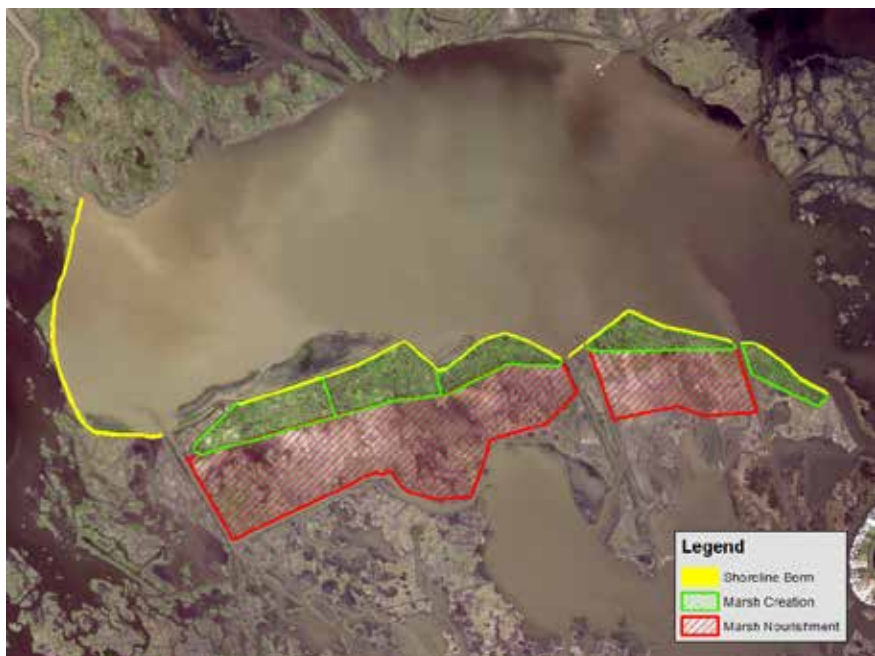


Figure 18. BS-16 Project Area.

PONTCHARTRAIN BASIN

Land Change Dynamics

The Pontchartrain Basin is an abandoned delta bordered by the Pleistocene Terrace on the north and west, Mississippi River on the south and the Chandeleur Islands on the east. Three major lakes, Maurepas, Pontchartrain, and Borgne, cover approximately 55 percent of the basin and are separated by associated land bridges. New Orleans is located within the basin adjacent to the southern shore of Lake Pontchartrain. Forested wetlands cover the western portion of the basin, transitioning to a gradient of fresh, intermediate, brackish, and saline marshes from west to east toward the Gulf of Mexico.

Pontchartrain Basin has experienced a decrease in wetland area, with approximately 116,634 acres (472 km²) of net loss since 1932 (Couvillion et al. 2017). The rate of land change in the Pontchartrain Basin did not change significantly from 1932 to 2016. Wetland loss in this basin is attributed to limited riverine input, erosion, and deteriorating land bridges on the east and west sides of Lake Pontchartrain.

Restoration activities in the Pontchartrain Basin include marsh creation, shoreline protection, hydrologic restoration and barrier island restoration. Excluding hydrologic restoration projects, CWPPRA projects in the Pontchartrain Basin have contributed approximately 1,745 acres (+/- 251 acres) of net land area benefit to the landscape collectively via new land built or land sustained from project inception through 2020. Episodic increases in land area benefit in this basin are evident, as three large marsh creation projects were successively constructed. In addition to the land built, each of the CWPPRA projects in this basin have contributed to a land sustaining effect, as evident in the divergence of the observed land area and without action projections (Figure 19).

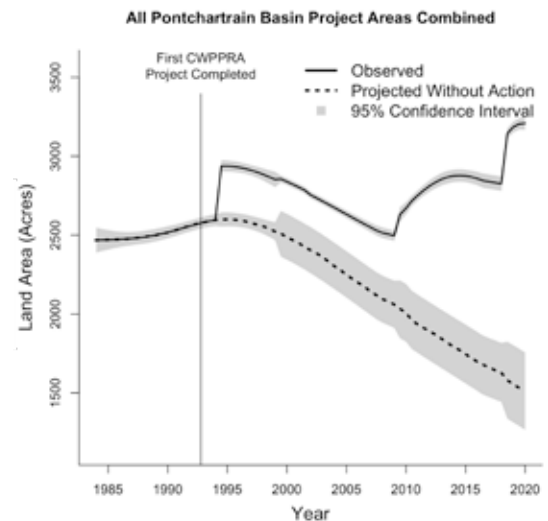


Figure 19. Cumulative land area change analyses for all constructed CWPPRA projects in Pontchartrain basin.

\$94 Million Expended
11 Projects Constructed

4 Projects in Engineering & Design
3 Projects In Construction

Constructed in 2017, the PO-104 project is located on the Big Branch Marsh National Wildlife Refuge along the northeastern corner of Lake Pontchartrain. Prior to construction, the poor condition of this marsh was due to a combination of subsidence, hurricane-induced interior ponding, and shoreline erosion. Several breaches existed along the shoreline and, in places, only a narrow strip of shoreline existed between Lake Pontchartrain and the interior ponds. Should shoreline breaching and enlargement of tidal channels have been allowed to extend, high tidal energy would have intruded into the interior ponds of the project area. This would have caused the interior marshes to experience accelerated loss rates.

Bayou Bonfouca Marsh Creation Project (PO-104)



Figure 20. PO-104 Project Area.

The goal of the PO-104 project was to re-create and nourish approximately 639 acres of low salinity brackish marsh in open waters adjacent to Bayou Bonfouca using sediment dredged from Lake Pontchartrain. Four marsh creation areas comprising 605 acres were filled with hydraulically dredged material. After material placement was complete in the marsh creation areas, additional dredged material was deposited outside of containment, creating an additional 281 acres of marsh in adjacent open water areas and nourishing many more. Final acreages will be quantified after land/water analysis of aerial photography takes place. In October of 2018, native marsh plants were planted to supplement the natural colonization of vegetation within the marsh creation areas. In late 2021, tidal creeks were constructed in the marsh creation areas to ensure hydrologic connection with the surrounding area, thus improving fish and wildlife habitat, and creating access for recreation.

DEMONSTRATION PROJECT

Non-Rock Alternatives to Shoreline Protection Demonstration (LA-16)

Approved: 2009

Constructed: February 2014

The CWPPRA Program encourages the assessment and use of new technology in coastal restoration to adapt to changing conditions through demonstration projects. As shorelines erode inland, the typical berm setting suited for high exposure to wind and waves thins, exposing the more fragile marsh edge to hydrologic forces. Shoreline protection becomes more complicated as former marsh platforms have a low weight-bearing capacity and require lower-density or pile-supported structures.

LA-16 assessed four commercially available structures appropriate for such shorelines along northeast Vermilion Bay. Wave Attenuation Devices (WADs) and Wave Screen System (WSS) were porous to allow water and sediment to pass through, while Buoyancy Compensated Erosion Control Modular System and EcoSystem Units were full water-column wave barriers (McGinnis 2018). While the reference area eroded 51 feet/year from 2014 to 2017, all structures attenuated waves by at least 60 percent and reduced shoreline erosion by at least 70 percent. The more porous structures gained soil volume along the shoreline, and the WSS, which was suspended a couple feet above the bay bottom, also gained soil volume on the bayside of the structure (Figure 21). LA-16 data was prominent in a Louisiana coast-wide synthesis of 12 shoreline protection structures that revealed a positive relationship between structure porosity up to 35 percent and soil volume change (Shows 2018; Figure 23).

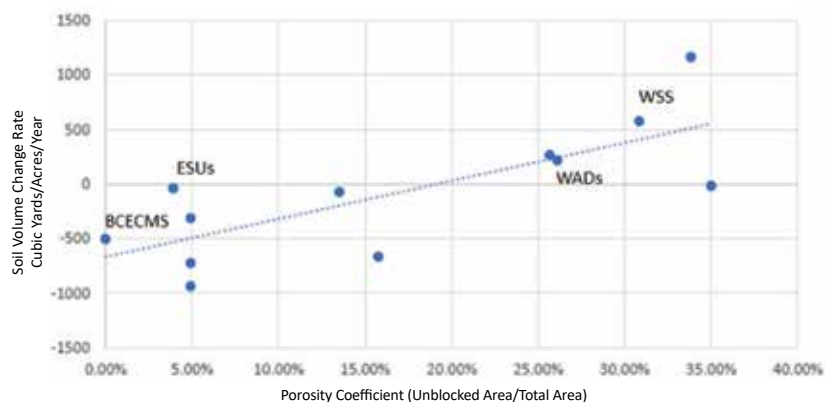


Figure 21. Left. Relationship between structure porosity and soil volume change behind shoreline protection structures across coastal Louisiana featuring LA-16 structures (adapted with permission from Shows 2019).



Figure 23. Aerial imagery during low water levels about 3 years after installation of LA-16 structures. Note mudflat formation behind the porous WADs and WSS.



Figure 22. CWPPRA provides opportunities to assess new wetland restoration techniques. Demonstration projects can be proposed at Regional Planning Team Meetings like the one pictured here from 2018 in Morgan City.



Figure 24. A close up image of each section of structures shows a better view of mudflat formation behind the WADs and WSS.

Coastwide Reference Monitoring System (CRMS)

In response to the need for enhanced evaluation and monitoring of Louisiana's growing coastal restoration program, CWPPRA developed the Coastwide Reference Monitoring System-Wetlands (CRMS-Wetlands) to provide a pool of reference sites by which to evaluate the effectiveness of individual restoration projects, as well as the overall program, and to provide a means to assess landscape change (Steyer et al., 2003a). The CRMS network of sites is comprised of approximately 390 ecological monitoring locations distributed across Louisiana's nine coastal basins within and outside of project boundaries (Figure 25). The sites encompass a range of ecological conditions, including fresh, intermediate, brackish, and salt marsh and swamp habitat, and are monitored using standardized data collection techniques at fixed sampling schedules. The reference network approach enables multiple scale evaluations of project conditions by habitat, basin or coast-wide. Construction of most CRMS sites occurred from 2005-2007 with continuous data collection since that time.

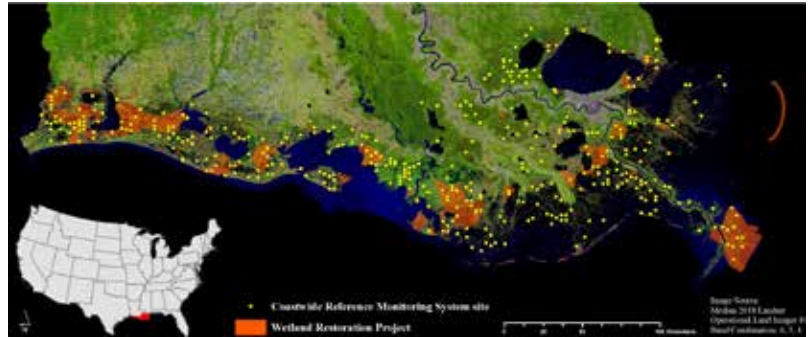
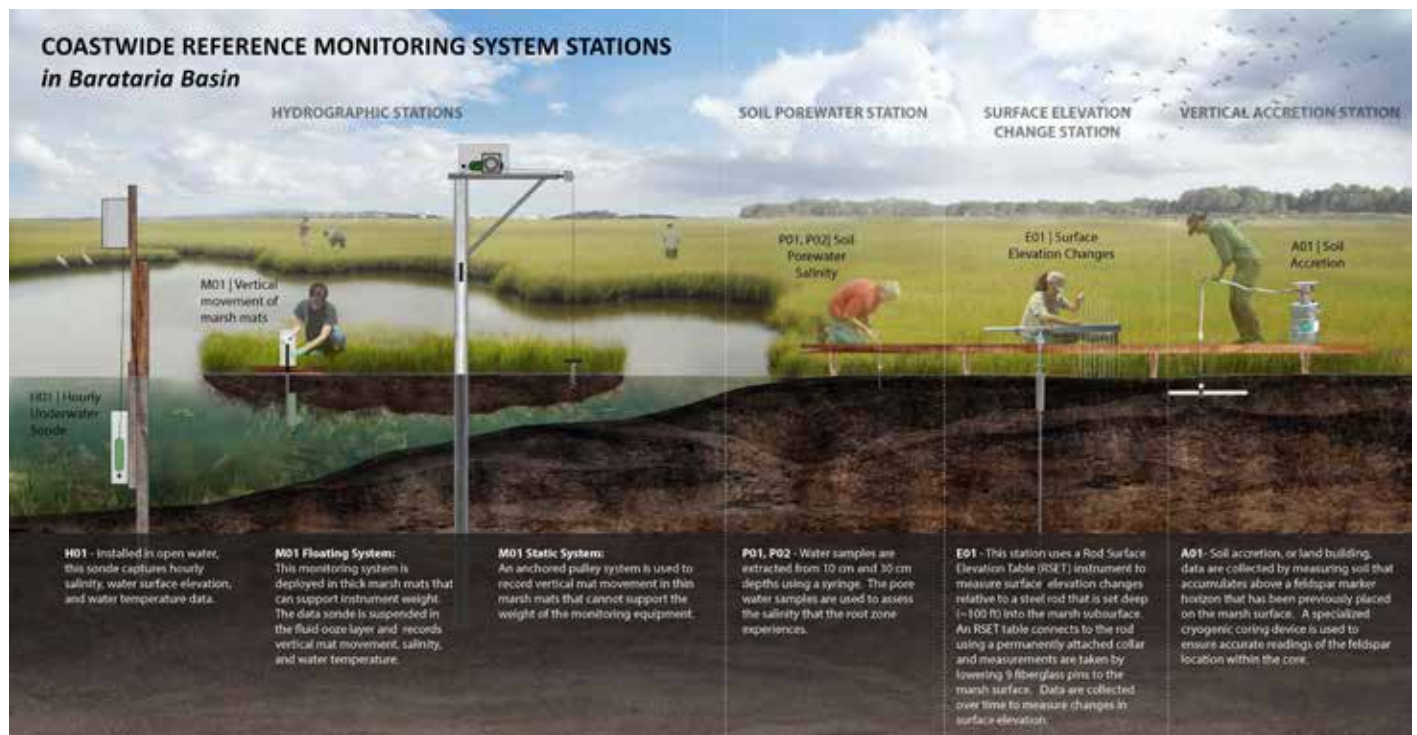


Figure 25. Distribution of CRMS sites and CWPPRA projects across the Louisiana coast.

Data variables collected at each CRMS site include water level, salinity, sediment accretion, surface elevation change, composition and abundance of vegetation, and soil characteristics within a 200 m² sampling area (Figure 25). The ratio of land to water is determined within a larger 1 km² area encompassing the sampling area to monitor land change through time. After the data undergo quality assurance and control procedures, data are approved and entered into the CPRA's Coastal Information Management System database (<https://cims.coastal.louisiana.gov/>). CRMS data feed into interpretable tools that can be used to assess the condition of individual CRMS sites, restoration projects, hydrologic basins, and the entire Louisiana coast. Calculated or derived data (e.g., averages, marsh classification, elevations, elevation change rates, and CRMS indices) are hosted on the CRMS website (<https://www.lacoast.gov/crms/Home.aspx>). Information is analyzed and summarized in maps, charts, tables, graphs, and indices, and lastly incorporated into interactive report cards. The CRMS program is as dynamic as the coastal habitats it monitors. Continuously evolving, the program continues to develop new products and analysis tools to improve project planning and implementation, and to support the evaluation of restoration actions planned and implemented by not only the CWPPRA Program but other coastal restoration programs across the State as well. In addition to the integral role CRMS data play for CWPPRA project planning and evaluation, CRMS data are leveraged to support adaptive management, future scenario modeling, and scientific research.



CPRA, USGS

Conclusion

The CWPPRA Program has been actively rebuilding wetlands and helping address coastal land loss for over 30 years. Projects that have rebuilt the barrier islands, improved coastal and interior marshes, and restored natural hydrologic regimes have all improved the coastal landscape.

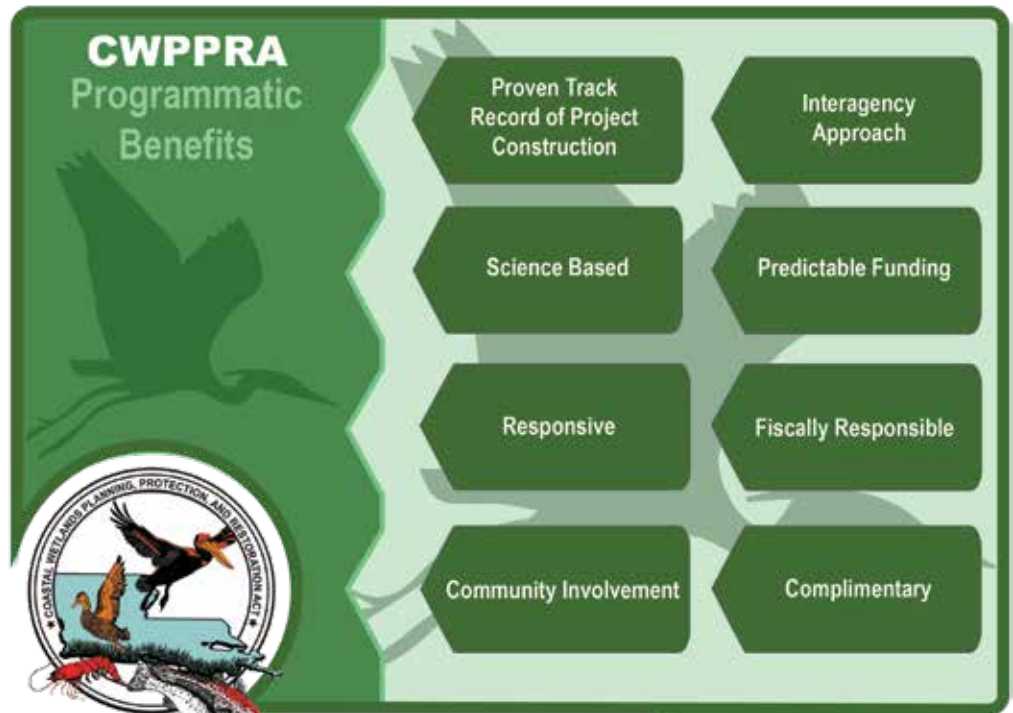
Capitalizing on CWPPRA's public planning process, which includes local government and citizen contribution to project nomination and development, several comprehensive restoration plans have been developed and widely accepted. CWPPRA has laid the foundation on which subsequent restoration initiatives have been modeled. In fact, several projects that have been designed through CWPPRA have been adopted and constructed through these other programs and initiatives. This type of synergy between funding vehicles supports efficiencies in project implementation.

A diverse, interdisciplinary team of academics, scientists, and engineers collects and analyzes data from CWPPRA projects using the CRMS and project-specific monitoring to evaluate the ecologic response from within the project footprint to the entire ecosystem. This helps guide the program to develop projects with a science-driven process. Using technological advances, the program supports successful restoration while monitoring and evaluating the success of projects to produce low cost restoration techniques for realistic future application.

CWPPRA's funding source, the Sport Fish Restoration and Boating Safety Trust Fund, authorized through Fiscal Year 2021 by the Fixing America's Surface Transportation Act of 2015, is supported by excise taxes on fishing equipment, and small engine and motorboat fuel taxes. The fund contributes 18.673 percent of its annual revenues to CWPPRA appropriations, 70 percent of which supports the Louisiana CWPPRA Program. With predictable funding through the Federal Sport Fish and Boating Safety Trust Fund and the experienced interagency team of coastal scientists and engineers, CWPPRA is, and will continue to be, uniquely able to quickly construct cost effective priority projects, typically within 3 to 5 years.

With a project selection process that funnels new projects into planning, engineering and design, and construction phases every year, the restoration of coastal Louisiana through the CWPPRA Program is only limited by funding. Shovel-ready projects are always in the queue and additional funding could be executed quickly to advance project implementation.

Overall, CWPPRA is meeting an otherwise unfilled niche by building near-term projects in acute, and often highly strategic, areas of need. This continues to be CWPPRA's greatest asset and contribution to turning the tide on Louisiana's land loss.



RESTORING COASTAL LOUISIANA SINCE 1990



USGS

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Appendices

Appendix 1. Useful Links

<http://www.lacoast.gov/new/Projects/List.aspx>

Complete list of authorized projects under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) since its implementation in 1990

<https://www.lacoast.gov/crms/Home.aspx>

Monitoring data at 390 Coastwide Reference Monitoring System (CRMS) sites

<http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA/Meeting-Documents/>

CWPPRA Public Meeting Documents

<http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA/Priority-Project-Lists/>

CWPPRA Priority Project List Documents and Process

<https://www.lacoast.gov/calendar/>

CWPPRA Meeting Calendar

<http://coastal.la.gov/our-plan/2017-coastal-master-plan/>

2017 Coastal Master Plan

Task Force Member Agencies:

<https://www.fws.gov/southeast/lafayette>; <http://www.fws.gov/coastal/CoastalGrants/>

U.S. Department of the Interior (represented by the U.S. Fish and Wildlife Service)

<https://www.nrcs.usda.gov/wps/portal/nrcs/site/la/home/>

U.S. Department of Agriculture (represented by the Natural Resources Conservation Service)

<http://habitat.noaa.gov/restoration/index.html>

U.S. Department of Commerce (represented by the National Oceanic and Atmospheric Administration
National Marine Fisheries Service)

<https://www.epa.gov/la/water-louisiana>

U.S. Environmental Protection Agency (represented by the Water Quality Protection Division of EPA Region 6)

<http://www.coastal.la.gov/>

Louisiana's Governor's Office (represented by the Coastal Protection and Restoration Chairman)

<http://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA>

U.S. Army Corps of Engineers (represented by the New Orleans District)

Appendix 2.

Table 1. Louisiana waterfowl, other migratory and resident birds, and mammals, reptiles, and amphibians benefited by CWPPRA projects.

Dabbling ducks	Diving ducks	Geese	Other migratory and resident birds	Mammals, reptiles, and amphibians
Mallard, mottled duck, gadwall, American widgeon, pintail, northern shoveler, green-winged teal, and blue-winged teal.	Lesser scaup, ring-necked duck, and several merganser species.	White-fronted geese, Canada geese, and snow geese	Brown and white pelicans cormorants and anhingas. Hérons: great blue heron, little blue heron, bitterns, green-backed heron, yellow-crowned night heron, black-crowned night heron, great egret, snowy egret, glossy ibis, white-faced ibis, and white ibis. Others: American coots, rails, gallinules, shorebirds, terns, boat-tailed grackle, red-winged blackbird, eastern kingbird, northern harrier, belted kingfisher, and songbirds.	Mammals: Louisiana black bear, nutria, muskrat, mink, river otter, raccoon, swamp rabbit, coyote, and white-tailed deer Reptiles: American alligator, western cottonmouth, red-eared turtle, common snapping turtle, and soft-shell turtle Amphibians: tree frogs, bullfrog, pig frog, leopard frogs, and salamanders

Table 2. Commercially and recreationally important fisheries species benefited by CWPPRA projects.

Freshwater fisheries	Commercially important fisheries	Recreationally important estuarine species
Largemouth bass, crappie, bluegill, gar, blue catfish, and shad. Crawfish and river and grass shrimp	Gulf menhaden, striped mullet, catfishes, gars, and freshwater drum. Brown and white shrimp, blue crab, Gulf stone crab, and the American oyster	Spotted sea trout, white trout, red drum, black drum, Atlantic croaker, spot, southern flounder, snappers, mackerel, groupers, and sharks.



The 2021 Evaluation Report to the U.S. Congress
on the Effectiveness of Coastal Wetlands Planning,
Protection and Restoration Act (CWPPRA) Projects

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

STATUS OF UNCONSTRUCTED PROJECTS

For Report:

The P&E Subcommittee will report on the status of unconstructed CWPPRA projects. There were three projects that were considered for “critical watch.”

- a. Critical-watch unconstructed projects:
 - South Grand Chenier Marsh Creation (ME-20)
 - North Catfish Lake Marsh Creation (TE-112)
 - Island Road Marsh Creation and Nourishment (TE-117)

2021 SOUP - Status of Unconstructed Projects - PPL 1 - 26

Project No.	Project Name	Agency	PPL	Authorized Date/Phase I Approval	Construction/ Phase II Approval	30% Design Review Date*	95% Design Review Date*	Current Approved Economic Analysis Date (Budget Estimate on Books)	Construct Start*	Construct Complete*	Current Approved Budget	Current Funded Budget	Expenditures	1st cost Unexpended	Monitoring Unexpended	O&M Unexpended	TOTAL Unexpended	TOTAL Unobligated	Current Total FF Cost Est. On Books	Critical Watch	On Schedule	Waiting on Phase II Funds	Project Issue Delays	Programmatic Issue Delays	Recommend Transfer	Recommend Deauthorization	Recommend Inactivation	Inactive Projects	> \$50 M
ME-20	South Grand Chenier Marsh Creation	FWS	11	16-Jan-02	22-Jan-14	6-Aug-09	3-Nov-09	16-Jan-14	Fall 2020		\$22,623,346	\$22,282,940	\$2,546,131	\$18,980,354	\$61,606	\$659,066	\$19,701,025	\$1,130,496	\$22,623,346	X									
TE-112	North Catfish Lake Marsh Creation	NRCS	22	24-Jan-13	30-Jan-22	22-Feb-21	Fall 2021				\$3,216,194	\$3,216,194	\$2,124,489	\$1,091,705	\$0	\$0	\$1,091,705	\$583,586	\$30,385,887	X									
TE-117	Island Road Marsh Creation and Nourishment	NMFS	23	16-Jan-14		23-Oct-19	15-Oct-21				\$3,721,447	\$3,721,447	\$2,450,436	\$1,271,011	\$0	\$0	\$1,271,011	\$128,039	\$39,185,267	X									
PO-75	LaBranche East Marsh Creation	NRCS	19	20-Jan-10	29-Jan-20	3-Mar-18	15-Oct-18	28-Oct-19	Fall 2021		\$55,340,981	\$54,307,857	\$2,478,820	\$50,571,808	\$322,414	\$934,815	\$51,829,037	\$21,397,406	\$54,307,857		X								
PO-133	LaBranche Central Marsh Creation	NRCS	21	19-Jan-12	22-Jan-21	15-Oct-18	23-Sep-20		Fall 2021		\$3,885,298	\$3,885,298	\$2,747,952	\$1,137,346	\$0	\$0	\$1,137,346	\$126,598	\$42,159,208		X								
PO-169	New Orleans Landbridge Shoreline Stabilization and Marsh Creation	FWS	24	22-Jan-15	12-Feb-19	1-Aug-20	1-Oct-16	1-Feb-19			\$25,446,124	\$23,098,518	\$1,988,143	\$20,768,399	\$146,265	\$195,711	\$21,110,375	\$20,992,410	\$25,446,124		X								
TE-134	West Fourchon Marsh Creation & Marsh Nourishment	NMFS	24	22-Jan-15	29-Jan-20	10-Jul-18	24-Oct-18	23-Oct-19			\$30,494,148	\$29,521,927	\$2,031,346	\$26,289,306	\$256,658	\$944,617	\$27,490,581	\$3,864,695	\$30,494,148		X								
TE-138	Bayou Decade Ridge Restoration and Marsh Creation	NMFS	26	12-Jan-17	12-Feb-19	7-Aug-18	24-Oct-18	15-Nov-18	15-Nov-20		\$27,268,025	\$25,851,017	\$2,193,467	\$22,587,655	\$0	\$0	\$22,587,655	\$3,105,055	\$27,268,025		X								
PO-179	St. Catherine Island Marsh Creation and Shoreline Protection	FWS	26	12-Jan-17		1-Mar-22	1-Jun-22				\$2,389,308	\$2,389,308	\$1,216,625	\$1,172,683	\$0	\$0	\$1,172,683	\$1,109,104	\$35,996,522		X								
ME-31	Freshwater Bayou Marsh Creation	NRCS	19	20-Jan-10	30-Jan-22	10-Jun-20	20-Oct-21				\$2,425,997	\$2,425,997	\$2,245,973	\$180,024	\$0	\$0	\$180,024	\$155,593	\$25,523,755			X							
BS-24	Terracing & Marsh Creation South of Big Mar	FWS	22	24-Jan-13	01-Jan-21	7-Jul-16	27-Oct-16				\$2,308,599	\$2,308,599	\$1,427,096	\$881,503	\$0	\$0	\$881,503	\$812,787	\$38,679,147			X							
CS-78	No Name Bayou Marsh Creation & Nourishment	NMFS	24	22-Jan-15		28-Jul-20	1-Oct-20	23-Oct-20			\$2,724,524	\$2,724,524	\$2,311,159	\$2,493,365	\$0	\$0	\$2,493,365	\$43,797	\$28,253,136			X							
BA-195	Barataria Bay Rim Marsh Creation	NRCS	25	14-Jan-16	30-Jan-22	14-Mar-19	24-Oct-19				\$2,693,708	\$2,693,708	\$2,330,084	\$363,624	\$0	\$0	\$363,624	\$103,554	\$23,838,905			X							
CS-79	Oyster Lake Marsh Creation and Nourishment	NMFS	25	14-Jan-16		23-Jun-20	23-Jun-20	21-Oct-20			\$3,608,939	\$3,608,939	\$1,256,789	\$2,352,150	\$0	\$0	\$2,352,150	\$242,405	\$38,073,046			X							
BA-194	East Leeville Marsh Creation and Nourishment	NMFS	25	14-Jan-16		23-Oct-20	23-Oct-19	11-Aug-20			\$4,026,090	\$4,026,090	\$2,293,225	\$1,732,865	\$0	\$0	\$1,732,865	\$177,045	\$35,066,972			X							
PO-178	Bayou La Loutre Ridge Restoration and Marsh Creation	NRCS	26	12-Jan-17	30-Jan-22	16-Jun-20	22-Oct-20				\$3,236,952	\$3,236,952	\$1,122,926	\$2,114,026	\$0	\$0	\$2,114,026	\$1,982,159	\$29,762,138			X							
PO-173	Fritchie Marsh Creation and Terracing	NMFS	25	14-Jan-16							\$3,033,294	\$3,033,294	\$359,655	\$2,673,639	\$0	\$0	\$2,673,639	\$820,128	\$27,944,102				X						
ME-32	South Grand Chenier Marsh Creation - Baker Tract	NRCS	23	16-Jan-14							\$2,653,242	\$2,653,242	\$595,220	\$2,058,022	\$0	\$0	\$2,058,022	\$824,744	\$25,441,833				X						
TV-11b	Freshwater Bayou Bank Stab - Belle Isle Canal to Lock	COE	9	11-Jan-00		17-Jun-02	22-Jan-04	11-Jan-00			\$1,498,967	\$1,498,967	\$1,101,738	\$283,328	\$113,901	\$0	\$397,229		\$35,634,067								Jun-13		
MR-15	Venice Ponds Marsh Creation & Crevasses	EPA	15	08-Feb-06		29-Jun-11	25-Oct-11	8-Feb-06			\$1,074,522	\$1,074,522	\$611,222	\$463,300	\$0	\$0	\$463,300		\$22,156,292								Jan-14		
PO-34	Alligator Bend Marsh Restoration and Shoreline Protection	NRCS	16	18-Oct-06		18-Aug-11	16-Nov-11	12-Nov-13			\$1,660,985	\$1,660,985	\$1,364,230	\$296,755	\$0	\$0	\$296,755		\$40,326,244								Oct-14		
TE-51	Madison Bay Marsh Creation and Terracing	NMFS	16	18-Oct-06		23-Jul-13	24-Oct-13	18-Oct-06			\$3,002,171	\$3,002,171	\$1,731,039	\$1,271,132	\$0	\$0	\$1,271,132		\$38,798,788								Oct-15		
TE-32a	North Lake Boudreaux Basin Freshwater Intro and Hydro Mgt	FWS	6	D		4-Aug-09	29-Jun-10	28-Oct-10			\$25,766,765	\$20,048,152	\$4,274,707	\$14,980,690	\$363,872	\$428,883	\$15,773,445		\$25,766,765								Oct-16		

*Use actual or current schedule date for design review and construction schedules

**CRITICAL WATCH LIST PROJECT

***Preliminary Analysis of Consistency

na= Not applicable (Cash Flow, Complex, or PENDING DEAUTH)

Agency Key:

FWS
NMFS
EPA
COE
NRCS
Inactive Projects

	Current Approved Budget	Current Approved Funded Budget	Expenditures	1st cost Unexpended	Monitoring Unexpended	O&M Unexpended	TOTAL Unexpended	TOTAL Unobligated	Current Total FF Cost Est . On Books
Critical Watch	\$29,560,987	\$29,220,581	\$7,121,057	\$21,343,070	\$61,606	\$659,066	\$22,063,741	\$1,842,121	\$92,194,500
On Schedule	\$144,823,884	\$139,053,925	\$12,656,353	\$122,527,197	\$725,337	\$2,075,143	\$125,327,677	\$50,595,270	\$215,671,884
Waiting on Phase II \$	\$21,024,809	\$21,024,809	\$12,987,251	\$10,117,558	\$0	\$0	\$10,117,558	\$3,517,339	\$219,197,099
Project Issue Delays	\$5,686,536	\$5,686,536	\$954,874	\$4,731,662	\$0	\$0	\$4,731,662	\$1,644,872	\$53,385,935
Program Issue Delays									
Rec. Transfer									
Rec. Deauthorization									
Inactivated									
Over \$50 million									

Critical Watch List

Note: All projects on this tab will give a status report at the fall Technical Committee Meeting

Project Name	Project No.	Agency	PPL	Project Issue Delays	Near-term Milestones	Current Phase
South Grand Chenier Marsh Creation	ME-20	FWS	11	Two previous bid advertisements results in bids over the construction budget	This project has been advertised for bids twice. Both times, bids were significantly over budget. Since the last advertisement (2018) the project team has modified the project to alleviate some of the bidder's concerns. A third bid advertisement is scheduled for July 2021.	II
North Catfish Lake Marsh Creation	TE-112	NRCS	22	NA	30% Design Review Meeting completed March 30, 2021, with 95% Design Review Meeting anticipated in Fall 2021 and Phase II funding request anticipated in December 2021.	I
Island Road Marsh Creation and Nourishment	TE-117	NMFS	23	NA	The 95% design review meeting will be held by October 15, 2021. A scope change request will be made to the Technical Committee and Task Force prior to a Phase 2 request.	I

**Status Review - Unconstructed CWPPRA Projects
August 10, 2021**

1. Project Name (and number): South Grand Chenier Marsh Creation (ME-20)

2. SOUP Category: Critical Watch List

3. PPL: 11

4. Federal Agency: USFWS

5. Date of Construction Approval / Phase Two Approval: January 2014

6. Approved Total Budget (Current): \$22,623,346

7. Fully-Funded Cost: \$22,623,346

8. Expenditures: \$

9. Unexpended Funds: \$

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None.

