

Mississippi River Reintroduction into Maurepas Swamp

RESTORE Proposal Coastal Protection & Restoration Authority

I. Summary Sheet

Appendix A: Council Member Applicant and Proposal Information Summary Sheet

Council Member: State of Louisiana	Point of Contact: Jerome Zeringue	
	Phone: (225) 342-7669	
	Email: Jerome.Zeringue@LA.GOV	
Project Identification		
Project Title: Mississippi River Reintroduction into Maurepas Swamp		
State(s): Louisiana	County/City/Region: St. John the Baptist, St. James, Ascension, and Livingston Parishes, Southeastern Louisiana	
Specific Location: <i>Projects must be located within the Gulf Coast Region as defined in RESTORE Act. (attach map or photos, if applicable)</i> Please see attached.		
Project Description		
RESTORE Goals: <i>Identify all RESTORE Act goals this project supports. Place a P for Primary Goal, and S for secondary goals.</i>		
<input checked="" type="checkbox"/> Restore and Conserve Habitat	<input checked="" type="checkbox"/> Replenish and Protect Living Coastal and Marine Resources	
<input checked="" type="checkbox"/> Restore Water Quality	<input checked="" type="checkbox"/> Enhance Community Resilience	
<input checked="" type="checkbox"/> Restore and Revitalize the Gulf Economy		
RESTORE Objectives: <i>Identify all RESTORE Act objectives this project supports. Place a P for Primary Objective, and S for secondary objectives.</i>		
<input checked="" type="checkbox"/> Restore, Enhance, and Protect Habitats	<input checked="" type="checkbox"/> Promote Community Resilience	
<input checked="" type="checkbox"/> Restore, Improve, and Protect Water Resources	<input checked="" type="checkbox"/> Promote Natural Resource Stewardship and Environmental Education	
<input checked="" type="checkbox"/> Protect and Restore Living Coastal and Marine Resources	<input checked="" type="checkbox"/> Improve Science-Based Decision-Making Processes	
<input checked="" type="checkbox"/> Restore and Enhance Natural Processes and Shorelines		
RESTORE Priorities: <i>Identify all RESTORE Act priorities that this project supports.</i>		
<input checked="" type="checkbox"/> Priority 1: Projects that are projected to make the greatest contribution		
<input checked="" type="checkbox"/> Priority 2: Large-scale projects and programs that are projected to substantially contribute to restoring		
<input checked="" type="checkbox"/> Priority 3: Projects contained in existing Gulf Coast State comprehensive plans for the restoration		
<input checked="" type="checkbox"/> Priority 4: Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries ...		
RESTORE Commitments: <i>Identify all RESTORE Comprehensive Plan commitments that this project supports.</i>		
<input checked="" type="checkbox"/> Commitment to Science-based Decision Making		
<input checked="" type="checkbox"/> Commitment to Regional Ecosystem-based Approach to Restoration		
<input checked="" type="checkbox"/> Commitment to Engagement, Inclusion, and Transparency		
<input checked="" type="checkbox"/> Commitment to Leverage Resources and Partnerships		
<input checked="" type="checkbox"/> Commitment to Delivering Results and Measuring Impacts		
RESTORE Proposal Type and Phases: <i>Please identify which type and phase best suits this proposal.</i>		
<input checked="" type="checkbox"/> Project <input checked="" type="checkbox"/> Planning <input type="checkbox"/> Technical Assistance <input type="checkbox"/> Implementation <input type="checkbox"/> Program		
Project Cost and Duration		
Project Cost Estimate:	\$14,190,000	Project Timing Estimate:
Total:		Date Anticipated to Start: 09/2015
		Time to Completion: 36 months / years
		Anticipated Project Lifespan: 50 years

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II. Executive Summary

The Mississippi River Reintroduction into Maurepas Swamp project's objective is to restore and enhance the health and sustainability of the Maurepas Swamp through the reintroduction of seasonal Mississippi River inflow. The Maurepas Swamp is one of the largest areas of forested wetlands along the Gulf Coast, and encompasses approximately 57,000 hectares of bald cypress-tupelo swamp southwest of Lake Maurepas. Historically, the swamp received sediment and nutrient inputs from the Mississippi River during seasonal overbank flooding. These inputs promoted vertical accretion and helped maintain wetland surface elevation in pace with relative sea level rise (RSLR). However, this process has been interrupted by flood control levees, and consequently elevation has decreased to the point where the swamp is almost constantly flooded. Conditions have been further exacerbated by partial impoundment of the swamp by canal spoil banks and abandoned railroad embankments, which have reduced the flow of water through the swamp and have created oxygen-poor, stagnant water conditions. The reduced freshwater inflow and sediment input has caused land loss within the sub-basin and resulted in the periodic introduction of brackish water from Lake Pontchartrain into Lake Maurepas and the swamp.

In addition to restoring and enhancing a total of 18,300 hectares of forested wetland, this project should provide a number of other benefits including increased habitat productivity, water quality, and community resilience as the Maurepas Swamp represents a significant storm buffer to nearby communities. For these reasons, the project is considered an important component of a comprehensive, basin-wide strategy for restoration of the Maurepas Swamp ecosystem, and a large-scale project projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

The Mississippi River Reintroduction into Maurepas Swamp Project consists of the following major components designed to divert fresh water from the river into the Maurepas Swamp: 1) a gated river intake structure, 2) box culverts through the levee, 3) a sedimentation basin, 4) a conveyance channel, and 5) a drainage pump station. The maximum design flow is 2,000 cubic feet per second. The project will be located near Garyville, LA in St. John the Baptist Parish. The intake structure will be comprised of three 10-ft x 10-ft sluice gates connected to three 10-ft x 10-ft box culverts that travel through the levee and underneath LA 44. The proposed conveyance channel extends just under 5½ miles from the river to a discharge point in the Maurepas Swamp approximately 1,000-ft north of I-10. The timeline for this project is 3 years for permitting and land rights, followed by 4 years of construction.

Measures of success for this project include restoration and enhanced health of the Maurepas Swamp by diverting Mississippi River water into an area of the swamp to restore forested

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wetland habitat. At the project-scale, performance measures will track the progress towards meeting management goals and objectives. When monitored over time, performance measures can help reduce uncertainty surrounding predictive models and inform whether intended results are being achieved or if additional actions are needed to fulfill program expectations. Defining the health of a system is inherently complex, however, and requires a systematic approach to develop a manageable list of metrics that can be quantified and monitored over time (The Water Institute of the Gulf, 2013).

The Coastal Protection and Restoration Authority (CPRA) is currently working with the Water Institute of the Gulf to more fully develop a System-wide Assessment and Monitoring Program (SWAMP) that will bring existing monitoring and assessment programs under one comprehensive umbrella in an effort to avoid duplication and improve efficiency. SWAMP is envisioned to be a scalable program that will allow for data assessments to be completed at the project-, basin-, and program-scales. Individual projects will generate monitoring plans which will nest within the larger SWAMP framework and will allow for periodic assessment of project performance against performance expectations.

The largest single environmental uncertainty in planning and implementing restoration projects in south Louisiana is accounting for the potentially high, and highly variable, rates of relative sea level rise (RSLR). For diversion projects, accounting for RSLR involves predictions of how much the receiving basin may deepen and enlarge over time, and thus pressure the biological community to adapt or convert to open water. The Mississippi River Reintroduction into Maurepas Swamp Project is intended to deliver freshwater and nutrients to allow the existing swamp vegetation to grow and accrete, thus counteracting RSLR. Underestimation of RSLR during planning and design could result in greater than anticipated deepening of the receiving basin regardless of the biological benefits of the freshwater and nutrient deliveries to the vegetation.

A commonly-expressed concern about Mississippi River diversion projects is that nutrient and agrochemical runoff from farms upstream in the basin can inhibit robust growth of the vegetation in diversion receiving basins. In addition, some have expressed concern about the potential for nutrients to degrade organic material in receiving basin soils and thus weaken soil strength. CPRA has spent much time and energy evaluating the available literature and other data on the topic. CPRA and other scientists have concluded that much of the literature on wetland soils and vegetation only demonstrates negative impacts after higher nutrient loadings than those expected in wetlands receiving Mississippi River water. CPRA is also developing robust monitoring and adaptive management plans for all diversion projects to document ecosystem responses over time and inform the need for any corrective actions.

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III. Proposal Narrative

1. Introduction and Background

Enacted in July 2012, the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act) established the Gulf Coast Ecosystem Restoration Council (Council), and tasked the Council with developing a comprehensive plan for restoration of the Gulf Coast's ecosystem and economy. Overarching goals of this plan are to: restore and conserve habitat; restore water quality; replenish and protect living coastal and marine resources; enhance community resilience; and restore and revitalize the Gulf economy (Gulf Coast Ecosystem Restoration Council 2013). These comprehensive goals require large-scale projects that have a commensurate level of ecosystem benefits and far-reaching effects, particularly when combined with complementary projects as part of a coordinated program. The State of Louisiana, in response to an ongoing coastal land loss crisis, has identified a large number of projects in its Comprehensive Master Plan for a Sustainable Coast (Master Plan) (2012) that align with the Council's aforementioned goals for comprehensive restoration. These projects have been rigorously studied, analyzed, and publicly vetted; and will significantly contribute to the restoration and protection of the Gulf Coast region and the more inclusive Gulf of Mexico Large Marine Ecosystem. Restoring the Gulf from the 2010 Deepwater Horizon oil spill is an especially significant issue for Louisiana which has suffered and continues to suffer the greatest impacts from that disaster.

CPRA Coastal Master Plan

The Coastal Protection and Restoration Authority (CPRA) developed a robust decision-making process to ensure that formulation of the 2012 Coastal Master Plan (Master Plan) relied on the best science and technical information available, while still incorporating an extensive public outreach campaign. The process was guided by clearly-articulated objectives developed for the 2007 Master Plan and by planning principles developed to aid in meeting those objectives. The objectives were clearly defined to reflect key issues affecting communities in and around Louisiana's coast:

1. Reduce economic losses from storm surge flooding,
2. Promote a sustainable coastal ecosystem by harnessing the natural processes of the system,
3. Provide habitats suitable to support an array of commercial and recreational activities coast wide,
4. Sustain the unique cultural heritage of coastal Louisiana, and
5. Promote a viable working coast to support regionally and nationally important businesses and industries.

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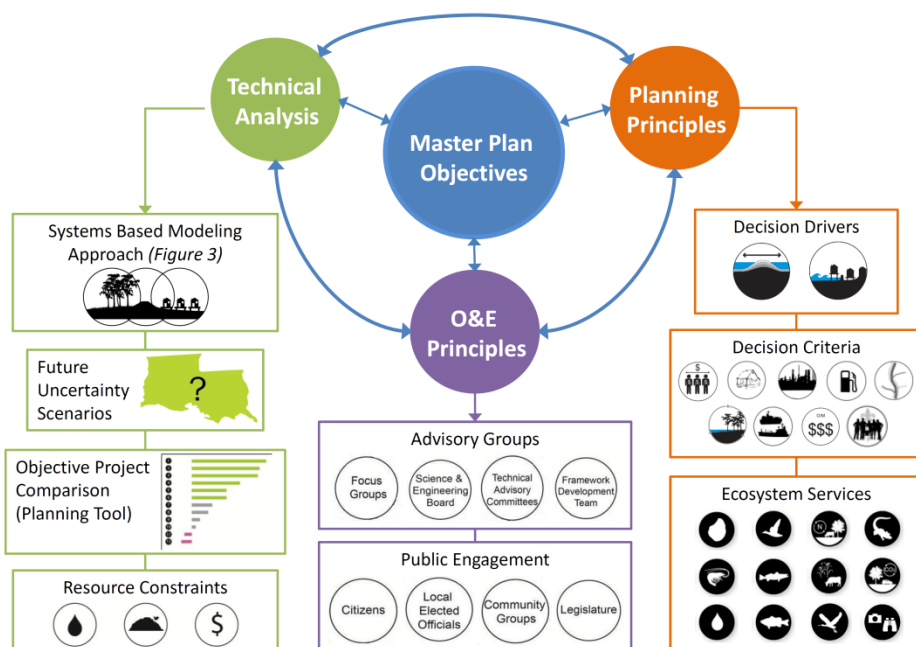


Figure 1. The decision-making process is a complex interaction of input and feedbacks between a technical analysis, outreach and engagement (O&E) and planning principles. The overall goal of the Master Plan is defined by the objectives. The systems based modeling approach, future uncertainty scenarios, planning tool and resource constraints all contribute to the technical data needed for the decision-making process. The planning principles and formulation involve decision drivers, decision criteria and ecosystem services metrics, as described in the methods section, which help determine the plan's ability to meet the objectives. The O&E strategy was designed to ensure public input and acceptance throughout the decision-making process and multiple groups were involved in defining and reviewing the technical analysis and plan formulation (Peyronnin et al. 2013).

