Chandeleur Islands Restoration Project

RESTORE Council Proposal Document

General Information

Title:
Chandeleur Islands Restoration Project

Project Abstract:
The Chandeleur Islands Restoration Project is an entire ecosystem restoration project that will restore wildlife and fish habitats for several species. It will also focus on preserving and enhancing 5,200 acres of the island's marine seagrass meadows. The project is located on a remote barrier island complex in SE Louisiana, more than 20 miles offshore and managed as Breton National Wildlife Refuge. This project include restoration activities on both North Chandeleur and New Harbor Islands in St. Bernard Parish.

The restoration strategy is designed to reverse decades of erosional wetland loss and provide direct benefits to a wide range of wildlife and fish species that were impacted by the 2010 DWH Oil Spill. This includes sea turtles such as Loggerhead, Green, and the endangered Kemp's Ridley. Several bird species will benefit, including colonial nesting waterbirds and foraging birds. A wide variety of fish species including reef fish, sharks, and game fish will benefit. Additionally, eighty species designated as 'Species of Greatest Conservation Need' will benefit from this project.

Restoration of the Chandeleur Islands will rebuild an important barrier island that serves as a first line of defense for many communities in St. Bernard Parish. The island is rapidly eroding, and its restoration is featured in St. Bernard's 2022 Coastal Strategy Document to mitigate against storm surges from tropical storms and hurricanes. This project is being implemented by Louisiana Coastal Protection and Restoration Authority and the United States Fish and Wildlife Service.

FPL Category: Cat2: Implementation Only

Activity Type: Project

Program: N/A

Co-sponsoring Agency(ies):
DOI/FWS

Is this a construction project?:
Yes

RESTORE Act Priority Criteria:
(I) Projects that are projected to make the greatest contribution to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region, without regard to geographic location within the Gulf Coast region.
(II) Large-scale projects and programs that are 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.
(III) Projects contained in existing Gulf Coast State comprehensive plans for the restoration and protection of natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.
(IV) Projects that restore long-term resilience of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands most impacted by the Deepwater Horizon oil spill.

Priority Criteria Justification:
This project is designed to address the primary threats that are limiting the population growth and existence of many species. The project will build nesting habitat for a wide variety of colonial water birds, and solitary waterbirds, Loggerhead sea turtles, Green sea turtles and Kemp's Ridley sea turtles. The project will also protect and enlarge the subaqueous habitats for the continued existence and expansion of the Northern Gulf of America's most diverse assemblage of marine seagrasses. These sea grasses are important nursery grounds for pelagic reef fishes, Lemon Sharks, and foraging habitat for Gulf Sturgeon, Redhead Ducks, and a variety of sea turtles. Without this project these habitats will continue to be lost at an ever increasing rate.

This project is a unique opportunity for whole ecosystem restoration. North Chandeleur Island spans 13 miles long. The project will restore the basic building blocks to ensure that the island is resilient in the face of future storms and will continue to build critical and declining wildlife and fisheries habitats into the future.

The Chandeleur Islands Restoration Project is a barrier island restoration project. This project and similar barrier island maintenance projects are highlighted in Louisiana's 2023 Comprehensive Master Plan for a Sustainable Coast and the 2015 Louisiana Wildlife Action Plan.

The Chandeleur Islands are one of the closest landmasses to the DWH oil spill. It was impacted early and repeatedly by the oil spill. The timing and location of the oil spill not only impacted the beaches, marshes and seagrasses of the islands but also its nesting sea turtles and the largest most species diverse assemblage of nesting waterbirds in the Gulf of America. This project is designed to reinvest lost sediment back to the island in a manner that will make it resilient in the face of future hurricanes so the islands will endure for decades into the future.

Project Duration (in years): 3

Goals

Primary Comprehensive Plan Goal:
Restore and Conserve Habitat

Primary Comprehensive Plan Objective:
Restore , Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:
Protect and Restore Living Coastal and Marine Resources

Secondary Comprehensive Plan Goals:
N/A
PF Restoration Technique(s):
Create, restore, and enhance coastal wetlands, islands, shorelines and headlands: Sediment placement

Location

Location:
The Chandeleur Islands are remote island chain located in Southeast Louisiana. The islands are 75 miles east of New Orleans, LA and 26 miles south of Biloxi, MS. They are located in St. Bernard Parish between Chandeleur Sound and the Gulf of America. Latitude N29.951776 W-88.825202. They are managed by the USFWS as Breton National Wildlife Refuge.

HUC8 Watershed(s):
Lower Mississippi Region(Lower Mississippi) - Lake Pontchartrain(Eastern Louisiana Coastal)

State(s):
Louisiana

County/Parish(es):
LA - St. Bernard

Congressional District(s):
LA - 1

Narratives

Introduction and Overview:
The Chandeleur Islands Restoration Project is an ecosystem level habitat restoration opportunity that will benefit 4 NOAA endangered species act resources, 21 NOAA managed

species, provide co-benefits to 5 USFWS endangered species act resources, and benefit 80 species of “greatest conservation need” in Louisiana (Holcomb, 2015). In addition to restoring an entire ecosystem for many species of wildlife and fisheries, the restoration of these barrier islands will enhance community resilience to St. Bernard, Orleans and Plaquemines Parishes from hurricanes and tropical storms.

The Chandeleur Island restoration project is designed with the specific goal to restore valuable habitat for fish and wildlife. This restoration will be accomplished by using nature-based solutions to increase and maintain the footprint of the island to an historical acreage. The project will restore important geomorphological features necessary to build and maintain EFH for fisheries that have eroded away. A major focal point of the project will be to enlarge and conserve the marine seagrass meadows and design project features that will allow the island to be resilient for decades into the future. Engineers have already begun to look at future sea level changes at our project location and will design and build an island that is prepared to adapt to those increases in the coming decades. This design will ensure habitats endure well into the future and enhance the island’s ability to dampen effects of hurricanes in this region of the Gulf of America. The project will also include the restoration and protection of New Harbor Island, a remnant barrier headland island located just west of the North Chandeleur Island. New Harbor is home to one of the largest Brown Pelican colonies in the Northern Gulf. Concurrent construction activities will restore a historically larger footprint of the island while providing long-term protection.

The restoration of these islands is truly a high priority, transformational opportunity within the Northern Gulf of America. Without significant restoration of this island and the associated EFH will likely disappear in the next two decades. The loss of this habitat will further compromise the future outlook of 27 species listed as threatened, endangered, or managed by NOAA and the USFWS. The loss of this important habitat linkage between the eastern and western Gulf of America will also compromise 80 Species of Greatest Conservation Need in Louisiana and leave several underserved communities without their first line of defense from hurricanes and tropical storms.

The Chandeleur Islands have influence on over 1.5 million acres of wetlands and shallow waters. They are the eastern boundary of Chandeleur Sound and impact salinity regimens, tidal flow, wave energy, and fisheries movement patterns over much of Southeast Louisiana. The Chandeleur Islands represent the distal border of the Pontchartrain Basin and serves as the littoral boundary between the Gulf of America and the Chandeleur Sound. The barrier island complex has offered a suite of immeasurably important habitats for a wide variety of fish, birds, marine mammals, and sea turtles. So much so that President Theodore Roosevelt established the Breton National Wildlife Refuge in 1904 by executive order as the second federal refuge of many to follow, and it was the only refuge he ever visited in person.