12. Brief chronology of project development and issues affecting implementation:

1/2002	Phase I E & D Task Force approval
8/6/2009	Successful 30% Design Review Meeting
10/28/2009	Scope change to increase costs 33% to \$27.9 M and remove Area A; approved by Task Force
11/3/2009	95% Design Review meeting
10/27/2010	Corps Section 404 Permit Issued
1-20-2010	Initial Phase II construction funding approval
5/16/2011	NEPA completed: Final EA and FONSI
1/2012	Returned construction funding due to landrights
11/26/2012	Scope/name change, removed FW features, reduced costs & benefits
9/2012	All landrights secured for the project
1/16/2014	Task Force Phase II 2 nd Funding Approval
6/2015	Permit Modification Received 6-16-2015
4/2016	Semi-Final Design PMT Review Meeting
4/6/2017	Unsuccessful 1 st bid opening. One over-budget bid rejected.
8/14/2018	Second unsuccessful bid opening. Three bids submitted; all over the project construction budget.
12-2018 to 3-2019	Discussions with contractors for project modification ideas.

3 to 8-2019	Modify plans and specifications to alleviate contractor concerns.
04/2020	Permit Approval
07/2020	Final Modifications to Plans
07/2021	Post Solicitation (7/8/2021)

Issues affecting implementation: Unsuccessful bid process. Two bid advertisements resulted in no bids within the construction budget. Hurricane Laura passed over the project area in August 2020 and Hurricane Delta in October 2020. These two storms caused a significant amount of shoreline erosion in the area where the dredge pipeline would cross the shoreline. Engineers had to assess the damage and decide on a solution to address the problem. This added cost had to be offset with a reduction in the acreage being proposed within the two marsh creation sites. The acreage was reduced from 453 to 386, which is a change of 15%. This corresponds to an increase in the ratio of total cost to acres benefitted by around 17.5%. Because both of these variances are below 25%, a scope change is not necessary.

13. Current status/remaining issues:

Modifications to reduce project costs and address contractor issues from the first two bid advertisements.

- Fill quantity was reduced by using a lower elevation on the settlement curve to calculate the fill quantity.
- Reduction in fill quantity allowed avoidance of stiff clay layer at the bottom of borrow site. All bidders expressed concerns with dredging stiff clay material.
- Removed cost for rebuilding Price Lake Road. Road can be used for access, but not for dredge pipe delivery.
- Removed restrictions for borrow site access and dredging "pattern". Restrictions were placed on how the borrow site was to be dredged. All bidders raised concerns about that issue.
- Dredge pipe access route from Gulf is in the borrow channel on the west side of the Price Lake levee. Required a permit modification.
- Due to hurricane damage during 2020, some shoreline protection (ACM) will need to be placed along the gulf shoreline where the dredge pipeline comes on shore.

A new Section 404 permit has been received.

14. Projected schedule:

7/8/2021	Post Solicitation
8/2021	Receive Bids
9/2021	Award Bid

15. Preparer: Robert Dubois, USFWS (337-291-3127)

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

- 1. Project Name:** North Catfish Lake Marsh Creation Project (TE-112)
- 2. SOUP Category:** Critical Watch List
- 3. PPL:** 22
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:** January 2020
- 6. Approved Total Budget:** \$3,216,194
- 7. Fully Funded Cost Estimate:** \$30,385, 887
- 8. Expenditures:** \$2,124,489
- 9. Unexpended Funds:** \$1,091,705
- 10. Estimate of anticipated funding increase, including O&M:** No funding increases anticipated.
- 11. Potential changes to project benefits:** None.
- 12. Brief chronology of project development and issues affecting implementation:**

2013 – 2017	The project was approved for Phase I funding at the January 2013 Task Force meeting. NRCS has coordinated with LDWF and pipeline companies and completed a magnetometer survey of Catfish Lake to identify borrow site location and access route(s) that would minimize conflicts with oyster leases and pipelines. NRCS established a secondary monument to provide survey control for the project area. NRCS prepared a Scope of Services for Engineering Services to complete the data collection and design of the project.
2018	Agreement in place to conduct Engineering Services. Geotechnical investigation and supplemental survey data collection to be initiated by October.
2019	Agreement for Engineering Services had been delayed, but it became active in 2019. Notice to Proceed for data collection was issued.
2020	Data collection has been completed. Preliminary Design is ongoing.
2021	30% Design Review Meeting completed March 30, 2021, with 95% Design Review Meeting anticipated in Fall 2021 and Phase II funding request anticipated in December 2021.
- 13. Current milestones/remaining issues:**

95% Design Review anticipated in Fall 2021 and Phase II funding request anticipated in December 2021.

14. Projected schedule:

Request Phase II funding in December 2021.

15. Preparer: (6/8/2017) (7/27/18) (5/31/19) (6/15/20) (7/16/21) Quin Kinler, NRCS (225) 271-2403

**Status Review - Unconstructed CWPPRA Projects
July 2021**

- 1. Project Name (and number):** Island Road Marsh Creation and Nourishment (TE-117)
- 2. SOUP Category:** Critical Watch List
- 3. PPL:** 23
- 4. Federal Agency:** NMFS
- 5. Date of Construction Approval / Phase Two Approval:**
- 6. Approved Total Budget:** \$3,721,447
- 7. Fully Funded Estimate:** \$39,185,267
- 8. Expenditures:** \$2,450,436
- 9. Unexpended Funds:** \$1,271,011
- 10. Estimate of anticipated funding increases, including O&M:** to be determined
- 11. Potential changes to project benefits:** Based on 30% design level data, there is a decrease from 383 acres to 292 acres (-24%) in the project area and from 312 to 205 net acres (-34%).
- 12. Brief chronology of project development and issues affecting implementation:**
 - January 2014 – Phase 1 Approval
 - 2015 to early 2017 – evaluated 4 alternative fill area layouts and 8 different alternatives for borrow areas based on infrastructure, water depths, and exploratory geotechnical surveys
 - February, July, and October 2017, met with landowners and Ducks Unlimited discussing alternatives analysis and dual claims
 - May 2018 – draft borrow area geotechnical investigations and borrow area modeling
 - October 23, 2019 – 30% design review
 - December 11, 2019 – responded to agency comments on the 30% design
 - January 2020 – project delivery team meetings were suspended for a change in scope analysis
 - April 2020 –
 - CPRA concurrence letter to proceed to 95% design
 - NMFS concluded a draft scope change analysis and concluded to proceed to a scope change request and 95% design
 - October, 2020 – An initial 95% design package and WVA project information sheet was drafted, but completion was postponed to refine the design.
 - January – March 2021, additional step-wise geotechnical analyses were conducted refining the duration for fill placement and mudline elevations to further inform the design and performance.
 - June 2021 – Revised draft 95% design package provided by CPRA to NMFS for review.

13. Current status/remaining issues: Sponsors are delivering a constructible design by completing due diligence via stepwise and exploratory analyses given project vicinity challenges. The draft 95% design package is under review and concurrently the benefits analysis is being updated. The 95% design review meeting is scheduled no later than October 15, 2021. The revised benefit to cost ratio will be evaluated to determine the path forward: 1) seek scope change, and, if approved, a Phase 2 request, or potentially 2) recommend inactivation depending on environmental justice considerations and a revised benefit to cost ratio in comparison to other projects among other considerations.

14. Projected schedule and milestones: Fall of 2021 a scope change request will be made to the Technical Committee and Task Force. The 95% design review meeting will be held in October 2021.

15. Preparer: Patrick Williams, NOAA Fisheries; 225-329-9268;
patrick.williams@noaa.gov

Initial draft June 2021

Projects On Schedule

Project Name	Project No.	Agency	PPL	Project Status & Critical Milestone(s)	Current Phase
LaBranche East Marsh Creation	PO-75	NRCS	19	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-75 permit issued. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.	I
LaBranche Central Marsh Creation	PO-133	NRCS	21	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.	I
New Orleans Landbridge Shoreline Stabilization and Marsh Creation	PO-169	FWS	24	Approved for construction in February 2019. A 404 permit has been received. NOAA Fisheries concurrence on Biological Opinion for Atlantic Sturgeon critical habitat has been received. Consultation with SHPO on cultural resources has been completed. Bid advertisement on June 18, 2021.	II
West Fourchon Marsh Creation & Marsh Nourishment	TE-134	NMFS	24	Port approached project team for potential use of Belle Pass/Bayou Lafourche borrow area. The port is collecting additional design-level data in order to confirm that the project goals can be met with this borrow source. Drafting final design 2022; construction permit application submittal by Spring 2022; anticipated bid advertisement Winter 2022/Summer 2023	II
Bayou Decade Ridge Restoration and Marsh Creation	TE-138	NMFS	26	Approved for construction in February 2019. Containment started November 2020. Active hydraulic dredging started May 2021. Estimated construction completion January 2022.	II
St. Catherine Island Marsh Creation and Shoreline Protection	PO-179	FWS	26	Findings from the cultural resources survey and geotechnical investigation have resulted in the need to reconfigure the project footprint. Waiting on results of supplemental cultural resources survey. Consultation with NOAA Fisheries for Atlantic sturgeon critical habitat to begin soon. 30% design scheduled for March 2022 and 95% design in June 2022.	I

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

- 1. Project Name (and number):** LaBranche East Project (PO-75)
- 2. SOUP Category:** On Schedule
- 3. PPL:** 19
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:** n/a
- 6. Approved Total Budget:** \$55,340,981
- 7. Fully Funded Cost Estimate:** \$54,307,857
- 8. Expenditures:** \$2,478,820
- 9. Unexpended Funds:** \$51,829,037
- 10. Estimate of anticipated funding increases, including O&M:** Scope change with 34% cost increase was approved in 2018.
- 11. Potential changes to project benefits:** Scope change with 10% cost decrease in net acres was approved in 2018.
- 12. Brief chronology of project development and issues affecting implementation:**

2010	Approved (Phase I)
2010 – 2011	Planning and Design began in August 2010 after CSA signed. Geotechnical Investigation of Marsh Creation Areas completed in January 2011. Results indicated areas with high organic content resulting in decision to analyze various methods of containment and dredge material placement to verify the proposed design.
2012	A pilot study was developed to analyze design alternatives. Permit or pilot study was drafted and submitted.
2013	USACE issued permit for pilot study. Work began on June 1, 2013.
2014	Pilot Study completed in April 2014. Project Team will monitor results through August 2014 and develop report with findings and recommend preferred alternative for design.
2015-2016	Continued observation and re-survey of pilot project settlement.
2017	Geotechnical re-evaluation based on results of pilot study yielded determination that project is constructible. Project Team is actively pursuing design.
2018	30% Design and 95% Design completed. Phase II funding request was submitted, but project was not selected.

- | | |
|------|---|
| 2019 | Cost estimate will be updated, and project will be re-submitted for Phase II request. Consideration is being given to combining this project with PO-133. |
| 2020 | Phase II request approved. CSA amendment and Construction MIPR complete. Landrights assignment and certification, COE permit, and final design / contracting package are nearing completion. |
| 2021 | Phase II of PO-133 was approved and added to PO-75 Phase II. PO-75 permit issued. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion. |

13. Current status/remaining issues: No issues at this time.

14. Projected schedule: Contract expected to go out for bid September / October 2021.

15. Preparer: Updated (6/18/14): John Jurgensen, NRCS (318) 473-7694
Updated (6/19/15): John Jurgensen, NRCS (318) 473-7694
Updated (6/15/16); (6/9/17); (7/27/18); (6/6/19); (6/10/20); (7/16/21):
Quin Kinler, NRCS (225) 271-2403.

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

- 1. Project Name (and number):** LaBranche Central Marsh Creation Project (PO-133)
- 2. SOUP Category:** On Schedule
- 3. PPL:** 21
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:** n/a
- 6. Approved Total Budget:** \$3,885,298
- 7. Fully Funded Cost Estimate:** \$42,159,208
- 8. Expenditures:** \$2,747,952
- 9. Unexpended Funds:** 1,137,346
- 10. Estimate of anticipated funding increases, including O&M:** None at this time.
- 11. Potential changes to project benefits:** None at this time.
- 12. Brief chronology of project development and issues affecting implementation:**

2012	Approved (Phase I)
2012 – 2014	Planning and Design began in July 2012 after CSA signed. Design Surveys completed October 2012. Magnetometer Survey Report completed June 2013. Geotechnical Investigation completed in April 2014.
2015-2016	Continued observation and re-survey of PO-75 pilot project settlement for potential application to PO-133.
2017	Geotechnical re-evaluation based on results of pilot study yielded determination that project is constructible.
2018	Project Team actively pursued design. 30% Design Review was delayed to 2019.
2019	30% Design Review completed.
2020	95% Design Review completed September 23, 2020. Phase II funding request submitted and recommended for approval by Technical Committee.
2021	Phase II of PO-133 was approved and added to PO-75 Phase II. PO-133 permit in progress. PO-75 and PO-133 Landrights ongoing. PO-75 Contracting package being modified to incorporate construction of PO-133 portion.
- 13. Current status/remaining issues:** No issues at this time.
- 14. Projected schedule:** Contract expected to go out for bid September / October 2021.

15. Preparer: (6/15/2016) (6/8/2017) (7/27/18) (5/31/19) (6/15/20) (7/16/21): Quin
Kinler, NRCS (225) 271-2403

**Status Review - Unconstructed CWPPRA Projects
August 10, 2021**

1. Project Name (and number): New Orleans Landbridge Shoreline Stabilization and Marsh Creation (PO-169)

2. SOUP Category: On Schedule

3. PPL: 24

4. Federal Agency: FWS

5. Date of Construction Approval / Phase Two Approval: 2/12/2019

6. Approved Total Budget:

7. Fully-Funded Cost:

8. Expenditures:

9. Unexpended Funds:

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None

12. Brief chronology of project development and issues affecting implementation:

January 2015	Phase I Approval
August 2016	30% Design Approval
October 2016	95% Design Approval
February 2019	Phase II Approval
May 2019	Section 404 Permit Received
July 2020	Consultation with NOAA Fisheries Complete
May 2021	Land Rights Completed
June 2021	Bid Package Advertised (6/18/2021)
July 22, 2021	Bid Opening

Issues affecting implementation: None

13. Current status/remaining issues:

Project has been advertised. Awaiting bids.

14. Projected schedule:

Sept 2021 - Award Bid

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

**Status Review - Unconstructed CWPPRA Projects
June 2021**

- 1. Project Name (and number):** West Fourchon Marsh Creation & Nourishment (TE-134)
- 2. SOUP Category:** On Schedule
- 3. PPL:** 24
- 4. Federal Agency:** NMFS
- 5. Date of Construction Approval / Phase Two Approval:** January 2020
- 6. Approved Total Budget:** \$30,494,148
- 7. Fully Funded Estimate:** \$30,494,148
- 8. Expenditures:** \$2,031,346
- 9. Unexpended Funds:** \$27,490,581
- 10. Estimate of anticipated funding increases, including O&M:** N/A
- 11. Potential changes to project benefits:** Project acreage decreased from 614 to 537 acres (12.5% decrease) because the single Phase 0 marsh creation area was split into two marsh creation areas to avoid two active natural gas pipelines that bisect the project area and also to optimize the dike construction of the marsh creation areas.
- 12. Brief chronology of project development and issues affecting implementation:**
 - 2015 – Phase 1 Approval
 - July 2018 – 30% Design Meeting
 - October 2018 – 95% Design Meeting
 - December 2018 – competed for Phase II funding
 - December 2019 –Phase II Approval by Technical Committee
 - July 2020 – Greater Lafourche Port Commission (GLPC) approached the project team to consider using Belle Pass/Bayou Lafourche as a borrow source
- 13. Current status/remaining issues:** Phase 2 funding approved by Task Force in January 2020/July 2020, the GLPC approached the project team to consider using Belle Pass/Bayou Lafourche as a borrow source. Additional design-level data is being collected by the GLPC and is needed in order to consider this borrow source in order to confirm that the project goals can be met with this borrow source. Depending on the outcome of this investigation, we will come back to the CWPPRA community for a brief out.
- 14. Projected schedule and milestones:** Additional design-level data collection and analysis expected by December 2021; Drafting final design Spring 2022; construction permit application submittal by Spring 2022; anticipated bid advertisement Winter 2022/Spring 2023.
- 15. Preparer:** Donna Rogers (NMFS); (225) 316-8958; donna.rogers@noaa.gov

Initial Draft June 2021 (DRR)

**Status Review - Unconstructed CWPPRA Projects
July 2021**

- 1. Project Name (and number):** Bayou De Cade Ridge and Marsh Creation Project (TE-138)
- 2. SOUP Category:** On Schedule/Under Construction
- 3. PPL:** 26
- 4. Federal Agency:** NMFS
- 5. Date of Construction Approval / Phase Two Approval:** February 2019
- 6. Approved Total Budget:** \$27,268,025
- 7. Fully Funded Estimate:** \$27,268,025
- 8. Expenditures:** \$2,193,467
- 9. Unexpended Funds:** \$22,587,655
- 10. Estimate of anticipated funding increases, including O&M:** None.
- 11. Potential changes to project benefits:** None
- 12. Brief chronology of project development and issues affecting implementation:**
 - January 2017 – Phase I Approval
 - February 2019 – Phase II Approval
 - September 2020 – construction contract awarded to Apollo Environmental Strategies, Inc.
 - November 2020 – Earthen containment dikes and earthen ridge started.
 - May 2021 – Earthen containment dikes and earthen ridge completed.
 - May 2021 – Active pumping began.
- 13. Current status/remaining issues:** The project is currently under construction.
- 14. Projected schedule and milestones:** Earthen containment dikes and earthen ridge have been constructed. Active pumping began May 2021. Project completion expected January 2022.
- 15. Preparer:** [Jennifer Smith, NOAA Fisheries, jennifer.smith@noaa.gov](mailto:jennifer.smith@noaa.gov)

Initial draft: June 2021

Status Review - Unconstructed CWPPRA Projects
June 22, 2021

1. Project Name (and number): St. Catherine Island Shoreline Protection and Marsh Creation (PO-179)

2. SOUP Category: On Schedule

3. PPL: 26

4. Federal Agency: FWS

5. Date of Construction Approval / Phase Two Approval: NA

6. Approved Total Budget: \$2,389,308

7. Fully-Funded Cost: \$35,996,522

8. Expenditures: \$1,216,625

9. Unexpended Funds: \$1,172,683

10. Estimate of anticipated funding increases, including O&M: Unknown.

11. Potential changes to project benefits: None

12. Brief chronology of project development and issues affecting implementation:

January 2017	Phase I Approval
February 2019	Borrow Area Sand Survey Results
August 2020	Final Geotech Report
July 2021	Supplemental Cultural Resources Survey

Issues affecting implementation: Several issues concerning Cultural Resources Phase I surveys and project geotechnical investigations have surfaced. The team is working through reconfiguring the project footprint with no foreseeable critical issues. Currently, awaiting results of final Cultural Resources Phase I survey and concurrence from SHPO.

13. Current status/remaining issues:

In the process of finishing E&D to proceed to 30% design which is expected in early 2022. A supplemental consultation with the SHPO is ongoing due to reconfiguring the marsh creation cells. Consultation with NOAA Fisheries for Atlantic sturgeon is expected to begin shortly.

14. Projected schedule:

March 2022	30% Design Review Meeting
June 2022	95% Design Meeting
December 2022	Request for Phase 2 Funding

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

Projects Waiting on Phase II Funding

Project Name	Project No.	Agency	PPL	Near-term Milestones	# of Phase II Requests	Current Phase
Freshwater Bayou Marsh Creation	ME-31	NRCS	19	Continued coordination with pipeline companies and with COE regarding the dredge pipe crossing of FWB. Phase II request to be resubmitted in Fall 2021.	1	I
Terracing and Marsh Creation South of Big Mar	BS-24	FWS	22	Project team has been working to re-design some of the project features to reduce project costs. Currently undergoing a Phase 1 cultural resources survey. The goal is to compete for Phase 2 funds in December 2021.	2	I
No Name Bayou Marsh Creation & Nourishment	CS-78	NMFS	24	Design is complete. Will be re-submitted for Phase II funding request in December 2021.	1	I
Barataria Bay Rim Marsh Creation	BA-195	NRCS	25	Design is complete. Will be re-submitted for Phase II funding request in December 2021.	2	I
Oyster Lake Marsh Creation and Nourishment Project	CS-79	NMFS	25	Design is complete. Will be re-submitted for Phase II funding request in December 2021.	1	I
East Leeville Marsh Creation and Nourishment	BA-194	NMFS	25	Design is complete. Assessing whether to pursue Phase II funding request in December 2021.	1	I
Bayou La Loutre Ridge Restoration and Marsh Creation	PO-178	NRCS	26	CPRA will be submitting this project to the LATIG for consideration of it being combined with the NRDA Lake Borgne project. Pending outcome, a CWPPRA Phase II request may or may not be resubmitted in Fall 2021.	1	I

**Status Review - Unconstructed CWPPRA Projects
July 16, 2021**

- 1. Project Name:** Freshwater Bayou Marsh Creation (ME-31)
- 2. SOUP Category:** Waiting on Phase II Funding
- 3. PPL:** 19
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:**
- 6. Approved Total Budget:** \$2,425,997
- 7. Fully Funded Cost Estimate:** \$25,523,755
- 8. Expenditures:** \$2,245,973
- 9. Unexpended Funds:** \$180,024
- 10. Estimate of anticipated funding increase, including O&M:** No funding increases anticipated.
- 11. Potential changes to project benefits:** None.

12. Brief chronology of project development and issues affecting implementation:

2010– 2014	The project was approved for Phase I funding at the January 2010 Task Force meeting. NRCS has completed initial surveys, but geotechnical investigation of the project area and borrow site have not been completed. Additionally, a wave analysis model will be completed once the borrow site is finalized. NRCS and ExxonMobil (landowner) are investigating contaminant testing protocol to ensure that borrow material is safe to use for marsh creation. That protocol was accepted on April 28 th , 2014 and implementation of testing is expected to begin this summer/fall.
2015	Contaminant investigation completed. No further issues pending. Design has resumed.
2016	Cultural resources clearance completed; supplemental design surveys, including that needed to adjust project due to construction work by Ducks Unlimited; pipeline coordination.
2017	Marsh creation cells reconfigured due to pipelines and DU construction work; draft Scopes of work for bathymetric surveys, magnetometer survey, and geotechnical investigation.

2018	Bathymetric surveys, magnetometer surveys, new secondary monument, and geotechnical investigation have been completed. Proceeding with project design.
2019	Preliminary design nearly complete. Draft 30% Design Report and Drawings going thru NRCS in-house review. Anticipate 30% Design Review Meeting in November 2019, with Phase II request in 2020.
2020	30% Design Review Meeting completed June 10, 2020, 95% Design Review Meeting completed October 20, 2020, and Phase II funding request submitted November 2020. Phase II was not funded.
2021	Continued coordination with pipeline companies and with COE regarding the dredge pipe crossing of FWB. Phase II request is anticipated in December 2021

13. Current milestones/remaining issues:

No pending issues. Phase II funding request is anticipated in December 2021.

14. Projected schedule:

Phase II funding request is anticipated in December 2021.

15. Preparer: Updated (6/17/14): Troy Mallach, NRCS, (337) 291-3064 and John Jurgensen, NRCS, (318) 473-7694
Updated (6/22/15): John Jurgensen, NRCS, (318) 473-7694
Updated (6/15/16); (6/9/17); (7/27/18); (6/6/19); (6/15/20); (7/16/21): Quin Kinler, NRCS (225) 271-2403

**Status Review - Unconstructed CWPPRA Projects
August 10, 2021**

- 1. Project Name (and number):** Terracing and Marsh Creation South of Big Mar (BS-24)
- 2. SOUP Category:** Waiting on Phase II Funding
- 3. PPL:** 22
- 4. Federal Agency:** FWS
- 5. Date of Construction Approval / Phase Two Approval:** N/A
- 6. Approved Total Budget:** \$2,308,599
- 7. Fully-Funded Cost:** \$38,679,147
- 8. Expenditures:** \$
- 9. Unexpended Funds:** \$
- 10. Estimate of anticipated funding increases, including O&M:** Unknown.
- 11. Potential changes to project benefits:** None.
- 12. Brief chronology of project development and issues affecting implementation:**

January 2013	Phase I Approval
August 2016	30% Design Approval
October 2016	95% Design Approval
March 2021	Cultural Resources Phase I Survey Began
May 2021	Additional Mag and Topo/Bathy Surveys
Dec 2021	Request Phase II Funding

Issues affecting implementation: None at this time.

13. Current status/remaining issues:

New design is underway. Construction costs have been reduced. Undergoing Phase I Cultural Resources Survey. On schedule to compete for Phase 2 funds in December 2021. Construction cost has been lowered due to the following actions: 1) decrease in the cut-to-fill ratio, 2) recalculating marsh fill volumes, 3) reducing terrace size, and 4) modifying terrace configuration to increase constructability and eliminate access dredging. The CPRA design engineer is drafting an updated design memo that will outline all of the additional data collection, analysis, and design changes that were made. A reduction in benefits is not anticipated due to these changes. The updated design memo will be sent to the EngWG as part of the cost estimate review prior to the Phase 2 request.

14. Projected schedule:

The goal is to prepare this project for a Phase 2 request in December 2021.