Evaluating Projects

The purpose for the 2012 Coastal Master Plan was to identify coastal protection and restoration projects that would improve the lives of coastal residents by creating a more resilient south Louisiana. Achieving this goal required new tools that helped us better understand our coast and how projects could provide benefits. The coast is a complex system. We needed to better understand how it is changing today and the kinds of changes we can expect in the future. We also had hundreds of project ideas and different views about how to move forward, and needed a way to sort through our many options and find those that would work best for us.

To meet these needs, CPRA used a systems approach to coastal planning and a science-based decision making process that resulted in a plan that was both funding- and resource- constrained. These tools helped us understand the practical implications of different project options and how gains in one area might create losses in another. Based on the preferences we wanted to explore, our tools helped identify strategies for investing in coastal protection and restoration projects. This analysis improved our understanding of how projects were affected by: our budget and the river water and sediment that we have to work with. We also used the tools to consider possible future coastal conditions that could affect the way our projects operate, along with other factors such as construction time.

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The Predictive Models

The 2012 Coastal Master Plan analyzed both protection and restoration measures, which influenced the models we selected and how they work. To estimate risk reduction outcomes, we used models that evaluated storm surge and the risk of expected annual damages. To estimate restoration outcomes, the models looked at how land changes throughout the coast—where land is building and where it is disappearing. These models examined how water moves through the coastal system as well as how salt and fresh water affect vegetation and habitats for key species and ecosystem services.

The integrated suite of Predictive Models developed for the Master Plan assessed how Louisiana's coastal landscape may change and how much damage communities may face from storm flooding over the next 50 years if we take no further action and for comparison then assessed how the coastal ecosystem and our level of risk could change if certain risk reduction and restoration projects are constructed. The models incorporated what we know about the way the coast works, and they made it easier to identify projects that best achieve our objectives.

Ecosystem services are benefits that the environment provides to people. In Louisiana, these range from providing the right habitats for oysters and shrimp to nature-based tourism. We could not detail the economic aspect of ecosystem services in our analysis. Instead, we focused on proxy characteristics of the coast, such as provision of habitat (i.e. habitat suitability indices) and other factors that can support ecosystem services.

The Predictive Models used in the Master Plan were organized into seven linked groups (Figure 2), involving the work of over 60 scientists and engineers. Each group worked on a different aspect of how the coastal system changes over time. Our effort was based on existing models where they were appropriate. New models were developed for vegetation, nitrogen uptake, barrier shorelines, flood risk, and to reflect potential for nature based tourism, fresh water availability, and support for agriculture/ aquaculture.

The models were designed to work together, following the precedent set by earlier State planning efforts, such as the Coastal Louisiana Ecosystem Assessment and Restoration (CLEAR) work conducted for the Louisiana Coastal Area Study (Nuttall et al., 2004; USACE, 2004). We also found new ways to link the expanded set of models to more fully capture how the coast works as a system. The level of modeling in the 2012 Coastal Master Plan was a significant technical achievement in the systems approach, the linked nature of the models, and in the breadth of subjects evaluated.

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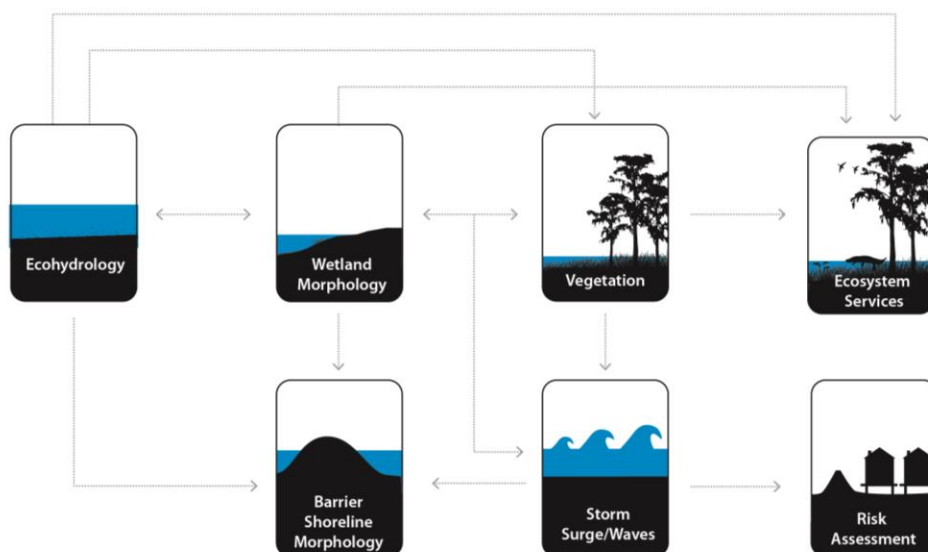


Figure 2. 2012 Master Plan predictive model groups (Meselhe et al. 2013, Couvillion et al. 2013, Visser et al. 2013, Nyman et al. 2013, Cobell et al. 2013, Johnson et al. 2013).

Future Environmental Scenarios

Many factors that will have a profound effect on the future of Louisiana's coast cannot be easily predicted or are outside of our control. These include factors such as subsidence and the levels of nutrients in the river, as well as the effects of climate change, such as sea level rise, changes in rainfall patterns, and storm frequency and intensity. Climate change was central to our analysis, given coastal Louisiana's vulnerability to increased flooding and the sensitivity of its habitats.

To account for these factors when developing the Master Plan, we worked with experts to develop two different sets of assumptions or scenarios. These scenarios reflect different ways future coastal conditions could affect our ability to achieve protection and build land:

- **Moderate scenario - assumed limited changes in the factors on the facing page over the next 50 years.**
- **Less optimistic scenario - assumed more dramatic changes in these factors over the next 50 years.**

CPRA found that restoration projects selected under the less optimistic scenario tended to be in the upper end of the estuaries and closer to existing land rather than near the Gulf of Mexico. As a result, the final Master Plan is largely comprised of projects selected under the less optimistic scenario.

The Planning Tool

The Planning Tool, in concert with the modeling effort, offered a way to examine these projects. The model results, represented by terabytes of data, are the building blocks of the 2012 Coastal Master Plan. We needed a user friendly way to sort and view these results so that we could

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identify groups of projects to examine in greater detail. The Planning Tool is a decision support system that helps the state choose smart investments for the coast. The tool integrates information from the models with other information such as funding constraints, compares how different coastal restoration and risk reduction projects could be grouped, and allows us to systematically consider many variables (e.g., project costs, funding, landscape conditions, and stakeholder preferences). These science-based tools help us understand the practical implications of different project options. Based on the outcomes, our tools suggested a strategy for investing in coastal flood risk reduction and restoration projects. As part of this strategy, the tools considered the constraints, such as the limited money, water, and sediment that we have to work with. The tools also considered possible future conditions that will affect the way our projects operate, along with other important factors such as construction time and how combinations of projects will work together. These results were translated so that citizens and state leaders could understand the projects' real world effects.

We used predictive models and the Planning Tool to help us select 109 high-performing projects that could deliver measurable benefits to our communities and coastal ecosystem over the coming decades. The Planning Tool was designed to translate the models' scientific output and show the practical implications of different options. Decision making for the plan followed directly from this analysis.

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The Maurepas Swamp is one of the largest areas of forested wetlands along the Gulf Coast, and encompasses approximately 57,000 hectares of bald cypress-tupelo (*Taxodium distichum*-*Nyssa aquatica*) swamp southwest of Lake Maurepas. Historically, the swamp received sediment and nutrient inputs from the Mississippi River during seasonal overbank flooding. These inputs promoted vertical accretion and helped maintain wetland surface elevation in pace with relative sea level rise (RSLR). However, this process has been interrupted by flood control levees, and consequently elevation has decreased to the point where the swamp is almost constantly flooded. These conditions have been exacerbated by partial impoundment of the swamp by canal spoil banks and abandoned railroad embankments, which have reduced the flow of water through the swamp and have created oxygen-poor, stagnant water conditions. Reduced freshwater inflow has also resulted in increased salinities, as brackish water from Lake Pontchartrain has intruded into Lake Maurepas and the swamp.

The result of these hydrologic changes is that the health of the Maurepas Swamp is declining. Net primary productivity, stem densities, and tree basal areas are very low and similar to other cypress swamps flooded by low nutrient, low dissolved oxygen, stagnant water (Shaffer et al. 2003, Hoepfner 2008). Furthermore, a large number of trees have been stressed and killed by increased salinities, particularly at locations near Lake Maurepas (Shaffer et al. 2003). Because neither cypress nor tupelo seeds can germinate under flooded conditions, there has been limited recruitment of new trees to the swamp (Visser and Sasser 1995). Therefore, where mortality has created gaps in the canopy, the swamp has converted to marsh (red areas of Figure 3).

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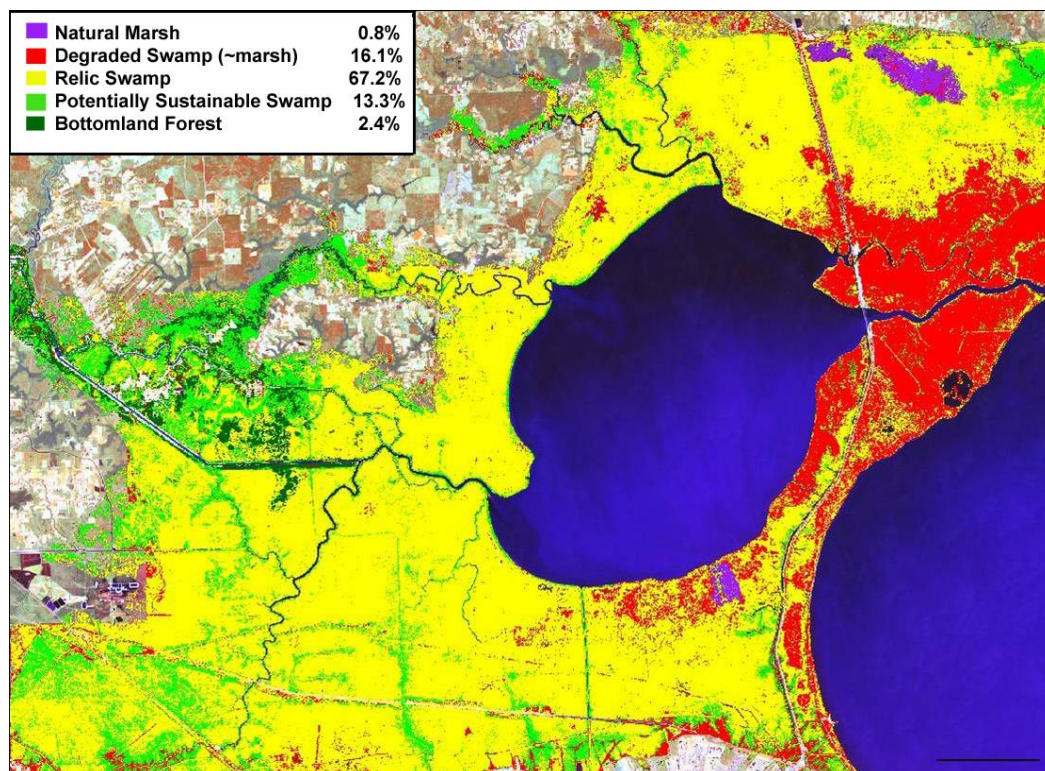


Figure 3. Habitat classification map from Shaffer et al. (2006) showing the relative health of swamp near Lake Maurepas. Areas in yellow are not sustainable under current conditions.