Unfortunately, the Chandeleur Islands have lost approximately 89% of their late 1800’s historical acreage (11,000 acres to 1,000 acres). This loss of acreage has resulted in loss of various habitats including essential fish habitat such as submerged marine seagrass which impacts a wide variety of species important to NOAA, USFWS, and Louisiana. This loss of acreage has made several underserved communities of Southeast Louisiana more vulnerable to

climate hazards such as tropical storms and hurricanes. The Chandeleur Islands are the first line of defense for several underserved communities in St. Bernard and Plaquemines Parishes. As the islands erode, we lose the first line of defense for these communities against storm surges. This loss compromises the entire multiple line of defense strategy and impacts the resilience of coastal Louisiana residents.

The major project features include construction of beach, dune, and salt marsh habitats that will work to conserve and protect seagrass habitat on the bay side of North Chandeleur Island. The overall size of the project benefit area is approximately 12,000 acres which includes 1,341-1,512 acres of beach and dune restoration; 468-698 acres of salt marsh restoration; 109 acres of bird colony restoration on the adjacent New Harbor Island; 5,200 acres of marine seagrass meadow preservation and enhancement; and the balance would be the back barrier island watershed acreage that will be conserved by the restoration footprint.

Proposed Methods :

The use of both hopper and cutterhead suction dredge alternatives for excavation, transportation, and placement are anticipated to be used to convey sediment from the borrow area, Hewes Point, to North Chandeleur and New Harbor Islands. Hopper dredges would suspend the sand within the hoppers and directly pump the sand to the island, with assistance of a booster pump and sediment pipeline. Alternatively, a conventional cutterhead dredge would excavate the sand mechanically using a rotating cutter and a large suction pump to pump it to the surface to be transferred through a spider-barge distribution system into multiple scow barges. These scow barges would be towed to a pump-out area where a hydraulic resuspension system connected to a booster pump and sediment pipeline would offload the scows and pump the sand to the islands.

Once the sediment has reached the Island it will be handled in the normal manner. The discharge pipeline will be extended the length of the beach, dune and marsh templates using pipe-handling loaders and bulldozers and the sand will be graded to conform to the plan dimensions using bulldozers, front-end loaders, and other earth moving equipment. Beach slopes and elevations will be conducive to sea turtle nesting (Culver et al 2020) and implemented in previous projects on Florida nesting beaches completed in 2024 such as Lover’s Key, Bonita Beach, and Estero Island.

As part of the Project design phase, a conveyance corridor alignment extending from the borrow areas to the shoreline of the Island is delineated. The purpose of designating the corridors is to ensure that the sediment pipelines are sited in alignments that minimize environmental disturbances and potential conflicts with existing infrastructure. The analysis included a review of existing pipeline database maps and potential significant cultural resources. The conveyance corridor alignments were laid out to balance the shortest distance between the Borrow Area and the Island with the lowest number of pipeline crossings. Further, the conveyance corridors were aligned to avoid previously charted obstructions and potential cultural resources. Once tentatively established, the conveyance corridor was surveyed for cultural resources and obstructions using sidescan sonar and magnetometer. Results of the analyses of those data were then used to further refine the conveyance corridor alignment.

Anchoring activities may take place within the conveyance corridor.

The dune platform will have sand fencing installed. The single row of sand fence will promote deposition of windblown sand and conserve sand placed within the fill template. The sand fencing will be constructed of wooden slats, appropriately spaced laterally, and secured with fence wire to wooden posts to form a porous barrier constructed four (4) feet in height above the dune platform (Khalil 2008).

Vegetative planting of the dune and marsh is a vital component of barrier island habitat restoration. The Project includes vegetation of the entire length of the dune and marsh platform at a planting density and composition similar to recent barrier island restoration projects in Louisiana.

The dune platform will be planted immediately following construction. The vegetative plantings would include a mixture of some or all of the following herbaceous species: Bitter Panicum (Panicum amarum var. amarum 'Fourchon'), Seashore Paspalum (Paspalum vaginatum 'Brazoria'), Seacoast Bluestem (Schizachyrium maritimum 'Timbalier'), Seashore Dropseed (Sporobolus virginicus), Sea Oats (Uniola paniculata 'Caminada'), Marshhay Cordgrass (Spartina patens 'Gulf Coast'), and Gulf Cordgrass (Spartina spartinae).

After construction and consolidation, the newly created marsh platform will be planted with Smooth Cordgrass (Spartina alterniflora var 'Vermilion') and other appropriate species.

New Harbor Island will be constructed in the same method as North Chandeleur Island but will enjoy the added benefit of rock placed around the island for shoreline protection from wave driven wind energy. The design of this island will be to preserve and expand the existing Brown Pelican and Reddish Egret Colony. Guidance from Louisiana's Coastal Ecosystem Restoration and Monitoring to Create or Improve Bird-Nesting Habitat (Deepwater 2023) have been implemented into the design of this project. The shoreline protection will have gaps along the eastern side to facilitate fisheries access to the island where the existing tidal Black Mangrove marsh will be preserved. The design will not feature a dune or beach feature but will target marsh elevations over the next 20+ years. Vegetative plantings installed will be Black Mangrove (Avicennia germinans), Matrimony Vine (Lycium barbarum), and Smooth Cordgrass (Spartina alterniflora var 'Vermilion').

The design of New Harbor Island implements lessons learned from three recently completed colonial bird nesting restoration projects Queen Bess (BA-202), Rabbit Island (CS-80) and the North Breton Island restoration project built by DOI. Each of these projects demonstrated a significant increase in nesting abundance one year after construction was complete.

No closure of Katrina Cut between North and South Chandeleur Island is planned for this restoration project.

The Chandeleur Island Restoration project will employ lessons learned from previous barrier island and bird colony restoration projects. The restoration of Louisiana's barrier islands and barrier island systems has been a priority over the past several decades. In all, 40 barrier island

projects have been constructed to date (including 11 in the Early Lafourche Barrier System, 20 in the Late Lafourche Barrier System, 6 in the Modern Barrier System, and 3 in the St. Bernard Barrier System and 2 are in design stage as Future Projects (1 in Early Lafourche and 1 in St. Bernard). Most of these constructed barrier island projects have been monitored, and their performance has been assessed to adaptively improve resilience and longevity of these projects and future barrier island projects.

The benefits to sea grasses will be in the preservation of the existing seagrass meadows and the anticipated increased species diversity and density or "percent cover" on the north end of Chandeleur Island. The proposed Chandeleur Island Restoration project will slow down erosion rates of the island footprint by enhancing and enlarging the dune, beach, and marsh features that exist on the island thus preserving habitat conditions on the lee side of the island. The lee side of the islands is where the seagrass meadows exist. As the island erodes and becomes smaller and more tidal, habitat conditions for seagrasses deteriorate and the meadows respond with coinciding loss of acreage. The project proposes building a dune and marsh complex on the north side of Chandeleur Island. These features once existed in this location but have now been reduced to a tidal shoal. Since those features have been lost, the seagrasses behind them also have suffered a significant reduction from multiple species to a single species (Shoal grass). The acreage of seagrasses in this location has also significantly reduced to sparse small pockets of sea grasses. The design of this restoration project will restore the habitat conditions on the lee side of the northern end of Chandeleur Island which will restore the necessary habitat conditions for multiple species of seagrasses to return to this location and allow the existing pockets of Shoal grass to expand into their historical footprint. Planting of seagrasses is also being explored by the design team to help jumpstart the recovery once the dune and marsh complex is complete on the north side of the island.

