West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)

RESTORE Council Proposal Document

General Information

Title:
West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)

Project Abstract:
Alabama, through the Alabama Department of Conservation and Natural Resources (ADCNR), is requesting $38M in Category 2 Council-Selected Restoration Component funding to restore 3.5 miles of linear dune, 40 acres of sandy water bottoms and 160 acres of beach and dune habitat, comprising 200 acres of barrier island habitat. The restoration of the west end of Dauphin Island will provide protection for the estuarine habitats of Mississippi Sound including, seagrasses, oysters, marshes, 30,000 acres of mainland conservation lands and vulnerable coastal villages, landward of the island. This project supports the primary RESTORE Comprehensive Plan goal to replenish and protect living coastal and marine resources. As part of the northern Gulf of America Barrier Island Complex that bedecks the coastline of the Gulf States with dunes, tidal creeks, bays, maritime forests, marshes and lagoons and where sand ceaselessly moves from east to west. The potential for the massive movement of sand along the northern Gulf is evident on Dauphin Island by the recent connection of Pelican Island complex to the island where 3 million cubic yards of sand is feeding the island, forming and widening beach, lagoon and dune habitat. Although the island has been cut off from the eastward source of sand for decades by ship channel dredging, sands continue the westward movement, starving the island of sand. This project supplements the volume of sand on the island to ensure the restoration of the transport of sand along the barrier island system , and in doing so, enhances sustainability of Dauphin Island and the coastline of southern Mobile County. This habitat restoration project provides for the enhancement of community resilience as a secondary goal of the RESTORE Comprehensive Plan goal.

FPL Category: Cat2: Implementation Only

Activity Type: Project

Program: N/A

Co-sponsoring Agency(ies): N/A

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.

Priority Criteria Justification:
This project will restore approximately 200 acres as follows: 40 acres of benthic sand habitat, 160 acres of beach and dune habitat, 3.5 miles of linear dune; restoring critical habitat for marine mammals and listed species in Alabama's coastal and offshore habitat (Atlantic Spotted Dolphin, Alabama Shad, Gulf sturgeon, three species of sea turtles, piping plover and others). Essential Fish Habitat (EFH) s is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. 1801(10)), protecting habitat for species of fish and shrimp at specific times in their life cycle. EFH for brown shrimp, pink shrimp, white shrimp, red drum, reef fish including red snapper, stone crab, and coastal migratory pelagics such as Spanish mackerel, Atlantic sharpnose sharks and Blacktip sharks; and highly migratory species (cobia, tuna, whahoo, bluefish, marlin, swordfish) use the northern Gulf of America waters off Dauphin Island.

There is an imminent threat of breaches by storms of Dauphin Island which will cause the sustainability of the island and all the habitats it consists of and protects in danger of elimination of birds, fisheries, and shellfish. The breach during Hurricane Katrina caused higher saline waters to reach the Mississippi Sound oyster habitat, the last remaining productive oyster reefs in Alabama. With higher salinities, oysters are decimated by oyster drills or disease.

The ecological issues caused by breach of Dauphin Island was clearly documented in the scientific literature after the Hurricane Katrina in 2005, when a west end breach formed (Park et al. 2014). Since closed in 2010, the oysters of Alabama have been carefully managed to back to harvestable size and being harvested using the traditional methods of oyster fishers in Alabama.

The project proposed was identified as a priority in the Alabama Barrier Island Restoration Assessment completed by the USACE and USGS (2020) and will complement on-going and completed projects on and around Dauphin Island. As part of the barrier island system that stretches from Florida to Mississippi, Alabama's barrier island littoral drift feeds the Mississippi Gulf Island National Seashore to the west, which has had $300M in federal investments in recent years as detailed in the Mississippi Coastal Improvement Plan.

Project Duration (in years): 5

Goals

Primary Comprehensive Plan Goal:
Replenish and Protect Living Coastal and Marine Resources

Primary Comprehensive Plan Objective:
Restore and Enhance Natural Processes and Shorelines

Secondary Comprehensive Plan Objectives:
Promote Community Resilience

Secondary Comprehensive Plan Goals:
Enhance Community Resilience

PF Restoration Technique(s):
Create, restore, and enhance coastal wetlands, islands, shorelines and headlands: Sediment placement

Location

Location:
West end of Dauphin Island, AL in south Mobile County. Lat/Long: 30.25°N, 88.17°W

HUC8 Watershed(s):
South Atlantic-Gulf Region(Pascagoula) - Pascagoula(Mississippi Coastal)

State(s):
Alabama

County/Parish(es):
AL - Mobile

Congressional District(s):
AL - 1

Narratives

Introduction and Overview:
Construction of this initiative will restore 3.5 miles of barrier island and 200 acres of sandy water bottoms and beach and dune habitat while protecting the Mississippi Sound estuarine habitats of seagrasses, oysters, and marshes. Dauphin Island (including its undeveloped western end) provides expansive coastal habitat, with over 200 acres of beach, dunes, overwash fans, intertidal wetlands, maritime forest and freshwater ponds in addition to shallow-water nearshore areas. These habitats support many living coastal and marine resources, including threatened and endangered species such as the piping plover. The island also protects the eastern Mississippi Sound ecosystem by reducing the wave energy and preserving the salinity structure for submerged aquatic vegetation (SAV), oysters, shrimp, crabs, and other species. Extreme events have severely impacted Dauphin Island over the past decades, including most recently Hurricanes Ivan, Katrina, and Isaac and the Deepwater Horizon Oil Spill. Restoration of Dauphin Island is critical as it serves as a sustainable barrier island to protect and restore island resources, including habitat and living coastal and marine resources. Protected fish and wildlife species, along with economically critical species, spend all or portions of their lives in these habitats. Additionally, human communities will benefit from the outcomes of this project, including some of the most underserved residents in coastal Alabama and the US. The project will reduce flood impacts as seas rise, protect economically important industries such as seafood and tourism, and provide access to and preservation of culturally significant natural spaces. Construction of the proposed initiative involves one primary goal and one secondary goal:

Primary Goal: Restore beach and dune habitats and re-introduce sand into the littoral barrier island system of the northern Gulf of America.