The goal of this project is to restore and enhance the health and sustainability of the Maurepas Swamp through the reintroduction of seasonal Mississippi River inflow. Because there have been no previous restoration projects that have diverted Mississippi River water into an area of swamp, a number of studies have been conducted to evaluate the feasibility of various diversion alternatives and their potential benefits to the swamp. Lee Wilson and Associates (2001) estimated that a 45 cubic meter per second (cms) (1,600 cubic feet per second) diversion could deliver approximately 1,098 grams/meter²/year of sediment to the swamp. Much of this sediment would be deposited in swamp nearest the outfall, and it has been estimated that these areas (encompassing approximately 4,000 hectares) could reach sustainable elevations within 50 years if a 45 cms per second average annual diversion flow is maintained (Day et al. 2004). Increased elevations would then create conditions amenable to seed germination and subsequent tree regeneration. Meanwhile, a larger portion of the swamp would benefit from increased nutrient inputs of approximately 0.1 to 0.28 g/m²/day of nitrate nearest the outfall, and 0.02 to 0.1 g/m²/day in more distant areas of the swamp (Lane et al. 2003). Considering primary productivity in the swamp is nitrogen limited, these riverine inputs are expected to significantly increase tree productivity and belowground organic matter accumulation, and subsequent vertical accretion rates should keep pace with RSLR as has been seen in cypress swamps exposed to municipal wastewater (Rybczyk et al. 2002). Swamp vegetation productivity would also be enhanced by the increased freshwater inflow, which would increase dissolved oxygen concentrations and reduce saltwater intrusion.

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In addition to restoring and enhancing a total of 18,300 hectares of forested wetland, the Mississippi River Reintroduction into Maurepas Swamp project should provide a number of other benefits. Increased primary productivity and water quality should increase secondary productivity and prey resources for swamp fauna, including: freshwater fishes, wading birds, migratory birds, alligators, and bald eagles (Fox et al. 2007). Furthermore, stands of mature bald cypress and other woody vegetation would be maintained, which will ensure suitable nesting sites are available for bald eagles, colonial nesting wading birds, and other birds (Fox et al. 2007). Increased fish and wildlife productivity will, in turn, provide greater opportunities for fishing, hunting, and wildlife watching. The project should also improve water quality in coastal Louisiana because greater than 90% of the nitrate introduced into the project area would be assimilated by the swamp (Lane et al. 2003), thus reducing the amount of nitrogen entering the Gulf of Mexico. Lastly, community resilience should be benefitted by the maintenance and persistence of the Maurepas Swamp, which represents a significant storm buffer to nearby communities.

The Mississippi River Reintroduction into Maurepas Swamp Project is considered an important component of a comprehensive, basin-wide strategy for restoration of the Maurepas Swamp ecosystem. A similar project, the Louisiana Coastal Area-funded Small Diversion at Convent/Blind River, proposes to introduce riverine freshwater, nutrients, and sediments into the southwest portion of the Maurepas Swamp along the Blind River (Figure 4). Another project, the Hydrologic Restoration of the Amite River Diversion Canal, proposes to re-establish hydrologic connectivity between natural water bodies and impounded swamps along the Amite River Diversion Canal. In addition to these restoration projects, much of the Maurepas Swamp has been incorporated into a wildlife management area that, following recent acquisitions by Louisiana's Coastal Forest Conservation Initiative, now encompasses almost 42,000 hectares. This area, which is managed by the Louisiana Department of Wildlife and Fisheries, will protect and conserve habitat for a wide variety of wildlife species.

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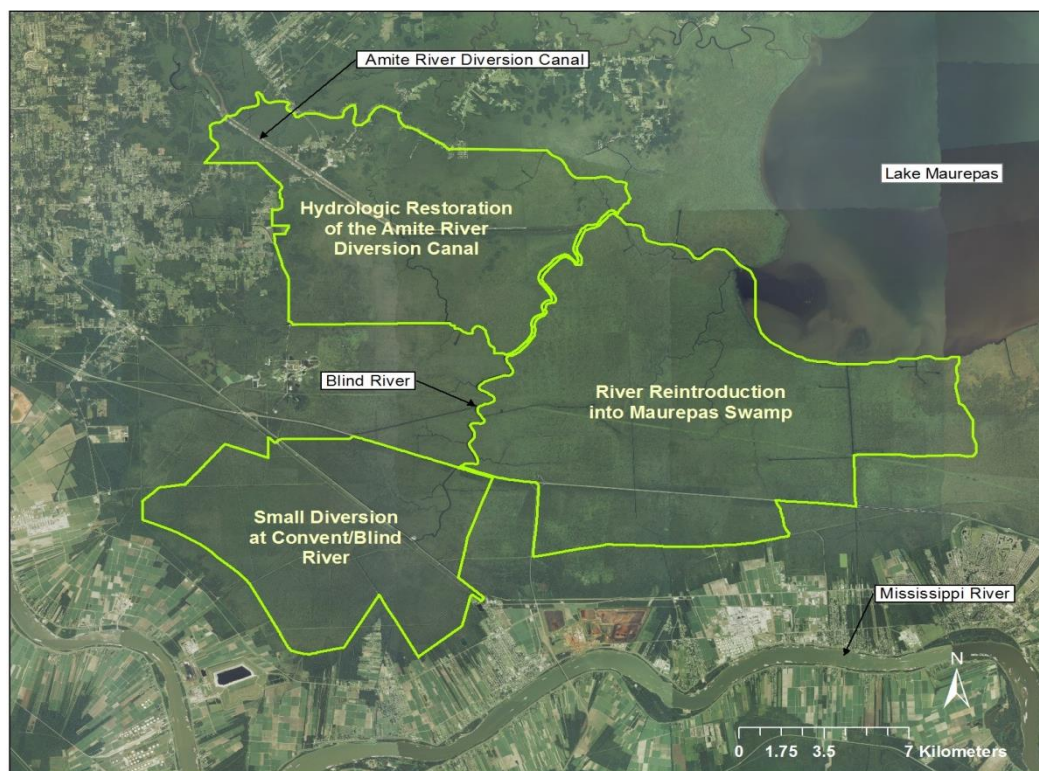


Figure 4. Influence areas of restoration projects proposed for the Maurepas Swamp.

2. Implementation Methodology

The Mississippi River Reintroduction into Maurepas Swamp Project consists of the following major components, designed to divert fresh water from the Mississippi River into the Maurepas Swamp: 1) a gated river intake structure, 2) box culverts through the levee, 3) a sedimentation basin, 4) a conveyance channel, and 5) a drainage pump station. The maximum design flow is 2,000 cubic feet per second. The project will be located near Garyville, LA in St. John the Baptist Parish. The intake structure will be comprised of three 10-ft x 10-ft sluice gates connected to three 10-ft x 10-ft box culverts that travel through the levee and underneath LA 44. The proposed conveyance channel extends just under 5½ miles from the river to a discharge point in the Maurepas Swamp approximately 1,000-ft north of I-10. The channel will have a typical bottom width of 40-ft and will be bounded on both sides by guide levees. A 250 cubic feet per second drainage pump station will be constructed approximately 2,500 feet north of US 61 to capture the existing drainage from Hope Canal and Bourgeois Canal (which will be interrupted by construction of the channel) and direct it into the conveyance channel. Major infrastructure crossings include LA 44, 2 railroads, US 61, and I-10.

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3. Monitoring & Adaptive Management

CPRA and collaborators collect a variety of data, both programmatic and project-specific, in support of coastal protection and restoration projects and activities. These data can support various aspects of the project from strategic planning, construction, operations, maintenance and adaptive management. These data typically include but are not limited to hydrographic (e.g., water level, water quality, salinity), bathymetric and topographic (e.g., above and below water surface land elevations including erosion, land loss/gain, accretion), geotechnical (e.g., soil analysis and mechanics), geophysical (e.g., seismic, sidescan sonar), biological (e.g., fish and wildlife, vegetation), and photographic (aerial and satellite imagery). Specifically, CPRA has several ongoing coast-wide and programmatic data collection systems for program evaluation and facilitation. The Coastwide Reference Monitoring System-Wetlands (CRMS) contains 390 sites that enable ecological assessments at the project, basin, and ecosystem level based on the collection of hydrographic data, forested swamp and herbaceous marsh vegetation data, accretion, surface elevation, and soil properties data. The Barrier Island Comprehensive Monitoring Program (BICM) began in 2006 to provide long-term data on the barrier islands of Louisiana that could be used to plan, design, evaluate, and maintain current and future barrier island restoration projects. The BICM program uses both historical and newly acquired data to assess and monitor changes in the aerial and subaqueous extent of islands, habitat types, geotechnical properties, environmental processes, and vegetation composition. BICM datasets included aerial still and video photography for shoreline positions, habitat mapping, and land loss; light detection and ranging (Lidar) surveys for topographic elevations; single-beam and swath bathymetry; and sediment grab samples. To manage sediment resources for coastal restoration projects the Louisiana Sand/Sediment Resource Database (LASARD) has been developed to identify and maintain geological, geotechnical, and geophysical data for marsh creation and barrier island projects. CPRA is currently working with the Water Institute of the Gulf to more fully develop a System-Wide Assessment and Monitoring Program (SWAMP) that will bring these monitoring and assessment programs under one comprehensive umbrella in an effort to avoid duplication and improve efficiency.

Managing complex environments in which the natural and socio-economic systems are highly integrated is inherently difficult. In addition, deltaic environments are uniquely challenged due to the interdependence and delicate balance of water, land and economic systems and future uncertainties regarding the magnitude and rate of climate change impacts. Adaptive management in deltaic environments is a relatively recent science that encourages an integrated and flexible approach to land and water management considering risk and uncertainty. It promotes solutions that are sustainable even if conditions change by providing a mechanism for robust decision making. Connecting short-term investments with long-term challenges and the selection of action paths that allow for maximum flexibility of future decisions are two of the key concepts of “Adaptive Delta Management” (Delta Alliance 2014). Historically, as human developments evolved in deltas, decisions were made that cannot be easily changed (such as the location of New Orleans). This results in some “path dependency”, meaning that future options are limited or constrained by past decisions. However, learning from past decisions and understanding the

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range of possible future scenarios will allow us to avoid these constraints in the future by using “adaptation pathways” to make decisions that allow for maximum future flexibility (Delta Alliance 2014; Haasnoot 2013). As new techniques and projects for restoration and risk reduction are being developed, there exists an opportunity for learning how the system will respond to the coastal protection and restoration program implementation and using that learning to improve future program management decisions. Adaptive management provides a structured process for making decisions over time through active learning and enables adjustments in program implementation as new information becomes available. Adaptive management embraces a scientific approach that involves identifying explicit goals and objectives, developing and implementing management actions, assessing the system’s response to the action(s), and then using that knowledge to make management decisions. It is designed to be iterative, allowing for the incorporation of new knowledge through every step of the process (The Water Institute of the Gulf 2013).