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

**Status Review - Unconstructed CWPPRA Projects
June 2021**

- 1. Project Name (and number):** No Name Marsh Creation (CS-78)
- 2. SOUP Category:** Waiting on Phase II Funds
- 3. PPL:** 24
- 4. Federal Agency:** NMFS
- 5. Date of Construction Approval / Phase Two Approval:** N/A
- 6. Approved Total Budget:** \$2,724,524
- 7. Fully Funded Estimate:** \$28,253,136
- 8. Expenditures:** \$2,311,159
- 9. Unexpended Funds:** \$2,493,365
- 10. Estimate of anticipated funding increases, including O&M:** N/A
- 11. Potential changes to project benefits:** N/A
- 12. Brief chronology of project development and issues affecting implementation:**
 - 2015 – Phase 1 Approval
 - September 2015 – began investigating proposed marsh creation area; surveying and geotechnical investigations in marsh creation area subsequently completed
 - September 2015 – began investigating CDF M as a potential borrow source
 - October 2016 – determined CDF M was not suitable as a borrow source due to required access to a depth of approximately -12' NAVD88 that will have to be dredged into natural ground to obtain sufficient material, creating a lake, and potential land rights issues.
 - October 2016 – began evaluating nearshore as a potential borrow source
 - October 2016 – began investigating Calcasieu Lake as a potential borrow source
 - November 2016– determined nearshore borrow area would require a minimum pump distance of 11 miles and a cost in excess of \$7 per cubic yard
 - August 2017 – began investigating Cameron Loop around Monkey Island as a potential borrow source
 - February 2018 – determined Cameron Loop was not suitable as a borrow area due to material quality, insufficient quantity, and potential impacts to infrastructure.
 - June 2018 – continued coordinating with LDWF on Calcasieu Lake borrow area
 - March 2019 – oyster surveys in Calcasieu Lake conducted
 - June 2019 - continued coordination with LDWF on Calcasieu Lake borrow area
 - November 2019 - borrow area geotechnical investigation fieldwork complete
 - April 2020 - borrow area survey fieldwork complete
 - July 2020 - 30% design review meeting held
 - October 2020 - 95% design review meeting held
 - December 2020 – Phase 2 request

13. Current status/remaining issues: Design is complete to 95%; Phase 2 request resubmittal.

14. Projected schedule and milestones: 30% design review meeting held on July 28, 2020; 95% design review meeting held on October 23, 2020; Phase 2 Request December 2020; Phase 2 Request resubmittal anticipated December 2021.

15. Preparer: Donna Rogers (NMFS); (225)316-8958; donna.rogers@noaa.gov

Initial Draft June 2021 (DRR)

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

- 1. Project Name (and number):** Barataria Bay Rim Marsh Creation Project (BA-195)
- 2. SOUP Category:** Waiting on Phase II Funding
- 3. PPL:** 25
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:** n/a
- 6. Approved Total Budget:** \$2,693,708
- 7. Fully Funded Cost Estimate:** \$23,838,905
- 8. Expenditures:** \$2,330,084
- 9. Unexpended Funds:** \$363,624
- 10. Estimate of anticipated funding increases, including O&M:** None at this time.
- 11. Potential changes to project benefits:** None at this time.
- 12. Brief chronology of project development and issues affecting implementation:**

2016 – 2019	CSA for Phase I completed. Design Surveys, Magnetometer Survey Report, and Geotechnical Investigation completed. 30% Design review meeting completed March 2019; 95% Design review meeting completed October 2019. Phase II funding request submitted.
2020	Repeat Phase II funding request submitted.
2021	Repeat Phase II funding request not approved. Repeat Phase II funding request is anticipated in December 2021.
- 13. Current status/remaining issues:** Repeat Phase II funding request is anticipated in December 2021.
- 14. Projected schedule:** Repeat Phase II funding is anticipated in December 2021.
- 15. Preparer:** (6/15/20) (7/16/21): Quin Kinler, NRCS (225) 271-2403

**Status Review - Unconstructed CWPPRA Projects
July 2021**

1. Project Name (and number): Oyster Lake Marsh Creation and Nourishment Project (CS-79)

2. SOUP Category: Waiting on Phase II Funds

3. PPL: 25

4. Federal Agency: NMFS

5. Date of Construction Approval / Phase Two Approval: NA

6. Approved Total Budget: \$3,608,939

7. Fully Funded Estimate: \$38,073,046

8. Expenditures: \$1,256,789

9. Unexpended Funds: \$2,352,150

10. Estimate of anticipated funding increases, including O&M: NA

11. Potential changes to project benefits: The acres have decreased from 661 to 413 (38% reduction) due to adjustments made to the configuration of the marsh creation area due to the expansion of Oyster Bayou, landowner discord, pipeline discoveries within the fill area, and the need for maintaining hydrologic connectivity within the project area.

12. Brief chronology of project development and issues affecting implementation:

- January 2016 – Phase 1 Approval
- February 2017 – Grant application for Phase 1 executed
- January 2018 – Marsh creation polygons revised due to Oyster Bayou (CS-59) project expansion
- March 2018 – Survey transects conducted
- May 2018 – Marsh creation polygons revised due to landowner dispute
- September 2018 – Geotechnical surveys conducted
- June 2020 – 30% Design Meeting
- October 2020 – 95% Design Meeting
- December 2020 – competed for Phase II funding

13. Current status/remaining issues: The project is currently waiting for approval for Phase II funding.

14. Projected schedule and milestones: The project will compete for Phase II funding in December 2021.

15. Preparer: [Dawn Davis, NOAA Fisheries, dawn.davis@noaa.gov](mailto:dawn.davis@noaa.gov)

Initial draft June 2021

**Status Review - Unconstructed CWPPRA Projects
July 2021**

- 1. Project Name (and number):** East Leeville Marsh Creation and Nourishment (BA-194)
- 2. SOUP Category:** Waiting on Phase II Funding
- 3. PPL:** 25
- 4. Federal Agency:** NMFS
- 5. Date of Construction Approval / Phase Two Approval:** TBD
- 6. Approved Total Budget:** \$4,026,090
- 7. Fully Funded Estimate:** \$35,066,972
- 8. Expenditures:** \$2,293,225
- 9. Unexpended Funds:** \$1,732,865
- 10. Estimate of anticipated funding increases, including O&M:** The construction plus contingency has decreased from the amount authorized for Phase 1. The fully funded cost for the operations, maintenance, and monitoring plan increased substantially from the amount authorized for Phase 1.
- 11. Potential changes to project benefits:** The project area has decreased from 484 acres to 275 acres. The TY20 net acres have decreased from 322 to 205. Disposal areas were eliminated, reduced, and refined during Phase 1 due to cultural resources, water depths, pipelines, or combinations thereof.

	Creation + Nourishment Constructed Acres	TY20 Net Acres
Phase 0	484 (358 MC + 124 MN)	322
Phase 1	275 (225 MC + 50 MN)	205

12. Brief chronology of project development and issues affecting implementation:

- January 2016 – Phase 1 Approval
- October 23, 2019 – 30% Design review
- December 11, 2019 – responded to agency comments on the 30% design
- March/April/May 2020 – supplemental geotech deliverables – six additional borings in areas adjacent to some MCAs; evaluated external borrow, slope stability, settlement to refine containment strategies
- March/April 2020 – co-sponsors concurred to proceed to 95% design and a scope change request
- April 2020 – NMFS completed a draft scope change analysis based on information at that time
- August 2020 – 95% Design review

- December 2020/Jan 2021 – Phase 2 request (not authorized)
- January/February 2021 – Stakeholder coordination
- April, 2021 – Consideration of potential cost savings opportunities

13. Current status/remaining issues: Opportunities for potential cost savings are being considered to determine if revisions will be made and interagency review requested. Determination of whether or not this project will be recompeted for Phase 2 funds is pending.

14. Projected schedule and milestones: If the project will be recompeted this year, products will be provided for workgroup review per the due dates in the CWPPRA calendar.

15. Preparer: Patrick Williams, NOAA Fisheries; 225-329-9268;
patrick.williams@noaa.gov

Initial draft June 2021

Status Review - Unconstructed CWPPRA Projects
July 16, 2021

- 1. Project Name:** Bayou La Loutre Ridge Restoration and Marsh Creation (PO-178)
- 2. SOUP Category:** Waiting on Phase II Funding
- 3. PPL:** 26
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:**
- 6. Approved Total Budget:** \$3,236,952
- 7. Fully Funded Cost Estimate:** \$29,762,138
- 8. Expenditures:** \$1,122,926
- 9. Unexpended Funds:** \$2,114,026
- 10. Estimate of anticipated funding increase, including O&M:** No funding increases anticipated.
- 11. Potential changes to project benefits:** None.
- 12. Brief chronology of project development and issues affecting implementation:**

2017– 2019	Design surveys, magnetometer survey, geotechnical investigation, cultural resources, preliminary landrights, preliminary design.
2020	30% Design Review Meeting completed July 16, 2020, 95% Design Review Meeting completed October 22, 2020, and Phase II funding request submitted November 2020. Phase II was not funded.
2021	CPRA will be submitting this project to the LATIG for consideration of it being combined with the NRDA Lake Borgne project. Pending outcome, a CWPPRA Phase II request may or may not be resubmitted for December 2021.
- 13. Current milestones/remaining issues:**

No pending issues. CPRA will be submitting this project to the LATIG for consideration of it being combined with the NRDA Lake Borgne project. Pending outcome, a CWPPRA Phase II request may or may not be resubmitted for December 2021.
- 14. Projected schedule:**

Phase II funding request may or may not be resubmitted for December 2021.
- 15. Preparer:** Quin Kinler, NRCS (225) 271-2403

Projects Delayed by Project Delivery Team Issues

Project Name	Project No.	Agency	PPL	Project Status & Critical Milestone(s)	Current Phase
Fritchie Marsh Creation and Terracing	PO-173	NMFS	25	The preferred project area was taken by the Plaquemines New Orleans to Venice/Non-Federal (NOV/NFL) levee mitigation project in 2019. The PDT is examining two new alternatives with a change in scope likely in Fall of 2021.	II
South Grand Chenier Marsh Creation - Baker Tract	ME-32	NRCS	23	Pending Landrights - CPRA/NRCS decision of how to proceed with ME-32 will take place after ME-20 which is expected to be complete in September 2021.	I

Status Review - Unconstructed CWPPRA Projects
July 2021

1. **Project Name (and number):** Fritchie Marsh Creation and Terracing (PO-173)
2. **SOUP Category:** Project Issue Delays
3. **PPL:** 25
4. **Federal Agency:** NMFS
5. **Date of Construction Approval / Phase Two Approval:** TBD
6. **Approved Total Budget:** \$3,033,294
7. **Fully Funded Estimate:** \$27,944,102
8. **Expenditures:** \$359,655
9. **Unexpended Funds:** \$2,673,639
10. **Estimate of anticipated funding increases, including O&M:** Due to the location of the USACE final mitigation plan for the Plaquemines NOV/NFL levee overlapping with the Phase I alignment, there will be a substantive change to the cost. The project will have to be relocated to the east side of the Fritchie Marsh. Alternatives are currently being formulated to minimize the cost increases.
11. **Potential changes to project benefits:** Alternatives being explored east of the Fritchie Marsh will likely have substantive changes from the Phase 1 project area. There may be more than a 25% reduction in benefits to help offset cost increases with a longer pumping distance.
12. **Brief chronology of project development and issues affecting implementation:**
 - January 2016 – Phase 1 Approval
 - Summer 2016 to Spring 2019 – established agreements for the three-party team (US Army Corps serving as engineering support); pursued several alternatives in design, and finalized a project design concept ready for geotech data gathering.
 - May 8, 2019 – USACE signed the Tentatively Selected Plan memo choosing the CWPPRA project area for the Plaquemines New Orleans to Venice/Non-Federal (NOV/NFL) levee mitigation project
 - 2019/2020 - NMFS and CPRA PDT worked to develop several alternatives for consideration to meet project goals- one on the Refuge and private lands (Las Conchas) on the east side of Fritchie Marsh and others to the north primarily on Refuge lands (longer pump distance)

- Winter 2020 to Spring 2021 - initiated conversations with Las Conchas; NMFS and CPRA revised project design based on the Las Conchas meeting
- Spring 2021 - presented the new concept to Las Conchas for their committed approval

13. Current status/remaining issues: The USACE selected a mitigation alternative for the Plaquemines NOV/NFL levee that overlaps the Phase 1 alternative. Due to this, the project options have shifted to the east. Two alternatives are being explored on the east side of the Fritchie Marsh. One on Las Conchas property and one to the north that overlaps the Big Branch Marsh National Wildlife Refuge. The team is waiting to hear back from Las Conchas on the alternative on their property. It is the most cost effective of the two alternatives. The project team will pursue the second alternative should Las Conchas not illustrate sufficient support for our preferred alternative.

14. Projected schedule and milestones: Potential reformulation for the CWPPRA project is pending final response from Las Conchas. During the Summer of 2021, we will decide on a path forward for the project. Our plan is to present this path forward along with Change in Scope in 2021.

15. Preparer: Brandon Howard; NOAA Fisheries; 225-380-0050; brandon.howard@noaa.gov

Initial draft June 2021

**Status Review - Unconstructed CWPPRA Projects
July 16, 2021**

- 1. Project Name:** South Grand Chenier Marsh Creation - Baker Tract (ME-32)
- 2. SOUP Category:** Project Issue Delays
- 3. PPL:** 23
- 4. Federal Agency:** NRCS
- 5. Date of Construction Approval / Phase Two Approval:**
- 6. Approved Total Budget:** \$2,653,242
- 7. Fully Funded Cost Estimate:** \$25,441,833
- 8. Expenditures:** \$595,220
- 9. Unexpended Funds:** \$2,058,022
- 10. Estimate of anticipated funding increase, including O&M:** No funding increases anticipated.
- 11. Potential changes to project benefits:** None.
- 12. Brief chronology of project development and issues affecting implementation:**

2014– 2017	Topographic and Magnetometer surveys completed.
2018	Project is on hold pending landrights.
2019	Project is on hold pending landrights.
2020	Project is on hold pending landrights.
2021	Some positive movement with landrights, but CPRA and NRCS are awaiting outcome of ME-20 bid process before deciding how to proceed with ME-32.
- 13. Current milestones/remaining issues:**

CPRA and NRCS are awaiting outcome of ME-20 bid process before deciding how to proceed with ME-32. Some positive movement with landrights, but not full resolution yet.

14. Projected schedule:

CPRA/NRCS decision of how to proceed with ME-32 will take place after ME-20 which is expected to be complete in September 2021.

15. Preparer: Updated (6/6/19) (6/10/20) (6/21/20) (7/16/21) Quin Kinler, NRCS (225) 271-2403

Inactive Projects

Project Name	Project No.	Agency	PPL	# of Phase II Requests	Project Status & Critical Milestone(s)	Current Phase
Freshwater Bayou Bank Stab - Belle Isle Canal to Lock	TV-11b	COE	9		All work was put on hold pending approval of a new Cost Share Agreement. The Task Force voted to inactivate this project at the June 4, 2013 meeting.	I
Venice Ponds Marsh Creation & Crevasses	MR-15	EPA	15	3	The Task Force voted to inactivate this project at the Jan 2014 meeting due to the project having gone through a 95% design review.	I
Alligator Bend Marsh Restoration and Shoreline Protection	PO-34	NRCS	16	2	Project design is complete. Project team has decided not to request funding until CWPPRA is reauthorized or another funding source is available. The Task Force voted to inactivate this project at the October 2014 meeting.	I
Madison Bay Marsh Creation & Terracing	TE-51	NMFS	16	2	Project did not receive funding at January 2014 and January 2015 Task Force meetings. The Task Force voted to inactivate the project at the October 2015 meeting.	I
North Lake Boudreaux Basin Freshwater Intro and Hydro Mgt	TE-32a	FWS	6		Several regulatory issues remain and still need to be resolved. It is estimated that a 404 permit could be issued by August 2017. Landrights for the conveyance channel were voided and could not be obtained by Terrebonne Parish. To pursue an alternate conveyance channel alignment, additional expenditures for engineering, construction, and landrights would be needed. An increase in the project cost must be approved by the Task Force. Project was inactivated in October 2016.	Non-Cash Flow

Projects Removed from SOUP					
Project Name	Project No.	Agency	PPL	Yr Removed from SOUP	Reason Removed from SOUP List
South Lake Decade Freshwater Introduction	TE-39	NRCS	9		Construction completed July 12, 2011.
Lake Borgne and MRGO Shoreline Protection	PO-32	COE	12		Project was deauthorized.
South Shore of the Pen	BA-41	NRCS	14		Construction completed June 5, 2012.
East Marsh Island Marsh Creation	TV-21	EPA/NRCS	14		Construction completed February 2011.
Penchant Basin Natural Resources Plan, Incr 1	TE-34	NRCS	6		Construction completed August 29, 2012.
West Belle Pass Barrier Headland Restoration Project	TE-52	NMFS	16	2011	Construction Completed June 2013.
Barataria Barrier Shoreline, Pelican Island to Chaland Pass (CU2)	BA-38	NMFS	11	2011	Construction completed December 2012.
Fort Jackson Sediment Diversion	na	COE	na	2012	Project was closed out October 2011.
Riverine Sand Mining/Scofield Island Restoration	BA-40	NMFS	14	2012	Project was deauthorized January 2012
Lake Hermitage Marsh Creation	BA-42	FWS	15	2012	Construction completed May 2015.
Barataria Basin Landbridge, Phase 3 CU #7	BA-27c	NRCS	9	2012	Construction Complete.
Barataria Basin Landbridge, Phase 3 CU #8	BA-27c	NRCS	9	2012	Construction Complete.
Raccoon Island Shoreline Protection and Marsh Creation	TE-48	NRCS	11	2012	Construction completed on April 27, 2013.
Little Pecan Bayou Hydrologic Restoration	ME-17	NRCS	9	2013	Project was deauthorized in October 2012.
Benneys Bay Diversion	MR-13	COE	10	2013	Project was deauthorized in October 2012.
Weeks Bay Marsh Creation/Shoreline Protection/Commercial Canal/Freshwater Redirection	TV-19	COE	9	2013	Project was transferred out of the CWPPRA Program to Iberia Parish in June 2013.
Delta Building Diversion North of Fort St. Philip	BS-10	COE	10	2013	Project was deauthorized in June 2013.
Avoca Island Diversion and Land Building	TE-49	COE	12	2013	Project was deauthorized in June 2013.
Spanish Pass Diversion	MR-14	COE	13	2013	Project was deauthorized in June 2013.
White Ditch Resurrection	BS-12	NRCS	14	2013	Project was deauthorized in June 2013.
Bohemia Mississippi River Reintroduction	BS-15	EPA	17	2013	Project was deauthorized in June 2013.
GIWW Bank Rest of Critical Areas in Terrebonne	TE-43	NRCS	10	2013	Constructed 2014
Sediment Containment for Marsh Creation Demonstration	LA-09	NRCS	17	2013	Constructed
River Reintroduction into Maurepas Swamp	PO-29	EPA	11	2014	Transferred to CPRA in 2013.
Bayou Sale Shoreline Protection	TV-20	NRCS	13	2014	Project was deauthorized in May 2014.
Bertrandville Siphon	BS-18	EPA	18	2014	Project was deauthorized in May 2014.
Bayou Dupont Ridge and Marsh Restoration	BA-48	NMFS	17	2014	Constructed 2015
Grand Liard Marsh and Ridge Restoration	BA-68	NMFS	18	2014	Constructed 2015
Southwest LA Gulf Shoreline Nourishment and Protection	ME-24	COE	16	2015	Project was transferred out of the CWPPRA Program to Chenier Plain in Jan 2015
West Pointe a la Hache Outfall Management	BA-04c	NRCS	3	2015	Project was deauthorized in Jan 2015.
South Lake Lery Shoreline & Marsh Restoration	BS-16	FWS	17	2015	Constructed

Sabine Refuge Marsh Creation, Cycles 4 & 5	CS-28-4&5	FWS	8	2015	Constructed 2015
West Pointe a la Hache Marsh Creation	BA-47	NRCS	17	2015	Built under the BA-42 project, then deauthorized
Cheniere Ronquille Barrier Island Restoration	BA-76	NMFS	19	2015	Transferred out of CWPRA program, then deauthorized
Kelso Bayou Marsh Creation	CS-53	NRCS	20	2016	Project was transferred in May 2016.
Terrebonne Bay Marsh Creation	TE-83	FWS	20	2017	Project was deauthorized January 2017
Central Terrebonne Freshwater Enhancement	TE-66	NRCS	18	2017	Project was transferred in January 2017
Bayou Dupont Sediment Delivery - Marsh Creation #3 and Terracing	BA-164	EPA	22	2017	Constructed
Bayou Bonfouca Marsh Creation	PO-104	FWS	20	2017	Completed
Oyster Bayou Marsh Restoration	CS-59	NMFS	21	2017	Constructed
Lost Lake Marsh Creation and Hydrologic Restoration	TE-72	FWS	19	2017	Constructed 2018
Grand Lake Shoreline Protection, Tebo Point & O&M Only [CIAP]	ME-21	NRCS	11	2017	Constructed
Hydrologic Restoration & Vegetative Planting in the des Allemands Swamp	BA-34-2	EPA	10	2018	Constructed 2018
Cameron Creole Watershed Grand Bayou Marsh Creation	CS-54	FWS	20	2018	Constructed 2019
Rockefeller Refuge Gulf Shoreline Stabilization	ME-18	NMFS	10	2018	In Construction
Shell Beach South Marsh Creation	PO-168	EPA	24	2019	Transferred to RESTORE in 2016
Northwest Turtle Bay Marsh Creation	BA-125	FWS	21	2019	In Construction July 2020
Cole's Bayou Marsh Creation and Nourishment	TV-63	NMFS	21	2019	Constructed
Shoreline Protection, Preservation, & Restoration (SPPR) Panel	LA-280	NMFS	25	2020	Deauthorized
Bayou Grande Chenier Marsh and Ridge Restoration	BA-173	FWS	23	2020	Transferred to CPRA
Cameron-Creole Freshwater Introduction	CS-49	NRCS	18	2020	In Construction
Cameron Meadows Marsh Creation and Restoration	CS-66	NMFS	22	2020	The construction contract was awarded
Caminada Headlands Back Barrier Marsh Creation	BA-171	EPA	23	2020	Notice to Proceed issued to construction contractor April 2020. Heavy construction expected to begin late June/early July 2020.
Caminada Headlands Back Barrier Marsh Creation Increment #2	BA-193	EPA	25	2021	The BA-193 project footprint was added to the BA-171 project in order to increase efficiencies. While the project will be built, this project number is deauthorized.
Ship Shoal: Whiskey West Flank Restoration	TE-47	EPA	11	2021	NFWF project (TE-100) constructed over footprint of this project. TE-47 is deauthorized.

*A project is removed once it is deauthorized, transferred, or the construction contract is awarded.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

CWPPRA STANDARD OPERATING PROCEDURES (SOP) UPDATE/REVISIONS

For Decision:

USFWS will present the requested changes and revisions to the scope change procedures in the CWPPRA SOP for Task Force approval based on the Technical Committee's recommendation.

(3) Changes in Project Scope: If a project undergoes a major change in scope or a change in scope resulting in a variance of more than 25% from: (1) the total project cost, (2) the number of net acres created/protected/restored~~benefits~~, (3) ~~net~~total AAHUs, or (4) the ratio of the total cost to the number of net acres created/protected/restored~~benefited~~ or total project cost to total project net AAHUs, then the project sponsors will submit a report to the TC explaining the reason(s) for the scope change, the impact on cost and benefits, and a statement from the local sponsor endorsing the change. Requests to the TC for changes in project scope will occur before the project's 95% Design Review meeting (Section 6.h.(1)). Under certain circumstances, it may be necessary to request a change in scope after a project's 95% Design Review meeting. Project sponsors must clearly indicate to the TC why the delayed request is necessary. The TC will review the report and recommend to the TF approval or rejection of the change. Changes in project scope resulting in an increase in total project cost are discussed in Section 5.d.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

DEVELOPMENT OF THE SUPPORT PROGRAMMATIC PROJECT FOR SIGNAGE

For Report/Decision:

Mr. Kent Bollfrass will provide an update on the development of a support programmatic project for signage. The Task Force will consider the Technical Committee's recommendation to approve the project.

- a. CPRA and NRCS request the Task Force considers the Technical Committee's recommended approval of the Ten-Year Support Programmatic Project for Signage; \$2,767,206.00
- b. CPRA and NRCS request the Task Force considers the Technical Committee's recommended approval of the first three years of incremental funding for Support Programmatic Project for Signage; \$703,878.00

CWPPRA

Report/Decision: Status of Development of the Support Programmatic Project for Signage



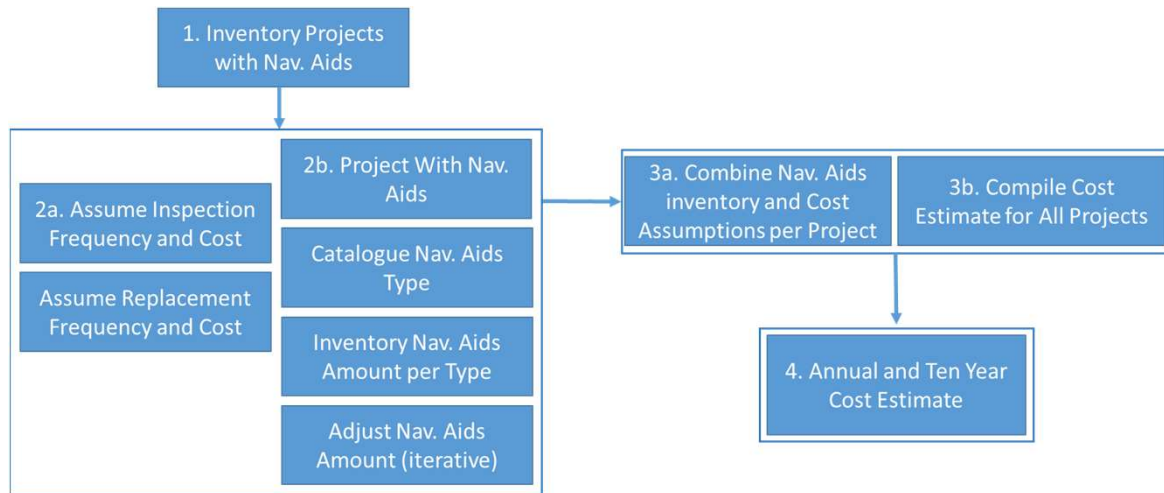
Task Force Meeting
7th October, 2021

Nav. Aids Program Development Summary

- Conceptualization of Navigational Aids Maintenance Program
 - Purpose to provide a funding mechanism to maintain previously existing warning signs, lights, buoys, timber piles, and other navigational aids/ infrastructure for CWPPRA projects that have been closed out (post 20 year life)
 - TC/TF tasked P&E to generate information for program consideration
 - P&E requested assistance from CPRA Regional Field Offices to generate cost estimate
- Ten Year Program Cost Estimate
 - 10 years was chosen as balance between short and long term considerations
 - Includes projects that have or will meet end of life criteria within 10 years
 - Increases as more projects meet end of life criteria over time
- Engineering Work Group Review; subsequent revisions
- Economic Work Group Fully Funded Cost Estimate
- Request the TC recommend approval of ten-year program and three-year incremental funding



Nav. Aids Program Development Summary



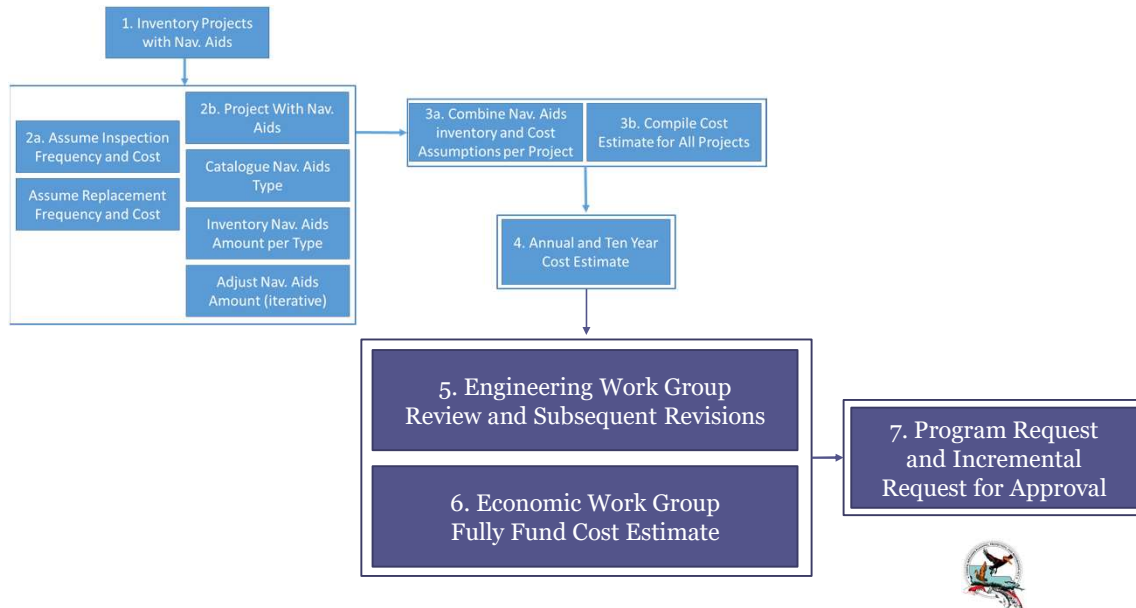
Ten Year Nav. Aids Program Estimate

Year	Annual Request	Projects (#)
2022	\$ 178,519.00	10
2023	\$ 168,190.00	13
2024	\$ 213,037.00	14
2025	\$ 144,386.00	15
2026	\$ 201,751.00	17
2027	\$ 171,622.00	19
2028	\$ 208,747.00	19
2029	\$ 194,106.00	22
2030	\$ 242,979.00	24
2031	\$ 255,849.00	26
Total	\$ 1,979,186.00	-

- Includes only projects that have previously met or will meet 20 year end of life for each year
- Program-wide, with existing projects there is potential to increase from 26 to 37 existing projects included beyond 2031
- Not fully funded
- Pre-Engineering Work Group Review



Nav. Aids Program Development Summary



Ten Year Nav. Aids Fully Funded Program Estimate

Fully Funded		
Year	Annual Request	Projects (#)
2022	\$ 220,455	10
2023	\$ 210,684	13
2024	\$ 272,739	14
2025	\$ 190,422	15
2026	\$ 271,539	17
2027	\$ 237,238	19
2028	\$ 295,061	19
2029	\$ 281,466	22
2030	\$ 360,574	24
2031	\$ 427,030	26
Total	\$ 2,767,206	-

- Updates to costs include State E&D, Closeout Report, State and Fed S&A, Corps Admin, and has now been Fully Funded
- CPRA and NRCS will request the Technical Committee recommend approval of the Ten-Year Support Programmatic Project for Signage; \$2,767,206.00



Nav. Aids Three-Year Incremental Request

Fully Funded			
Year	Annual Request	Projects (#)	
2022	\$ 220,455	10	
2023	\$ 210,684	13	
2024	\$ 272,739	14	
Total	\$ 703,878	-	

- CPRA and NRCS will subsequently request the Technical Committee recommend approval of the first three years of incremental funding for Support Programmatic Project for Signage; \$703,878.00

- Three years to initiate the program
- Update the request annually
 - Test assumptions; apply lessons learned
 - Program uncertainties; dynamic landscape
 - P&E emphasis on likely need for flexibility



Nav. Aids Program Uncertainties

- Brand new program, assumptions will be tested when put into practice. Expectation is to learn and then adjust as needed over time.
- Additional projects, project extensions, and project/ feature removals
 - Project Extensions for projects w/ nav. aids would reduce scale and cost
 - Project, feature, or nav. aids removals would reduce scale and cost
 - Future approved projects with nav. aids would increase scale and cost
- Land Rights
 - Placeholder amount for inclusion in cost estimate
 - Without specific locations, access routes, descriptions of work, etc. a cost estimate for land rights is difficult to develop
 - Pending program approval CPRA will explore the potential to pursue statutory authority to perform maintenance on nav. aids



Emphasis on Program Flexibility

- Given the uncertainties remaining the P&E emphasizes the need to remain for flexible in out years as CWPPRA implements this program
 - Basic assumptions will be tested as well, refinements may be needed
- Land Rights
 - Placeholder amount to get program initiated
 - Current amount will be rolled over until expended at which time additional funds may need to be requested to continue program
- Dynamic landscape; P&E recognizes that there may be scenarios that require reevaluation for inclusion of additional nav. aids in the future
 - Subset of previously closed out projects that never had nav. aids
 - Projects. features determined not to need nav. aids at close out
 - None in either category identified at this time, keep options open



Nav. Aids Program Related Effort

- CWPPRA projects on NOAA Navigational Charts
 - CPRA verified process for adding projects by adding Lake Borgne Shoreline Protection (PO-30)
 - CPRA has completed an inventory to determine previously constructed CWPPRA projects' inclusion on NOAA Navigational Charts
 - Hard structures and rocks prioritized, particularly near navigation channels
- 13 CWPPRA projects not on charts
 - 13 submitted to NOAA Nautical Data Branch of the Office of Coast Survey for inclusion determination; 2-page write-up in Binder Materials
 - 12 determined as not necessary for inclusion
 - 1 pending survey/review
- New CWPPRA projects will be submitted post construction by PM's to keep program up to date



COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

**REQUEST FOR A 20-YEAR PROJECT LIFE EXTENSION FOR REPLACE SABINE
REFUGE WATER CONTROL STRUCTURES AT HEADQUARTERS CANAL, WEST
COVE CANAL AND HOG ISLAND GULLY (CS-23) PROJECT**

For Decision:

USFWS and CPRA propose a 20-year project life extension for CS-23. A formal assessment of costs and benefits has been completed and the results will be presented. The Task Force will consider the Technical Committee's recommendation to approve the project life extension request.