Barrier island restoration has been a successful technique to restore critical habitat in Louisiana and across the United States (Campbell, 2005; Marine Board, 1995; Rosati, 2009; Rosati, 2007a; Rosati 2007b). With several major barrier island restoration projects in place, the post-restoration estimated Year of Disappearance (YOD) for several barrier island systems in Louisiana have been extended from years to decades. This increase in island longevity throughout the system is a direct benefit of the restoration projects. Further, with the increase in both frequency and intensity of major hurricanes over the past decade (and similar projections into the future), in the absence of the restoration and protection program, it is expected many of these islands would have disappeared much sooner than original projections. (CPRA 2024)

Environmental Benefits:

The project will use nature-based solutions to restore multiple habitat types that support multiple species of wildlife, including many that are at-risk, at the Chandeleur Islands. These habitats exist in a strategic location and abundance that makes the area unique. While restoring specific habitat features for fish and wildlife we will also be restoring a barrier island with resilience as a focal point. This barrier island is the first line of defense to mitigate storm surges for coastal communities. Restoration of this barrier island will provide benefits to fisheries, wildlife, and local communities.

Impacts of the project will have wide benefits to a multitude of species listed as threatened or

endangered (6 species) and managed (21 species) and species of Greatest Conservation Need in Louisiana (80 species) (Holcomb et al 2015) . This restoration project has synergy with many federal, state, and local restoration and conservation plans including: NOAA's National Saltwater Recreational Fisheries Policy, NOAA's Recovery plan for the northwest Atlantic population of the loggerhead sea turtle, NOAA's Recovery Plan for the U.S. Population of Atlantic green turtle, and has synergy with NOAA's Bi-National Recovery Plan for the Kemp's ridley sea turtle and the Gulf Sturgeon Recovery/Management Plan.

This project will conserve and restore habitat identified by the National Audubon Society as a Globally Significant Bird Area (birds at Chandeleur have been observed in 33 other countries around the world). The project will conserve the largest and most diverse assemblage of seagrass in the northern Gulf of America which is essential nursery habitat for many species of reef and pelagic fisheries and endangered sea turtles whose ranges are Gulf wide.

The project will conserve, restore and protect the beach, dune, marsh, and seagrass habitat on Chandeleur Island using nature-based solutions. The restored habitat will sequester carbon, benefit the estuary by reducing gulf wave energy and regulating the salinity gradient, and provide habitat essential for a range of wildlife and fisheries.

The Chandeleur Islands are the first line of defense (barrier islands) from storm surge for residents of St. Bernard as well as those living on the east bank of Plaquemines and Orleans Parishes.

These barrier islands are remote and difficult to access. One of the benefits of this project is its ability to restore fish and wildlife habitat in a setting that has few anthropogenic threats. Its remoteness and designation as a federal Wilderness Area and federal Refuge allow for nearly undisturbed utilization of habitats by fish and wildlife that disperse far outside the boundaries of the refuge. This provides enhanced wildlife viewing and consumptive recreational opportunities both at the islands and locations far removed from the Chandeleurs. Fisheries species that use the islands as spawning and nursery habitat include speckled trout, redfish, flounder, menhaden, and several species of snapper. These and several species of waterfowl are important to many outdoor enthusiast in the Northern Gulf of America.

This project will restore salt marsh habitat as identified in the Salt Marsh Keystone Initiative. As articulated in the USDOI Restoration and Resilience Framework, bird species populations that depend on salt marsh are in deep decline. The Chandeleur Islands are a hot spot for bird populations that depend on this habitat and restoration of salt marsh habitat will benefit multiple species. The CPRA has the experience and expertise designing, constructing and monitoring marsh restoration and colonial bird nesting habitats. Our agency's expertise in marsh restoration is demonstrated and articulated in the Marsh Creation Design Guidelines that our agency staff authored.

Metrics:

Metric Title: HR004 : Habitat restoration - Acres restored

Target: 2140

Narrative: (1) Beach and Dune habitat restored (1,340 acres) - Beach and Dune Fill will be accomplished utilizing compatible sediments from a borrow area near the Project. Fill material will be placed at varying elevations and widths along the existing shoreline. (2) Marsh habitat restored (690 acres) - The Marsh Fill will be constructed on the north end of North Chandeleur Island behind the constructed Beach and Dune Fill where a narrow bare sandy beach and an expansive low-lying, nearly unvegetated, sandy intertidal platform currently exists. Marsh Fill elevations selected will provide foraging habitats as well as a stable platform to accept washover sediments enhancing the longevity of the Project. (3) Colonial Bird nesting habitat (110 acres) - Bird habitat will be created by restoring mangrove habitat on New Harbor Island. This island is home to one of Louisiana's largest Brown Pelican colonies, however much of this island's acreage has eroded to open water. One hundred and ten acres will be restored via sand fill and the existing mangrove habitat will be preserved with the construction of rock breakwaters.

Metric Title: HR007 : Marine habitat restoration - Acres of SAV restored

Target: 5200

Narrative: (1) Marine Seagrasses protected (5,200 acres) - The restoration of the beach and dune features will provide protection to the existing SAV by adding longevity to the existing Island footprint. (2) Marine Seagrasses enhanced (1,395 acres within the above 5,200 acres) - The restoration of the Island will provide low-energy/low-turbidity conditions that allow the SAV to thrive. Restoration of the beach, dune, and marsh is expected to enhance the environment for SAV resulting in enhanced species abundance, species diversity, and percent cover.

Risk and Uncertainties:

The risks and uncertainties associated with the construction of this project, which is expected to exceed two years, will be localized and temporary. Due to the rapid erosion of these islands, the risk of "no action" will have a far larger impacts to nesting birds, sea turtles, marine mammals, and fisheries than the restoration project and its associated construction. Since the mid 1800's more than 1,000 hectares of the islands acreage and associated seagrass meadows have disappeared (McBride et al., 1992). This erosion is some of the highest barrier island losses in the United States (Fearnley et al 2009) This continuing trend is lowering the quantity and quality of essential fish habitat, nesting habitat, and foraging habitats for many wetland obligate species. If the restoration project is not built the loss of habitat will continue.

The borrow source for this restoration project, Hewes Point, has been investigated and found to be approximately 93% sand. This sand was once part of the island and has been transported to

this shoal via natural erosion and longshore transport. This restoration project proposed recycling this sediment back to the island to build the project features that will preserve the islands for decades into the future. The Hewes point sand is the same grain size, color, and composition as the sands that make up the island and is ideal for restoration purposes and compatible for nesting sea turtles and birds. This sediment is very close to the project location making it the most economically efficient source to acquire sand to restore the island. Other sediment sources such as the St. Bernard shoal were evaluated but ruled out due to the long distance transport costs.