Due to the complexity of CPRA’s program, the uncertainty in future environmental conditions, and the “future without action” prognosis, CPRA’s adaptive management strategy is complex. Project and program assessment, communication, and feedback loops are critical to CPRA’s adaptive management strategy and affect every step in project and program implementation. Therefore, supporting efforts, such as focused applied research, science advisory boards and modeling tool development are critical. CPRA’s Adaptive Management Strategy streamlines the implementation of the Master Plan and maximizes its long-term benefits by institutionalizing the learning process, providing a process for resolving uncertainties and integrating new knowledge into the construction and operations of projects, and providing adaptation pathways to allow maximum flexibility for future management decisions.

4. Measures of Success

Measures of success for this project include restoration and enhanced health of the Maurepas Swamp by diverting Mississippi River water into an area of the swamp to restore forested wetlands. At the project-scale, performance measures will track the progress towards meeting management goals and objectives. When monitored over time, performance measures can help reduce uncertainty surrounding predictive models and inform whether intended results are being achieved or if additional actions are needed to fulfill program expectations. In addition, performance measures can also be used to inform the public of the system’s response to management actions. Defining the health of a system is inherently complex, however, and requires a systematic approach to develop a manageable list of metrics that can be quantified and monitored over time (The Water Institute of the Gulf, 2013).

CPRA is currently working with the Water Institute of the Gulf to more fully develop a System-Wide Assessment and Monitoring Program (SWAMP) that will bring existing monitoring and assessment programs under one comprehensive umbrella in an effort to avoid duplication and improve efficiency. SWAMP is envisioned to be a scalable program that will allow for data assessments to be completed at the project-, basin-, and program-scales. Individual projects will

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generate monitoring plans which will nest within the larger SWAMP framework and will allow for periodic assessment of project performance against performance expectations.

CPRA has recently worked with the Water Institute to develop recommendations for performance measures, and is currently developing using those recommendations to design a robust SWAMP monitoring plan to provide data necessary to perform programmatic performance assessments. Concurrent with this effort, existing monitoring programs, such as CRMS and BICM are being incorporated into the SWAMP design framework, and projects that require monitoring strategies are being informed and nested within this overall framework. That is not to say that some projects will not require additional monitoring to supplement SWAMP; however SWAMP will provide the backbone to facilitate comprehensive programmatic performance assessment.

5. Risks & Uncertainties

The largest single environmental uncertainty in planning and implementing restoration projects in south Louisiana is accounting for the potentially high, and highly variable, rates of relative sea level rise (RSLR). Concern about the effects of RSLR is different for river diversions than for other project types, such as marsh creation or shoreline protection. For diversion projects, accounting for RSLR involves predictions of how much the receiving basin may deepen and enlarge over time, and thus pressure the biological community to adapt or convert to open water. The Mississippi River Reintroduction into Maurepas Swamp Project is intended to deliver freshwater and nutrients to allow the existing swamp vegetation to grow and accrete, thus counteracting RSLR. Underestimation of RSLR could result in excessive deepening of the receiving basin regardless of the biological benefits of the freshwater and nutrient deliveries to the vegetation.

Uncertainty exists for both future changes in the water level of the Gulf of Mexico (regional) sea level rise and subsidence components of RSLR. CPRA believes that it has made prudent assumptions of future regional sea levels, independent of subsidence, consistent with the scientific literature. CPRA also has a spatially-variable map of predicted subsidence rates that was developed for the 2012 Coastal Master Plan following the convening of an expert workgroup. Geographically-specific subsidence values derived from that map have since been shown to be consistent with calculated subsidence inferred from tide gauge observations.

The Mississippi River Reintroduction into Maurepas Swamp Project is also expected to capture suspended sediment from the Mississippi River. As the project has only been designed for surface water capture, sediment capture will be coincidental and is predicted to be limited to suspended fine sediments. There is some evidence that fine suspended sediment loads in the Mississippi River has been declining, and although this decline has been slow, it has been pervasive. At present, project modeling has been limited to estimation of hydrodynamic flows in the receiving basin, and project benefits modeling such as salinity reductions or growth

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stimulation of the vegetation has not yet been conducted. CPRA is in the process of evaluating its needs for future modeling of those parameters.

A commonly-expressed concern about Mississippi River diversion projects is that nutrient and agrochemical runoff from farms upstream in the basin can inhibit robust growth of the vegetation in diversion receiving basins. This is especially a concern with plant belowground biomass, which anchors the vegetation into the soil. In addition, some have expressed concern about the potential for nutrients to degrade organic material in receiving basin soils and thus weaken soil strength. CPRA has spent much time and energy evaluating the available literature and other data on the topic. CPRA and other scientists have concluded that much of the literature on wetland soils and vegetation only demonstrates negative impacts after very high nutrient loadings, while the nutrient loadings expected in wetlands receiving Mississippi River water will not be sufficient to trigger adverse effects on receiving wetlands. CPRA is also developing robust monitoring and adaptive management plans for all diversion projects to document ecosystem responses over time and inform the need for any corrective actions.

6. Outreach & Education

CPRA established a strategic outreach and engagement framework for the Coastal Master Plan that helped to guide communications and interactions with diverse audiences throughout the planning process. These audiences include key citizen groups and organizations, non-governmental organizations, local and State officials, business groups and the general public. CPRA's outreach and engagement framework provides a variety of ways for stakeholders and citizens to learn about and participate in the master planning process, including small group gatherings, web offerings, direct communication with local and State government, and through monthly public meetings.

A successful restoration project is built on local knowledge, input from a diverse range of coastal stakeholders, and extensive dialogue with the public. We continue to reach out to the public in new ways to better share information on increasing flood risk and CPRA restoration and protection projects. Having a strong outreach and engagement component in the Louisiana's coastal program provides long-term benefits and will positively impact the future of coastal restoration and protection planning. CPRA is committed to engaging stakeholders and citizens in the effort to ensure their voices are heard and their input is incorporated.

People from all walks of life have rallied around the 2012 Coastal Master Plan, recognizing that we must embrace bold solutions if we are to tackle the crisis that has gripped our coast for so long. A poll conducted by the National Audubon Society showed that Louisiana voters feel strongly that our state's coastal areas and wetlands are crucial to save. Specifically, 86% of Louisiana voters supported adoption of the 2012 Coastal Master Plan and 98% of coastal voters felt that Louisiana's coastal areas and wetlands are "very important" to the state's future.

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The solutions presented in the Coastal Master Plan and through these projects will preserve our nation's energy and economic security, restore the health of the gulf region, and support a bright and safe future for all coastal residents. Louisiana is committed to maximizing its investment in oil spill recovery activities by implementing restoration projects that are consistent with the Coastal Master Plan and have been through a transparent and robust public engagement process.

Below are additional details on current outreach and engagement opportunities CPRA provides.

CPRA Board Monthly Public Meetings

The CPRA Board holds monthly meetings to provide the public with updates related to projects, programs, and policies. A public comment period is included at the close of each monthly meeting allowing the opportunity for citizens to ask questions or provide comments for the record.

CPRA staff regularly attend these meetings and are available before and after to discuss agency initiatives with members of the public. Meeting details, including itemized agendas, are posted to CPRA's online calendar which is located at www.coastal.la.gov.

National Environmental Policy Act / Permitting Project-Specific Opportunities

Throughout project development there are a number of project-specific opportunities for public engagement and comment incorporated into the National Environmental Policy Act (NEPA) and permitting processes.

Community Meetings

As the project progresses, the state will be available to meet with local groups and leaders to provide information. CPRA also has staff available to meet with citizens in smaller groups, so that we can answer questions and share updates. To request a meeting on the status of this project or to be added to our mailing list, please send an email to: Coastal@LA.gov.

7. Leveraging of Partnerships

CPRA has a variety of resources and partnerships with which it is able to leverage for the benefit of this project. Through the Coastal Master Plan, CPRA is able to apply the integrated suite of Predictive Models and Planning Tool, a science-based decision support system developed for the master plan to work towards the RESTORE objectives of habitat protection and restoration. SWAMP will bring the previously described CRMS-Wetlands, BICM, and LASARD monitoring and assessment programs together into one framework in an effort to avoid duplication, improve efficiency, and provide the data needed to perform programmatic performance assessments.

This project is considered an important component of a comprehensive, basin-wide strategy for restoration of the Maurepas Swamp ecosystem and will leverage the work and resources associated with similar diversion projects including the Louisiana Coastal Area-funded Small Diversion at Convent/Blind River which proposes to introduce riverine freshwater, nutrients, and

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sediments into the southwest portion of the Maurepas Swamp along the Blind River. The Hydrologic Restoration of the Amite River Diversion Canal is another project that proposes to re-establish hydrologic connectivity between natural water bodies and impounded swamps along the Amite River Diversion Canal. The Mississippi River Reintroduction into Maurepas Swamp project will also leverage and partner with the Louisiana Department of Wildlife and Fisheries which manages the wildlife management area that has incorporated much of the Maurepas Swamp following the recent acquisitions by Louisiana's Coastal Forest Conservation Initiative.

8. Proposal Project Benefits

In addition to restoring and enhancing a total of 18,300 hectares of forested wetland, the Mississippi River Reintroduction into Maurepas Swamp project should provide a number of other benefits. The project should provide innumerable benefits to fauna that are dependent on cypress-tupelo swamps for habitat. Increased primary productivity and water quality should increase food resources and subsequently increase secondary productivity of freshwater fishes, wading birds, migratory birds, alligators, bald eagles, and other wildlife species (Fox et al. 2007). In addition, stands of mature bald cypress and other woody vegetation would be maintained, which will ensure suitable nesting areas are available for numerous bird species. Bald eagles, for example, predominantly use bald cypress when nesting in Louisiana; and the Maurepas Swamp typically supports a large number of nests (Fox et al. 2007). Thus, the project should greatly benefit populations of this important and protected species, amongst others.

Increased fish and wildlife productivity will, in turn, provide greater opportunities for fishing, hunting, and wildlife watching. These are economically important industries in Louisiana and the region. An analysis performed by Southwick and Associates (2008) found that hunting, fishing, boating, and wildlife viewing and photography had a total economic effect of \$6.75 billion (including direct, indirect, and induced economic impacts) and supported a total of 76,700 jobs. The Maurepas Swamp, and more specifically the Maurepas Swamp Wildlife Management Area and Blind River, a scenic river that flows through the swamp, are popular areas for these activities.

The project should also improve water quality in coastal Louisiana. Lane et al. (2003) found that greater than 90% of the nitrate introduced into the project area by the diversion would be assimilated by the swamp (Lane et al. 2003). This would reduce the amount of nitrogen and other nutrients entering the Gulf of Mexico, which in turn would reduce hypoxia on the continental shelf and benefit.

Lastly, the project will also enhance local community resilience. Wetlands, in general, represent important storm buffers and bald cypress, in particular, have been shown to be resilient to the effects of storms (Williams et al. 1999). Considering the location of the Maurepas Swamp in relation to several population centers and important industries, it is important Maurepas Swamp be maintained so that it can continue to protect these communities and assets.

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Land loss and flooding risks are changing the way people live, work, and do business throughout Louisiana's coast. The projects in the 2012 Coastal Master Plan are intended to prevent the environmental and economic collapse that will occur if land loss continues and these projects also provide an opportunity to create jobs through a new restoration economy.