Request for 20-Year Project Life Extension

CS-23 Replace Sabine Refuge
Water Control Structures at
Headquarters Canal, West Cove
Canal and Hog Island Gully

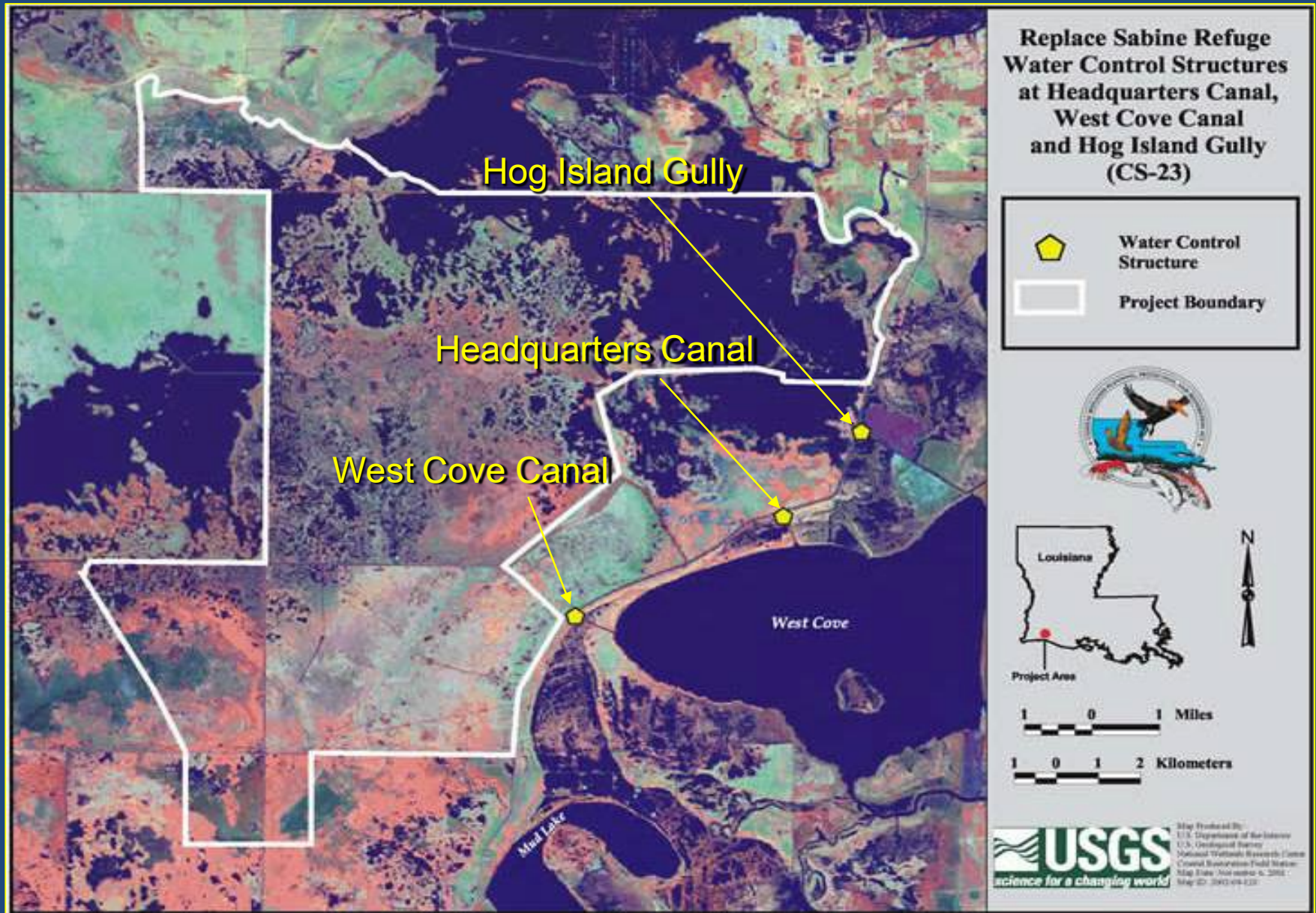
Task Force

October 7, 2021



Coastal Protection and
Restoration Authority of Louisiana

CS-23 Project Features



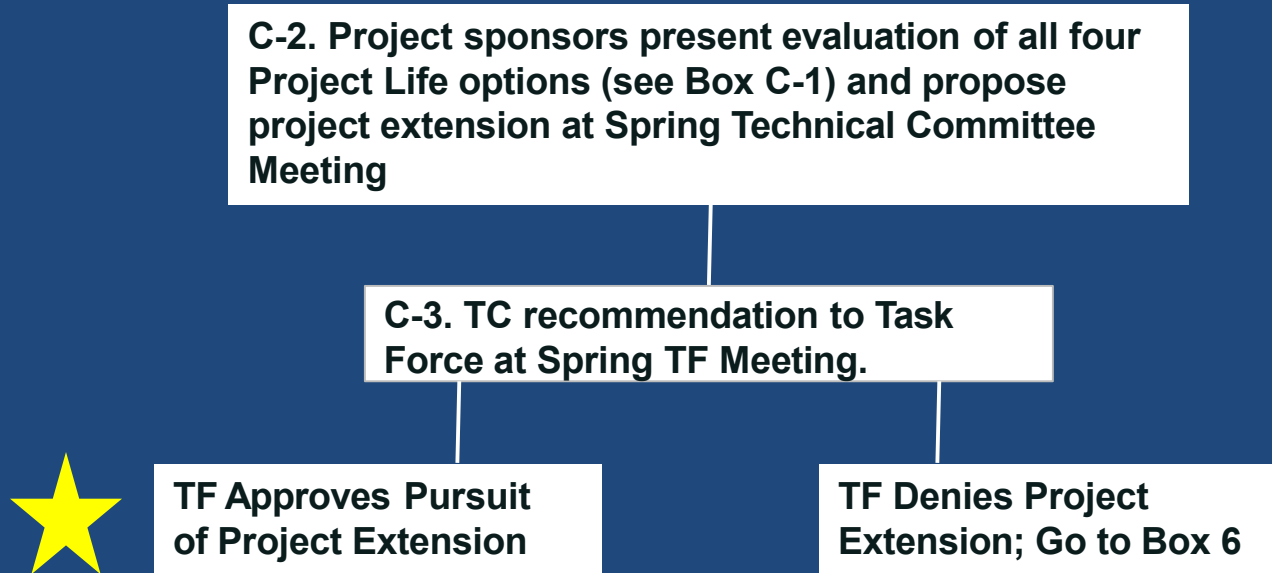
Project Background

- **Approved on Priority Project List 3 - 1993**
- **Purpose – Provide greater management capability to control salinities and water levels; increase the cross-sectional area to allow better drainage**
- **Construction completed in 2003**
- **Project life expires September 2023**

Project Performance and Direction

- **Difficulty Managing Water Levels** – Mean flood depths have only been below the marsh in 2011 (drought) and 2014; Average marsh elevation flooded approximately 78% of the time.
- **O&M Budget Increase Approved in 2020**
 - Operations contract similar to CS-04a (Cameron-Creole Watershed)
 - Canal cleanout to improve water delivery to control structures
 - More intensive management guided by CPRA & Sabine NWR staff
 - The recommended approach is to control water levels while continuing to manage for intermediate to brackish marsh salinities

CWPPRA 20-Year Life Decision Matrix



Spring 2021 - Task Force approved request to proceed with a formal assessment of Project Extension.

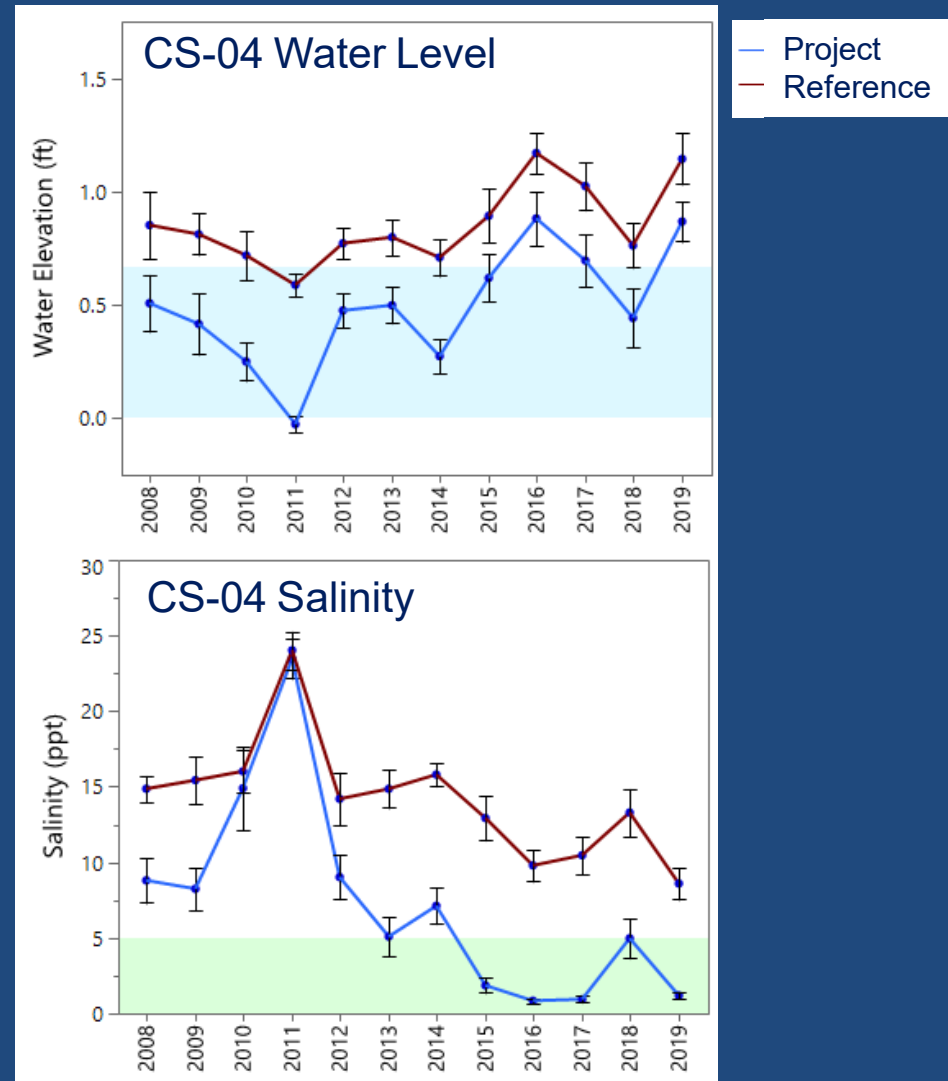
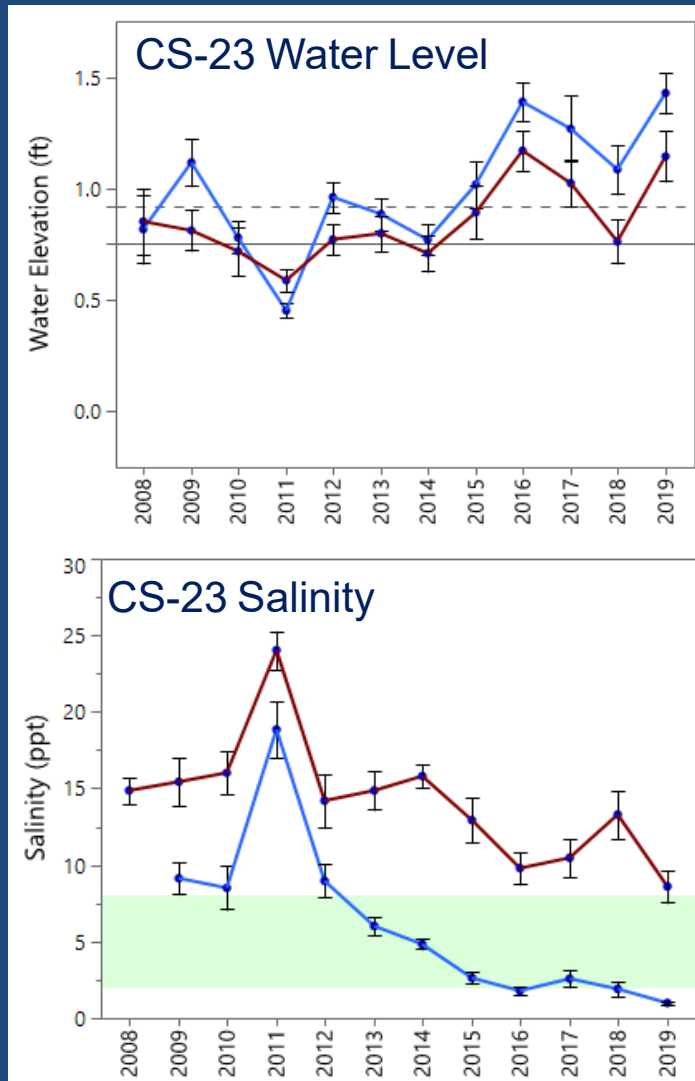
CWPPRA 20-Year Life Decision Matrix

C-4. Project Team:

- a) Prepares formal assessment of cost/benefit of 20-year project;**
- b) Better identifies risk and impacts of extending project, abandoning features in place, and removing features;**
- c) Prepares formal assessment of cost/benefits of project extension.**

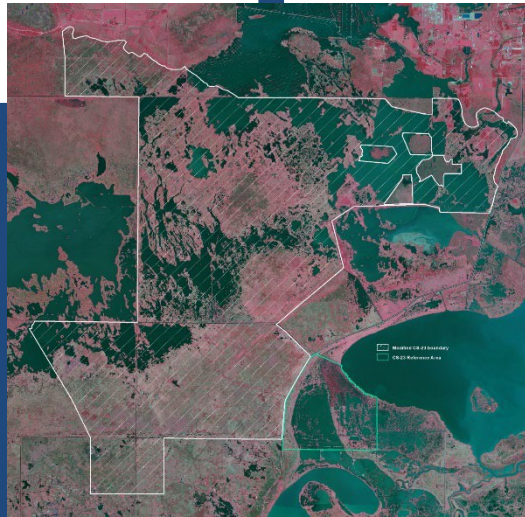
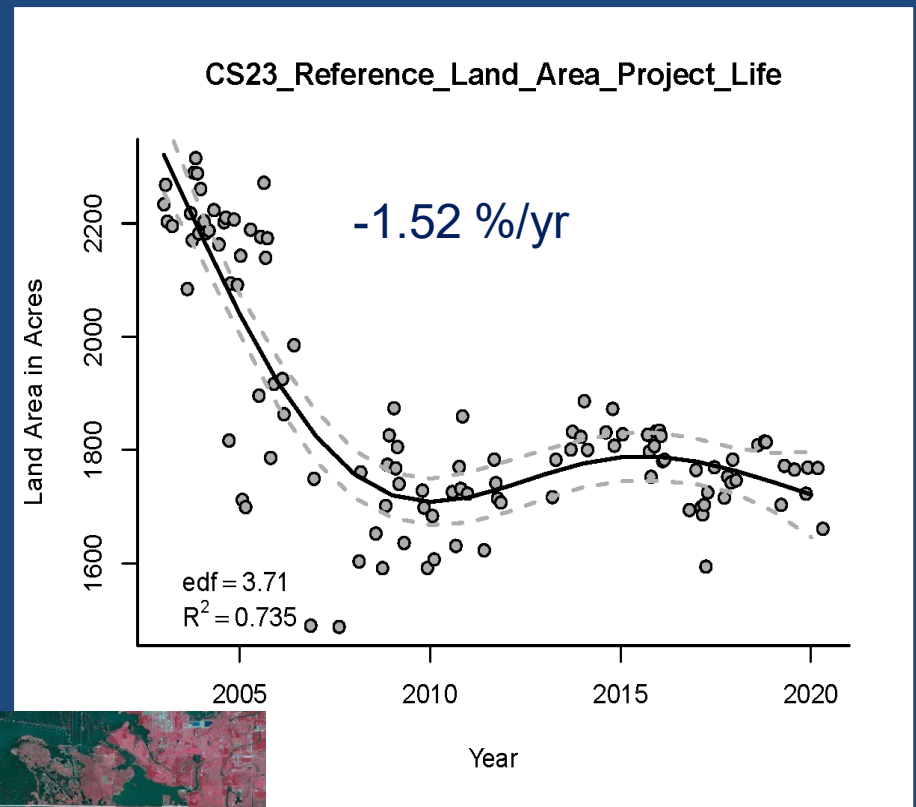
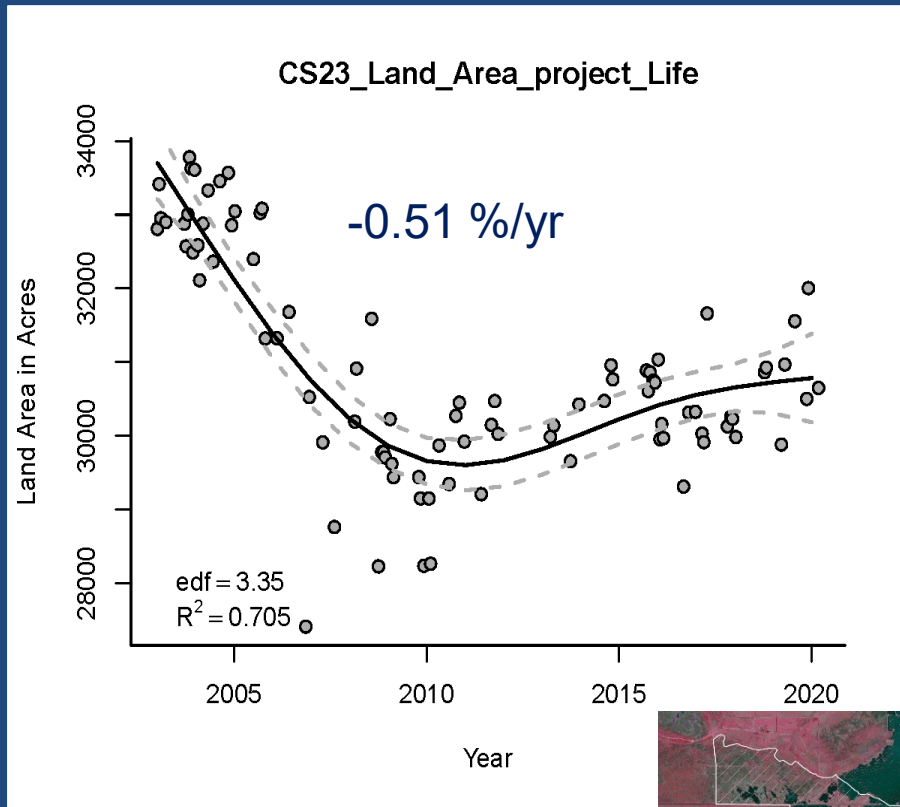
CWPPRA Workgroups conduct review of above.

CS-23 and CS-04 Water Level and Salinity



Reference = Calcasieu Lake, CRMS0685; CS-23 Project = CRMS0651; CS-04 Project = CRMS2418

CS-23 Performance



a) Cost/benefit of 20 year project;

	Estimated Loss (acres) Through Year 20	Estimated Net Acres at Year 20	Fully-Funded Cost	Cost/Acre
With Project	-367	953	\$7,959,729	\$8,352
Without Project	-1,320			

- Based on original estimate of benefits and current fully-funded cost
- Had the original estimate of benefits utilized the observed project area and reference area loss rates, over 5,000 net acres would have been projected

b) Risk and impacts of extending project, abandoning features in place, and removing features;

	Project Extension (Year 21- Year 40)	Abandon Features in Place	Project Removal
Risk	• Very low risk/liability • Structures maintained by CWPPRA program • Structures are not navigable	• Very low risk/liability • Structures are not navigable • Structures would be maintained at a reduced level by FWS	Not a viable option
Impacts	• CWPPRA Program commits to \$9.1M over the next 20 years for OM&M	• Significant wetland impacts could result in the 42,000-acre project area • Reduced level of operations, maintenance, and monitoring by FWS • Flooding duration likely to increase along with marsh loss rates	

c) Formal assessment of **costs**/benefits of project extension

OM&M Activity	Estimate
Annual Inspections	\$723,657
Annual Operations Contract	\$1,467,382
WCS and Monitoring Station Maintenance	\$363,939
Canal Cleanout Maintenance Event (includes design surveys, E&D, dredging, inspection, etc)	\$2,485,042
Weekly Data Review for Structure Operations	\$301,358
Land-Water Analysis	\$401,190
SAV Monitoring	\$17,905
OM&M Reports	\$82,355
State Admin and IDC Charges	\$2,714,727
Closeout Report	\$54,115
Federal – Annual Inspections and Admin	\$488,275
Corps Admin	\$42,123

- All estimated costs have been reviewed by the Engineering Work Group
- Costs presented are fully-funded numbers provided by the Economics Work Group

c) Formal assessment of costs/**benefits** of project extension

	Estimated Loss (acres) Through Year 20	Estimated Net Acres at Year 20	Fully-Funded Cost	Cost/Acre
With Project	-2,266	3,628	\$9,142,079	\$2,520
Without Project	-5,894			

- Under future without-project, assumes loss rate of -0.51 %/yr would linearly increase to the reference area loss rate of -1.52 %/yr
- Under future with-project, assumes a 60% reduction in percent time flooded; based on CS-04a percent inundation elevations
- Reduction in flooding results in increased marsh productivity; a 26% reduction in marsh loss is estimated

CWPPRA Cost Effectiveness 2009-2021

Priority Project List	Average Cost/Net Acre
18	\$46,822
19	\$88,656
20	\$50,682
21	\$60,622
22	\$89,578
23	\$132,661
24	\$85,088
25	\$101,566
26	\$141,160
27	\$89,341
28	\$107,108
29	\$136,946
30	\$125,922
Overall Average PPL18-30	\$96,627
Phase II Approvals	Average Cost/Net Acre
2009	\$120,303
2010	\$140,462
2011	\$206,094
2012	\$70,429
2013	\$67,618
2014	\$54,646
2015	\$62,095
2016	\$104,751
2017	\$98,012
2018	\$160,370
2019	\$94,872
2020	\$79,685
2021	\$63,615
Overall Average 2009-2021	\$101,766

Technical Committee Decision

- FWS and CPRA request a Technical Committee vote to recommend to the Task Force a 20-year project life extension for CS-23 at a fully-funded cost of \$9,142,079

Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully (CS-23)

Coastal Wetlands Planning, Protection and Restoration Act



Final Formal Assessment of Costs and Benefits for Consideration of Project Life Extension

Prepared by

**U.S. Fish and Wildlife Service
and
Louisiana Coastal Protection and Restoration Authority**

August 24, 2021

Project Name

Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully (CS-23)

Project Sponsors

U.S. Fish and Wildlife Service and Louisiana Coastal Protection and Restoration Authority

Project Location

Calcasieu-Sabine Basin, Sabine National Wildlife Refuge (NWR), West of Louisiana Highway 27

Project Description / Project Features

The project replaced three water-control structures on Sabine NWR to allow better management of water levels and salinities across the 42,000-ac project area (Figure 1). Construction was completed in 2003. In 2020, an O&M budget increase was approved which will provide funding for an operations contractor during the final years of project life.

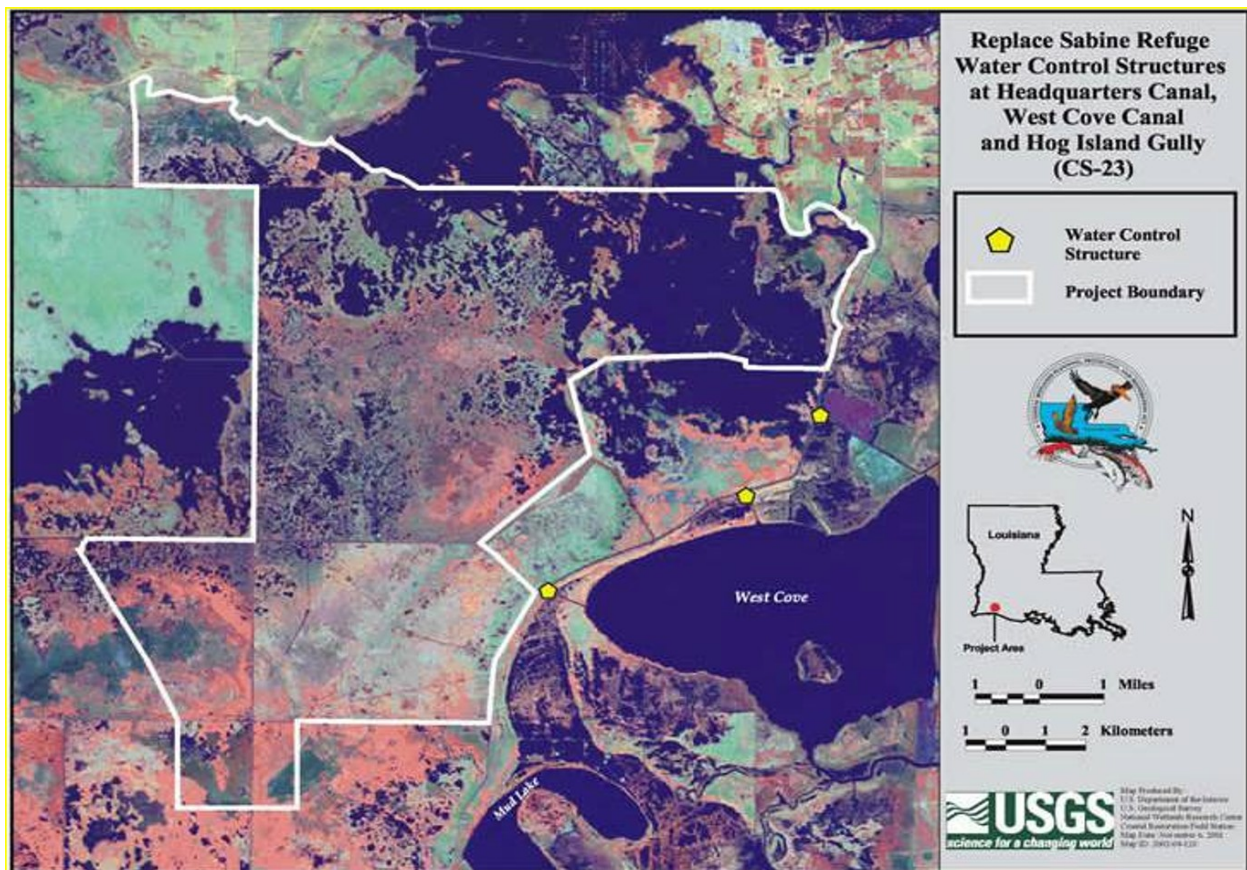


Figure 1. CS-23 Project features.

Current Status

The project is in Year 18 and expires in September 2023. An operations contract is expected to be advertised for bids in Fall 2021. A canal cleanout maintenance event is planned for Spring

2022. In May 2021, the Task Force approved formal evaluation of a 20-year project life extension.

Cost of Initial 20 Year Period

The current fully funded cost is \$7,959,729.

Benefits of Initial 20-Year Project

The original Priority Project List 3 Wetland Value Assessment (WVA), projected a loss of 1,320 acres of marsh under the Future Without-Project (FWOP) scenario. A loss of 367 acres was projected under the Future With-Project scenario, resulting in an estimated benefit of 953 net acres. Since project completion, the project area has experienced a land change rate of -0.51 %/yr while the land change rate for the reference area was -1.52 %/yr.

Cost Effectiveness of Initial 20-Year Project

The cost effectiveness of the initial 20-year project is \$8,352 per net acre (\$7,959,729 / 953 net acres).

Cost of Project Extension

The current estimated fully-funded cost of a 20-year project extension is \$9,142,079. A summary of Operations, Maintenance, and Monitoring (OM&M) costs (fully funded) for Years 21-40 is shown in Table 1. See Appendix A for the fully-funded budget and complete breakdown of all costs.