The median grain size (0.13mm) and the low percentage of fine material (approximately 6.1% fines) of the Hewes point sediment is ideal for barrier island restoration. This sediment will have very little small flocculate plumes associated with the placement of material and impacts to seagrasses and fisheries are expected to be local, temporary, and minor. Most of the sediment placement for this project will be on the dune, beach, and feeder beach. Sediment placed for these features will have to dewater through the back barrier marsh before reaching the sea grass meadows. This process will be a nourishment benefit for the back barrier marshes and will remove most of the fine material before it has an opportunity to reach the sea grasses. There are locations where pocket marsh and sand reservoirs will be adjacent to sea grass meadows. In these locations sediment management techniques such as silt curtains or training dikes will be implemented to contain the flocculent plumes.

Due to the long duration of construction (in excess of two years) it is highly likely that a hurricane or tropical event will impact the project site during construction. This project is anticipated to be under construction all months of the year without pause except for significant weather events. CPRA is experienced in constructing barrier islands during hurricane season and having impacts to the projects while under construction. A couple recent examples include the impact of Hurricane Ida on West Grand Terre Island, and hurricanes Laura and Delta in 2020 on the Rabbit Island restoration project. Hurricanes and their redistribution of sediment is a natural process of barrier island morphology. The Chandeleur Island project takes storm surge impacts, erosion, and relative sea level rise into consideration as part of the design. If a storm surge hits the island during construction sediment will be naturally relocated to the back side of the island. Some sediment will also be suspended into the longshore transport which may re-nourish the shoreline of the island. The impacts of a storm surge during or immediately after a construction may mobilize more sediment as compared to “no action” scenario. This increased mobilization of sand will simply nourish the backside of the island creating a larger platform for the recovery of tidal wetlands and seagrasses. This is believed to be benefit as compared to a “no action” scenario. The project is designed to allow natural process to rework the sediment to nourish the island for decades into the future on a seasonal and episodic timeframes.

In collaboration with The Water Institute of the Gulf (TWIG), the potential for storm recovery at the Project Area was evaluated. TWIG performed an analysis of historical survey data from the U.S. Geological Survey and the Coastal Protection and Restoration Authority to determine the storm recovery response of Chandeleur Island following major tropical storms. It was determined that North Chandeleur Island experienced dune accretion at a rate of 0.043 ft3/ft2 over a 5-year period following Hurricane Katrina (CEC, 2024). The restoration of the beach and

dune system on North Chandeleur Island will add additional sand to the system to increase the longevity of the barrier island through resistance to and accelerated recovery from storms.

The impacts of hurricanes were modeled into the design of the project with respect to the historical frequency of storms. There may be long term risks and uncertainties if a catageory five or a higher frequency of storms relative to the historical record is realized at the project site. The risk associated with this occurrence would be a shorter project life, however the island is still expected to recover quicker and more effectively than the “no action” alternative.

The potential effects of sea level rise at the Project Area was also evaluated with TWIG’s assistance. Geotechnical research identified that a majority of North Chandeleur Island resides on a thick platform of sand (Twitchell et al., 2009 and GEOEngineers, 2024) which is liberated as the shoreline erodes and nourishes the shoreface (Miner et al., 2021). This liberation of sand allows for the beach and dune to respond to increases in sea level rise as shoreline equilibrium as a function of the Bruun Rule (D’Anna et al., 2021 and Bruun, 1988). Restoring the beach and dune system on North Chandeleur Island will add additional sand to the system to allow the coastal processes of the area to keep pace with sea level rise (Coastal, 2024).

CPRA and DOI staff have met with most of the charter boat captains that utilize the Chandeleur Islands on November 6, 2024 in Gulfport, MS. All participants expressed support for the project and only a few questioned impacts to fishing during construction. We explained how the equipment would be laid out and discussed the temporal and spatial impacts. No concerns were expressed about the proposed plans.

During construction we do anticipate mitigating impacts to nesting birds, foraging birds, nesting sea turtles, foraging sea turtles, sea grasses, and marine mammals in around equipment and on the project site. We are working closely with our federal partners to develop best management practices (BMPs) to properly handle these sensitive issues. We have already held early compliance calls with DOI and NOAA on these subjects. We will continue to work closely with DOI, NOAA, and the USFWS refuge staff to correctly implement all compliance guidance that is recommended. Some anticipated compliance BMPs that may be implemented include construction shut downs on New Harbor Island, bird hazing on Chandeleur Island, buffer zones around nesting birds, relocation of sea turtle nests, buffer areas around sea turtle nests, and equipment shut downs when marine mammals approach equipment. Environmental monitors will be employed on this project that are subject matter experts on birds and sea turtles during the nesting seasons, and to look out for sensitive species during the fall and winter migratory bird seasons.

Temporary and minor disturbances to marine sea grass beds (<4%), nesting sea turtles and birds are anticipated during the construction window.

Monitoring and Adaptive Management:

We anticipate that a significant portion of the construction funding will be provided by the Louisiana and Open Ocean TIG’s Joint Restoration Plan and Environmental Assessment #1. Utilization of these funds will require a robust monitoring plan be developed prior to

implementation of the restoration project. The monitoring plan that will be developed for this project will be similar in format and design to previous LA TIG plans and will start one year after construction completion. Each of the project features will be monitored and reported through the DIVER portal for at least 15 years after construction. Monitoring will include collection of geo-rectified aerial imagery to measure lengths and acreages of project features over time. The same imagery will allow for documentation of marsh types, vegetation cover and shoreline erosion and accretion rates. On the ground topographic and hydrographic transect surveys will also be collected at set intervals to see how elevations are changing for the different project features and to inform on the health of the vegetative plantings. Submerged aquatic vegetation monitoring will also be conducted. This will require some combination of aerial surveys and in-water diver surveys to assess the health and extents of the seagrass meadows. Surveys for birds and sea turtle nesting will also be required to monitor wildlife response. All this information will be provided to the adaptive management team that will have funding and a project-specific "monitoring and adaptive management plan" to address management needs of the project.

Pre-construction surveys and post-construction "as-built" surveys will be collected as part of this project. The Louisiana and Open Ocean TIG's Joint Restoration Plan and Environmental Assessment #1 will include measurable restoration parameters and goals. Most parameters such as beach and dune elevation, length, and acreage will be measurable immediately after construction is complete, however some parameters will take time to mature before success can be determined. Parameters such as acres of sea grass meadows or acres of tidal marsh will take up to five years for sediments to stabilize and vegetation to colonize before success criteria and determinations can be made. Multi-year monitoring will assess project success and inform adaptive management needs. Any challenges or limitations found during the monitoring will be addressed using funds set aside for adaptive management.