Several recent studies have examined how coastal restoration measures will help Louisiana's working coast. A common theme in these studies is how readily coastal restoration and protection efforts create jobs. A recent LSU/Louisiana Workforce Commission study (Louisiana Workforce Commission 2011) found that the \$618 million spent by the state in 2010 on coastal restoration created 4,880 direct jobs and an additional 4,020 indirect and induced jobs, for a total impact of 8,900 Louisiana jobs. The spinoff benefits of these jobs were considerable; the study estimated that the state's initial investment in 2010 created more than \$1.1 billion in sales. Louisiana's annual investment in coastal restoration alone is expected to be between \$400 million to \$1 billion, which would translate into 5,500 and 10,300 total jobs, \$270-\$520 million in wages, and between \$720 million and \$1.35 billion in total sales per year.

Duke University's Center on Globalization, Governance & Competitiveness (2011) found that Louisiana is already a national leader in the creation of coastal restoration jobs, with the highest concentration of related business headquarters in the Gulf. According to this study, restoration jobs spur investments and jobs in a range of sectors including shipbuilding, equipment repair, and manufacturing. The Duke study emphasized that to expand this job creation engine, Louisiana would need to maintain a steady investment in restoration efforts so that relevant firms will have an incentive to scale up their investments. A third study by Restore America's Estuaries (Restore America's Estuaries 2011), which looked at restoration efforts nationwide, found that restoring our coasts can create more than 30 jobs for each million dollars invested. This is more than twice as many jobs per dollars invested as is gained by the oil and gas and road construction industries combined. Further, the study found that investing in restoration provides long lasting benefits to local economies, such as higher property values, better water quality, sustainable fisheries, and increases in tourism dollars.

Since 2007, the State has made unprecedented investments in our coast, and the Coastal Master Plan builds on this momentum. The projects outlined here strike a balance between providing immediate relief to hard hit areas and laying the groundwork for the large scale projects that are needed if we are to protect communities and sustain our landscape into the future.

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IV. Location Information

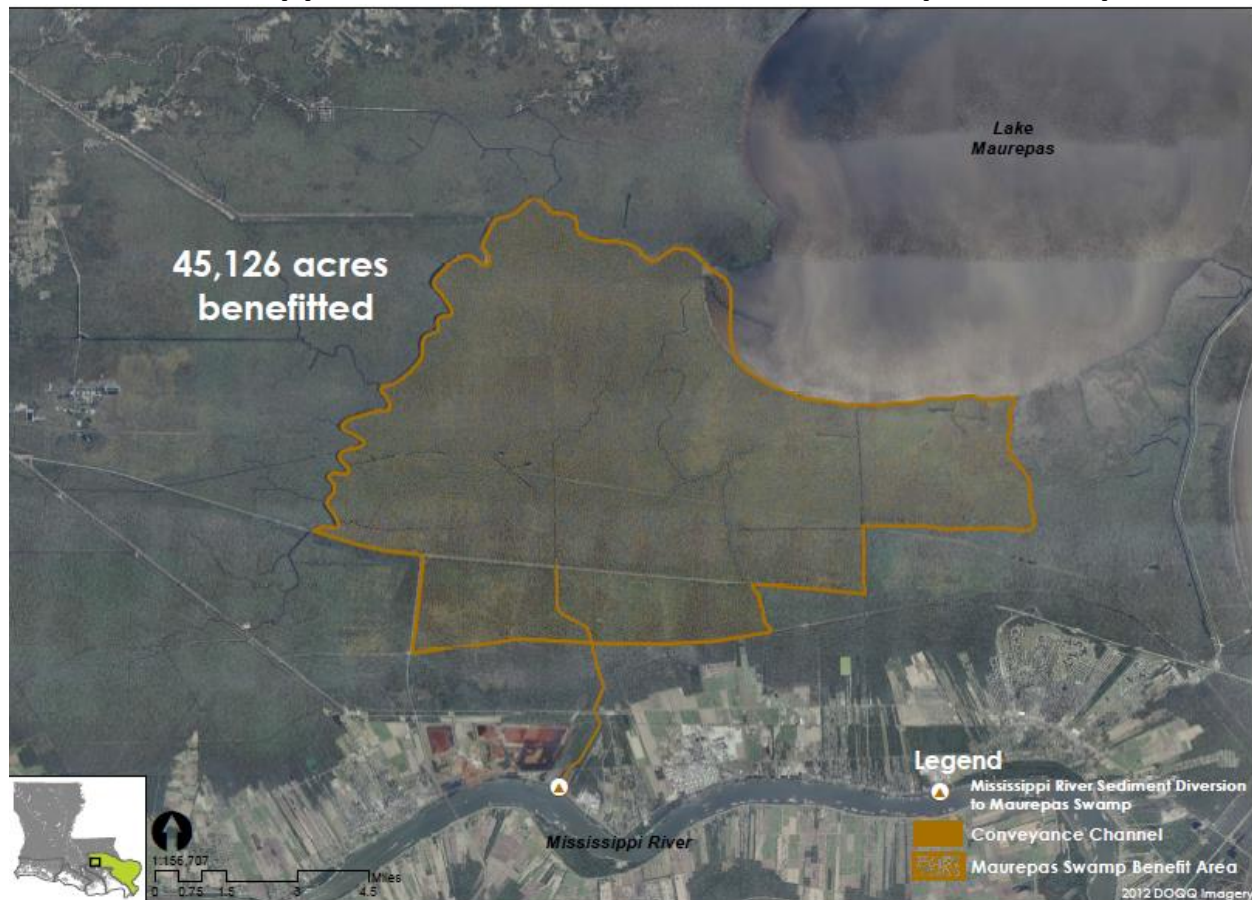
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V. Budget Narrative

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Phase I	
Engineering & Design / Permitting	\$13,200,000
Phase I Adaptive Management	\$990,000
TOTAL PHASE I COST ESTIMATE	\$14,190,000
Phase II	
Estimated Construction Cost	\$160,660,712
Phase II Adaptive Management	\$12,049,553
TOTAL PHASE II COST ESTIMATE	\$172,710,265
TOTAL ESTIMATED PROJECT COST	\$186,900,265

*The cost estimate for the project may be affected by change in project features, adjustment of quantities, or change in industry prices prior to bid openings.

The total estimated cost for the Mississippi River Reintroduction into Maurepas Swamp Project is \$186,900,265. Of this total project cost, CPRA is requesting \$14,190,000 in RESTORE funds to see this project through Phase I of engineering and design and permitting. Due to the extensive work already performed for the 2012 Coastal Master Plan and through the CWPPRA program, CPRA has completed the necessary high level planning exercises for this project. The requested \$13,200,000 for the engineering and design and permitting line item includes all of the expected permitting, NEPA requirements, land rights, engineering and design, and pre-construction monitoring project needs. In addition to these dollars, CPRA is requesting \$990,000 for Adaptive Management purposes in order to effectively manage resources and monitor complex environmental conditions to ensure the project's success and reduce foreseeable risks and uncertainties to the utmost, most feasible extent. Therefore, to build upon CPRA's experience and existing capacity, CPRA is requesting a total of \$14,190,000 in RESTORE funds for the Mississippi River Reintroduction into Maurepas Swamp Project.

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VI. Environmental Compliance Checklist (Appendix B)

Gulf Coast Ecosystem Restoration Council Environmental Compliance Checklist

Please check all federal and state environmental compliance and permit requirements as appropriate to the proposed project/program

<u>Environmental Compliance Type</u>	Yes	No	Applied For	N/A
Federal				
National Marine Sanctuaries Act (NMSA)				X
Coastal Zone Management Act (CZMA)			X	
Fish and Wildlife Coordination Act			X	
Farmland Protection Policy Act (FPPA)		X		
NEPA – Categorical Exclusion				X
NEPA – Environmental Assessment	X			
NEPA – Environmental Impact Statement			X	
Clean Water Act – 404 – Individual Permit (USACOE)			X	
Clean Water Act – 404 – General Permit(USACOE)				X
Clean Water Act – 404 – Letters of Permission(USACOE)				X
Clean Water Act – 401 – WQ certification			X	
Clean Water Act – 402 – NPDES			X	
Rivers and Harbors Act – Section 10 (USACOE)			X	
Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)			X	
Endangered Species Act – Section 7 - Biological Assessment (BOEM,USACOE)	X			
Endangered Species Act – Section 7 – Biological Opinion (NMFS, USFWS)			X	
Endangered Species Act – Section 7 – Permit for Take (NMFS, USFWS)			X	
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) – Consultation (NMFS)			X	
Marine Mammal Protection Act – Incidental Take Permit (106) (NMFS, USFWS)				X
Migratory Bird Treaty Act (USFWS)			X	
Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)			X	
Marine Protection, Research and Sanctuaries Act – Section 103 permit (NMFS)				X
BOEM Outer Continental Shelf Lands Act – Section 8 OCS Lands Sand permit				X
NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)	X			
NHPA Section 106 – Memorandum of Agreement/Programmatic Agreement				X
Tribal Consultation (Government to Government)	X			
Coastal Barriers Resource Act – CBRs (Consultation)				X
State				
As Applicable per State			X	

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The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Task Force approved the Mississippi River Reintroduction into Maurepas Swamp project for planning studies and design in 2001 with Environmental Protection Agency (EPA) as the federal sponsor and the State of Louisiana as the local sponsor. Engineering and design activities were initiated in 2002 and National Environmental Policy Act (NEPA) compliance was begun with the publication in the Federal Register of a Notice of Intent to prepare an Environmental Impact Statement (EIS). Public scoping meetings were held. EPA undertook informal consultation with the U.S. Fish and Wildlife Service (USFWS) for West Indian manatee, Gulf sturgeon, and pallid sturgeon. SHPO and tribal consultation under Section 106 of the National Historic Preservation Act were completed by EPA; SHPO concurred that the project, as proposed, will not affect historic properties.

In January 2014, the CWPPRA Task Force de-authorized this project due to construction costs. Prior to de-authorization, EPA completed a Draft Environmental Information Document (EID) that included an Executive Summary, alternatives considered and evaluated from an engineering standpoint, and documented existing conditions in the Mississippi River, Maurepas Swamp, and the Pontchartrain Basin. Existing conditions were drawn from ecological studies undertaken by swamp ecologists to assess the health of the Maurepas Swamp.

The Small Diversion at Hope Canal was identified by the U.S. Army Corps of Engineers (USACOE) for immediate authorization in the January 31, 2005 Report of the Chief of Engineers for ecosystem restoration for the Louisiana Coastal Area (LCA). The LCA Programmatic Supplemental Environmental Impact Statement (PSEIS), prepared in advance of the 2005 Report of the Chief of Engineers, states, “[i]nitial analysis indicates that [Hope Canal] address[es] the most critical ecological needs of the Louisiana coastal area in [a location] where delaying action would result in a ‘loss of opportunity’ to achieve restoration.” In Section 7002(c) of the Water Resources Development Act (WRDA) 2007, Congress established priorities for USACOE coastal restoration in Louisiana and directed the USACOE to carry out those priorities with the State of Louisiana. Section (b)(1)(B) states, “the Secretary shall give priority to . . . any Mississippi River diversion project that will protect a major population area of the Pontchartrain, Pearl, Breton Sound, Barataria, or Terrebonne basins” and “will produce environmental benefit to the coastal Louisiana ecosystem.” Congress authorized the Small Diversion at Hope Canal for construction in Section 7000(c)(B) of WRDA 2007.

Coastal Zone Management Act

The Coastal Protection and Restoration Authority (CPRA) submitted a Joint Coastal Use Permit application for construction of the project to the Louisiana Department of Natural Resources Office of Coastal Management (LDNR OCM) in May 2013.

Clean Water Act – 404 – USACOE/Rivers and Harbors Act – Section 10 (USACOE)

LDNR OCM forwarded the complete application package to USACE NOD on June 26, 2013 to begin processing of the CWA 404/USACOE Section 10 permit. USACOE NOD, LDNR OCM, and the Louisiana Department of Environmental Quality (LDEQ) published a Joint Public Notice

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in August 2013; comments were received from both federal and state regulatory agencies as well as non-governmental organizations (NGOs).