Table 1. OM&M activities and costs.

OM&M Activity	Estimate
Annual Inspections	\$723,657
Annual Operations Contract	\$1,467,382
WCS and Monitoring Station Maintenance	\$363,939
Canal Cleanout Maintenance Event (includes design surveys, E&D, dredging, inspection, etc)	\$2,485,042
Weekly Data Review for Structure Operations	\$301,358
Land-Water Analysis	\$401,190
SAV Monitoring	\$17,905
OM&M Reports	\$82,355
State Admin and IDC Charges	\$2,714,727
Closeout Report	\$54,115
Federal – Annual Inspections and Admin	\$488,275
Corps Admin	\$42,123

Benefits of Project Extension

In its simplest terms, project performance can be determined with a land change comparison of the project area and reference area (Figure 2). From 2003 (project completion) to 2020, the project area's annual loss rate was -0.51 %/yr while the loss rate for the reference area was -1.52

%/yr (Figure 3). Each area experienced significant loss with the passage of Hurricanes Rita (2005) and Ike (2008) and then began a slow recovery around 2010.

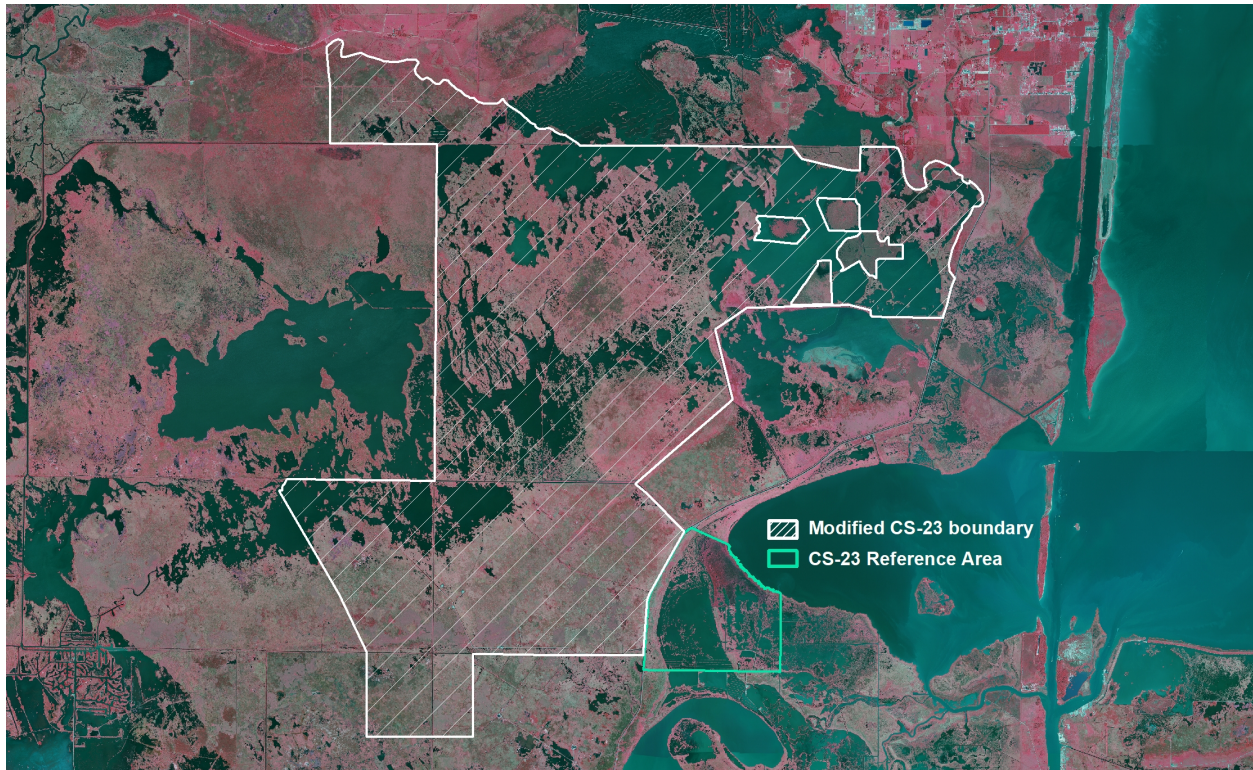


Figure 2. CS-23 project area and reference area.

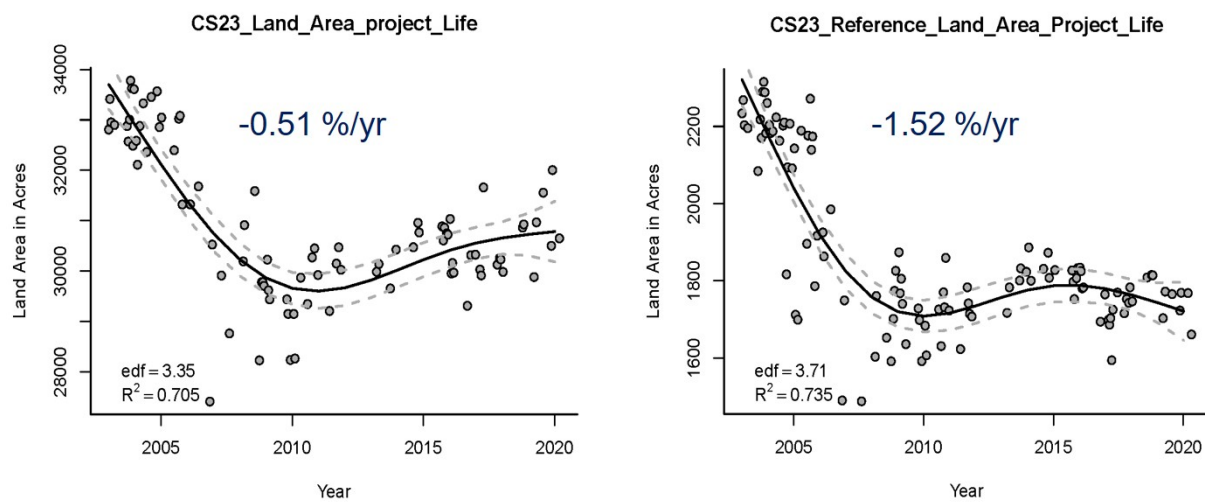


Figure 3. Land change rates for CS-23 project area and reference area.

Future Without Project (FWOP)

For the FWOP scenario, structure operation and maintenance will no longer be funded by the CWPPRA program. The structures would be operated and maintained by the Sabine NWR. However, Sabine NWR lacks the staff and funding to continue intensive management of the structures and adequately maintain them. It is likely that the structures would remain in the “open” position to allow tidal exchange, with little to no management of water levels and salinity. Marshes in the project area would experience increased flooding as there would be no intensive management to reduce water levels or the duration of flooding. Under this scenario, it is proposed that the loss rate of -0.51 %/yr would linearly increase to the reference area loss rate of -1.52%/yr. It is estimated that 5,894 acres would be lost during the 20-year project life.

Future With Project (FWP) – Option 1

For the FWP scenario, OM&M will continue under the CWPPRA program for an extended 20-yr project life (i.e., Years 21-40). Intensive management of water levels and salinities will be carried out by CPRA and Sabine NWR staff via an operations contractor.

This option offers the simplest approach for estimating benefits of the project extension. Under this option, the 2003-2020 loss rate of -0.51 %/yr would continue during the 20-yr project life extension. The loss rate would not increase, as under FWOP, but would remain the same as the initial 17 years of the project’s life with active management of water levels and salinities. It is important to note that the 2003-2020 loss rate does not capture a period of intensive management under an operations contract. It is therefore proposed as a conservative estimate for FWP. Under Option 1, it is estimated that 3,035 acres would be lost during the 20-year project life. Therefore, Option 1 would result in 2,859 net acres. The Option 1 land loss spreadsheet can be found in Appendix B.

Future With Project (FWP) – Option 2

Water levels, marsh elevations, and percent flooding were investigated for the CS-23 and CS-04a Cameron-Creole Maintenance (Figure 4) project areas. The CS-23 and CS-04a projects are very similar in that they are both marsh management projects utilizing water control structures to manage water levels and salinities in marshes surrounding Calcasieu Lake. Since January 2012, the CS-04a project has been managed under an operations contract and was approved for a 20-year project life extension in 2016. Intensive water level management under the CS-04a operations contract has allowed water levels to be maintained below that of Calcasieu Lake while the opposite has been observed in the CS-23 project area (Figure 5).

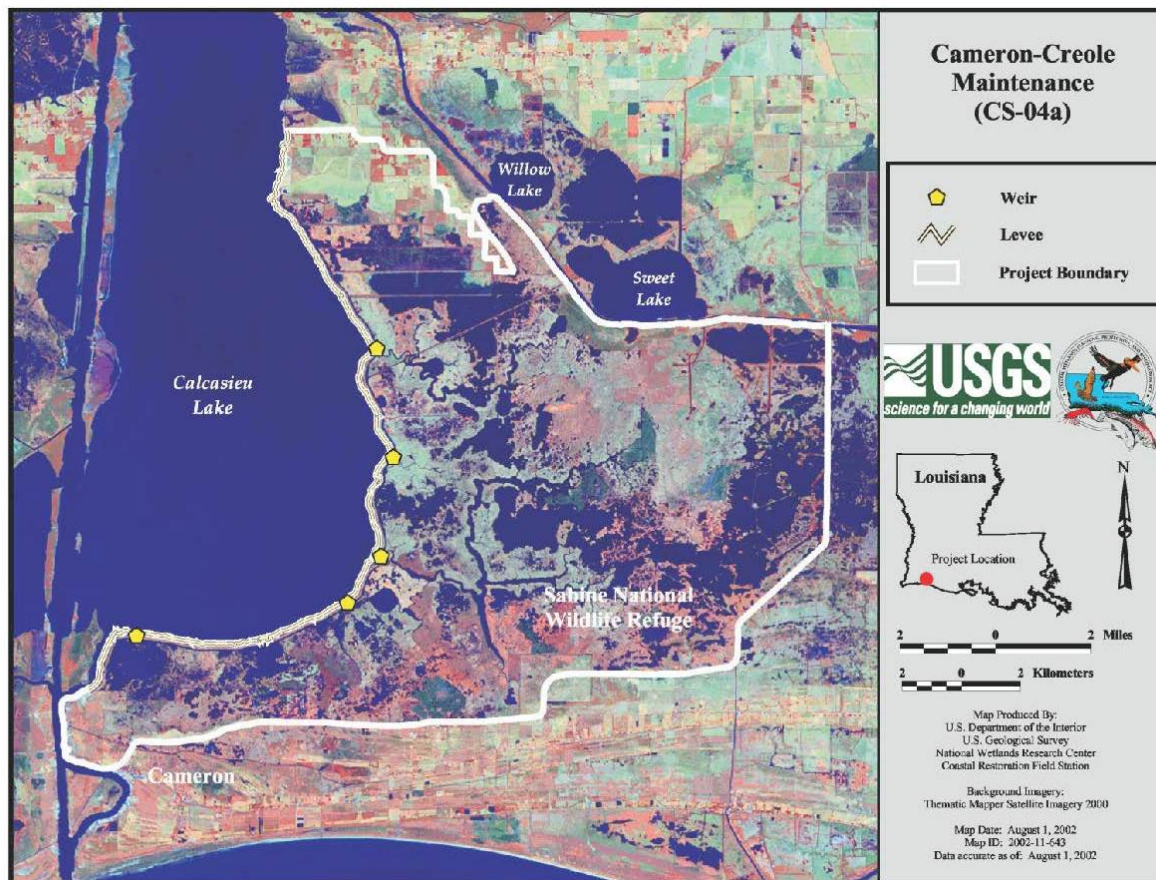
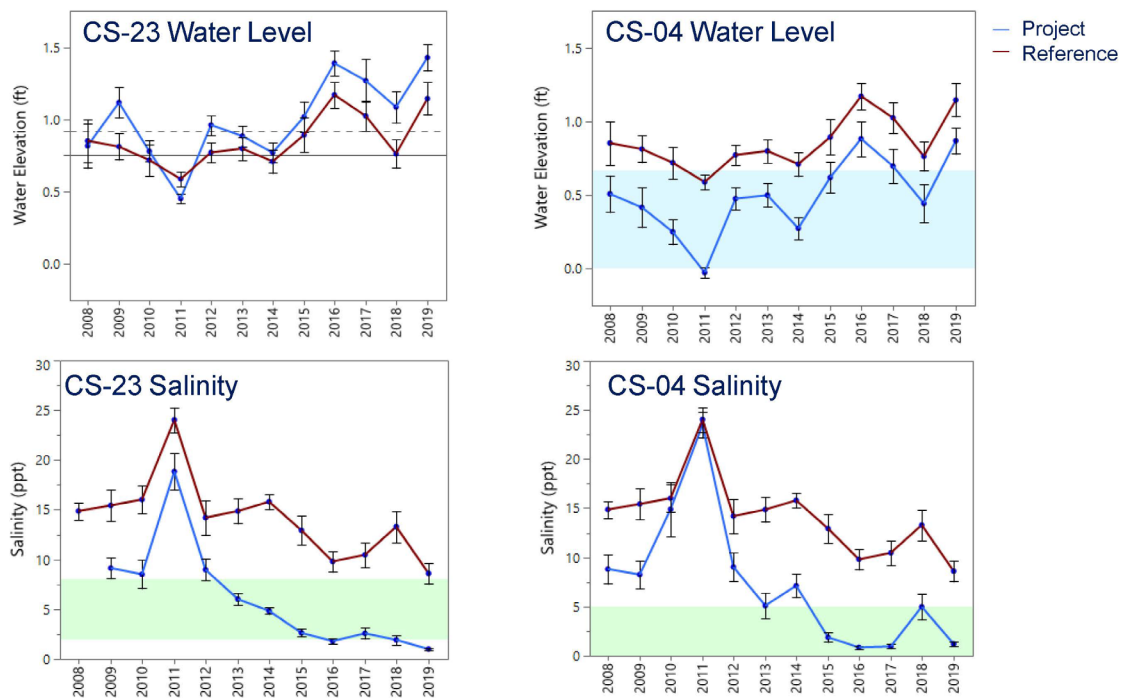


Figure 4. CS-04a Cameron-Creole Maintenance Project Area.

The average marsh elevation (NAVD88; Geoid 12A) is somewhat higher in the CS-23 project area compared to CS-04a (Table 2). However, percent inundation elevations are much higher in the CS-23 marshes and are similar to those found in Calcasieu Lake (Table 3). The average CS-23 marsh elevation of +0.77 ft is flooded approximately 78% of the time based on hourly data (January 2012 to September 2020) for CRMS 0651. By comparison, marsh at that same elevation in the CS-04a project area, is flooded an average of 31% of the time, a 60% reduction in percent time flooded.



Reference = Calcasieu Lake, CRMS0685; CS-23 Project = CRMS0651; CS-04 Project = CRMS2418

Figure 5. Comparison of water levels and salinities for CS-23, CS-04a, and Calcasieu Lake.

Table 2. Average marsh elevation (ME) in the CS-23 and CS-04a project areas.

CRMS Station	Marsh Elevation (ft) CS-23	Salinity (ppt) CS-23	CRMS Station	Marsh Elevation (ft) CS-04a	Salinity (ppt) CS-04a
0651	0.90	1.6	1743	0.50	8.2
0635	0.47	1.6	1738	0.54	9.1
0639	0.88	8.1	2418	0.33	2.2
0641	0.86	3.3	0645	0.49	7.3
2334	0.73	4.2	0644	0.41	11.9
Mean	0.77	3.8		0.45	7.7

Table 3. Percent inundation elevations for CS-23, CS-04a, and Calcasieu Lake.

Percent Inundation	CS-23 Inundation Elevation (ft) (CRMS 0651)	CS-04a Inundation Elevation (ft) (CRMS 2418)	Calcasieu Lake Inundation Elevation (ft) (CRMS 0685)
10	1.66	1.17	1.68
20	1.44	0.91	1.42
30	1.31	0.78	1.25
40	1.20	0.67	1.09
31		0.77 (CS-23 average ME)	
50	1.09	0.57	0.94
60	0.97	0.47	0.78

62		0.45 (average ME)	
70	0.86	0.36	0.61
78	0.77 (average ME)		
80	0.74	0.23	0.40
90	0.59	0.09	0.11

The effects of salinity and inundation on marsh productivity were initially developed for the Louisiana Coastal Area (LCA) Habitat Switching Module (Visser et al., 2003). The productivity algorithms developed for the LCA study were later used as the basis for development of the Hydrologic Index (Snedden and Swenson 2012) reported for each CRMS station. The Hydrologic Index (HI) ranges from 0 to 100 and corresponds to the percent of maximum productivity resulting from a given average annual salinity and percent time flooded. Generally, there is an optimal range of salinity and percent time flooded which allows a given marsh type to achieve maximum productivity. Productivity declines outside of that range.

For purposes of this evaluation, it is assumed that intensive management and operation of the CS-23 water control structures will achieve the same level of success, in terms of reducing marsh flooding, as with the CS-04a project. Based on the average CS-23 marsh elevation of +0.77ft, a 60% reduction in percent time flooded would result under FWP conditions. No change in salinity is assumed. With a reduction in percent time flooded from 78% to 31%, the HI scores improve for the intermediate and brackish marshes found in the project area (Table 4).

Table 4. Hydrologic index scores for intermediate and brackish marsh under FWOP and FWP.

Condition	Average Annual Salinity	Percent Time Flooded	Intermediate Hydrologic Index	Brackish Hydrologic Index
FWOP	3.8	78	0.49	0.44
FWP-Option 2	3.8	31	0.51	0.97
		Percent change	4.1	120.5

It is assumed that the increase in HI scores (i.e, increased marsh productivity) will result in reduced marsh loss. Based on the acreages of fresh/intermediate and brackish marsh (2013 marsh type survey) in the project area, a weighted percent change in the HI was calculated (Table 5). It is proposed that the overall 26% increase in productivity will result in a corresponding 26% reduction in the land loss rate. Under Option 2, it is estimated that 2,266 acres would be lost during the 20-year project life. Therefore, Option 2 would result in 3,628 net acres. The Option 2 land loss spreadsheet can be found in Appendix B.

Table 5. Weighted percent change in Hydrologic Index.

Marsh Type	Acreage	Percent Marsh Type	HI Percent Change	HI Weighted Percent Change
Fresh/Intermediate	25,115	0.81	0.041	0.03
Brackish	5,875	0.19	1.21	0.23
Total	30,990	1.00		0.26

Net Acres

Net acres resulting from the FWP-Option 1 scenario are 2,859. Net acres for FWP-Option 2 are 3,628.

Preferred Option To Estimate Benefits

The Environmental Work Group indicated a preference for Option 2 to estimate benefits of the proposed project extension.

Cost Effectiveness of Project Extension

Cost effectiveness (fully-funded cost per net acre) of the project extension ranges from \$3,198 per net acre (\$9,142,079 / 2,859 net acres) to \$2,520 (\$9,142,079 / 3,628 net acres) for FWP Options 1 and 2, respectively.

Cost Effectiveness Versus Other Recently Approved CWPPRA Projects

Table 6 presents the cost effectiveness (cost per net acre) of a potential extension of the CS-23 project for the two FWP options and the average cost effectiveness of projects approved in the CWPPRA Program over the past 13 years.

Table 6.

Projects	Cost/ Net Acre
CS-23 Years 1-20	8,352
CS-23 Project Extension Years 21-40 – Option 1	3,198
CS-23 Project Extension Years 21-40 – Option 2	2,520
PPL18 Average	46,822
PPL19 Average	88,656
PPL20 Average	50,682
PPL21 Average	60,622
PPL22 Average	89,578
PPL23 Average	132,661
PPL24 Average	85,088
PPL25 Average	101,566
PPL26 Average	141,160
PPL27 Average	89,341
PPL28 Average	107,108
PPL29 Average	136,946
PPL30 Average	125,922
OVERALL AVG PPL18-30	96,627
2009 Phase II Approvals Average	120,303
2010 Phase II Approvals Average	140,462
2011 Phase II Approvals Average	206,094
2012 Phase II Approvals Average	70,429

2013 Phase II Approvals Average	67,618
2014 Phase II Approvals Average	54,646
2015 Phase II Approvals Average	62,095
2016 Phase II Approvals Average	104,751
2017 Phase II Approvals Average	98,012
2018 Phase II Approvals Average	160,370
2019 Phase II Approvals Average	94,872
2020 Phase II Approvals Average	79,685
2021 Phase II Approvals Average	63,615
OVERALL AVG PHASE II APPROVALS 2009-2021	101,766

Literature Cited

- Snedden, G.A., and Swenson, E.M., 2012, Hydrologic index development and application to selected Coastwide Reference Monitoring System sites and Coastal Wetlands Planning, Protection and Restoration Act projects: U.S. Geological Survey Open-File Report 2012–1122, 25 p.
- Visser, J.M., G.D. Steyer, G.P. Shaffer, S.S. Hoppner, M.W. Hester, E. Reyes, P. Keddy, I.A. Mendelssohn, C.E. Sasser, and C.M. Swarzenski. 2003. Habitat Switching Module, Chapter 9. In, R.R. Twilley (ed.), Coastal Louisiana Ecosystem Assessment and Restoration (CLEAR) Model of Louisiana Coastal Area (LCA) Comprehensive Ecosystem Restoration Plan. Volume I: Tasks 1-8. Final Report to Department of Natural Resources, Coastal Restoration Division, Baton Rouge, LA. Contract No. 2511-02-24. 319 pp

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

**REQUEST FOR A CHANGE IN SCOPE FOR THE PPL23 – ISLAND ROAD MARSH
CREATION AND NOURISHMENT (TE-117) PROJECT**

For Decision:

NMFS and CPRA request approval of a change in scope for the Island Road Marsh Creation and Nourishment (TE-117) Project. A scope change is required due to a decrease in benefits by more than 25% from the Phase 0 Candidate. The Task Force will consider the Technical Committee's recommendation to approve the change in scope request.



Coastal Protection and
Restoration Authority of Louisiana



Island Road Marsh Creation and Nourishment (TE-117)

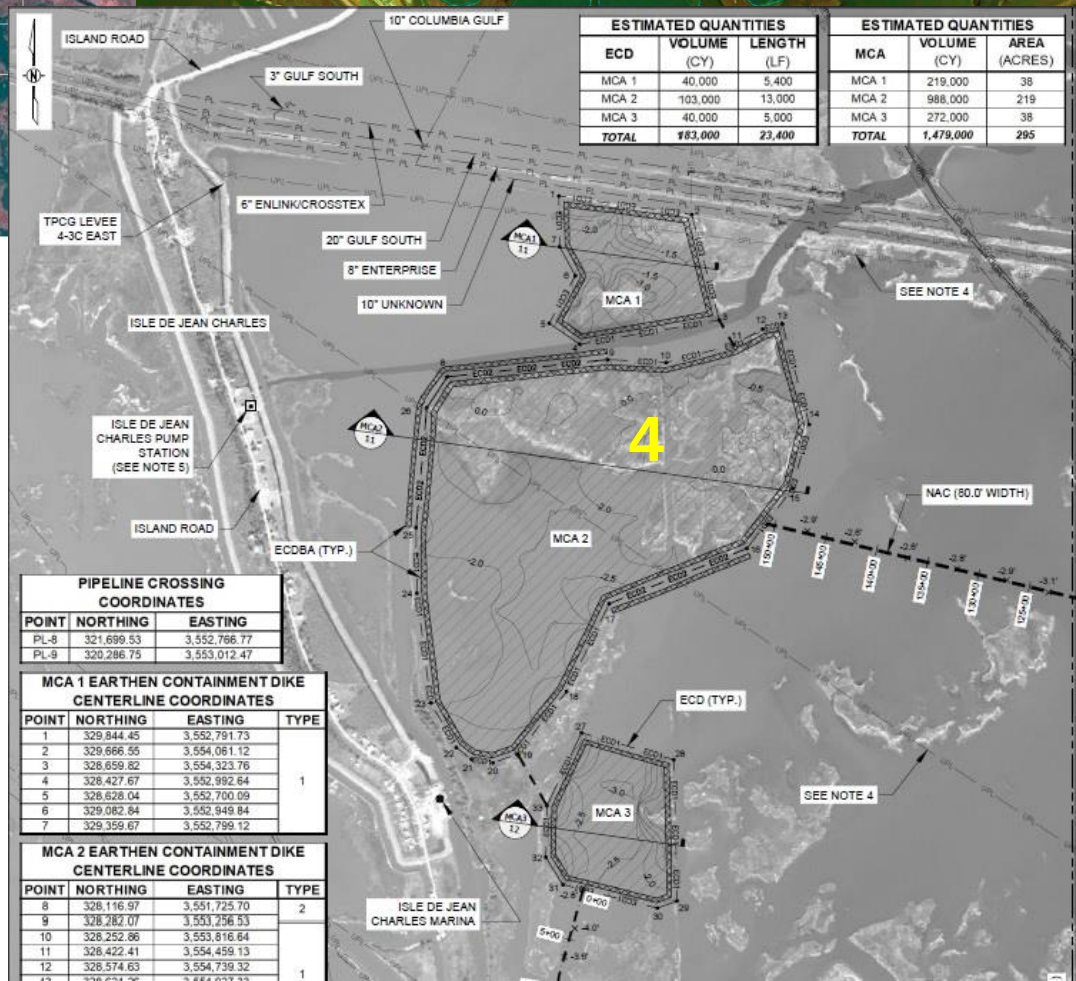
Scope Change Request
Task Force
October 7, 2021



Project Background

- Approved for Phase 1 January 2014
- 30% Design Review Meeting October 23, 2019
- 95% Design Review Meeting September 23, 2021



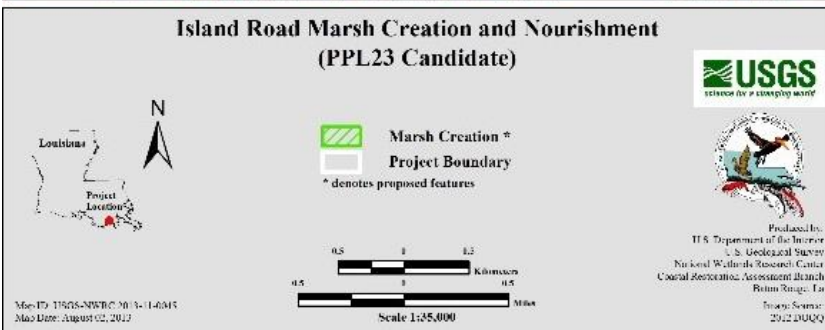
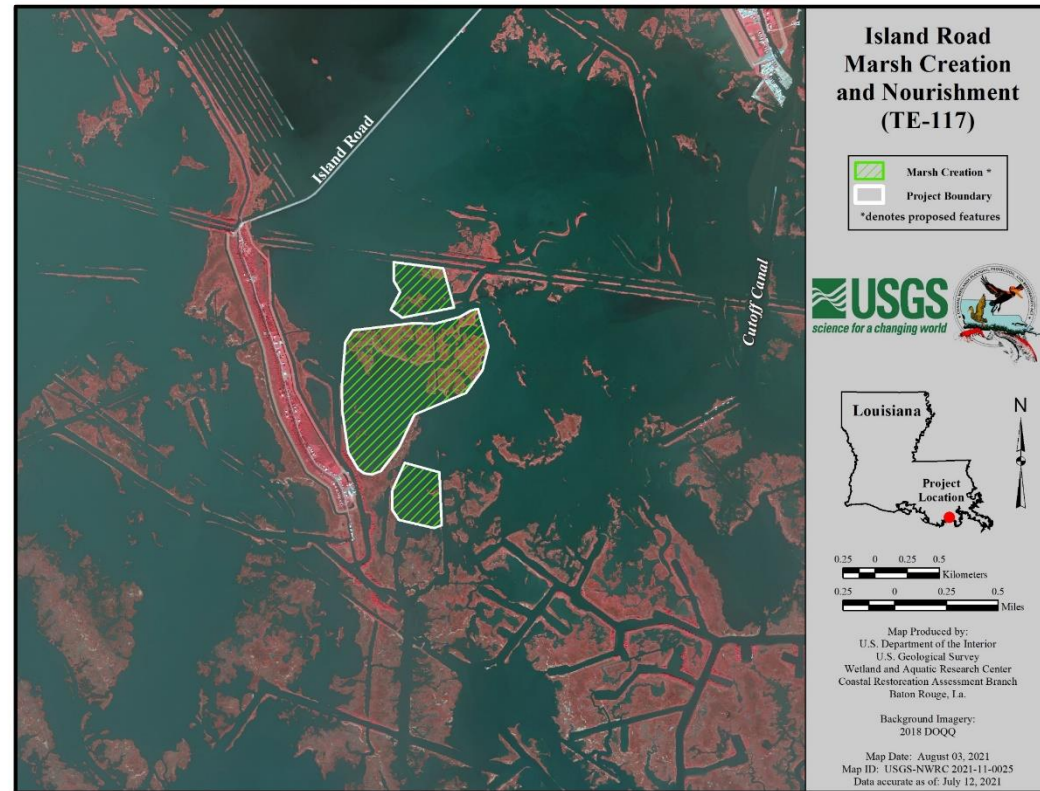


- 4 alternative fill configurations were evaluated
- Relocated cells from north of Twin Pipelines to south of Twin Pipelines and parallel to Isle de Jean Charles
- Optimized acres based on mudline elevations