Data Management:

Data collected in association with this project will be managed in accordance with established CRMS, SWAMP, and survey standards data management protocols, where applicable, and made publically available. CPRA's data management system is called the Coastal Information Management System (CIMS; https://cims.coastal.la.gov/) and is our overall enterprise data repository that combines a network of webpages hosted by CPRA. It includes a spatial (GIS) database and relational tabular database in one public-facing, GIS-integrated system capable of robust visualizations and data delivery. It also has a library for sharing documents pertinent to CPRA's mission. CIMS facilitates CPRA, its partners, and the general public's access to CPRA's suite of protection and restoration projects as well as CRMS and SWAMP stations, Coastal Master Plan activities, geophysical data, and coastal community resilience information. CIMS is the official repository for environmental, modeling, and monitoring data for restoration and protection projects undertaken by the State of Louisiana.

Additionally, environmental compliance documentation, construction completion reports, and monitoring and adaptive management data generated for this project will be added to the publicly accessible DWH Administrative Record.

Collaboration:

The Chandeleur Island Restoration Project is a barrier island maintenance project that is an

important part of Louisiana's Comprehensive Mater Plan for a Sustainable Coast (Coastal 2023). This plan is a publicly vetted document that was unanimously approved by the Louisiana Legislature in 2023.

The Chandeleur Islands Project enjoys a broad stakeholder group that provided information and expertise influencing the project's design. The group consists of NOAA, USFWS, USGS, LDWF, The Water Institute of the Gulf, The Gulf Coast Joint Venture, MS Dept. of Marine Resources, The Pontchartrain Conservancy, Ducks Unlimited, Plaquemines Parish, St. Bernard Parish, and others.

Subject matter expert teams were assembled to help define project habitat characteristics to be part of the design package for construction. Teams consisted of biologists that are subject matter experts in marine sea grasses, sea turtles or nesting coastal water birds from federal, state, NGO and the private sector including NOAA, USFWS, USGS, LDWF, University of Southern Mississippi, SWCA Environmental, The Water Institute of the Gulf, SEG Environmental, and CPRA.

The design team met with several charter boat captains, and recreational boaters that frequent the Chandeleur Island on November 6, 2024 in Gulfport, MS. An overview of the proposed restoration project was presented and comments were solicited. Many comments were received concerning work on the southern end of the island. The audience was overall pleased with the work and collaboration. There was no concern expressed for the spatial or temporal footprint of the construction work or infrastructure expressed at this meeting.

Funding for the project also enjoys strong collaboration among several federal state, NGO, and private organizations. The RW TIG funded the E&D effort, which consists of support from all five Gulf Coast States and the RW TIG federal trustee agencies. Funding for construction has support from the LA TIG, which includes the state of Louisiana and federal trustee agencies. Funding has been proposed through a federal NAWCA grant, which has match partners from Ducks Unlimited, St. Bernard Parish, and the Chandeleur Island Brewing Company.

The project has support from several state, NGO, and private companies that have written letters of support for funding opportunities including LDWF, USFWS, St. Bernard Parish, City of New Orleans, LA CCA, MS CCA, LA Ducks Unlimited, MS Ducks Unlimited, LA Wildlife Federation, Global Green, Healthy Gulf, Levees.org, Lower Ninth Ward CSED, Restore or Retreat, The Meraux Foundation, The Theodore Roosevelt Conservation Partnership, Environmental Defense Fund, Audubon, Pontchartrain Conservancy, Restore the Mississippi River Delta, Southern Seaplane, and the Chandeleur Island Brewing Company.

Public Engagement, Outreach, and Education:

The project has been presented to the public through three CPRA board meetings on August 17, 2022; September 13, 2023; and most recently July 17, 2024. These meetings are open to the public and have a remote viewing option as well. In addition to these meetings, the public has been advised of the project through the public interface of the Region-wide TIG that provided the engineering and design funds and the public will be engaged again through the

Louisiana and Open Ocean TIG's Joint Restoration Plan and Environmental Assessment #1 public engagement process.
The project team will also be working with the 4-H club in St. Bernard Parish to active engage high school students in the project. Coordination on this project aspect will begin in the fall of 2024.

Leveraging:

Funds: $8,000,000.00

Type: Co-funding

Status: Received

Source Type: Other Federal

Description: DWH NRDA Funds from RW TIG for Project's E&D

Funds: $150,000,000.00

Type: Co-funding

Status: Proposed

Source Type: Other

Description: $150,000,000 - $200,000,000 anticipated. DWH NRDA Funds from LA TIG formal request expected early 2025

Funds: $5,000,000.00

Type: Co-funding

Status: Proposed

Source Type: Other

Description: $5,000,000 - $20,000,000 anticipated. DWH NRDA Funds from (OO TIG) formal request expected early 2025

Funds: $10,000,000.00

Type: Co-funding

Status: Committed

Source Type: Other Federal

Description: NOAA Grant funding for projects that restores coastal habitat and strengthen coastal community resilience under the Bipartisan Infrastructure Law and Inflation Reduction Act

Funds: $5,000,000.00

Type: Co-funding

Status: Proposed

Source Type: Other Federal

Description: NFWF - 2024 America's Ecosystem Restoration Initiative: America the Beautiful Challenge

Funds: $2,680,000.00

Type: Co-funding

Status: Committed

Source Type: State

Description: State Surplus Funds from FY2022

Funds: $2,900,000.00

Type: Co-funding

Status: Proposed

Source Type: Other Federal

Description: North American Wetlands Conservation Act administered by the USFWS. Public-Private partnership grant funds for long term conservation projects that benefit wetland associated migratory birds.

Environmental Compliance:
Formal consultation through NOAA and USFWS officially began on April 25, 2025. Data collection for compliance pieces have been concluded. Data collection efforts include marine mammal surveys, bird surveys, sea grass surveys, and cultural surveys. The NEPA and NHPA compliance will be led by DOI's Restoration Planner Amy Mathis through the Louisiana Trustee Implementation Group (LA TIG). Fields Environmental Consulting has been hired by CPRA to assist the USFWS with the NEPA compliance documentation through the Louisiana and Open Ocean TIG's Joint Restoration Plan and Environmental Assessment #1.. This information will be made available through NOAA's DIVER Portal under the Deepwater Horizon Restoration

Projects link.

Bibliography (All references listed below that were published prior to 2025 may reference the Gulf of Mexico. This nomenclature has been retained to maintain the integrity of the referenced material. The Council recognizes the name change Gulf of America):

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Budget

Project Budget Narrative:
The entire budgeted amount included in this proposal is for construction (implementation).