NEPA – Environmental Assessment

USACOE NOD completed an Environmental Assessment with Finding of Significant Impact on May 21, 2014. This document was prepared as part of the public interest review for the CWA 404/USACOE Section 10 permit.

NEPA—Environmental Impact Statement

USACOE published a Notice of Intent (NOI) to prepare a Programmatic Supplemental EIS (PSEIS) in the Federal Register for the Louisiana Coastal Area, Louisiana—Comprehensive Coastwide Ecosystem Restoration Feasibility Study (LCA Comprehensive Study) on April 4, 2002. As proposed, the study would “build on the restoration strategies presented in the Coast 2050 Plan and the May 1999, 905(b) Reconnaissance Report “Section 905(b) (WRDA 86) Analysis Louisiana Coastal Area, Louisiana—Ecosystem Restoration. The expected outcome of the LCA Comprehensive Study [was] the identification of restoration projects that would result in sustaining a coastal ecosystem that supports and protects the environmental economy and culture of southern Louisiana and contributes greatly to the economy and well-being of the nation.” The anticipated date of public review of the PSEIS, as stated in this Federal Register notice, was late summer 2003.

A second USACOE NOI for the LCA Program was published in the Federal Register on April 4, 2004. The NOI, stating the PEIS would be refocused on modified to identify “the most critical ecological needs and [propose] a near-term program of highly cost-effective projects to address” these needs. It was anticipated the Draft PEIS would be available for public review during summer 2004. The Draft PEIS was made available for public review and comment on July 2, 2004 (the 45-day public review period ran from July 9, 2004 to August 23, 2004). Small Diversion at Hope Canal was identified in this Draft PEIS as one of five near-term critical restoration features. The Final PSEIS was made available for public review and comment in November 2004. This Final PEIS stated: “feasibility-level documents would document planning; engineering and design; real estate analyses; and supplemental requirements under the NEPA” and “[recommend] that Congress authorize implementation . . . subject to review and approval of the feasibility-level decision documents by the Secretary of the Army.” The Record of Decision (ROD) was signed by the Assistant Secretary for the Army (Civil Works) on November 18, 2005.

EPA Region 6 published a Notice of Intent to prepare an EIS for the CWPPRA Mississippi Re-Introduction into Maurepas Swamp in 2002.

Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)

EPA conducted informal consultation with USFWS through emails, phone calls, and meetings. A Biological Assessment was prepared for this project species included in the BA are West Indian manatee (*Trichechus manatus*), pallid sturgeon (*Scaphirhynchus albus*), and Gulf

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sturgeon (*Acipenser oxyrinchus desotoi*). Formal consultation with USFWS has not been initiated or undertaken for this project.

Migratory Bird Treaty Act (USFWS)

Consultation with USFWS in regard to migratory birds was undertaken through the Joint Public Notice for the USACOE Section 10/404 permit. Any required bird surveys or bird abatement measures will be undertaken prior to the commencement of construction activities.

Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)

Consultation with USFWS in regard to bald and golden eagles was undertaken through the Joint Public Notice for the CWA 404/USACOE Section 10 permit. A survey for bald eagle nests will be undertaken prior to the commencement of construction activities.

NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)

EPA completed consultation with the Louisiana SHPO in 2008. A Phase I Cultural Resources Survey was undertaken and provided to SHPO for review/comment. SHPO concurred with EPA's determination that no historic properties will be affected by the project, as proposed.

State

- A Special Use Permit will be obtained from the Louisiana Department of Wildlife and Fisheries prior to construction for activities occurring within the boundaries of the Maurepas Swamp Wildlife Management Area.
- A Scenic River permit will be obtained from the Louisiana Department of Wildlife and Fisheries prior to the commencement of construction.
- A Right-of-Way permit will be obtained from the Louisiana Department of Transportation and Development prior to the commencement of construction.

VII. Data / Information Sharing Plan

Introduction

CPRA has for over a decade made its coastal protection and restoration data and information widely available on the internet using a web-enabled, GIS-integrated system called SONRIS. Recently, ever growing responsibilities, an increase in data generation, and the need to deliver this information in a more timely and efficient manner have inspired an effort by the CPRA to significantly improve its data management and delivery capabilities. The first step was the development of a Data Management Plan in 2013 through a partnership with The Water Institute of the Gulf (The Water Institute of the Gulf, 2013). CPRA then partnered with the U.S. Geological Survey's National Wetlands Research Center (USGS) to produce the CPRA Coastal Information Management System (CIMS) in an effort to redesign and improve its data management and delivery capabilities. CIMS combines a network of webpages hosted by CPRA (www.coastal.la.gov), a GIS database, and a relational tabular database into one GIS-integrated system capable of robust visualizations and data delivery. Any data generated through this RESTORE project will be made available to the public as part of CPRA's ongoing efforts to

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share data and improve transparency. CPRA is committed to sharing information to help the public make science-based decisions.

Data Generation

CPRA and collaborators collect a variety of data, both programmatic and project-specific, in support of coastal protection and restoration projects and activities. These data typically include but are not limited to hydrographic (e.g., water level, water quality, salinity), bathymetric and topographic (e.g., above and below water surface land elevations including erosion, land loss/gain, accretion), geotechnical (e.g., soil analysis and mechanics), geophysical (e.g., seismic, sidescan sonar), biological (e.g., fish and wildlife, vegetation), and photographic (aerial and satellite imagery). Specifically, CPRA has several ongoing coast-wide and programmatic data collection systems for program evaluation and facilitation. The Coast-wide Reference Monitoring System-Wetlands (CRMS) contains 390 sites and several thousand ecological monitoring stations that enable ecological assessments at the project, basin, and ecosystem level. These stations collect hourly hydrographic data, forested swamp and herbaceous marsh vegetation data, accretion, surface elevation, and soil properties data. The Barrier Island Comprehensive Monitoring Program (BICM) began in 2006 to provide long-term data on the barrier islands of Louisiana that could be used to plan, design, evaluate, and maintain current and future barrier island restoration projects. The BICM program uses both historical and newly acquired data to assess and monitor changes in the aerial and subaqueous extent of islands, habitat types, geotechnical properties, environmental processes, and vegetation composition. BICM datasets included aerial still and video photography for shoreline positions, habitat mapping, and land loss; light detection and ranging (Lidar) surveys for topographic elevations; single-beam and swath bathymetry; and sediment grab samples. To manage sediment resources for coastal restoration projects the Louisiana Sand/Sediment Resource Database (LASARD) has been developed to identify and maintain geological, geotechnical, and geophysical data for marsh creation and barrier island projects. The CPRA is currently working with the Water Institute of the Gulf to more fully develop a System-wide Assessment and Monitoring Program (SWAMP) that will bring these monitoring and assessment programs under one comprehensive umbrella in an effort to avoid duplication and improve efficiency.

Data Standards and Metadata

CPRA has an established Data Management Team (DMT) and is the primary contributor to the data system with additional data streams from federal and state agencies, universities and private contractors. CPRA has developed and documented policies, standard operating procedures, data conventions, and quality assurance/quality control procedures (QA/QC) for data collection of all data generated in support of the coastal protection and restoration program (Folse et al., 2012; BEM Systems, Inc. and Coastal Planning and Engineering, Inc., 2012; Coastal Protection and Restoration Authority of Louisiana, 2013). In conjunction with the development of the CIMS system, CPRA and USGS are developing and maintaining metadata for all CPRA data using Federal Geographic Data Committee (FGDC) standards.

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Data Stewardship and Preservation

Data stewardship is provided by the CPRA DMT and associated consultants. Data integrity is checked with very detailed and complex QA/QC software routines prior to input into the database and additional automated routines when input into the database. Intensive use of data by CPRA staff and contractors who collect and input data into the database provide feedback on data quality and software routines to the CPRA DMT. Data preservation of the database is largely done through regular tape backup and/or cloud storage. All data and documents are kept in perpetuity.

Data Access and Security for Adaptive Management

The ability to learn from previous actions and to adaptively manage existing efforts is a critical step to improve the success of the State's coastal protection and restoration program. An important step in that process is sound data management that makes past data and information on project and program effectiveness available to project planners, engineers, and scientists. Also of critical importance is making coastal protection and restoration program information readily available to interested parties outside of the CPRA. Academic researchers can use the data generated by the program to improve the science informing the decision-making process. The general public can use the information to understand how current and future program actions will affect their daily activities, which helps promote program transparency. To that end, the CPRA provides a web-based portal for all geospatial and tabular data and documents associated with coastal protection and restoration projects and for coast-wide programmatic data such as CRMS and BICM. In addition to background information on the State's coastal protection and restoration program, a wide variety of up-to-date information is available such as program documents, remote imagery, project information and boundaries, project infrastructure (including levees, floodwalls, and pump stations), monitoring station locations, elevation benchmarks, ecological data, geophysical data, and information on the State's coastal community resiliency program. Users are able to perform a wide range of custom data retrievals for refining and summarizing information. Private-facing aspects of CIMS include remote data upload and QA/QC by CPRA staff and contractors. Security is provided through Secure Socket Layers of username/password access and software assignment of roles that allows differential access to database functions.

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Mississippi River Reintroduction into Maurepas Swamp

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Mississippi River Reintroduction into Maurepas Swamp

RESTORE Proposal
Coastal Protection & Restoration Authority

IX. Other

Letters of support and environmental documentation.

November 12, 2014

Jerome Zeringue, Chair
Coastal Protection and Restoration Authority
P.O. Box 44027
Baton Rouge, LA 70804-4027

Re: River Reintroduction into Maurepas Swamp

Dear Mr. Zeringue:

The undersigned organizations and officials strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding.

The River Reintroduction into Maurepas Swamp project is nearly ready for construction, with approximately 95% of the design completed. This project has been under consideration for several years. Funding for this project to cover remaining engineering and design, and permitting would be an important step in getting this project into construction.

This project will play a key role in the restoration of Lake Maurepas, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Levees have prevented the Mississippi River from delivering freshwater, nutrients, and sediment to the swamp. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. Without the cypress and tupelo trees, the lake will convert to marsh and open water. Lake Maurepas is connected to Lake Pontchartrain through the Manchac Pass. This pass is one of the main connections of upstream freshwater to Lake Pontchartrain. Therefore, the health of Maurepas Swamp will affect the health of Lake Pontchartrain and the entire basin. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

The Maurepas project is a large-scale project because of the extensive impact area expected to benefit from the reintroduction of Mississippi River water. The project is expected to maintain 45,000 acres of coastal swampland over the next 50 years.

River Reintroduction into Maurepas Swamp has long been discussed as an important coastal restoration project and is currently included in Louisiana's Coastal Master Plan as the West Maurepas Diversion project. The project has long been included in coastal planning, including Coast2050, Louisiana Coastal Area Study, and the 2007 Coastal Master Plan. Each project sponsor and plan recognized the importance of this project for coastal restoration, and invested in the project's planning, engineering, and design.

Lake Maurepas' swamp habitat is threatened by saltwater intrusion, long term subsidence, and lack of nutrients to sustain it, as a result of isolation from the Mississippi River. The area

Re: River Reintroduction into Maurepas Swamp- page 2

provides valuable habitat for wildlife and fish in the Pontchartrain Basin, including in the Maurepas Swamp Wildlife Management Area (WMA). The WMA would benefit greatly from enhanced fish and wildlife habitat. The swamp also provides important storm protection as a natural buffer for coastal communities. Without reintroduction of freshwater from the Mississippi River, much of the swamp can be expected to convert into open water in the near future. With the ability to utilize the resources of the river and operate the project for decades to come, this project will lead to a more resilient coastal forest system in the Lake Maurepas area.