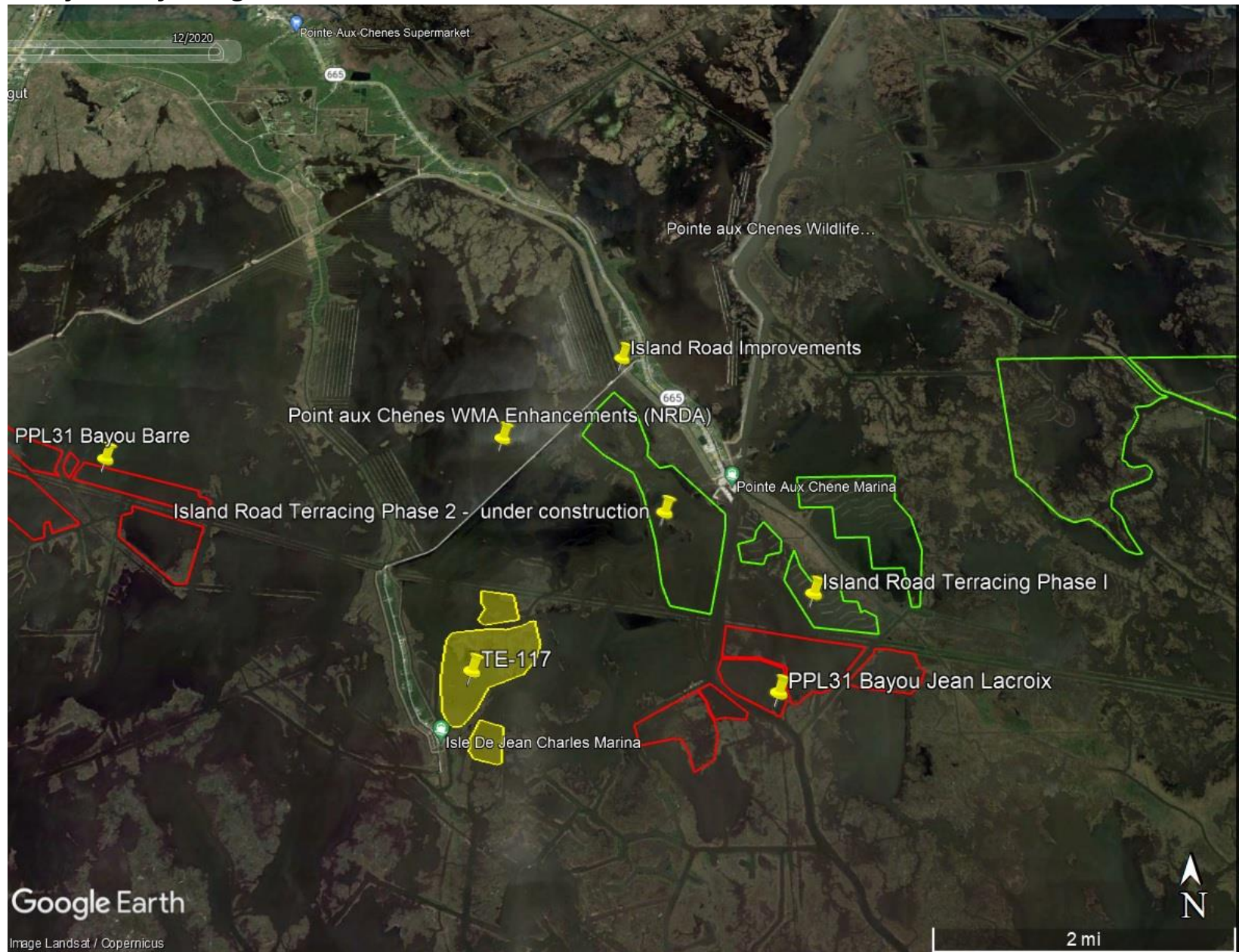
Phase 0 Project Map



Phase 1 95% Design



Project Synergies

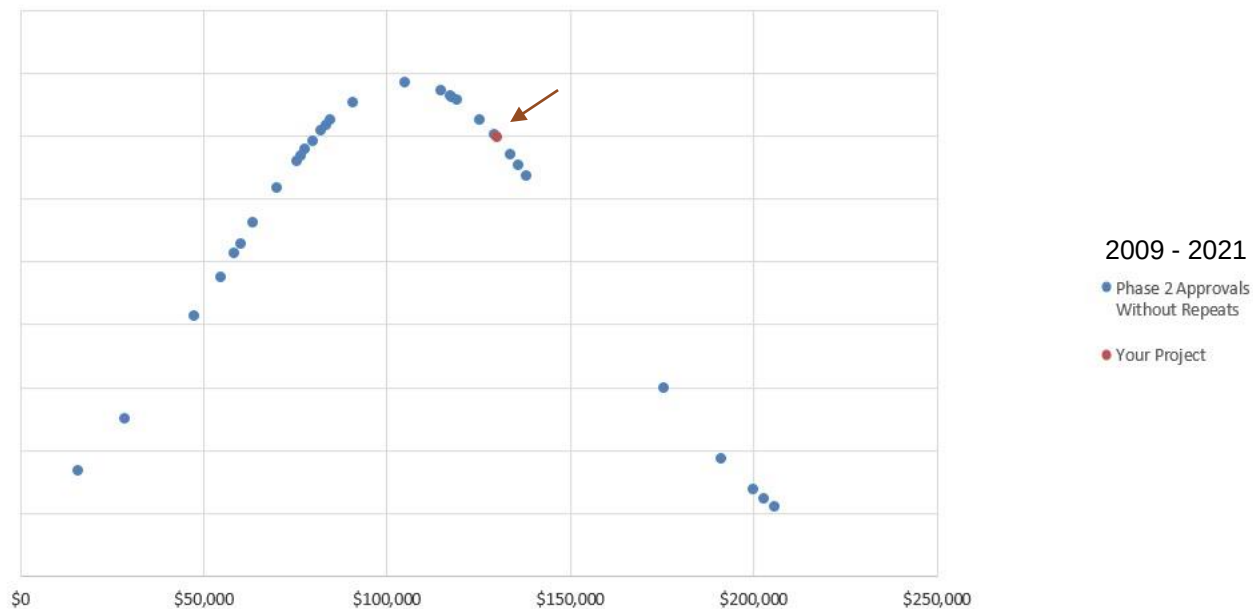


CWPPRA

	Phase 0	Phase 1 (95% Design)	Percent Change
Construction Cost	\$29,465,016	\$19,124,385	-35.1%
Fully-Funded Cost	\$39,185,267	\$26,774,139	-31.7%
Project Area	383	295	-23.0%
Net Acres	312	206	-34.1%
AAHUs	166		
Construction Cost/Constructed acre	\$76,932.16	\$64,828.42	-15.7%
Total Cost (FFC)/net	\$125,594	\$130,229	3.7%

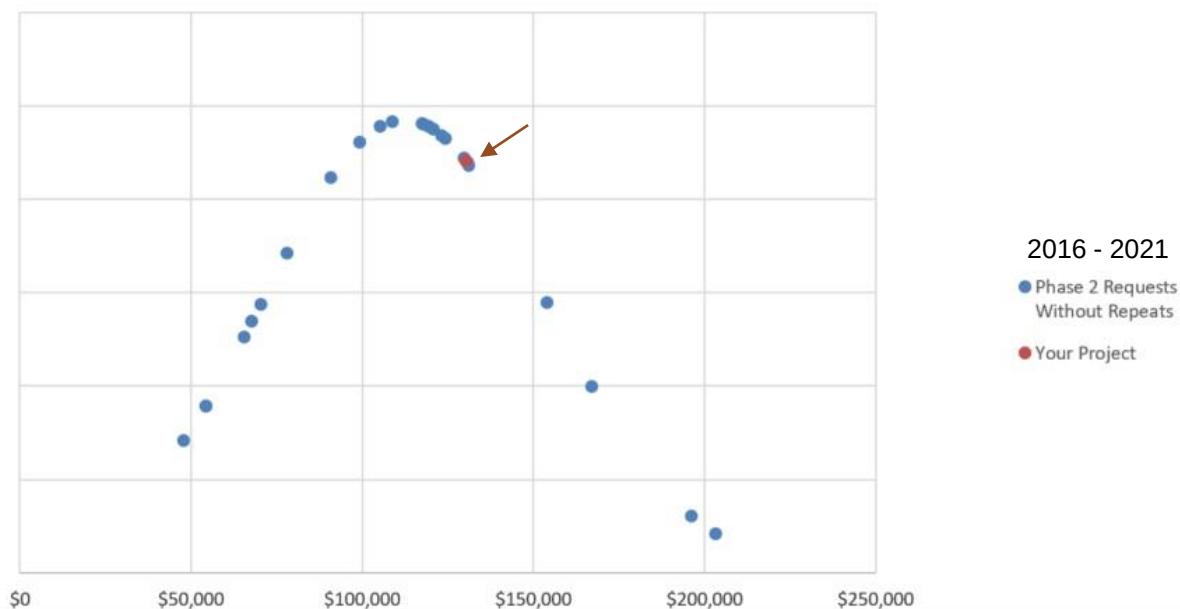
Projects	Total Cost/ Net Acre	Min	Max
TE-117	130,229		
PPL18 Phase I Approvals Average	46,822	14,006	109,758
PPL19 Phase I Approvals Average	88,656	30,633	187,300
PPL20 Phase I Approvals Average	50,682	14,905	77,661
PPL21 Phase 1 Approvals Average	60,622	56,999	66,913
PPL22 Phase I Approvals Average	89,578	75,698	104,475
PPL23 Phase I Approvals Average	132,661	113,400	171,459
PPL24 Phase I Approvals Average	85,088	56,847	105,086
PPL25 Phase I Approvals Average	101,566	86,925	120,665
PPL26 Phase I Approvals Average	141,160	91,015	168,208
PPL27 Phase I Approvals Average	89,341	31,016	118,573
PPL28 Phase I Approvals Average	107,108	39,158	138,009
PPL30 Phase I Approvals Average	136,946	116,143	170,472
PPL29 Phase I Approvals Average	128,506	118,863	142,264
OVERALL AVG PPL18-25 PHASE I APPROVALS	96,826	65,047	129,296
2009 Phase II Approvals Average	120,303	83,812	176,053
2010 Phase II Approvals Average	140,462	28,677	200,342
2011 Phase II Approvals Average	206,094	206,094	206,094
2012 Phase II Approvals Average	70,429	16,290	115,080
2013 Phase II Approvals Average	67,618	58,628	76,608
2014 Phase II Approvals Average	54,646	54,646	54,646
2015 Phase II Approvals Average	62,095	60,310	63,879
2016 Phase II Approvals Average	104,751	75,399	134,104
2017 Phase II Approvals Average	98,012	77,927	118,097
2018 Phase II Approvals Average	160,370	117,567	203,173
2019 Phase II Approvals Average	94,872	70,278	119,465
2020 Phase II Approvals Average	120,181	105,152	129,632
2021 Phase II Approvals Average	69,406	47,913	90,898
OVERALL AVG PHASE II APPROVALS 2009-2021	105,326	77,130	129,852
AVG ALL APPROVALS 2009-2021	101,076	69,178	129,066

Cost per net acre Distribution Bell Curve



- 8 Phase 2 approvals from 2009 to 2021 more expensive than TE-117
- 7 Phase 2 requests from 2016 to 2021 more expensive than TE-117

Cost per net acre Distribution Bell Curve



Island Marsh Creation and Nourishment (TE-117)

Change in Project Scope

Report to the Technical Committee

September 2, 2021

NOAA Fisheries and the Louisiana Coastal Protection and Restoration Authority request the Technical Committee recommend approval of a change in scope for the Island Road Marsh Creation and Nourishment Project (TE-117). A scope change is required due to a decrease in benefits by more than 25% from the Phase 0 Candidate. At the 95% design level, a 34% decrease in net acres and 32% decrease in the fully funded cost is estimated. The draft cost estimate and Wetland Value Assessment (WVA) will be provided for interagency review as part of the 95% design review milestone. Therefore, final updated net acres, Average Annual Habitat Units (AAHUs) and a fully-funded cost will be available after the 95% design review meeting scheduled for September 23, 2021.

The TE-117 Project was approved on Priority Project List 23 with a fully-funded cost of \$39,285,267. The total cost (FFC) per net acre was \$125,594. The Phase 0 project consisted of four confined cells to create and nourish a total of 383 acres of tidal marsh habitat to begin restoring the structural framework of marshes and bayous that have deteriorated along Cutoff Canal and the Twin Pipelines Canal near Island Road in Terrebonne Parish. The 95% design consists of marsh restoration in three confined disposal areas now totaling approximately 295 acres along the Twin Pipelines Canal and the community of Isle de Jean Charles near Island Road. Two of the three new cells were options evaluated during Phase 0. The draft revised FFC is estimated to be \$26,774,139. The reasons for modifications since Phase 0 that have resulted in a change in scope greater than 25% are mudline elevations, soils, pipelines and utilities, and inlet/outlet needs for a pumping station. Specific modifications since Phase 0 include relocation of marsh creation areas, relocation of the borrow area, and a revision to equipment access and dredge pipe corridor alignments.

1. Phase 0 MCAs were relocated from north of the Twin Pipelines Canal and adjacent to Cutoff Canal to south of and adjacent to the Twin Pipelines Canal and adjacent to the community of Isle de Jean Charles.
2. Phase 0 borrow area was relocated from Lake Felicity/Chien to Lake Tambour due to pumping distance and oyster lease and seed ground constraints. The new borrow site reduces the pumping distance. A new dredge pipe corridor is associated with the new borrow area.
3. The Phase 0 loss rate was -1.04%/yr and the Phase 1 loss rate is -1.46%/yr.
4. The benefit area delineation was revised to the dike centerline (from the exterior toe of the dike) for consistency in Phase 1 assessment methods.

The 95% Design Review meeting is scheduled for September 23, 2021. The revised cost estimate and benefits (net acres and AAHUs) are pending review by the Engineering and Environmental Workgroups. The Phase 0, Phase 1 (95% Design), and percent change metrics are presented in Table 1. Final preparation of information required in a Phase 2 authorization request is underway. A step-wise data acquisition and design approach was adopted by the project delivery team to deliver a constructible design

that provides restoration for ecological and storm protection synergy important for local stakeholders. There is a cost reduction similar in amount to the net acreage reduction.

Table 1. Comparison of TE-117 Phase 0 to Phase 1 (95% Design). The Phase 1 fully-funded cost is estimated.

	Phase 0	Phase 1 (95% Design)	Percent Change
Construction Cost	\$29,465,016	\$19,124,385	-35.1%
Fully-Funded Cost	\$39,185,267	\$26,774,139	-31.7%
Project Area	383	295	-23.0%
Net Acres	312	206	-34.1%
AAHUs	166		
Construction Cost/Constructed acre	\$76,932.16	\$64,828.42	-15.7%
Total Cost (FFC)/net	\$125,594	\$130,229	3.7%



Figure 1. Phase 0 (left) and Phase 1 (right) project maps.

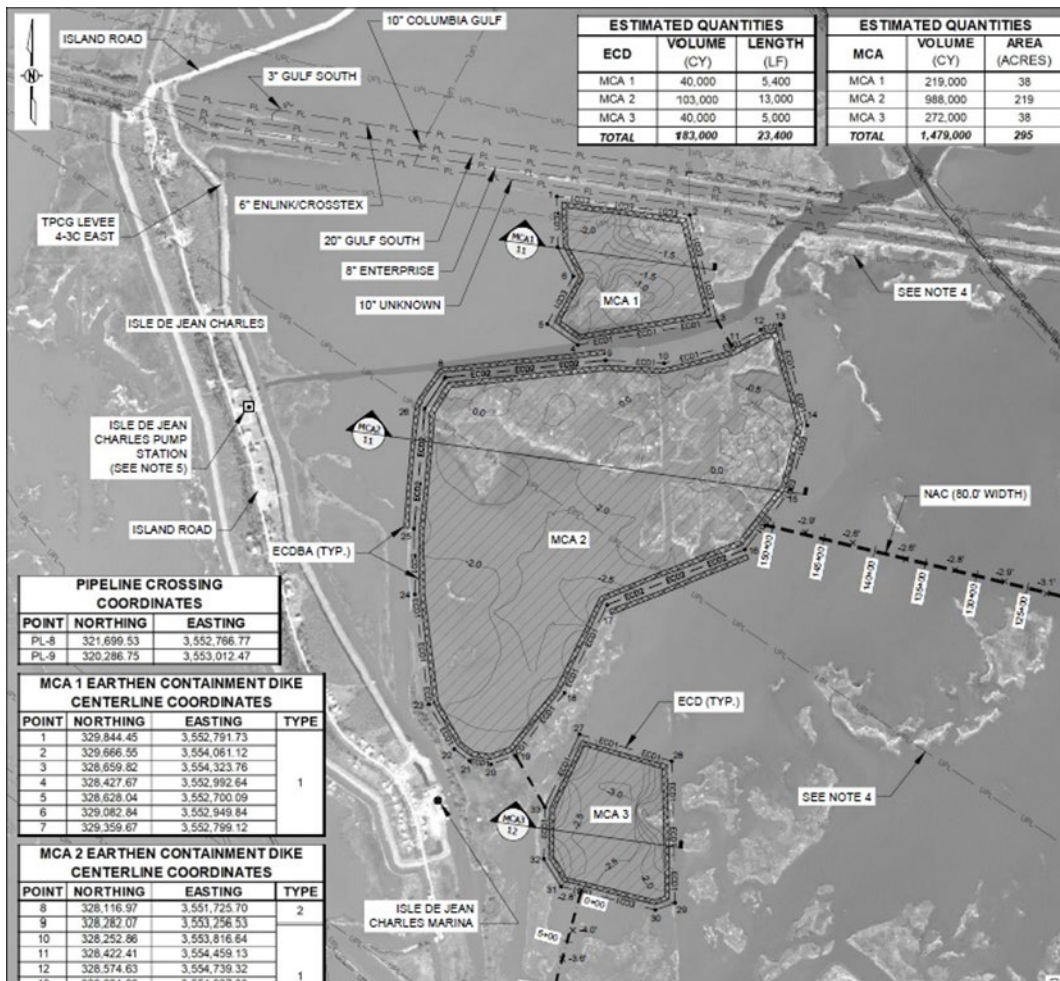


Figure 2. Plan view of Phase 1 95% design restoration features.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

**REQUEST FOR A TRANSFER OF APPROVED O&M TO APPROVED MONITORING
FOR FOUR MILE CANAL TERRACING AND SEDIMENT TRAPPING (TV-18)
PROJECT**

For Decision:

NMFS and CPRA request Task Force approval based on the Technical Committee's recommendation to transfer \$19,354 from the approved Operations and Maintenance budget to the approved Monitoring budget for the Four Mile Marsh Creation and Terracing (TV-18) Project. Funds are needed for two years of CRMS photography analysis deemed important for final reporting for this project. Incremental funding approval for the final monitoring increment will be made in a motion later in this agenda. This action does not represent an overall budget increase to the Project. It would reduce the Project's Operations and Maintenance budget to \$1,654,507 and increase the Project's Monitoring budget to \$198,634.

Request for CWPPRA Project Monitoring Funding Increase Project
Performance Synopsis
October 2, 2021

FOUR MILE CANAL TERRACING AND SEDIMENT TRAPPING (TV-18)

1 - Project History

Construction of Four Mile Canal Terracing and Sediment Trapping TV-18 of PPL9 was constructed by May of 2004. The projects consists of earthen terraces meant to reduce the extensive (8ft/yr) shoreline erosion of Little White Lake and Four Mile Canal. Sections of rock dike were added as a maintenance event. Funds that had been approved for a mid-life reconstruction of some terraces have not been requested. The project has performed well despite the heavy terrace erosion along the canal, where reducing the boat-wake energy is most challenging.

2 – Increase Request

This request is to approve the transfer of O&M to Monitoring funds in the amount of \$19,354. This will increase the total funded monitoring budget to \$198,634, and not increase total project costs. Funds will be used to perform land water analysis of 2012 and 2018 photography to capture results of the project at mid and end years. The currently remaining monitoring funds of \$78k (including a \$375 incremental request) are sufficient to complete planned shoreline and vegetation surveys in 2022 and a final report in 2023. Funds are requested for the analysis of existing photography.

3 – Increase Justification

The land water analysis for TV-18 is \$9,677.09 per year analyzed, and the years available from existing CRMS photography are 2012, 2015, and 2018. We request funds for the analysis of two years (2012 and 2018), to assess the project area change as it has undergone significant storm impacts since the last 2011 OMM report and 2009 photography. Results will be used in project close-out reports and be used in future calculations of sediment trapping rates.

CWPPRA Project Monitoring Budget Adjustment Template

Project Nan Four Mile C
PPL: 9
Project Spo NOAA

Prepared By: Leigh Anne Sharp
Date Prepared: 8/11/2021
Date Revised:

Approved Original Base Line					Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State Monitoring	Corps Admin	Fed Monitoring	FY	State Monitoring	Corps Admin	Fed Monitoring	FY	State Monitoring	Corps Admin	Fed Monitoring
0	2005	\$24,511			2005				2005	\$24,511		
-1	2006	\$5,987			2006				2006	\$5,987		
-2	2007	\$6,184			2007				2007	\$6,184		
-3	2008	\$6,388			2008				2008	\$6,388		
-4	2009	\$6,599			2009				2009	\$6,599		
-5	2010	\$6,817			2010				2010	\$6,817		
-6	2011	\$7,042			2011				2011	\$7,042		
-7	2012	\$7,274			2012				2012	\$7,274		
-8	2013	\$7,514			2013				2013	\$7,514		
-9	2014	\$7,762			2014				2014	\$7,762		
-10	2015	\$8,018			2015				2015	\$8,018		
-11	2016	\$8,283			2016				2016	\$8,283		
-12	2017	\$8,556			2017				2017	\$8,556		
-13	2018	\$8,839			2018				2018	\$8,839		
-14	2019	\$9,130			2019				2019	\$9,130		
-15	2020	\$9,432			2020				2020	\$9,432		
-16	2021	\$9,743			2021				2021	\$9,743		
-17	2022	\$10,064			2022				2022	\$10,064		
-18	2023	\$10,396			2023				2023	\$10,396		
-19	2024	\$10,740			2024				2024	\$30,094		
Total		\$179,280	\$0	\$0		\$178,905	\$0	\$0		\$198,634	\$0	\$0

SUMMARY:
Benefits:

Original Net Acres	Revised Net Acres

Approved Monitoring Budget vs Obligations to Date Increment Years -19

Funding Category	Approved Original Monitoring Baseline	Monitoring Obligations to Date	Difference
State Monitoring			
Corps Admin			
Fed Monitoring			
Totals			

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount

Approved Original Budgeted Monitoring Funds less Monitoring Obligations to Date:

	Total Approved Original Monitoring Baseline	Monitoring Obligations to Date	Remaining Available Monitoring Budget
	\$179,280	\$178,905	\$375

Original Approved vs Proposed Revised Fully Funded

Approved Fully Funded Baseline Estimate	Additional Monitoring funding required for remaining project life	Requested Revised Fully Funded Estimate
\$179,280	\$19,354	\$198,634

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State Monitoring	\$179,280	\$198,634	(\$19,354)
Corps Admin	\$0	\$0	\$0
Fed Monitoring	\$0	\$0	\$0
Total	\$179,280	\$198,634	(\$19,354)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectiveness	Revised Cost Effectiveness
10.80%	#DIV/0!	#DIV/0!

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

**REQUEST FOR THE MONITORING AND O&M BUDGET INCREASES FOR BRADY
CANAL HYDROLOGIC RESTORATION (TE-28) PROJECT**

For Decision:

NRCS and CPRA request a \$114,024.21 Monitoring budget increase and a \$43,789.00 Operations and Maintenance budget increase to reconcile past expenditures in advance of financial closeout. The Task Force will consider the Technical Committee's recommendation to approve the budget increase requests.

**Request for CWPPRA Project Monitoring and Operations and Maintenance
Budget Increases
Project Performance Synopsis
August 11, 2021**

Brady Canal Hydrologic Restoration (TE-28)

1 – Project History

The Brady Canal Hydrologic Restoration (TE-28) project involved the installation and maintenance of canal plugs along with the repair, construction, and maintenance of levees, several different types of weirs, rock plugs, earthen and/or rock and earthen embankments, as well as the construction and maintenance of stabilized channel cross-sections. The structures are designed to reduce adverse tidal effects in the project area as well as to better utilize available freshwater and sediment. Project construction began in August 1999 and was completed on July 10, 2000. During this period, the following features were constructed: three fixed crest weirs with variable crest section(s) (Figure 1, structures 14, 21, and 23); a fixed crest weir with barge bay (structure 6); a fixed crest weir (structure 24); two rock armored channel liners (structures 10 and 20); a rock plug (structure 7); and three different embankment types (rock armored earthen embankment, rock dike, and earthen embankment).

Throughout the life of the project six (6) in-kind service efforts took place by the land owners to repair breaches along the project boundary. CPRA conducted three (3) additional maintenance projects (2003, 2012, and 2018).

CPRA collected an extensive array of data throughout the project life. Vegetation data was collected seven (7) times between 1996 and 2016, hourly salinity and water levels were collected from 1996 – 2018 at various locations using between 3 and 9 instruments (of which two instruments were used to calculate marsh mat movement in the northern portion of the project), habitat mapping was conducted four (4) times between 1998 and 2016, submerged aquatic vegetation (SAV) was sampled three (times) between 1996 and 2002, and accretion measurements were obtained twice in 2000/01 and 2006/07.

The following is based on the conclusions found in the 2018 Operations, Maintenance, and Monitoring Close-out Report:

Monitoring:

- The goal for decreasing marsh loss was achieved as both fresh and intermediate marsh acreages have increased inside the project area by ~294 and ~37 acres, respectively. These increases

equate to a project-wide average marsh gain of ~16 acres per year, nearly reversing historical loss rates from 1932-1958.

- The goal to increase or maintain fresh and intermediate marsh vegetation has likewise been successfully achieved over the course of the project. Obligate Wetland and Facultative Wetland species dominate the wetland status of species throughout the project area. Positive trends in important fresh and intermediate marsh indicator species such as *Sagittaria lancifolia*, *Panicum hemitomon*, *Paspalum vaginatum* and *Schoenoplectus americanus* are evident within the project area where they are out-performing their influence in reference areas.
- The goal of decreasing variability in water level within the project area has been achieved, as an examination of water level range revealed statistically different, lower water level variability in CTU 1 and 2 when compared to respective reference areas. The range analysis also revealed lower variability within CTU 3 compared to its reference area, although the difference was not statistically significant.
- Results indicate that the goal of reducing salinity variability inside the project area was not achieved.

Operations and Maintenance

Summary of past maintenance projects include the following:

10/21/2002 - Apache Corporation contracted Frisco Construction Co. to repair and restore the existing levee embankment along Turtle Bayou, Superior Canal, and along the west bank of Jug Lake. This work was completed at a total cost of \$5,310,

04/2003 - Brady Canal Breach Repair Project (2003) – This maintenance project was completed on August 13, 2003 and included the installation of approximately 9,667 tons of riprap along the north bank of Bayou Decade, 2,325 linear feet of levee refurbishment and earthen breach repair along Turtle Bayou and Superior Canal, and replacement of a timber pile on the navigational aid structure at Weir 6. The cost associated with the engineering, design and construction of the 2003 Brady Canal Breach totaled \$600,430.65

8/15/2003 – ConocoPhillips, formerly Burlington Resources, completed the repair of two (2) large breaches along Little Carencro Bayou following Hurricane Lili. The maintenance project was completed on 8/15/2003 at a total cost of \$31,642.57, including construction oversight and administration.

10/31/2003 - Apache Corporation contracted Berry Bros. General Contractors to completed 5,050 linear feet of levee refurbishment along the west bank of Jug Lake. The cost for the levee refurbishment including construction oversight was \$34,284.87. Following the levee refurbishment, Shaw Coastal performed an as-built survey of the repairs at a cost of \$5,100.60. The total project cost for this maintenance event was \$39,385.47.

9/20/2006 - Apache Corporation contracted Frisco Construction Co. Inc. of Houma, La. to repair breaches and refurbish low areas of the spoil banks along the east bank of Jug Lake and embankment tie-ins adjacent to structures #21, #23 and #24. The repairs were completed on 9/20/2006 at a total cost of \$9,265.

9/30/2006 – Conoco Phillips contracted Dupre Brothers, Inc. of Houma, La. to repair several breaches along Carencro Bayou, Little Carencro Bayou and Brady Canal using material from adjacent bayous. The total cost for refurbishment and repair of these breaches was \$25,890.

7/30/2007 – Apache Corporation contracted Dupre Brothers Construction, Inc. of Houma, La. to repair several breaches along the east bank of Jug Lake and reinforce earthen embankment tie-ins adjacent to variable crest weir structures #21, #23, and #24. The repairs were completed on 7/30/2008 at a total cost of \$9,103.12

10/2013 - Brady Canal 2012 Maintenance Project – This maintenance project began in October 2013. It included the refurbishment of 13,900 linear feet of earthen embankment along the perimeter of Jug Lake, rock armoring of the embankment tie-ins adjacent to the three (3) water control structures in Jug Lake, replacement of two (2) timber dolphins at Structure No. 6, replacement of three (3) warning signs at Structure No. 10, and a breach repair/closure adjacent to an existing timber bulkhead at the intersection of Carencro Bayou and Brady Canal. The total project costs associated with surveying, engineering, design, and construction of the 2012 maintenance project totaled \$1,693,284.39.

12/2019 – Brady Canal 2019 Maintenance Project – The project was initiated due to routine inspections and damage assessments conducted by CPRA and NRCS to address deficiencies along the earthen embankments along the northern lake rim of Jug Lake. Roughly 3 miles of earthen embankment refurbishment and breach repairs were included in this maintenance project. The total project cost including construction, engineering and design, and construction oversight was \$497,203.

In addition to the above maintenance project, navigational aids were diagnostically tested, inspected and repaired quarterly and the three (2) water control structures operated twice a year over the life of the project.

2 – Increase Request

The amount of additional funding for Monitoring being requested is \$114,024.21. The amount being requested for O&M is \$43,789.

3 – Increase Justification

The monitoring plan was developed in 1996 with adjustments made in 1998 (reduced in scope due to budgetary constraints) and 2003 (evaluation of project specific monitoring as it relates to the implementation of CRMS). Since that time costs increased as a result of Hurricane Katrina/Rita in 2005 and indirect costs applied to the project. Due to these increases to the project, monitoring inadvertently overspent the budget by \$114,024.21. This request is being made to balance the monitoring budget and close-out the project. The overage in the O&M budget of \$43,789 was mainly due the indirect cost which was not accounted for in the original funding for the project.