Total FPL Project/Program Budget Request:
$ 84,900,000.00

Estimated Percent Monitoring and Adaptive Management: 0 %

Estimated Percent Planning: 0 %

Estimated Percent Implementation: 100 %

Estimated Percent Project Management: 0 %

Estimated Percent Data Management: 0 %

Estimated Percent Contingency: 0 %

Is the Project Scalable?:
No

If yes, provide a short description regarding scalability.:
N/A

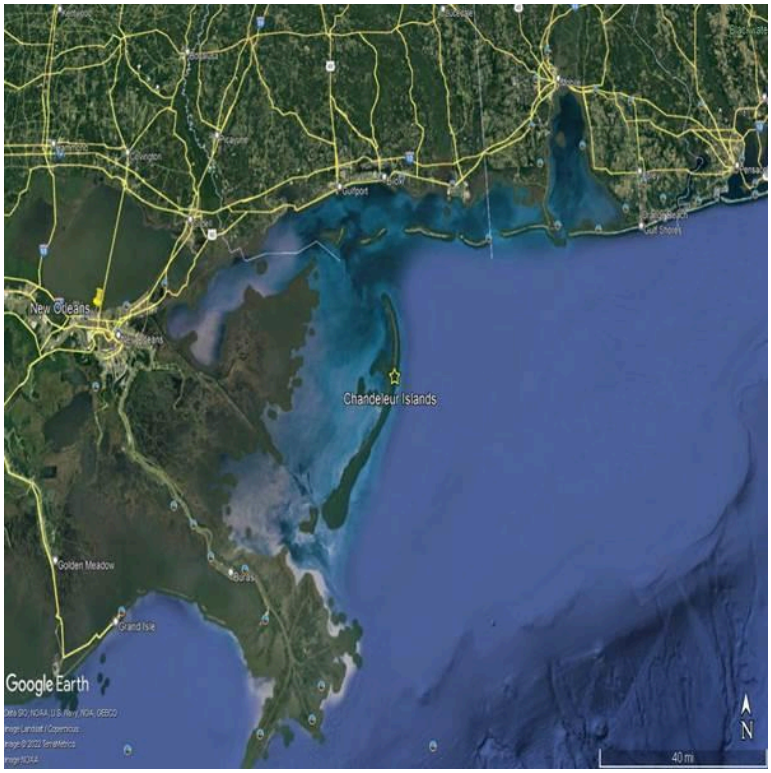
Environmental

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g.,title and date of document, permit number, weblink etc.)
National Environmental Policy Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Endangered Species Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.

National Historic Preservation Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Magnuson-Stevens Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Fish and Wildlife Conservation Act	N/A	Note not provided.
Coastal Zone Management Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Coastal Barrier Resources Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Farmland Protection Policy Act	N/A	Note not provided.
Clean Water Act (Section 404)	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
River and Harbors Act (Section 10)	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Marine Protection, Research and Sanctuaries Act	N/A	Note not provided.
Marine Mammal Protection Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
National Marine Sanctuaries Act	N/A	Note not provided.

Migratory Bird Treaty Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Bald and Golden Eagle Protection Act	No	We anticipate that formal compliance will start before the end of the 2024 calendar year.
Clean Air Act	N/A	Note not provided.
Other Applicable Environmental Compliance Laws or Regulations	N/A	Note not provided.

Maps, Charts, Figures



Caption : Region Image Project Location

Caption : Islands locations

Other Uploads

Main Uploads_0:
PO-0199_Alternative 5_01-18-2024.pdf
Caption : N/A
Link to Download
http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/4105/77

GIS Data_3:
Chandeleur.gdb.zip
Caption : N/A
Link to Download
http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/4145/77

Council Staff Review: Chandeleur Islands Restoration Project

FPL Internal Staff Review

Project/Program	Chandeleur Islands Restoration Project		
Primary Reviewer	John Ettinger	Sponsor	Louisiana
EC Reviewer	John Ettinger	Co-Sponsor	DOI

1. Is/Are the selected Priority Criteria supported by information in the proposal?	Yes
Notes	

2. Does the proposal meet the RESTORE Act geographic eligibility requirement?	Yes
Notes	

3. Are the Comprehensive Plan primary goal and primary objective supported by information in the proposal?	Yes
Notes	

4. Planning Framework: If the proposal is designed to align with the Planning Framework, does the proposal support the selected priority approaches, priority techniques, and/or geographic area?	Yes
Notes	

5. Does the proposal align with the applicable RESTORE Council definition of project or program?	Yes
Notes	

6. Does the budget narrative adequately describe the costs associated with the proposed activity?	Yes
Notes	100% construction

7. Have three external BAS reviews been completed and has the proposal sponsor provided their response?	More information needed
Notes	Please see the external BAS review comments, and external reviews summary attached with these review comments. Note: Restore Council staff worked with the state to resolve these comments.

8. Have appropriate metrics been proposed to support all primary and secondary goals?	Yes
Notes	

9. Environmental compliance: If FPL Category 1 has been selected for the implementation component of the project or program, does the proposal include environmental compliance documentation that fully supports the selection of Category 1?	N/A
Notes	The implementation component is in FPL Category 2.

Summary of Best Available Science Review: Chandeleur Islands Restoration Project

The Chandeleur project proposal, reviewed by three external BAS reviewers, aims to restore and conserve vital coastal habitats such as barrier shorelines, dunes, salt marshes, and seagrass meadows. The proposal demonstrates alignment with regional conservation goals and is guided by the Louisiana Comprehensive Master Plan. Reviewers recognized the credibility and experience of the Louisiana Coastal Protection and Restoration Authority (CPRA), which brings a solid foundation to the effort. The project includes long-term monitoring and adaptive management plans, supported by established data systems like DIVER and CIMS.
However, the proposal would be significantly strengthened by more detailed explanations of the proposed methods, including sediment transport, dune and vegetation restoration, and how key features like the Hurricane Katrina cut will be addressed. Scientific citations and peer-reviewed literature to support the proposed techniques and anticipated outcomes are limited, and the proposal does not fully articulate long-term risks related to climate change, sea level rise, or storm events. While short-term impacts to wildlife and seagrass are mentioned, no mitigation strategies are outlined. In summary, the proposal reflects a strong vision and draws from extensive institutional expertise, but it would benefit from more rigorous scientific justification, clearer methodological detail, and a more thorough risk assessment to fully support its implementation and long-term success.

Summary of Louisiana's Response to BAS Comments: Chandeleur Islands Restoration Project

In response to BAS reviewer comments, the State significantly strengthened the Chandeleur project proposal. Key updates include the addition of secondary benefits and a comprehensive revision of the bibliography, expanding it from 2 to 19 sources with citations now integrated throughout the document. The Methods section was substantially revised to provide greater detail, including clarification that Katrina Cut will not be closed as part of this project. The proposal now includes a thorough discussion of risks and uncertainties, emphasizing that the project is expected to provide clear benefits over a no-action scenario, regardless of storm activity or seasonal variation. Additionally, the updated proposal highlights best management practices to address potential sediment plume impacts and notes that restoration materials are composed of 93% sand, minimizing risk to sensitive habitats. The response also references the CPRA’s extensive track record, citing over 40 past barrier island projects and two bird colony restorations to demonstrate experience and capability. Overall, the updates aim to directly address reviewer concerns by enhancing scientific justification, clarifying methods, and expanding the discussion of environmental risks and management strategies.

Best Available Science Review Forms: Chandeleur Islands Restoration Project

Proposal Title: Chandeleur Islands Restoration Project
Location (If Applicable): The Chandeleur Islands are remote island chain located in Southeast Louisiana. The islands are 75miles east of New Orleans, LA and 26 miles south of Biloxi, MS. They are located in St. BernardParish between Chandeleur Sound and the Gulf of America. Latitude N29.951776 W-88.825202. They are managed by the USFWS as Breton National Wildlife Refuge.
Council Member Bureau or Agency: Louisiana Coastal Protection and Restoration Authority
Type of Funding Requested: Implementation

Reviewed by: In State
Date of Review: September 24, 2024

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Need more information

Comments:

As indicated in the proposal under the heading GOALS the primary comprehensive plan objective is to “Restore and Conserve Habitat” and there are no secondary plan objectives provided or secondary goals. It seems odd that there are no secondary objectives mentioned in as much that the proposal states numerous times that a benefit of the proposed work would also be to enhance inland community resilience because of storm-surge reduction created by an enhanced Chandeleur barrier system.