In conclusion, the 2012 Coastal Master Plan data demonstrated that the swamp could be completely lost in a mere two decades. We commend the CPRA for nominating this project to the RESTORE Council. Due to the urgency of getting this project constructed and operating, the below signatories urge Louisiana's Coastal Protection and Restoration Authority, and the RESTORE Council, to select this project for funding.

Sincerely,

Rebecca Triche, Executive Director
Louisiana Wildlife Federation

Jason Amato, Council Member
St. James Parish

Ryan Schilling, President
East Ascension Sportsman's League

Alvin St. Pierre, Jr, Council Member
St. James Parish

Troy Schexnayder, President
American Sportsmen Against Poaching

Michael Wright, Council Vice-Chairman
St. John the Baptist Parish

Clay Schexnayder, State Representative
District 81 (Ascension, St. James Parishes)

Cheryl Millet, Council Member
St. John the Baptist Parish

Ann L. Taylor, Commissioner
LA Wildlife and Fisheries Commission

William H. Herke, PhD.
Fishery Scientist

Tommy Martinez, Parish President
Ascension Parish

Timmy Roussel, Parish President
St. James Parish

Natalie Robottom, Parish President
St. John the Baptist Parish

Chris Loar, Council Member
Ascension Parish



November 14, 2014

Coastal Protection and Restoration Authority
Attn: Jerome Zeringue, Chair
Coastal@la.gov

RE: *Letter of Support for Mississippi River Gulf Outlet (MRGO) Ecosystem Restoration Projects*

Dear Coastal Protection and Restoration Authority-

We are writing to express support for three projects to be submitted by the Coastal Protection and Restoration Authority (CPRA) to the Gulf Coast Ecosystem Restoration Council (Council) for Council-Selected Restoration Component (Bucket 2) funding. The projects include the River Reintroduction into Maurepas Swamp, the Biloxi Oyster Reef and the Golden Triangle Marsh Creation, all within the MRGO ecosystem restoration area, and all projects that will significantly contribute to the long-term sustainability of estuarine environment of southeast Louisiana and Mississippi.

The MRGO was a federal navigation channel that severely altered the hydrology of the region, destroying tens of thousands of acres of protective wetlands surrounding Greater New Orleans. It was singled out as a key factor in the catastrophic flooding that Hurricane Katrina caused in communities like the Lower Ninth Ward in New Orleans and communities like Arabi, Chalmette and Violet in St. Bernard Parish. Since 2006, the MRGO Must Go Coalition, representing 17 conservation and community organizations, has worked with local, state, and federal governments to advance planning and lay the groundwork for large-scale restoration of the MRGO area. **Over 76,000 members of the public commented in support of ecosystem restoration projects along the MRGO through the USACE MRGO ecosystem restoration planning process and the 2012 Louisiana State Master Plan planning process.**

The MRGO ecosystem restoration area, which covers 3.8 million acres, stretches from Lake Maurepas to Chandeleur Sound including Mississippi Sound and its bordering wetlands and barrier islands. Though impacted by the MRGO, it is a resilient wetland landscape that can continue to provide ecosystem services to the Gulf of Mexico marine and estuarine environments of Louisiana, Mississippi and Alabama. These same wetlands provide storm surge protection in communities in coastal Mississippi, New Orleans and around the entire perimeter of Lake Pontchartrain. In particular, the Biloxi Marsh and Maurepas Land Bridge were identified as a “critical landscape feature” by the Army Corps of Engineers (Corps LACPR study released in 2009) because of its importance in reducing storm surge.

The MRGO ecosystem restoration area incurred significant damage during the 2010 Deepwater Horizon disaster, with oil moving through Breton, Mississippi, and Chandeleur Sounds, resulting in shoreline oil reported in the Biloxi Marsh, Chandeleur Islands, and the New Orleans East Land Bridge. Wildlife death attributed to oiling occurred in these areas and beyond, including in Lake Pontchartrain itself and along the Lake Borgne Land Bridge.

- **Golden Triangle Marsh Creation Project**, located near the confluence of the MRGO shipping channel and the Gulf Intracoastal Waterway, is in an area badly damaged by the saltwater intrusion and erosion that followed the dredging of the MRGO. The restored marsh will help

buffer the newly constructed IHNC Surge Barrier, which is essential to the resilience and flood protection of communities in the Greater New Orleans area. This marsh creation will also provide important estuarine services for Lake Borgne and Mississippi Sound. The project has undergone technical analysis completed by the Corps and the State of Louisiana through the Mississippi River Gulf Outlet Ecosystem Restoration Plan authorized in WRDA 2007. The project has a signed Chief's Report and a completed Programmatic EIS.

- Erosion of the Biloxi Marsh by wave action has resulted in significant loss of the once productive habitat. The **Biloxi Oyster Reef Project** will reestablish vertical oyster reefs along the southeastern shore of the marsh and will help slow marsh deterioration. In addition to providing protection against waves and storm surge, oyster reefs also provide a broad range of other ecosystem and economic benefits. Once established, these reefs are naturally self-maintaining. This project also has a completed Programmatic EIS and a signed Chief's Report from the Corps.
- **River reintroduction into Maurepas Swamp** aims to restore freshwater flow from the Mississippi River that has been cut-off since the construction of the Mississippi River flood control levees and the closure of Bayou Manchac. The lack of freshwater, sediment and nutrient input has caused saltwater intrusion and lower productivity, enhancing net subsidence. Without restoration, one of the largest bald cypress swamps in the nation is threatened to convert to open water. Most of the preliminary feasibility and design work for the diversion has been completed and the Corps has just filed a Notice of Intent to prepare an Environmental Impact Statement (EIS) for the project. Once complete, the project is expected to maintain over 45,000 acres of land, southwest of Lake Maurepas, over the next 50 years.

These projects are primed for implementation and are all authorized in the 2012 Coastal Master Plan. They are also cornerstone projects to restoring a 6000 square mile estuary connected to the Gulf of Mexico, and all three projects will advance gulf-wide restoration of marine and estuarine services, while also contributing to community and economic resiliency. **Our Coalition believes that the Council should build on previous efforts by targeting these vital ecosystem restoration projects for immediate implementation funding.**

These projects are well-studied, mostly designed, and have enjoyed unprecedented public input and rigorous review over the past seven years since the passage of WRDA 2007. They are ready to move forward with final design and construction, and they meet all four Restoration Priorities found in the RESTORE Act.

The RESTORE Act provides a powerful opportunity to move these urgent projects forward and help remedy some of the damage incurred to the coastal ecosystem by the infamous MRGO.

Thank you for your work and please let us know how we can best help you in your efforts. Our member organizations represent millions of knowledgeable and capable individuals whose shared interest is the recovery of our precious wetlands and natural resources. Please contact Coalition coordinator, Amanda Moore, at moorea@nwf.org should you have any questions.

Sincerely,

MRGO Must Go Coalition

American Rivers
Citizens Against Widening the Industrial Canal
Coalition to Restore Coastal Louisiana
Environmental Defense Fund
Global Green
Gulf Restoration Network
Holy Cross Neighborhood Association
Lake Pontchartrain Basin Foundation
Levees.org
Louisiana Environmental Action Network
Louisiana Wildlife Federation
Lower Mississippi Riverkeeper
Lower Ninth Ward Center for Sustainable Engagement and Development
Mary Queen of Vietnam Community Development Corporation
National Audubon Society
National Wildlife Federation
Sierra Club – Delta Chapter

Additional Supporters:
Atchafalaya Basinkeeper
Orleans Audubon Society

Cc:
Justin Ehrenwerth
Executive Director
Gulf Coast Ecosystem Restoration Council

N. Gunter Guy
Commissioner
Alabama Department of Conservation and Natural Resources

Mimi Drew
NRDA Trustee
Former Secretary, Florida Department of Environmental Protection

Jerome Zeringue
Chair
Louisiana Coastal Protection and Restoration Authority

Gary Rikard
Executive Director
Mississippi Department of Environmental Quality

Toby Baker
Commissioner
Texas Commission on Environmental Quality

Robert Bonnie
Under Secretary for Natural Resources and Environment
Department of Agriculture

Jo Ellen Darcy
Assistant Secretary for Army (Civil Works)
Department of the Army

Ken Kopocis
Assistant Administrator for the Office of Water
Environmental Protection Agency

VADM John Carrier
Vice Commandant of the Coast Guard
United States Coast Guard

Rachel Jacobson
Principal Deputy Assistant Secretary for Fish and Wildlife and Parks
Department of the Interior



November 14, 2014

Coastal Protection and Restoration Authority
c/o Mr. Jerome Zeringue, Chairman
Office of the Governor, Coastal Activities
Capitol Annex Building, Suite 138
Baton Rouge, Louisiana 70802

Re: Comments on the State of Louisiana Projects for the RESTORE Act Funded Priorities List; River Reintroduction into Maurepas Swamp Project

Dear Coastal Protection and Restoration Authority members,

The undersigned groups appreciate the opportunity to share our supporting comments on the River Reintroduction into Maurepas Swamp Project, submitted by the State of Louisiana for RESTORE Council consideration for the first Funded Priorities List of the RESTORE Pot 2 Council-selected projects.

We represent a coalition of conservation interests that have worked for decades to restore a healthy Gulf of Mexico ecosystem – starting with prompt restoration of the Mississippi River Delta – reconnecting the Mississippi River to its delta to protect communities, environment, and economies. Our groups continue to recommend urgent action on projects that will reduce land loss and restore wetlands in the Mississippi River Delta through comprehensive restoration actions that have the potential to provide multiple benefits and services over the long term to the entire Gulf of Mexico.

Most of the necessary restoration actions to be undertaken in Louisiana are already fully authorized under the Water Resources Development Act (WRDA) of 2007, were unanimously approved by the Louisiana legislature in the 2012 Coastal Master Plan, enjoy broad public support, and have been vetted by scientists and lawmakers for many years.

Such is the case with the River Reintroduction into the Maurepas Swamp Project.

The River Reintroduction into Maurepas Swamp Project has long been discussed as an important coastal restoration project: it was featured as a key restoration project in the 1998 “Coast 2050” plan, was further developed in the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) program with EPA as its sponsor, was included in the LCA (Louisiana Coastal Area) Study (WRDA 2007) and the Louisiana 2007 Coastal Master Plan, and is currently included in Louisiana’s 2012 Coastal Master Plan (named the “West Maurepas Diversion”).

This project would benefit the western Maurepas swamps, the landbridge between Lakes Maurepas and Pontchartrain and the LaBranche wetlands. In addition, this project, in conjunction with the Central Wetlands diversions, will influence the Biloxi Marsh area.

Dominated by bald cypress and water tupelo trees, this swamp complex is one of the largest forested wetlands in the nation. Levees constructed along the river and the closure of Bayou Manchac have isolated the area from spring floods and the vital fresh water, nutrients and sediments that once enhanced the swamp. This isolation has led to a decrease in swamp elevation, that coupled with rising salinities throughout the Pontchartrain Basin have left the swamp in a state of rapid decline – trees are dying and young trees are not regenerating. The River Reintroduction into Maurepas Swamp Project will reconnect the swamps to the river, preventing further loss and the conversion to open water, as well as helping to temper rising salinities throughout the entire Pontchartrain Basin.

Applying funds to the project now, toward completion of the remaining engineering, design, and permitting, will finally take the River Reintroduction into Maurepas Swamp Project to a construction-ready status. And, given its development history, this project would seem a perfect candidate for CPRA to conduct in collaboration with EPA, with some assistance from Corps of Engineers regulatory and restoration teams.