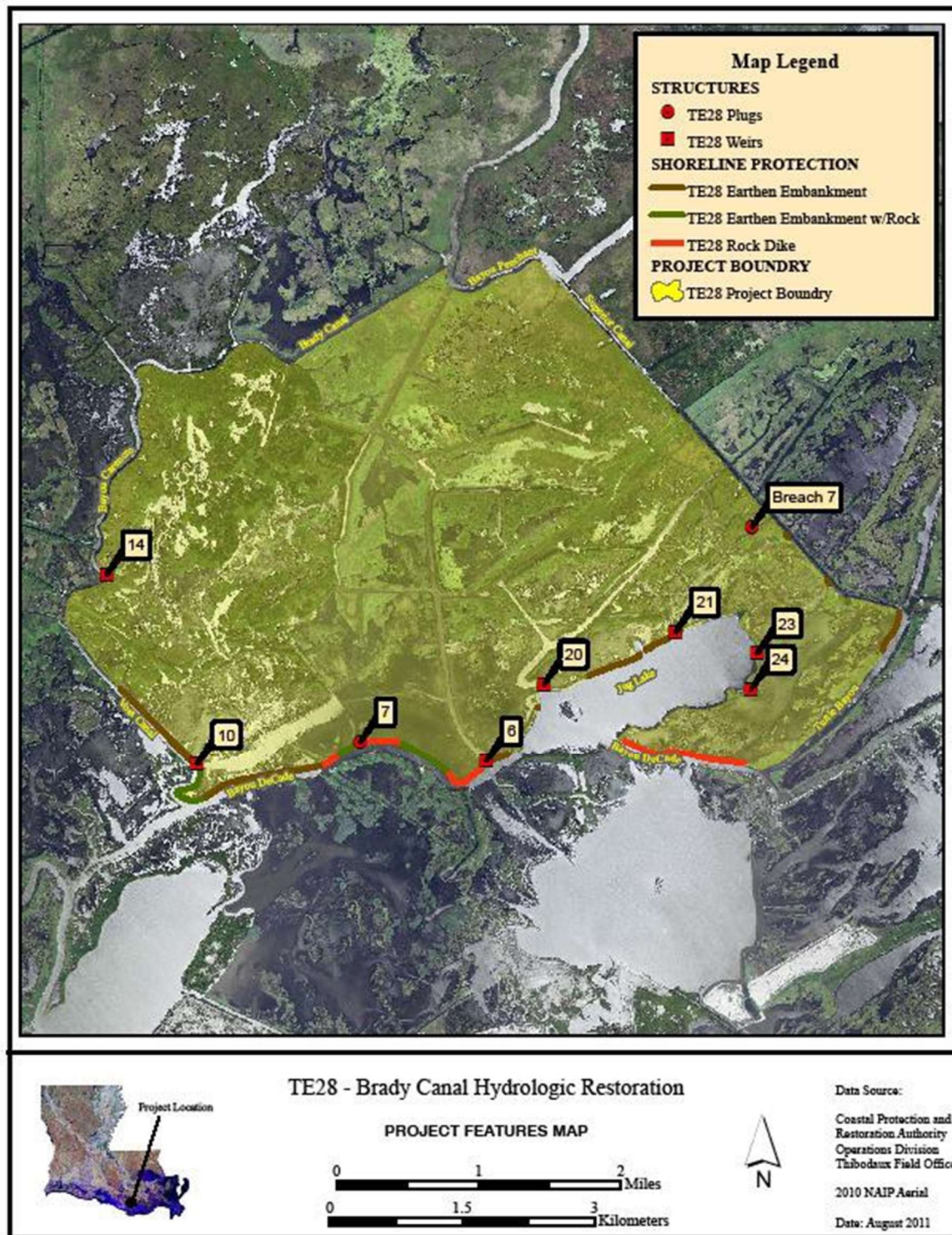


Figure 1. Brady Canal Hydrologic Restoration (TE-28) project features

CWPPRA Project O&M Budget Adjustment Template

Project Name: Brady Canal Hydrologic Restoration TE-28
PPL: 3
Project Sponsor: NRCS

Prepared By: CPRA / NRCS Q Kinler
Date Prepared: 8/11/2021
Date Revised: 8/6/2021

	Approved Original Base Line (Includes TF approved increase from Jan 1999)				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0	2000	\$27,037	\$0	\$0	2000	\$0	\$0	\$0	2000	\$0	\$0	\$0
-1	2001	\$27,740	\$0	\$0	2001	\$0	\$0	\$0	2001	\$0	\$0	\$0
-2	2002	\$28,461	\$0	\$0	2002	\$0	\$0	\$0	2002	\$0	\$0	\$0
-3	2003	\$29,201	\$0	\$0	2003	\$0	\$0	\$0	2003	\$0	\$0	\$0
-4	2004	\$306,979	\$0	\$0	2004	\$0	\$0	\$0	2004	\$0	\$0	\$0
-5	2005	\$30,739	\$0	\$0	2005	\$0	\$0	\$0	2005	\$0	\$0	\$0
-6	2006	\$31,539	\$0	\$0	2006	\$0	\$0	\$0	2006	\$0	\$0	\$0
-7	2007	\$32,359	\$0	\$0	2007	\$0	\$0	\$0	2007	\$0	\$0	\$0
-8	2008	\$33,200	\$0	\$0	2008	\$0	\$0	\$0	2008	\$0	\$0	\$0
-9	2009	\$276,765	\$0	\$0	2009	\$0	\$0	\$0	2009	\$0	\$0	\$0
-10	2010	\$34,949	\$0	\$0	2010	\$0	\$0	\$0	2010	\$0	\$0	\$0
-11	2011	\$35,857	\$0	\$0	2011	\$0	\$0	\$0	2011	\$0	\$0	\$0
-12	2012	\$36,790	\$0	\$0	2012	\$0	\$0	\$0	2012	\$0	\$0	\$0
-13	2013	\$37,746	\$0	\$0	2013	\$0	\$0	\$0	2013	\$0	\$0	\$0
-14	2014	\$165,402	\$0	\$0	2014	\$0	\$0	\$0	2014	\$0	\$0	\$0
-15	2015	\$39,735	\$0	\$0	2015	\$0	\$0	\$0	2015	\$0	\$0	\$0
-16	2016	\$40,768	\$0	\$0	2016	\$0	\$0	\$0	2016	\$0	\$0	\$0
-17	2017	\$41,828	\$0	\$0	2017	\$0	\$0	\$0	2017	\$0	\$0	\$0
-18	2018	\$42,915	\$0	\$0	2018	\$0	\$0	\$0	2018	\$3,593,821	\$7,918	\$94,083
-19	2019	\$44,028	\$0	\$0	2019	\$0	\$0	\$0	2019	\$43,789	\$6,199	\$0
	Total	\$1,344,038				\$3,593,821	\$7,918	\$94,083		\$3,637,610	\$14,117	\$94,083

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
297	297

Approved O&M Budget vs Obligations to Date:

Increment Years -0 through -19

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	\$1,344,038	\$3,593,821	(\$2,249,783)
Corps Admin	\$0	\$7,918	(\$7,918)
Fed S&A & Insp	\$0	\$94,083	(\$94,083)
Totals	\$1,344,038	\$3,695,822	(\$2,351,784)

Approved Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved O&M	O&M Obligations to Date	Remaining Available O&M Budget
1999 App. Budget	\$1,344,038		
2009 Increase	\$1,845,463		
2012 Increase	\$468,731		
Totals	\$3,658,232	\$3,695,822	(\$37,590)

Total Approved Budget less Total Proposed Revised Budget

Funding Category	Current Total	Proposed Revised Total	Difference
State O&M & Insp.	\$3,550,032	\$3,593,821	(\$43,789)
Corps Admin	\$14,117	\$14,117	\$0
Fed S&A & Insp	\$94,083	\$94,083	\$0
Total	\$3,658,232	\$3,702,021	(\$43,789)

Current Request:

Current Increment Funding Request Year	Proposed Revised O&M Estimate	Remaining Available O&M Budget	Current O&M Funding Request Amount
Year -19	\$49,988	\$6,199	\$43,789
Totals	\$49,988	\$6,199	\$43,789

Total Original Approved O&M vs Proposed Revised Fully Funded O&M Estimates:

Approved O&M Estimate	Previously Approved O&M Increases	Additional O&M Funding Required for Remainder of Project Life	Requested Revised Fully Funded Monitoring Estimate
\$1,344,038	\$2,314,194	\$43,789	\$3,702,021

Total Original Approved vs Proposed Revised Fully Funded Estimates:

Total Original Fully Funded Baseline Estimate	Approved Net Budget Change to E&D, Constr., O&M and Monitoring	Pending O&M and Monitoring funding required for remaining project	Requested Revised Fully Funded Estimate
\$5,897,400	\$1,696,352	\$157,813	\$7,751,565

Change in Total Cost and Cost Effectiveness:

	Cost Estimate % Change	Cost Effectiveness	Revised Cost Effectiveness
Original Fully Funded Baseline Est.		\$19,857	
Approved Fully Funded Baseline Est. Plus Net Budget Changes	31.44%		\$26,100

Includes \$14,117 for COE

CWPPRA Project Monitoring Budget Adjustment Template

Project Name: Brady Canal Hydrologic Restoration
PPL: 3
Project Sponsor: NRCS

Prepared By: CPRA/TRO and NRCS/Q Kinler
Date Prepared: 8/6/2021
Date Revised:

	Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State Monitoring	Corps Admin	Fed S&A & Insp	FY	State Monitoring	Corps Admin	Fed S&A & Insp	FY	State Monitoring	Corps Admin	Fed S&A & Insp
0												
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18												
-19												
Total		\$863,200	\$0	\$0		\$1,198,362	N/A	N/A		\$114,024	N/A	N/A

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
297	297

Approved Monitoring Budget vs Obligations to Date: Increment Years -0 through -19

Funding Category	Approved Original Monitoring Baseline	Monitoring Obligations to Date	Difference
State Monitoring	\$863,200	\$1,198,362	(\$335,162)
Corps Admin	N/A	N/A	N/A
Fed S&A & Insp	N/A	N/A	N/A
Totals	\$863,200	\$1,198,362	(\$335,162)

Current Request:

Current Monitoring Increment Funding Request Year	Current Monitoring Funding Request Amount
Year -19	\$114,024

Approved Budgeted Monitoring Funds less Monitoring Obligations to Date:

	Total Approved Monitoring	Monitoring Obligations to Date	Remaining Available Monitoring Budget
Orig Appr Budget	\$863,200	\$1,198,362	
Funding Dec. 1996	(\$129,107)		
Funding Inc. 1998	\$350,245		
Totals	\$1,084,338	\$1,198,362	(\$114,024)

Monitoring Original Approved vs Proposed Revised Fully Funded Estimate:

Approved Monitoring Estimate	Additional Monitoring funding required for remaining project life	Requested Revised Fully Funded Monitoring Estimate
\$1,084,338	\$114,024	\$1,198,362

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Current Total	Proposed Revised Total	Difference
State Monitoring	\$1,084,338	\$1,198,362	(\$114,024)
Corps Admin	N/A	N/A	N/A
Fed S&A & Insp	N/A	N/A	N/A
Total	\$1,084,338	\$1,198,362	(\$114,024)

Total Original Approved vs Proposed Revised Fully Funded Estimate:

Total Original Fully Funded Baseline Estimate	Approved Net Budget Change to E&D, Constr., O&M and Monitoring	Pending O&M and Monitoring funding required for remaining project life	Requested Revised Fully Funded Monitoring Estimate
\$5,897,400	\$1,696,352	\$157,813	\$7,751,565

Change in Total Cost and Cost Effectiveness:

	Cost Estimate % Change	Cost Effectiveness	Revised Cost Effectiveness
Original Fully Funded Baseline Est.		\$19,857	
Approved Fully Funded Baseline Est. Plus Net Budget Changes	31.44%		\$26,100

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

**REQUEST FOR A ONE-YEAR TIME EXTENSION AND O&M BUDGET INCREASE
FOR BAYOU CHEVEE SHORELINE PROTECTION (PO-22) PROJECT**

For Decision:

USACE and CPRA request a one-year time extension and \$81,786.00 budget increase to install 15 navigation warning signs with lights along the length of the project as recommended by USCG and to complete project closeout. The Task Force will consider the Technical Committee's recommendation to approve the budget increase and time extension requests.

O&M Funding Increase Request Beyond the Approved O&M Budget
for
Bayou Chevee Shoreline Protection (PO-22) Project

1) Project History

a. Description

Construction of the Bayou Chevee project was completed on December 7, 2001. The project is divided into two areas (see Fig 1). The rock dike protects both areas from shoreline erosion.

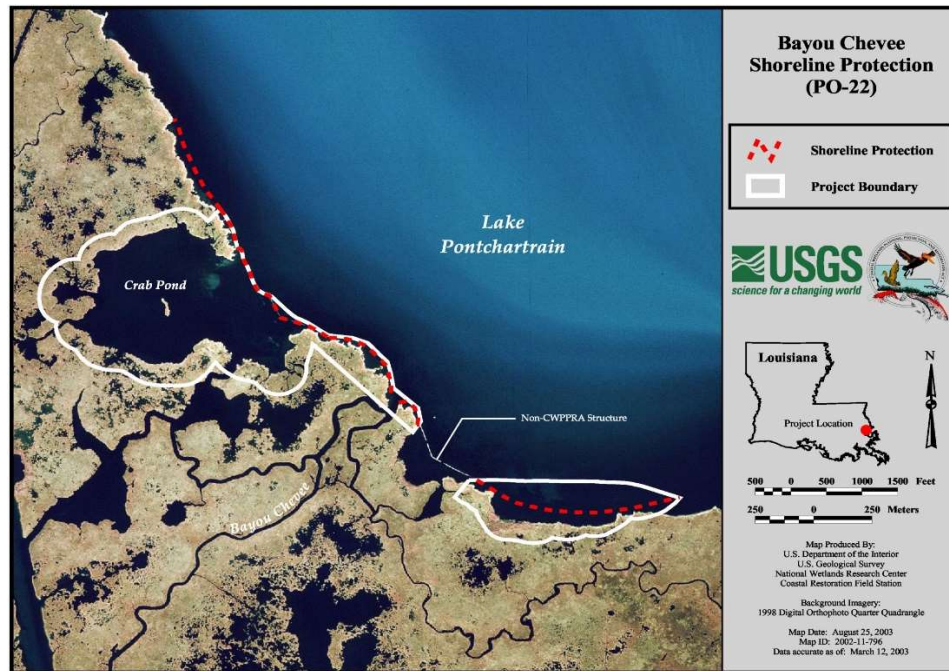


Figure 1: Project Map

High wave energies associated with Lake Pontchartrain and Chef Pass have caused extensive erosion along the southern Lake Pontchartrain shoreline estimated to average 15 feet per year. Thus, without the project, it was estimated that the shoreline erosion would have amounted to 300 feet in 20 years. The project was intended to alleviate this problem through the construction of 8,875 feet (extended from the originally planned 5,690 feet by contract modification) of new rock dike that extends across both the North and South Coves. A pre-existing U.S. Fish and Wildlife Service rock dike located between the North Cove and the South Cove serves to link the dike sections into one continuous rock structure.

The principal project features include:

1. North Cove Rock Dike – 4,825 feet
 - a. Elevation – 3.6 feet NGVD29

- b. Crown width – 4.9 feet
- 2. South Cove Rock Dike – 4,050 feet
 - a. Elevation – 3.6 feet NGVD29
 - b. Crown width – 4.9 feet
- 3. Fish dips – two on each of the North Cove and South Cove dikes.
- 4. Settlement plates (4) – placed on east-southeast side of each fish dip.
- 5. Flotation channels – channels were constructed a minimum of 82 feet from the center of the dike and silted in shortly after construction.

b. O&M Completed to Date

Completed O&M activities to date include performing scheduled project inspections as well as conducting two elevation surveys of the rock dike in 2011 and 2018.

c. Original Project Budget (O&M)

The original approved twenty year CWPPRA O&M budget was \$236,693.

d. Previous O&M Funding Increases

An additional \$85,000 was requested and approved in 2020 to perform installation of 10 warning signs along the rock dike prior to project close out.

2) Increase Request

a. O&M Increase Being Requested

\$81,786 increase to O&M funds

b. Fully Funded Cost Estimate

Previous = \$2,675,067.01

New = \$2,756,853.01

c. Description of Proposed O&M Events to Be Accomplished With the Requested Funding

The requested funding would be used to install the USCG required 15 warning signs with lights along the length of the rock dike prior to project close out.

3) O&M Fund Increase Justification

a. Summary of Project Performance

For the most part, the project has been effective in achieving the goal of reducing the rate of shoreline erosion in the North and South Cove areas. However, as evidenced by the large amount of shoreline retreat between 2005 and 2008, the capacity of the rock structure to prevent erosion was overcome by the effects of Hurricane Katrina in 2005. For the period of time that included Hurricane Katrina (2005 – 2008), the rates of shoreline retreat in the North and South cove project areas were 4.3 and 10.4 times higher, respectively, than the next highest rates of retreat in any other time period.

The project has clearly been effective in achieving the goal of maintaining SAV abundance in the North Cove and maintaining/increasing abundance in the South Cove project areas. Frequency of occurrence of SAV in both the North Cove project and reference areas has been high since construction of the rock dike. In the South Cove, SAV frequency has been consistently higher behind the shoreline protection in the project area than in the reference area.

Table 1. Rate of shoreline change for north and south cove project and reference areas for 5 time periods of the PO-22 project. Rates shown are the average of all transects for the given area and time period. All values are ft/yr. Negative values indicate shoreline retreat.

Time Period					
	North Cove Project	North Cove Reference - Pond	North Cove Reference - LP Shoreline	South Cove Project	South Cove Reference
2002 - 2005	-2.2	0.0	-0.3	-4.2	-34.7
2005 - 2008	-26.5	-1.6	-3.0	-74.9	-160.6
2008 - 2011	-6.2	-2.3	-6.7	-7.2	-31.2
2011 - 2014	-1.4	0.3	-3.9	-4.7	-10.2
2002 - 2014	-8.5	-0.9	-3.5	-22.8	-64.8

Table 2. Net shoreline change for north and south cove project and reference areas for 5 time periods of the PO-22 project. Values shown are the average of all transects for the given area and time period. All values are in feet. Negative values indicate shoreline retreat.

Time Period					
	North Cove Project	North Cove Reference - Pond	North Cove Reference - LP Shoreline	South Cove Project	South Cove Reference
2002 - 2005	-6.6	-0.1	-0.9	-12.7	-104.1
2005 - 2008	-89.2	-5.4	-10.1	-252.0	-540.2
2008 - 2011	-18.8	-6.9	-20.4	-21.8	-94.7
2011 - 2014	-4.8	1.0	-13.0	-15.5	-33.7

2002 - 2014	-108.1	-11.4	-44.3	-289.2	-822.8
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b. Summary of Project Deficiency

The installation of 15 warning signs with lights will satisfy the USCG navigation aid requirements, enabling the project features to be left in place after the end of the project life.

c. Reasons for Requested Transfer

The request made in September 2020 was based on an estimate produced using the CWPPRA cost estimate spreadsheet. It was assumed that only warning signs would be installed at 1,000 foot spacing. After consulting the USCG they will require 15 signs with lights to be installed. This change along with State IDC corrections increase the needed funds to perform this maintenance event and proceed with project close out. An additional year of project time is being requested to make sure there is enough time available to properly close the project out.

CWPPRA Project O&M Budget Adjustment Template

Project Name: Bayou Chevee Shoreline Protection
PPL: 5
Project Sponsor: USACE

Prepared By: Barry Richard
Date Prepared: 8/19/2020
Date Revised:

	Approved Original Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0	2002	\$289,524		\$32,169								
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18					2021	\$180,263		\$32,041				
-19									2022	\$165,650		\$2,000
-20									2023	\$20,525	\$2,000	\$1,000
Total		\$289,524	\$0	\$32,169		\$180,263	\$0	\$32,041		\$186,175	\$2,000	\$3,000

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
212	212

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -2

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	\$289,524	\$180,263	\$109,260
Corps Admin	\$0	\$0	\$0
Fed S&A & Insp	\$32,169	\$32,041	\$129
Totals	\$321,693	\$212,304	\$109,389

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount
Year -19	(\$81,786)

Approved Original Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved Original O&M Baseline	O&M Obligations to Date	Remaining Available O&M Budget
	\$321,693	\$212,304	\$109,389

Original Approved vs Proposed Revised Fully Funded

Approved Fully Funded Baseline Estimate	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
\$2,675,067	\$81,786	\$2,756,853

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State O&M & Insp.	\$289,524	\$366,438	(\$76,915)
Corps Admin	\$0	\$2,000	(\$2,000)
Fed S&A & Insp	\$32,169	\$35,041	(\$2,871)
Total	\$321,693	\$403,479	(\$81,786)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectiveness	Revised Cost Effectiveness
3.06%	\$12,618.24	\$13,004.02

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

ANNUAL REQUEST FOR INCREMENTAL FUNDING FOR FY24 ADMINISTRATIVE COSTS FOR CASH FLOW PROJECTS

For Decision:

The U.S. Army Corps of Engineers will request funding approval in the amount of \$80,954 for administrative costs for cash flow projects beyond Increment 1. The Task Force will consider the Technical Committee's recommendation and vote to approve the request for funds for the following projects:

- Freshwater Bayou Wetland Protection, (ME-04), PPL-2, NRCS
Incremental Funding amount: \$4,070
- Cote Blanche Hydro Rest, (TV-04), PPL-3, NRCS
Incremental Funding amount: \$2,771
- Black Bayou Hydrologic Restoration (CS-27), PPL-6, NOAA
Incremental Funding amount: \$1,501
- Sabine Cycles 4 & 5 (CS-28-4-5), PPL-8, FWS
Incremental Funding amount: \$4,341
- Barataria Bain Landbridge Shoreline Protection Phase 3, (BA-27c), PPL-9, NRCS
Incremental Funding amount: \$2,764
- Black Bayou Culverts Hydrologic Restoration (CS-29), PPL-9, NRCS
Incremental Funding amount: \$1,474
- Timbalier Island Dune & Marsh Restoration (TE-40), PPL-9, EPA
Incremental Funding amount: \$2,366
- New Cut Dune (TE-37), PPL-9, EPA
Incremental Funding amount: \$1,448
- Freshwater Intro S. of Hwy 82 (ME-16), PPL-9, FWS
Incremental Funding amount: \$1,001

- Four Mile Canal Terracing & Sediment Trapping (TV-18), PPL-9, NOAA
Incremental Funding amount: \$2,525
- Perry Ridge WB Stabilization (CS-30), PPL-9, NRCS
Incremental Funding amount: \$2,525
- GIWW Bank Restoration (TE-43), PPL-10, NRCS
Incremental Funding amount: \$4,269
- Lake Borgne SP (PO-30), PPL-10, EPA
Incremental Funding amount: \$2,452
- North Lake Mechant (TE-44), PPL-10, FWS
Incremental Funding amount: \$962
- East Sabine Lake (CS-32), PPL-10, FWS
Incremental Funding amount: \$3,745
- Delta Management at Fort St. Philip (BS-11), PPL-10, FWS
Incremental Funding amount: \$2,580
- Grand White Lake (ME-19), PPL-10, FWS
Incremental Funding amount: \$3,630
- Grand Lake SP (ME-21a), PPL-11, NRCS
Incremental Funding amount: \$2,813
- West Lake Boudreaux (TE-46), PPL-11, FWS
Incremental Funding amount: \$2,122
- Coastwide Nutria Control Program, (LA-03b), PPL-11, NRCS
Incremental Funding amount: \$1,532
- Dedicated Dredge BB Landbridge (BA-35), PPL-11, FWS
Incremental Funding amount: \$1,976
- Pass Chalant to Grand Bayou Pass Barrier Shoreline, (BA-37), PPL-11, NOAA
Incremental Funding amount: \$2,037
- Barataria Bain Landbridge Shoreline Protection Phase 4, (BA-27d), PPL-11, NRCS
Incremental Funding amount: \$1,326
- Bayou Dupont Sediment Delivery System (BA-39), PPL-12, EPA
Incremental Funding amount: \$2,053

- South White Lake Shoreline Protection (ME-22), PPL12, COE
Incremental funding amount: \$1,476
- Whiskey Island Back Barrier (TE-50), PPL-13, EPA
Incremental Funding amount: \$1,918
- Goose Point (PO-33), PPL-13, FWS
Incremental Funding amount: \$1,422
- East Marsh Island (TV-21), PPL-14, NRCS
Incremental Funding amount: \$1,635
- Lake Hermitage Marsh Creation, (BA-42), PPL-15, FWS
Incremental Funding amount: \$4,811
- West Belle Pass Barrier Headland Restoration, (TE-52), PPL-16, NOAA
Incremental Funding amount: \$2,976
- Bayou Dupont Marsh, (BA-48), PPL-17, NOAA
Incremental Funding amount: \$2,869
- Grand Liard, (BA-68), PPL-18, NOAA
Incremental Funding amount: \$2,843
- Oyster Bayou, (CS-58), PPL-21, NOAA
Incremental Funding amount: \$1,374
- Bayou Dupont SDS, (BA-164), PPL-22, EPA
Incremental Funding amount: \$1,347

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

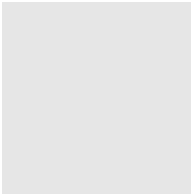
TASK FORCE MEETING

OCTOBER 7, 2021

**REQUEST FOR FUNDING FOR THE CWPPRA PROGRAM'S TECHNICAL
SERVICES**

For Decision:

The U.S. Geological Survey (USGS) and CPRA are requesting funding for technical services for the CWPPRA program in the amount of \$216,546. The Task Force will consider the Technical Committee's recommendation and vote to approve the request for a budget increase and funding for technical services in the amount of \$216,546.



United States Department of the Interior
U.S. GEOLOGICAL SURVEY

Wetland and Aquatic Research Center

May 7, 2021
Scope of Work

Technical Services to the CWPPRA Program

Accurate and timely information is critical to large, interagency programs such as CWPPRA for project planning and interacting with the general public. Due to the spatial extent of the CWPPRA program, the number of stakeholders involved, and the amount of Federal and State dollars associated with the program, the continued maintenance of project, GIS, and website data are necessary to ensure the most up to date and accurate data are available. It is the goal of USGS to provide the CWPPRA partners and the public with timely and accurate information about the program and the constructed projects, as well as, aid project managers during project reevaluation.

Project Information Database Maintenance Task Description:

WARC has created and maintains a real-time, interactive, internet-based data management system, which provides consistent, current programmatic information. This system is comprised of several synchronized database components deployed in various locations which serve specific tasks at their respective location ranging from tracking project costs to progress milestones. This information system is currently working with several CWPPRA databases including: Outreach Committee's standardized public project fact sheets, CWPPRA budget analyst reports and databases, the WVA working group spreadsheets, and the USGS CWPPRA project mapping effort. Additionally, the presence of this system allows staff to "database enable" the CWPPRA fact sheets thus allowing the inclusion of real-time information which directly addresses the conflicting information problem.

As security requirements governing federal systems change, there is a need to ensure that the CWPPRA project information database complies with current information exchange policies wherever a database component is deployed.

As the primary mechanism for integrating databases across the five Task Force agencies and the State of Louisiana, this system is critical to ensure consistent, accurate information exchange and dissemination between the many moving parts of CWPPRA and ensures resources are available to address any problems or user needs in a timely manner.

CWPPRA Outreach and Website Content Task Description:

In keeping with CWPPRA goals, the outreach group is tasked with informing stakeholders and the public about the status and accomplishments of the CWPPRA restoration program. Through the development of new and innovative content and products that are focused on 3 general themes: 1) value of coastal wetlands, 2) awareness of the Louisiana coastal land loss problem and the need for ecosystem restoration, and 3) inform both national and local target audiences on the strengths and successes of CWPPRA's wetland restoration projects. To achieve these goals, the outreach group continually fosters CWPPRA's interagency model and collaboration with NGOs, academia, and the public through the creation of innovative and engaging outreach products and materials. One of the main communication tools is the CWPPRA website and other social media platforms that allow partners and the general public to communicate with the program. To foster public awareness of CWPPRA restoration and protection projects, the outreach team is responsible for maintaining and creating new content for the websites and social media platforms including developing public fact sheets and providing status updates on all CWPPRA projects. These informational fact sheets detail each project through every stage of its construction as well as its maintenance and monitoring lifespan within the

CWPPRA program. At any time, the public should be able to search for a CWPPRA project to find its location, a comprehensive description of the wetland-related problem, the restoration strategy and its status. These fact sheets are created by the outreach staff in conjunction with project managers from each federal agency and the State of Louisiana. In addition to fact sheets, CWPPRA outreach staff is responsible for continually creating new outreach content that the public will find educational and noteworthy. Some examples include new website content, videos, and social media updates. Since the CWPPRA program is very active and dynamic, the outreach staff is constantly updating and generating new content. This includes updating materials for 508 accessibility and compliance. This task includes responding to website inquiries for more information and requests for educational materials, as well as daily maintenance and updates of text and links.

CWPPRA Website (www.LACoast.gov) Maintenance Task Description:

The CWPPRA website currently provides a continuous online presence for federal/state partners and the general public to access the latest information on CWPPRA, its projects, partners, and other pertinent information related to Louisiana's coastal wetlands conservation and restoration. The LaCoast.gov website is an interface between the public and the program. WARC utilizes web server hardware and software, and continually performs system management, backup and recovery maintenance, and programming efforts for the www.LaCoast.gov website. The steadily increasing online security threats are minimized by performing frequently scheduled internal and external penetration tests and quickly addressing those security concerns found.

GIS Task Description:

During Phase I of a CWPPRA project it may be necessary to reevaluate that project to facilitate a scope change at 30% or 95% design. Some projects require little geospatial work, while others need evaluations similar to Phase 0 (Candidate phase). This includes historic land change assessments, project specific land water, shoreline change analysis, and project map creation or editing. Typically, three to five projects require this level of evaluation within a fiscal year. In addition, many projects are approaching their end of project life. Post-project analyses that aid in determining a path forward for the project may be needed. WARC provides the project manager with GIS support that consists of spatial data analyses, maps, graphics, and technical support utilizing the most recent spatial data sets available. Providing these products and services to CWPPRA agencies requires a standardized GIS data management environment and a good deal of coordination with those project managers. As these decisions are just beginning for the CWPPRA program, impacts on workload have been minimal. However, more projects are approaching this crossroads, and it is anticipated geospatial analysis in project-life decisions to increase over time.