The singular mention of a METHOD in the proposal is that sand-rich sediment will be conveyed from the northernmost tip of the Chandeleur system (Hewe’s Point) to the project location toward the south. However, there are no details provided about: 1) how sediment will be conveyed, other than design drawings that show a conveyance pipeline corridor, 2) how sediment will be placed, 3) how dune and aquatic seagrass plantings will take place, 4) how sediment will be placed at New Harbor Islands along with detached rip rap, or 4) how a large cut (H. Katrina cut) with a large tidal exchange and prism will be blocked during construction.

One can assume that these types of things have been successfully implemented in the past and that the sponsor has developed this proposal on the best available science but not a single reference is provided indicating that this has been done elsewhere, that the methods are valid or even a reference indicating that there is adequate enough sediment available at the proposed borrow site. The singular item in the bibliography that might address these questions is an engineering report produced for Louisiana Coastal Protection and Restoration Authority.

Question 2.

If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes

Comments:

The proposal addresses a Gulf of America concern, so question is seemingly not applicable.

Question 3.

Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Need more information

Comments:

There are essentially no literature sources cited in this proposal. The only literature source cited in the bibliography relevant to the suggested use of sediment, construction and revegetation is a report by an engineering firm. There are many, many scientific peer-reviewed publications from academia and state and federal agencies that address all of these topics in the Chandeleur system and for other areas along the Louisiana coast. Although the cited engineering report addresses some of the mentioned issues the use of the engineering report as the singular bibliographic entry, that is relevant to the proposed activity of sediment conveyance, construction and vegetative plantings, is a current shortfall of the proposal per Question 1.
The proposal does mention that teams of Subject Matter Experts were convened to develop the goals and metrics of the proposed habitat restoration and conservation. Accordingly Subject Matter Experts would be aware of the literature sources to support the intended project goals, but these sources are not provided in the proposal.

Question 4.

Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	No

Comments:

The singular mention of risks and uncertainties is "Temporary and minor disturbances to sea grass beds, nesting sea turtles and birds…." To list this as the only risk is very short sighted. Yes there no doubt will be these types of disturbances during the construction window but importantly these disturbances will likely affect more than just the project footprint and there is no mention for the spatial or temporal scale of disturbances.
Depending upon the season of construction sediment on the Gulf side of the barrier system will be litorally transported into adjacent areas potentially causing disturbances shore parallel to the construction site. As shown by peer-reviewed publications the seasonality strongly influences Gulf side transport magnitudes and directions. Further, there is no mention of the potential impacts over longer time periods, only the statement of minor disturbances.
Back barrier disturbances will similarly occur due to sediment relocation, let alone the large number of vessels, barges, and other pieces of equipment that will be active in the area during the construction phase. Additionally there are going to be disturbances to the fishery ecosystem (not just seagrass, turtles, and birds), causing disturbances to a large number of recreational fishers that particularly rely upon this area of the barrier system for productive catches, let alone habitat used by fishes for reproduction or as nurseries (again seasonal dependent).
There is no mention of the overall uncertainties, which are many. What if Hurricane Katrina cut with an already large tidal prism exchange can not be easily closed? What if during construction a tropical cyclone takes place and displaces any sediment that was placed prior to cyclone impact? What effect would seasonality have on the construction window? What if construction can not be completed during the relative low wave-energy conditions characteristic of the late spring, summer and early fall seasons?

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science,* the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Need more information
Comments:	
It is reasonable to assume that the Louisiana Coastal Protection and Restoration Authority is operating from the base of the peer-reviewed and publicly available information but this is not identified clearly in the proposal.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Need more information
Comments:	
There is mention in the proposal that the intended goals of the project (habitat restoration and conservation, namely) are supported by the opinions of Subject Matter Experts but it is not clear how these experts are maximizing the quality, objectivity and integrity of information. There is no mention of statistics that support the objectives. No mention even of a case study where there has been success, limited success or failure in similar situations.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Need more information
Comments:	
The proposal does not reasonably or effectively communicate that risks and uncertainties are based on the science of risks and uncertainties in such projects.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	

The Louisiana Coastal Protection and Restoration Authority has a long history of barrier shoreline sediment renourishment, dune creation and vegetative restoration projects along the Louisiana coast and consequently habitat restoration and conservation. They have successfully led such projects with a wide array of partnering/co-sponsoring agencies. This particular proposed effort will be unique in the context of the other renourishment projects they have undertaken because of the remoteness of the Chandeleur system and the overall size of the H. Katrina cut that they propose to close, but nonetheless they have faced similar types of challenges elsewhere along the Louisiana coast.

Question B

Does the project/program have clearly defined goals and objectives?	Yes

Comments:

Yes the goal of habitat creation and restoration is clearly stated with indications of total acreages of barrier shoreline, dunes, saltmarsh and seagrass meadows that will be generated/affected by the proposed construction effort. The goal of creating an ecosystem-level project is articulated as well as the numerous species that will be positively affected by the success of such a project.
Further there is mention of the positive benefits that a post-construction, more continuous barrier system may have on storm surge reduction and therefore benefits to more interior wetlands, although this is less well articulated relative to the ecosystem goals and objectives.
Although not stated as a goal or objective the idea of storm surge reduction is mentioned numerous times and that this would benefit inland communities and wetlands.

Question C

Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Need more information

Comments:

The proposal is overall lacking in these areas in that there is no clear statement of how sediment will be transferred, the stages of construction that will be undertaken, how H. Katrina cut will be closed, how revegetation of dunes will be completed, or the methods of reestablishment of seagrass across a flood tidal delta/washover platform. There is no mention about the scientific soundness of any approaches that are anticipated nor the cost-effectiveness in terms of the expected environmental benefits.
The methods to be used in the restoration and conservation of the New Harbor Islands is also not clearly expressed. There is mention that engineering plans/designs are still currently underway and seemingly those plans would address such methods and rationals but this is not described in the proposal.

Question D

Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes

Comments:

Yes, the project identifies in the qualitative sense the environmental benefits for the many species that utilize this barrier island system. Basically, the underlying statement is along the lines of: if you build it they will come. Because of the substantial geomorphologic change that is historically endemic to the system and the consequential loss of habitat, any additional habitat creation will in total benefit the entire ecosystem.

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
Yes the proposal clearly states the intended metrics of success in the form of total acreage of the various habitats to be created as well as the protection that a continuous barrier shoreline will provide to existing seagrass habitat peripheral to the construction area.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
The only mention of risk in the proposal seems to be centered around the disturbance to some wildlife and the existing seagrass beds during the construction phase. There is a subtle indication that design plans that are currently underway, as well as the existing pre-construction design templates provided, are intended to create a project with longevity in a regime of rising relative sea level rise and possible impacts by tropical cyclones. In general these aspects for consideration are not clearly articulated.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	

The only clearly identified risk seems to be wildlife and habitat disturbances during the construction phase. There is little to no mention of the many uncertainties that exist (as stated in previous responses). For the singular risk of wildlife and habitat disturbance mentioned in the proposal there is no mitigation plan presented.