In conclusion, the 2012 Coastal Master Plan data demonstrated that the swamp could be completely lost in a mere two decades. Due to the urgency of getting this project constructed and operating, the below signatories commend Louisiana's Coastal Protection and Restoration Authority for submitting, and we urge the RESTORE Council to select this project for funding.

Sincerely,

Kim Reyher

Executive Director

Coalition to Restore Coastal Louisiana

Steve Cochran

Director, Mississippi River Delta Program

Environmental Defense Fund

John Lopez, PhD

Coastal Director

Lake Pontchartrain Basin Foundation

David Muth

Director

Mississippi River Delta Restoration Program

National Wildlife Federation

Doug Meffert

Executive Director/Vice President

Audubon Louisiana

Karen Gautreaux

Director of Governmental Relations

The Nature Conservancy of Louisiana

Rebecca Triche

Executive Director

Louisiana Wildlife Federation

cc: Kyle Graham, Director, CPRA Implementation Office

Chris Boudreaux

From: Lyle Johnson <reelman@eatel.net>
Sent: Monday, November 17, 2014 7:02 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

The Maurepas project is a large-scale project because of the extensive impact area expected to benefit from the reintroduction of Mississippi River water. The project is expected to maintain 45,000 acres of coastal swampland over the next 50 years. The use of RESTORE funds for a diversion will ensure that restoration continues many years after construction is finished. The years of study and modeling efforts that have been invested to date will ensure that the best available science has been taken into consideration.

This project is expected to restore and protect the natural resources, ecosystems, fisheries, and wildlife habitats in the Pontchartrain Basin, including in the Maurepas Swamp Wildlife Management Area (WMA). Without reintroduction of freshwater from the Mississippi River, much of the swamp can be expected to convert into open water in the near future. With the ability to utilize the resources of the river and operate the project for decades to come, this project will lead to a more resilient coastal forest system.

Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Lyle Johnson President LOWA
13168 Bayou Terrace Dr
Saint Amant, LA 70774

Chris Boudreaux

From: Collette Lambert <clambert@guyhopkins.com>
Sent: Sunday, November 16, 2014 10:01 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

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This project is expected to restore and protect the natural resources, ecosystems, fisheries, and wildlife habitats in the Pontchartrain Basin, including in the Maurepas Swamp Wildlife Management Area (WMA). Without reintroduction of freshwater from the Mississippi River, much of the swamp can be expected to convert into open water in the near future. With the ability to utilize the resources of the river and operate the project for decades to come, this project will lead to a more resilient coastal forest system.

Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

C Lambert
40416 William Ficklin Rd
Gonzales, LA 70737

Chris Boudreaux

From: Sinead Borchert <sineadborchert@gmail.com>
Sent: Sunday, November 16, 2014 8:52 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Sinead Borchert
3295 Ivanhoe St
Baton Rouge, LA 70802

Chris Boudreaux

From: chelsea wetzel <user@votervoice.net>
Sent: Sunday, November 16, 2014 7:06 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

chelsea wetzel
34637 Gus Baldwin Rd
Pearl River, LA 70452
c.wetzel2013@yahoo.com

Chris Boudreaux

From: samuel gomez <user@votervoice.net>
Sent: Saturday, November 15, 2014 10:51 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

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This project is expected to restore and protect the natural resources, ecosystems, fisheries, and wildlife habitats in the Pontchartrain Basin, including in the Maurepas Swamp Wildlife Management Area (WMA). Without reintroduction of freshwater from the Mississippi River, much of the swamp can be expected to convert into open water in the near future. With the ability to utilize the resources of the river and operate the project for decades to come, this project will lead to a more resilient coastal forest system.

Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

samuel gomez
4044 E Louisiana State Dr
Kenner, LA 70065
gmzzemog@aol.com

Chris Boudreaux

From: samuel gomez <user@votervoice.net>
Sent: Saturday, November 15, 2014 10:51 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

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Sincerely,

samuel gomez
4044 E Louisiana State Dr
Kenner, LA 70065
gmzzemog@aol.com

Chris Boudreaux

From: Mr. & Mrs. Duke Chenault <d.mchenault@verizon.net>
Sent: Saturday, November 15, 2014 8:33 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Duke Chenault
1365 Horseshoe Ln
Hackberry, LA 70645

Chris Boudreaux

From: bill Ellingham, III <gngrbrd@hotmail.com>
Sent: Saturday, November 15, 2014 8:14 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

bill Ellingham III
20009 Old Covington Hwy
Hammond, LA 70403

Chris Boudreaux

From: Jack Reilley <user@votervoice.net>
Sent: Friday, November 14, 2014 11:52 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Jack Reilley
402 Main St
Madisonville, LA 70447
jackreilley@yahoo.com

Chris Boudreaux

From: Alice Pieritz <albecky@usa.net>
Sent: Friday, November 14, 2014 10:45 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Alice R. Pieritz
222 Dogwood Dr
Anacoco, LA 71403

Chris Boudreaux

From: Jimmy Babin <jimmy@creativecjuncooking.com>
Sent: Thursday, November 13, 2014 2:46 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Jimmy Babin
14468 Bayou Terrace Dr
Saint Amant, LA 70774

Chris Boudreaux

From: Joshua Pettit <jbpettit@gmail.com>
Sent: Thursday, November 13, 2014 2:46 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Sincerely,

Joshua Pettit
14381 Gibson St
Maurepas, LA 70449

Chris Boudreaux

From: Kade Sheets <kade.sheets@gmail.com>
Sent: Thursday, November 13, 2014 1:33 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I'm a lifetime resident of Ascension Parish, and just moved to Livingston parish to live on the Lower Amite river. I've loved the area all my life, but I have seen a decline in the fishing and hunting resources over the years since the early 90's. I've heard story's from my father and grandfather of the duck hunting there 30 years ago being so amazing! They talk of, at some point, there were some type of locking station that has been closed feeding the Blind river and since there has only been invasion of other plants and continual dying of the solid bottom swamps they duck hunted for years. I'd love to see the project come through and renew the resources of the Maurepas Swamp. Not only will this benefit the swamp but also the entire area commercially.

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Kade Sheets
19791 Highway 22
Maurepas, LA 70449

Chris Boudreaux

From: Damain Kerek <wdkerek@cescoltd.com>
Sent: Thursday, November 13, 2014 1:09 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Sincerely,

Damain Kerek
11402 Oliver Rd
Saint Amant, LA 70774

Chris Boudreaux

From: Russ Granier <rgranier@gmcable.com>
Sent: Thursday, November 13, 2014 11:54 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Sincerely,

Russ Granier
18135 Aydele Ln
French Settlement, LA 70733

Chris Boudreaux

From: Bertis Tamplain <ratltrapla@hotmail.com>
Sent: Thursday, November 13, 2014 11:28 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Bertis Tamplain
504 Magnolia Ave
La Place, LA 70068

Chris Boudreaux

From: Kelly Falgout <kellyfalgout@bellsouth.net>
Sent: Thursday, November 13, 2014 11:11 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Kelly Falgout
11685 HOMEPORT DR
MAUREPAS, LA 70449

Chris Boudreaux

From: Beau Gautreau <user@votervoice.net>
Sent: Thursday, November 13, 2014 11:02 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Sincerely,

beau gautreau
13067 Oneal Rd
Gonzales, LA 70737
beaugautreau@yahoo.com

Chris Boudreaux

From: Nathaniel Capdepon <nathan.capdepon@gmail.com>
Sent: Thursday, November 13, 2014 10:57 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Sincerely,

Nathaniel Capdepon
132 Haroleans St
Harahan, LA 70123

Chris Boudreaux

From: Clint Broussard <user@votervoice.net>
Sent: Thursday, November 13, 2014 10:51 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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This project is expected to restore and protect the natural resources, ecosystems, fisheries, and wildlife habitats in the Pontchartrain Basin, including in the Maurepas Swamp Wildlife Management Area (WMA). Without reintroduction of freshwater from the Mississippi River, much of the swamp can be expected to convert into open water in the near future. With the ability to utilize the resources of the river and operate the project for decades to come, this project will lead to a more resilient coastal forest system.

Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Clint Broussard
13049 She Lee Place Rd
Gonzales, LA 70737
Clinthbroussard@yahoo.com

Chris Boudreaux

From: Stephen Shurtz <shurtz.la@att.net>
Sent: Thursday, November 13, 2014 9:08 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

This project will play a key role in the restoration of the swamp, a unique and protective ecosystem consisting of the second largest coastal forest in Louisiana, and provide storm and floodwater protection for multiple communities. The swamp has been in decline for decades due to saltwater intrusion, subsidence, and chronic flooding. Studies show that rising salinities in the lake are causing tree mortality, and 87% of the swamp is dying. The majority of coastal swamps in the Pontchartrain Basin are deteriorating, and most of them will be lost to open water in the near future if no action is taken.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Stephen A. Shurtz
2220 Tulip St
Baton Rouge, LA 70806

Chris Boudreaux

From: Derek Schilling <user@votervoice.net>
Sent: Thursday, November 13, 2014 9:01 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Derek Schilling
45152 Kid Bourgeois Rd
Saint Amant, LA 70774
schillingderek@yahoo.com

Chris Boudreaux

From: Ronnie Webster <ronnie@gulfsouthre.com>
Sent: Thursday, November 13, 2014 8:45 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Ronnie Webster
123 Dogwood Dr
Covington, LA 70433

Chris Boudreaux

From: Phoebe schexnayder <claycarcraft69@hotmail.com>
Sent: Thursday, November 13, 2014 8:41 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Phoebe schexnayder
PO Box 593
Sorrento, LA 70778

Chris Boudreaux

From: Mark Shurtz <shirtsm@hotmail.com>
Sent: Thursday, November 13, 2014 8:08 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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Sincerely,

Mark Shurtz
41133 Adams Rd
Hammond, LA 70403

Chris Boudreaux

From: Brandon Bell <bmbell1986@gmail.com>
Sent: Thursday, November 13, 2014 8:01 AM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

I strongly support the inclusion of the restoration project, River Reintroduction into Maurepas Swamp, as a nominated project for consideration of RESTORE Act funding. This project achieves the objectives set forth in the criteria for Bucket 2 projects, and is essential for ecosystem restoration in coastal Louisiana.

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Sincerely,

Brandon Bell
21196 Highway 22
Maurepas, LA 70449

Chris Boudreaux

From: marianne maumus <mmaumus1@me.com>
Sent: Wednesday, November 12, 2014 9:09 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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Sincerely,

marianne maumus
5 New Basin Way
New Orleans, LA 70124

Chris Boudreaux

From: Steve Molaison <stephenmolaison@bellsouth.net>
Sent: Wednesday, November 12, 2014 6:48 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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Sincerely,

Steve Molaison
215 Lafayette Ave
Thibodaux, LA 70301

Chris Boudreaux

From: Marissa Turner <user@votervoice.net>
Sent: Wednesday, November 12, 2014 4:50 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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Sincerely,

Marissa Turner
17235 Trinidad Dr
Prairieville, LA 70769
marissa_t_2000@yahoo.com

Chris Boudreaux

From: Jim Richard <j.richard70809@gmail.com>
Sent: Wednesday, November 12, 2014 4:19 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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Due to the urgency of getting this project constructed and operating, and the wide reaching benefits of this project I urge the RESTORE Council to select River Reintroduction into Maurepas Swamp.

Sincerely,

Jim Richard
3044 McConnell Dr
Baton Rouge, LA 70809

Chris Boudreaux

From: Derek Brockbank <brockbankd@nwf.org>
Sent: Wednesday, November 12, 2014 4:16 PM
To: Coastal
Subject: Support for River Reintroduction into Maurepas Swamp

Dear CPRA CPRA,

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Sincerely,

Derek Brockbank
3801 Canal St
New Orleans, LA 70119