Technical Services for FY22

Description	Cost
Project Information Database Maintenance	\$43,212
CWPPRA Outreach and Website Content	\$41,000
CWPPRA Website (www.LACoast.gov) Maintenance	\$45,834
GIS Support for CWPPRA Constructed Project Activities	\$86,500
TOTAL	\$216,546

Deliverables:

Project Information Database Maintenance Task

- Database hosting and regularly scheduled backups (on and offsite)
- Synchronization scripts for multi-agency database communication
- Update project information and figures
- Programming and database administration
- Federal security review

CWPPRA Outreach and Website Content Task

- Public outreach project fact sheet creation and updates
- WaterMarks / Landmarks digital distribution
- Social media development
- Web site content creation and management (articles, pictures, video, etc.)
- Online accessibility as required for 508 ADA compliance
- Website newsflash creation and distribution
- Fulfilling online requests for program information and outreach materials

CWPPRA Website Hardware/Software/Security Maintenance Task

- LaCoast website hosting on a federal server
- Website source code maintained in a version control code repository
- CWPPRA website maintained on daily basis
- Maintain LaCoast SSL Certificate
- Maintain CWPPRA email list
- Maintain users/roles for authenticated LaCoast website access (e.g. Project Managers, LUCC Calendar, Outreach Team)
- Provide summary of CWPPRA website activities
- Maintain compliance with the Dept of Homeland Security policies regarding public facing federal servers
 - Perform, respond, and reconcile internal and external penetration tests
 - Maintain web application firewall configuration settings

GIS Task

- Updated WVA analysis for In Phase projects (Typically 3-5 a year)
- End of project life analysis for constructed projects, as requested
- Fact Sheet maps for In Phase and newly selected PPL projects
- Miscellaneous requests for CWPPRA agencies

Points of Contact:

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Coastal Restoration Assessment Branch
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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

REQUEST FOR OPERATION AND MAINTENANCE (O&M) INCREMENTAL FUNDING

For Decision:

The Task Force will consider and vote to make a recommendation to the Task Force to approve requests for total FY24 O&M incremental funding in the amount of \$4,607,388.00 and O&M budget increases in the total amount of \$124,797.00

- a. PPL 9+ Projects requesting approval for FY24 O&M incremental funding in the total amount of \$2,486,543.00 for the following projects:
- Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
Incremental Funding Request: \$114,958.00
 - Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
Incremental Funding Request: \$6,272.00
 - Little Lake Shoreline Protection/ Dedicated Dredging Near Round Lake (BA-37)
Incremental Funding Request: \$4,064.00
 - Pelican Island and Pas La Mer to Chaland Pass (BA-38)
Incremental Funding Request: \$14,842.00
 - Bayou Dupont Sediment Delivery System (BA-39)
Incremental Funding Request: \$8,342.00
 - Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
Incremental Funding Request: \$7,968.00
 - Cameron-Creole Grand Bayou Marsh Creation (CS-54)
Incremental Funding Request: \$25,382.00
 - Coastwide Nutria Control Program (LA-03b)
Incremental Funding Request: \$2,091,073.00
 - Coastwide Vegetative Planting Project (LA-39)
Incremental Funding Request: \$5,278
 - Freshwater Introduction South of Highway 82 (ME-16)
Incremental Funding Request: \$16,297.00
 - Rockefeller Refuge Gulf Shoreline Protection (ME-18)
Incremental Funding Request: \$29,899.00
 - Grand Lake Shoreline Protection (ME-21)
Incremental Funding Request: \$8,744.00
 - South Grand Chenier Marsh Creation (ME-22)

- Incremental Funding Request: \$9,364.00
- Bayou Bonfuca Marsh Creation (PO-104)
Incremental Funding Request: \$67,839.00
- West Bell Pass Barrier Headland Restoration (TE-52)
Incremental Funding Request: \$4,202.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
Incremental Funding Request: \$12,604.00
- Cole's Bayou Marsh Restoration (TV-63)
Incremental Funding Request: \$42,120.00
- Bayou Dupont Marsh and Ridge Creation (BA-48)
Incremental Funding Request: \$5,424.00
- Grand Liard Marsh and Ridge Restoration (BA-68)
Incremental Funding Request: \$11,871.00

b. PPL 1-8 Project requesting approval for FY24 O&M incremental funding in the total amount of \$2,120,845.00 and budget increases in the total amount of \$124,797.00 for the following projects:

- Naomi Outfall Management (BA-03c)
Budget Increase Amount: \$88,636.00
Incremental Funding Request: \$88,636.00
- Barataria Waterway West Bank Protection (BA-23)
Budget Increase Amount: \$36,161.00
Incremental Funding Request: \$36,161.00
- Cameron Creole Maintenance (CS-04a)
Incremental Funding Request: \$1,848,047.00
- Black Bayou Hydrologic Restoration (CS-27)
Incremental Funding Request: \$22,426.00
- Bayou Chevee Shoreline Protection (PO-22)
Incremental Funding Request: \$81,786.00
- Brady Canal Hydrologic Restoration (TE-28)
Incremental Funding Request: \$43,789.00

O&M Funding Increase Request Beyond the Approved O&M Budget
for
Naomi Outfall Management (BA-03c) Project

1) Project History

a. Description

The State of Louisiana and Plaquemines Parish Government (PPG) jointly funded construction of the Naomi Siphon Diversion project (BA-03), a set of eight siphons that was built in 1992 to re-introduce freshwater from the Mississippi River into the adjacent marshes. The re-introduction was intended to restore some of the ecological functions supported by periodic over-bank flooding that occurred prior to the placement of the flood-control levees.

In order to better-manage the freshwater from the siphons and prevent saltwater intrusion, weirs were installed in two canals that connect the project area to the Barataria Bay Waterway. The weirs were constructed in 2002 as part of the Naomi Outfall Management project (BA-03c), which is funded through the federal Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) and sponsored by the National Resource Conservation Service (NRCS). The BA-03c project area encompasses the 13,130-acre BA-03 project area and includes an additional 13,000 + acres.

The BA-03c project area lies within the Barataria Basin in Jefferson and Plaquemines Parishes, Louisiana (Figure 2). The area is bordered by the Barataria Bay Waterway (BBW) and the town of Lafitte on the west and the Mississippi River (MR) back protection levee and the community of Naomi on the east. The area extends to the south of the Pen (a failed agricultural impoundment) and includes the Dupre Cut portion of the BBW. The project comprises ~ 26,956 ac (10,782 ha) of brackish and intermediate marsh.

The BA-03c project consists of two fixed-crest weirs with boat bays that were constructed in the Goose Bayou and Bayou Dupont Canals (see inspection photographs in Appendix A). These canals connect the open-water Pen with the BBW (Figure 1) and can serve as a conduit for freshwater from the Naomi siphons to exit the project area. Additionally, during high tide, higher saline water from the BBW can enter the project area through these canals. The weirs are designed to enhance the retention of freshwater within the project area and discourage saltwater intrusion.

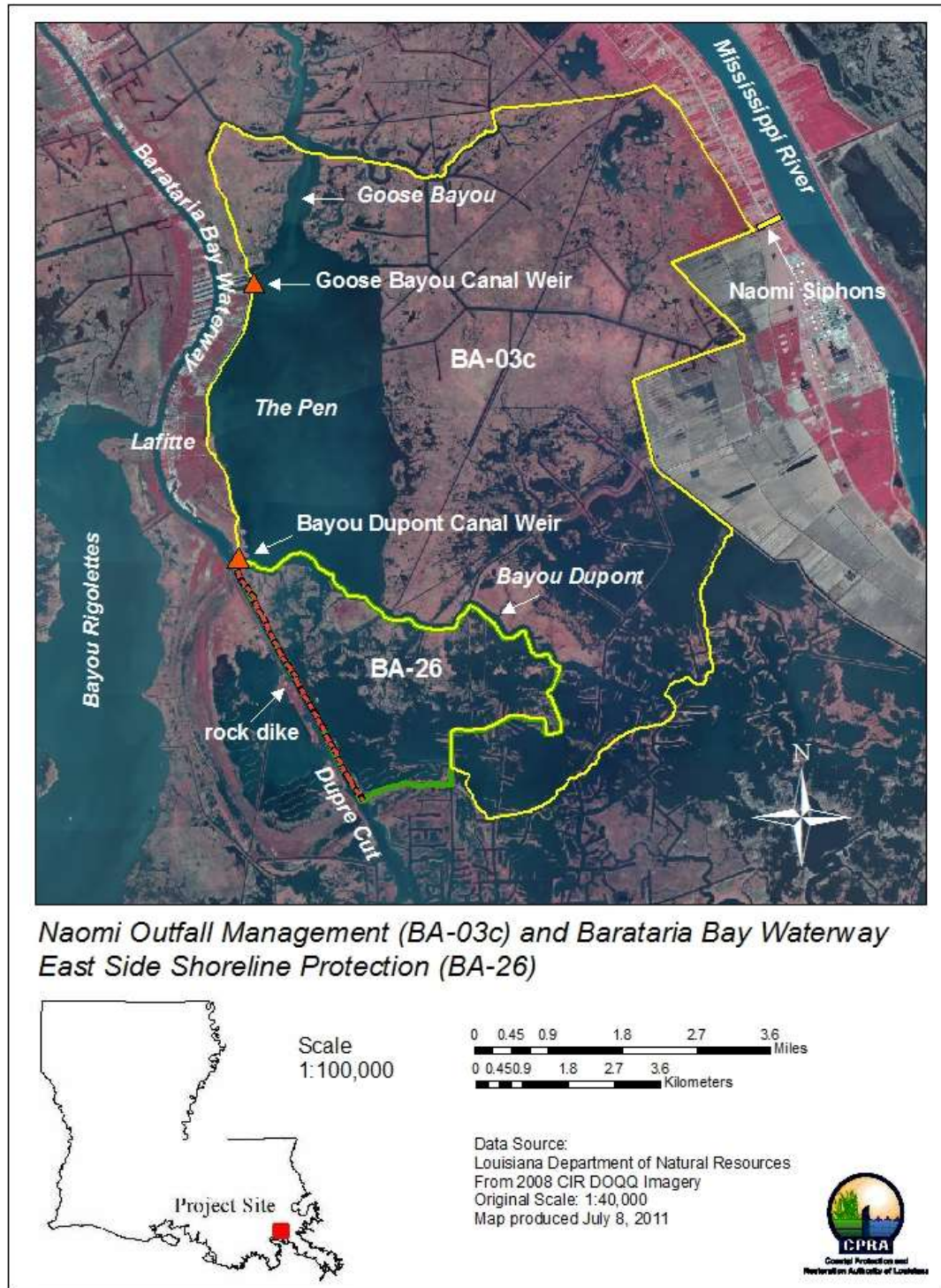


Figure 1: Project Map

b. O&M Completed to Date

On June 20, 2006, a contract was awarded to place two warning buoys in places where warning signs were damaged and to replace 5 navigation lights. This project was completed on October 4, 2006.

A second maintenance contract was awarded May 27, 2015 for the replacement of the barrier float buoys and navigation signs at the Goose Bayou weir. Repair work was completed August 10, 2015.

In late 2010 the Bayou Dupont Weir was partially deconstructed to allow access of equipment for construction of the South Shore of The Pen Shoreline Protection and Marsh Creation Project (BA-41). It remained in this state through the construction of the Bayou Dupont Marsh Creation Projects (BA-48 and BA-164) as well as the Long Distance Sediment Pipeline Project (BA-43EB). It was replaced back to as-built specifications in late 2016 at no cost to the project.

CPRA was notified in September 2017 that a company had knocked over one of the lighted pile clusters at the Bayou Dupont Weir. This company agreed to replace as designed at no cost to the government. This repair was completed in November 2017.

c. Original Project Budget (O&M)

The original approved twenty year CWPPRA O&M budget was \$488,980.

d. Previous O&M Funding Increases

There have been no previous O&M funding increases.

2) Increase Request

a. O&M Increase Being Requested

\$88,984 increase to O&M funds

b. Fully Funded Cost Estimate

Original = \$2,309,638

New = \$2,398,623

c. Description of Proposed O&M Events to Be Accomplished With the Requested Funding

The requested funding would be used to replace the missing navigational aids at the Bayou Dupont Weir Structure.

3) O&M Fund Increase Justification

a. Summary of Project Performance

The first goal of the Naomi Outfall Management project is to reduce the mean salinity in the project area. Salinity is clearly being reduced as a result of the siphons at stations inside and

near the mouth of the outfall canal. Salinity between May 2008–December 2010 was also reduced during siphon flow at CRMS4103, located in the central project area. With further distance from the outfall canal it becomes more difficult to credit salinity reductions solely to the siphons. Salinity reductions in the project area are often occurring when the river stage is high and the salinity in the project area may be lower due to increased discharge from the mouth of the river and perhaps freshwater from the Davis Pond Diversion. It can be expected that increasing the flow through the siphons would expand the range of freshening in the project area.

The construction of the boat-bay weirs was intended to 1) retain freshwater from the diversion and direct it south and 2) reduce inflow of saltwater from the Barataria Bay Waterway. Since the percent change in salinity pre/post weir construction for the reference site falls within the range of salinity change for the project sites, it is difficult to discern any effect from the weirs on salinity in the project area. Settling of the weirs, in particular the Goose Bayou Canal weir, may have diminished the water control potential from these structures.

The second goal of this project is to improve the growing conditions and increase the relative abundance of fresh-to-intermediate marsh species in the project area. Between the 2000 (pre-weir) and 2003 (post-weir) vegetation surveys, there was a significant increase in the percent cover of fresh-to-intermediate species (30% to 73%). However, 2000 was a drought year and the vegetation community reflected higher salinities in the basin by transitioning to a more salt-dominated community. The abundance of fresh–intermediate and intermediate/brackish–salt species has varied between years, with 1997 having the highest percent cover of fresher species and 2000 having the lowest. Significant events such as drought and hurricanes, especially Hurricane Katrina in 2005, affect the plant community composition and percent cover and demonstrate the response of wetlands to their environmental conditions. From these data, shifts between fresher and saltier plant communities appear to be influenced more by basin-wide environmental factors than by siphon operation or the installation of the weirs. However, if the siphons were run more frequently and at an increased flow rate, the project area could see a transition to a community with a greater abundance of fresh-intermediate species.

Water elevation was monitored as part of this project to ensure that there would not be a negative impact on vegetation from increased flooding due to siphon flow. Water elevation data from continuous recorders in the project area demonstrated that there was no significant increase in water elevation when the siphons were flowing. Two discrete water elevation stations did show an increase in water elevation during flow. These stations are

located in and at the mouth of the outfall canal and represent a highly localized response in elevation to siphon flow. The construction of the weirs may have prompted additional concerns about an increase in water elevation within the project area during siphon flow; however, no significant increase occurred at any of the continuous recorder stations in the project area post-construction.

The third goal—to reduce the rate of conversion of marsh to open water in the project area—was met for the Naomi Siphon Diversion (BA-03) project area. This goal could not be assessed for the BA-03c project area. Land-water analyses for the BA-03 project area show that there has been no loss of land between 1991 and 2009; in fact, there has been an increase from 8,175 acres to 8,289 acres. The 2000 aerial photography included the BA-03, BA-03c, and BA-26 project areas. However, it could not be used for comparison of land-water analyses because it was flown at a different scale than the 1991 and 2009 imagery.

b. Summary of Project Deficiency

Two of the navigation aids at the Bayou Dupont Weir are missing and need to be replaced.

c. Reasons for Requested Transfer

The current budget will not support this maintenance event to replace two navigational aids at the Bayou Dupont Weir structure. These navigational aids are required by the project permit to aid in the navigation thru the structure.

CWPPRA Project O&M Budget Adjustment Template

Project Name: Naomi Outfall Management
PPL: 5
Project Sponsor: NRCS

Prepared By: Barry Richard
Date Prepared: 7/27/2021
Date Revised:

Approved Original Base Line					Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0	2002	\$440,082		\$48,898								
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18					2021	\$446,594		\$49,622				
-19									2022	\$75,984	\$2,000	\$3,765
	Total	\$440,082	\$0	\$48,898		\$446,594	\$0	\$49,622		\$75,984	\$2,000	\$3,765

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
26,130	26,130

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -2

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	\$440,082	\$446,594	(\$6,512)
Corps Admin	\$0	\$0	\$0
Fed S&A & Insp	\$48,898	\$49,622	(\$724)
Totals	\$488,980	\$496,215	(\$7,235)

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount
Year -20	\$88,984

Approved Original Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved Original O&M Baseline	O&M Obligations to Date	Remaining Available O&M Budget
	\$488,980	\$496,215	(\$7,235)

Original Approved vs Proposed Revised Fully Fund

Approved Fully Funded Baseline Estimate	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
\$2,309,638	\$88,984	\$2,398,623

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State O&M & Insp.	\$440,082	\$522,578	(\$82,496)
Corps Admin	\$0	\$2,000	(\$2,000)
Fed S&A & Insp	\$48,898	\$53,387	(\$4,489)
Total	\$488,980	\$577,964	(\$88,984)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectiveness	Revised Cost Effectiveness
3.85%	\$88.39	\$91.80

O&M Funding Increase Request Beyond the Approved 20-Year Budget
for
BA-23 Barataria Bay Waterway West Bank Protection Project

1) Project History

a. Description

The Barataria Bay Waterway West Bank Protection Project (BA-23) is located in Jefferson Parish, Louisiana approximately 4.5 mi (7.2 km) south of Lafitte on the west side of the Dupre Cut portion of the Barataria Bay Waterway (BBW). The project area is east of Bayou Rigolettes, north of the Lafitte Oil and Gas Field, and southwest of The Pen. Principal project components include 9,900 linear feet of rock shoreline protection along the west bank of the BBW and a water control structure on an abandoned oilfield access canal which intersects the waterway. The purpose of the foreshore rock dike is to protect the existing adjacent marsh from excessive water exchange, wave action, and subsequent erosion. The water control structure, comprised of a weir and two 48-inch diameter culverts, was intended to manage the water levels in the protected marsh behind the dike for enhancement of wildlife habitat. Construction was completed in November 2000.

b. O&M Completed to Date:

- In 2005, a contract was awarded to cap the rock shoreline protection structure with 5,143 tons of rip-rap on the settled sections to bring them up to design elevation. This work was completed in 2006.
- The access channel leading to the water control structure was dredged in 2007 to improve flow. 4,400 cubic yards of material was excavated and placed beneficially adjacent to the channel.
- Vandalism of the weir in 2015 led to the replacement of several stoplogs and miscellaneous hardware.
- In 2015, 100 sandbags were purchased and installed along eroded areas of the water control structure berm to stabilize the bank line until a maintenance contract could be awarded.
- A contract to repair the water control structure was awarded in 2015. Two 36"-diameter HDPE liners were installed and grouted within the annular space of the deteriorated 48" culverts. Approximately 191 cubic yards of earth fill was placed to repair erosion damage, and 284 square yards of geotextile fabric and riprap were installed to help prevent further erosion on the marsh side of the structure. Work was completed in 2016.

c. Original Project O&M Budget

\$746,260

d. Previous O&M Funding Increases

An O&M budget increase of \$291,423 was approved in 2015 to enable maintenance repairs to proceed on the water control structure. Another increase of \$64,218 was approved in 2016 to perform O&M duties thru the project end of life.

2) Increase Request

a. O&M Increment Increase Being Requested

\$36,161 increase to O&M funds

b. Fully Funded Cost Estimate

Current = \$1,100,410

New = \$1,136,571

c. Description of Proposed O&M Events to Be Accomplished with the Requested Funding

The requested funding would be used to fund the project close out related costs.

3) Increase Justification

a. Summary of Project Performance

The monitoring results indicate that the project has been effective in meeting the objective of re-establishing a hydrologic barrier to protect the marsh and open water in the project area from excessive wave energy, water level fluctuations, and saltwater intrusion from the Barataria Waterway. The water control structure has been effective in retaining water during winter months, increasing available habitat for wintering waterfowl.

b. Summary of Project Deficiency

The original fully-funded cost estimate did not account for the indirect labor costs (IDC) associated with CPRA's maintenance activities and twice-yearly structure operations.

c. Reason for Requested Increase

CPRA IDC corrections consumed a larger portion of the remaining project budget than anticipated and this request is meant to fund the remainder of the project thru close out.

CWPPRA Project O&M Budget Adjustment Template

Project Name: Barataria Bay Westside Shoreline Protection
PPL: 4
Project Sponsor: NRCS

Prepared By: Barry Richard / Quin Kinler
Date Prepared: 8/10/2021
Date Revised:

	Approved Current Base Line				Obligations to Date				Proposed Revised Estimate and Schedule			
Year	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	State O&M & Insp.	Corps Admin	Fed S&A & Insp	FY	O&M & State Insp.	Corps Admin	Fed S&A & Insp
0												
-1												
-2												
-3												
-4												
-5												
-6												
-7												
-8												
-9												
-10												
-11												
-12												
-13												
-14												
-15												
-16												
-17												
-18										\$1,126,571		
-19		\$1,100,410			2020	\$1,126,571			2022	\$10,000		
	Total	\$1,100,410	\$0	\$0		\$1,126,571	\$0	\$0		\$1,136,571	\$0	\$0

SUMMARY:

Benefits:

Original Net Acres	Revised Net Acres
232	232

Approved O&M Budget vs Obligations to Date: Increment Years -0 through -19

Funding Category	Approved Original O&M Baseline	O&M Obligations to Date	Difference
State O&M & Insp.	\$1,100,410	\$1,126,571	(\$26,161)
Corps Admin	\$0	\$0	\$0
Fed S&A & Insp	\$0	\$0	\$0
Totals	\$1,100,410	\$1,126,571	(\$26,161)

Current Request:

Current Increment Funding Request Year	Current Funding Request Amount
Year -20	\$36,161

Approved Original Budgeted O&M Funds less O&M Obligations to Date:

	Total Approved Original O&M Baseline	O&M Obligations to Date	Remaining Available O&M Budget
	\$1,100,410	\$1,126,571	(\$26,161)

Current Approved vs Proposed Revised Fully Funded Estimates:

Approved Fully Funded Baseline Estimate	Additional O&M funding required for remaining project life	Requested Revised Fully Funded Estimate
\$3,369,006	\$36,161	\$3,405,167

Total Approved Original Budget less Total Proposed Revised Budget

Funding Category	Original Total	Proposed Revised Total	Difference
State O&M & Insp.	\$1,100,410	\$1,136,571	(\$36,161)
Corps Admin	\$0	\$0	\$0
Fed S&A & Insp	\$0	\$0	\$0
Total	\$1,100,410	\$1,136,571	(\$36,161)

Change in Total Cost and Cost Effectiveness:

Fully Funded Cost Estimate % Change	Original Cost Effectiveness	Revised Cost Effectiveness
1.07%	\$14,521.58	\$14,677.44

COASTWIDE NUTRIA CONTROL PROGRAM (LA-03B)

FEDERAL AGENCY: NRCS

	TOTAL	Construction	O & M	Post Const Monitoring	COE Mgt
TASK FORCE APPROVED PHASE II BUDGET (YEARS 1-22)	\$48,855,118	\$1,682,839	\$44,884,296	\$2,268,214	\$19,769
EXPENDED: PROGRAM YR 1 (2002-2003)	\$1,797,063	\$1,682,839		\$113,518	\$706
EXPENDED: PROGRAM YR 2 (2003-2004)	\$1,770,229		\$1,696,217	\$73,283	\$729
EXPENDED: PROGRAM YR 3 (2004-2005)	\$1,580,451		\$1,523,412	\$56,287	\$752
EXPENDED: PROGRAM YR 4 (2005-2006)	\$1,059,669		\$954,192	\$104,701	\$776
EXPENDED: PROGRAM YR 5 (2006-2007)	\$2,366,367		\$2,290,206	\$75,361	\$801
EXPENDED: PROGRAM YR 6 (2007-2008)	\$2,035,557		\$1,952,998	\$81,732	\$827
EXPENDED: PROGRAM YR 7 (2008-2009)	\$2,169,608		\$2,078,585	\$90,170	\$853
EXPENDED: PROGRAM YR 8 (2009-2010)	\$2,716,422		\$2,613,099	\$102,442	\$881
EXPENDED: PROGRAM YR 9 (2010-2011)	\$2,160,461		\$2,070,779	\$88,774	\$909
EXPENDED: PROGRAM YR 10 (2011-2012)	\$2,195,268		\$2,106,221	\$88,109	\$938
EXPENDED: PROGRAM YR 11 (2012-2013)	\$2,382,174		\$2,295,097	\$86,109	\$968
EXPENDED: PROGRAM YR 12 (2013-2014)	\$2,382,581		\$2,295,562	\$86,019	\$999
EXPENDED: PROGRAM YR 13 (2014-2015)	\$2,175,303		\$2,077,107	\$97,166	\$1,030
EXPENDED: PROGRAM YR 14 (2015-2016)	\$2,217,574		\$2,107,368	\$109,143	\$1,063
EXPENDED: PROGRAM YR 15 (2016-2017)	\$1,518,579		\$1,425,432	\$92,050	\$1,097
EXPENDED: PROGRAM YR 16 (2017-2018)	\$1,285,755		\$1,182,464	\$102,159	\$1,133
EXPENDED: PROGRAM YR 17 (2018-2019)	\$1,571,643		\$1,476,678	\$93,796	\$1,169
EXPENDED: PROGRAM YR 18 (2019-2020)	\$1,916,539		\$1,815,539	\$101,000	\$0
ESTIMATED/EXPENDED: PROGRAM YR 19 (2020-2021)	\$2,402,330		\$2,302,709	\$98,414	\$1,207
ESTIMATED: PROGRAM YR 20 (2021-2022)	\$3,454,552		\$3,304,552	\$150,000	\$0
ESTIMATED: PROGRAM YR 21 (2022-2023)	\$3,279,841		\$3,117,610	\$160,787	\$1,444
ESTIMATED: PROGRAM YR 22 (2023-2024)	\$3,302,635		\$3,135,538	\$165,610	\$1,487
EXPENDED/ESTIMATED THRU PROGRAM YEAR 22	\$47,740,601	\$1,682,839	\$43,821,365	\$2,216,628	\$19,769
PROJECTED AVAILABLE BALANCE AFTER PROGRAM YEAR 2:	\$1,114,517	\$0	\$1,062,931	\$51,586	\$0
ESTIMATED: PROGRAM YR 23 (2024-2025)	\$3,326,114	\$0	\$3,154,004	\$170,578	\$1,532
2021 OM&M, MONITORING, and MGT REQUEST to Fund LA-03b THRU PROG. YR. 23	\$2,211,597	\$0	\$2,091,073	\$118,992	\$1,532

	PROJECTED EXPENDITURES			
	Prog. Yr 20 2021-2022	Prog. Yr 21 2022-2023	Prog. Yr 22 2023-2024	Prog. Yr 23 2024-2025
NRCS S&A ¹	\$31,821	\$13,782	\$14,195	\$14,621
DNR S&A ¹	\$47,731	\$8,039	\$8,281	\$8,529
DWF Activities				
Monitoring (Survey & Report)	\$130,000	\$137,817	\$141,952	\$146,210
General O&M Activities ¹	\$625,000	\$575,789	\$593,062	\$610,854
Incentive Payments ²	\$2,000,000	\$2,520,000	\$2,520,000	\$2,520,000
Nutria Survey Report	\$20,000	\$22,970	\$23,659	\$24,368
Contingency ³	\$600,000	\$0	\$0	\$0
COE Project Management	\$0	\$1,444	\$1,487	\$1,532
TOTAL	\$3,454,552	\$3,279,841	\$3,302,635	\$3,326,114

COE opted to not request increment

¹ General Activities include program management, tail collections, etc.

² Incentive payments currently \$6 per tail.

³ PY 20 Contingency would allow incentive payment and collection if harvest exceeds 400,000/year and cover other unforeseen costs. For PYs 21 - 23, 5% contingency is included in each line item.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

REQUEST FOR MONITORING INCREMENTAL FUNDING

For Decision:

The Task Force will consider and vote to make a recommendation to the Task Force to approve FY24 incremental funding in the total amount of \$11,768,859.21.

- a. PPL 9+ Projects requesting approval for FY24 incremental funding in the total amount of \$1,454,590.00 for the following projects:
 - Barataria Basin Landbridge Shoreline Protection (BA-27c)
Incremental Funding Request: \$19,038.00
 - Hydrologic Restoration and Vegetative Plantings in the Lac Des Allemands Swamp (BA-34-2)
Incremental Funding Request: \$218,434.00
 - Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35)
Incremental Funding Request: \$105,378.00
 - Pelican Island and Pas La Mer to Chaland Pass (BA-38)
Incremental Funding Request: \$143,088.00
 - Bayou Dupont Sediment Delivery System (BA-39)
Incremental Funding Request: \$3,714.00
 - Lake Hermitage Marsh Creation (BA-42)
Incremental Funding Request: \$2,207.00
 - Bayou Dupont Marsh and Ridge Creation (BA-48)
Incremental Funding Request: \$28,937.00
 - Grand Liard Marsh and Ridge Restoration (BA-68)
Incremental Funding Request: \$188,168.00
 - Bayou Dupont Sediment Delivery- Marsh Creation 3 (BA-164)
Incremental Funding Request: \$3,597.00
 - Delta Management at Fort St. Phillip (BS-11)
Incremental Funding Request: \$119,461.00
 - Black Bayou Culverts Hydrologic Restoration (CS-29)
Incremental Funding Request: \$41,730.00
 - Coastwide Nutria Control Program (LA-03b)
Incremental Funding Request: \$118,922.00
 - Coastwide Vegetative Planting Project (LA-39)
Incremental Funding Request: \$67,565
 - Bayou Bonfuca Marsh Creation (PO-104)
Incremental Funding Request: \$2,005.00

- Raccoon Island Shoreline Protection and Marsh Creation (TE-48)
Incremental Funding Request: \$62,936.00
- Whiskey Island Back Barrier Marsh Creation (TE-50)
Incremental Funding Request: \$86,772.00
- Four Mile Canal Terracing and Sediment Trapping (TV-18)
Incremental Funding Request: \$19,729.00
- Cole's Bayou Marsh Restoration (TV-63)
Incremental Funding Request: \$222,909.00

b. PPL 1-8 Project requesting approval for FY24 incremental funding in the total amount of \$314,269.21 for the following projects:

- Cameron Creole Maintenance (CS-04a)
Incremental Funding Request: \$108,631.00
- Sabine Refuge Marsh Creation, Increment 4 and 5 (CS-28-4)
Incremental Funding Request: \$91,614.00
- Brady Canal Hydrologic Restoration (TE-28)
Incremental Funding Request: \$114,024.21

c. Coastwide Reference Monitoring System (CRMS) requesting approval for FY24 incremental funding in the total amount of \$10,000,000.00

- Coastwide Reference Monitoring System (LA-30)
Incremental Funding Request: \$10,000,000.00

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

DATE OF UPCOMING CWPPRA PROGRAM MEETING

For Announcement:

The Technical Committee Meeting will be held December 9, 2021 at 9:30 a.m.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

OCTOBER 7, 2021

SCHEDULE DATES OF FUTURE PROGRAM MEETINGS

For Announcement:

December 9, 2021	9:30 a.m.	Technical Committee	TBD
January 2021	9:30 a.m.	Task Force	TBD

*Dates are subject to change. Please check back with lacoast.gov for the latest calendar.