Question H

Does the project/program consider recent and/or relevant information in discussing the elements above?	No

Comments:

No mention of recent or relevant information pertaining to the singular risk of disturbance mentioned in the proposal.

Question I

Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes

Comments:

The Louisiana Coastal Protection and Restoration Authority has historically had a strong adaptive management program in place for all of its coastal projects and the lessons learned from such projects have continuously been integrated into future projects. There is little doubt that this project too will incorporate such information and there is a section in the proposal that specifically emphasizes that adaptive management strategies will be implemented through pre and post-construction surveys to determine whether the pre-project metrics have been successfully met.

Question J

Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes

Comments:

The Louisiana Coastal Protection and Restoration Authority has had robust monitoring programs in place for all coastal projects as well as a very strong data management approach through the agency Coastal Information Management System. This system provides GIS data, tabular data and project documents that are all easily available to the public.

Please summarize any additional information needed below:

SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Chandeleur Islands Restoration Project
Location (If Applicable): The Chandeleur Islands are a remote island chain located in Southeast Louisiana. The islands are 75miles east of New Orleans, LA and 26 miles south of Biloxi, MS. They are located in St. BernardParish between Chandeleur Sound and the Gulf of America. Latitude N29.951776 W-88.825202. Theyare managed by the USFWS as Breton National Wildlife Refuge.
Council Member Bureau or Agency: Louisiana Coastal Protection and Restoration Authority
Type of Funding Requested: Implementation

Reviewed by: Out of State
Date of Review: 9/28/2024

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
Proposed methods are primarily justified through the Louisiana Comprehensive Master Plan.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes

Comments:
Supporting documents all pertain to the Gulf Coast region.

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
No comments provided.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Need more information
Comments:	
The proposal does address short term risks due to disturbances to seagrasses and wildlife but does not address any long-term risks or uncertainties to the proposed project.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science,* the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Need more information
Comments:	
Being a highlighted project type in the Louisiana Comprehensive Master Plan, this provides indirect science support and justification of this project. However, the applicant does not specifically address the science used to inform methodology or provide direct reference.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Need more information

Comments:
The applicant could provide better justification around the body of science that supports project implementation as well as include how monitoring and adaptive management programs may play a role in informing data gaps and future project implementation.

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Need more information
Comments:	
The applicant could provide additional resources to better support the proposal in respect to the risks and uncertainties addressed. As previously indicated, the proposal could provide additional information around long-term uncertainties and risks of project implementation.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
No comment provided.	

Question B	
Does the project/program have clearly defined goals and objectives?	Yes
Comments:	
No comment provided.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Need more information
Comments:	
The proposal provides clear methods but does not provide any general justification or support for methodology.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
While overall benefits were discussed, the proposal would be stronger if more literature support was provided.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
Success metrics align with Master Plan and other conservation plan objectives.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
The proposal does not explicitly describe long-term risks.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
Short-term risks to existing seagrass beds and wildlife from project implementation disturbance was mentioned. However no specific mitigation plans to address these issues were discussed, although I assume that may be in the planning stages and will be provided prior to implementation.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Need more information
Comments:	
No literature or supporting information provided for the implementation risks section of proposal.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Need more information
Comments:	
The proposal does not provide any direct information regarding past success and failures of similar efforts.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is the appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
Monitoring and data management strategies are provided in a general sense, but no science justification is provided.	

Please summarize any additional information needed below:
As a reviewer I would assume that the science and planning support for implementation projects, such as the proposed, are primarily informed through the Master Plan in Louisiana. That said, this proposal would have been stronger if more reference to that plan and the science that drove decisions and project selection therein. In addition, having some discussion around success and failures and long-term uncertainties of barrier island maintenance projects would be beneficial.

SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Chandeleur Islands Restoration Project
Location (If Applicable): The Chandeleur Islands are remote island chain located in Southeast Louisiana. The islands are 75miles east of New Orleans, LA and 26 miles south of Biloxi, MS. They are located in St. BernardParish between Chandeleur Sound and the Gulf of America. Latitude N29.951776 W-88.825202. Theyare managed by the USFWS as Breton National Wildlife Refuge.
Council Member Bureau or Agency: Louisiana Coastal Protection and Restoration Authority
Type of Funding Requested: Implementation

Reviewed by: Out of Gulf
Date of Review: 10/19/2024

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Need more information
Comments:	
The proposal does base the objectives and methods in existing plans, such as the 2023 CMP and the 2015 LA Wildlife Action Plan, however, it does not explicitly utilize peer review literature to justify the engineering design or benefits of the project, even though these resources do exist.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
Prefer to answer N/A as the benefits of the project have large-scale implications for the Gulf Coast region.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
The limited number of resources used are adequately cited.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Yes
Comments:	
The proposal discusses the risks of not acting and the loss of these habitats in the next 2 decades without the project. There is not extensive discussion of other risks with the implementation of the project, however as a reviewer, I am aware of the long-time expertise and experience in barrier island restoration by the applicants and assume the risks and uncertainties are low. I do not foresee a situation where the project would be completely obsolete.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science,* the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
I believe with the reliance on previous planning efforts that are heavily based in science, the applicants have achieved this.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
This includes a commitment to an extensive monitoring program for at least 15 years after construction.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Yes
Comments:	
These issues are discussed briefly and deferring to an extensive history of similar projects by both applicants.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Need more information
Comments:	
As a reviewer, I am well aware of both applicants extensive experience in implementing barrier island and wildlife restoration projects, however this expertise is not mentioned directly in the proposal.	

Question B	
Does the project/program have clearly defined goals and objectives?	Yes
Comments:	

Question C

Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
The proposal has an extensive list of benefits to the northern GOM.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
Yes and includes long-term monitoring and adaptive management plans and data management and availability through DIVER and CIMS.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
The project does indicate that the islands and the wildlife that rely on its diverse habitats would be lost in 2 decades to continued degradation and climate change if the project was not implemented. The project would extend the lifespan of these key geologic features. The proposal does not, however, discuss things like, specific SLR projections and risks to the restored island.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or	Yes

socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	
Comments:	
The project mentions short-term impacts to grass beds, nesting sea turtles and birds during the construction of the project. The proposal does not have any explicit mitigation plans but assumed would be part of the environmental compliance.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
The project includes some of the latest data on the Chandelier Islands, as well as gathered experts and interested parties for input.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	No
Comments:	
Past similar projects are not discussed.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is the appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
The proposal identifies extensive aerial, in water and on-the-ground monitoring that will be conducted for 15 years post-construction. The proposal identified funding that will be available for management needs in the future as part of an adaptive management program.	

Please summarize any additional information needed below:

Although the proposal may have overrelied on the extensive expertise of the applicants in planning, engineering, constructing and managing barrier island restoration projects instead of explicitly including the details needed, however an opportunity for more information should be provided considering 1) the breadth of science that does support this proposal, 2) the extensive benefits to the project throughout the northern GOM, and 3) the knowledge and experience of the applicants.