Secondary Goal: Support and Enhance Community Resilience through replenishing a protective barrier island that enhances community resilience of South Mobile County.

The planning, design and permitting for this project has been funded by National Fish and Wildlife Foundation Gulf Environmental Benefit Fund (NFWF GEBF) and Gulf of Mexico Energy Security Act (GOMESA).

There are five goals within the RESTORE Councils comprehensive plan. This Project addresses two of those goals, Goal #3: Replenish and Protect Living Coastal and Marine Resources and Goal #4: Enhance Community Resilience. The Project ties in with RESTORE Councils primary objective of Restore and Enhance Natural Processes and Shorelines and

Promote Community Resilience. Under the 2016 Comprehensive Plan update the Council advanced the following commitments:

Regional ecosystem-based approach to restoration: The northern Gulf of America is an interconnected landscape of barrier islands, wetlands, and maritime forests stretching from the Florida panhandle to the Louisiana bayous and beyond. An interdependent complex, the barrier islands rely on east to west littoral downdrift of sand; interruptions in these pathways cause a sediment imbalance that leaves the downstream islands in a deficit and perpetually eroding. Alabama's barrier island littoral drift feeds the Mississippi Gulf Island National Seashore to the west, which has had $300M in federal investments in recent years as planned for in the Mississippi Coastal Improvement Plan. Restoration of Dauphin Island's West End will reestablish the littoral downdrift, supporting the millions of dollars invested in the region by local, state, and federal agencies and non-profits.

Leveraging resources and partnerships: This proposed project is the culmination of decades of planning efforts informing the most sustainable and adaptive path forward. The initiative builds on completed USACE and USGS research, specifically the Alabama Barrier Island Restoration Assessment (USACE & USGS 2020), which identified this as a priority project for restoring this critical barrier island ecosystem. NFWF GEBF, in implementing the findings of the ABIRA (USACE & USGS 2020), funded the 30% land-side design of the project ($993K). ADCNR committed GOMESA funding to get full design and permitting in 2024 ($1.25M). Further, NFWF GEBF funded $30M for the East End restoration and Graveline Bay Marsh Creation. The USACE is entering into a MOA with the Town of Dauphin Island to ensure long-term sustainability of the project through beneficial use of future dredge ship channel sediments. This initiative supports restoration that is required for the northern Gulf of America barrier island system.

Engagement, Inclusion, and Transparency: The project is the culmination of decades of

planning efforts to inform the most sustainable and adaptive path forward. The initiative builds on recently completed research, specifically the Alabama Barrier Island Restoration Assessment, which identified priority projects for restoring critical ecosystems.

Science-based decision-making: A multidisciplinary study was conducted to investigate viable options for the restoration of Dauphin Island as a sustainable barrier island to enhance and restore island resources and the surrounding coastal resources. The study investigated sustainable restoration options through a feasibility-like study based on science and technical expertise that provides the ability to effectively evaluate the natural resource benefits and impacts of restoration measures. The study included modeling the island to evaluate: (1) beneficial use options and other sand placement activities; and (2) other resilient and sustainable island restoration options in support of critical habitats and resources (USGS, 2020). These proposed restoration activities were identified as those with the most potential to enhance the ecological resilience and structure of Dauphin Island.

Delivering results and measuring impacts: The proposed restoration activities will support barrier island ecosystems that provide ecosystem services, such as water purification, fish and

wildlife habitat, and biodiversity. They are also critical to providing wave dissipation, stabilization to the shoreline, sediment retention, and shelter for the marsh and meadows that naturally occur behind the beach and dunes.

Loss of barrier island area threatens the estuarine ecosystem goods and services of the Mississippi Sound and exposes the mainland coast and its associated wetlands and coastal habitats to increasing saltwater intrusion and damage from future storms and storm surges (USACE, 2009). These coastal habitats are keystone within the coastal environment as they provide the base for a host of ecosystem services and benefits (Purcell et al, 2020). These ecosystem services include: serving as natural buffers to protect shorelines from eroding; storm surge protection (Gittman et al., 2014); fisheries production, water quality enhancement through sediment and nutrient reduction, faunal support, carbon sequestration, and providing habitat for a multitude of trophic levels within the ecosystem (Barbier et al., 2011; Mendelssohn et al., 2012). The restoration of Dauphin Island's west end would continue to support and increase these ecosystem services in Alabama.

Southern Mobile County has several towns and communities that could be exposed to higher levels of storm damage in the case of the contraction of the length or breadth of Dauphin Island. The island enhances the resilience of the coastal towns of Alabama Port, Coden, and Bayou la Batre by serving as a wave break during storms. Dauphin Island reduces high salinity intrusion into the estuarine bays of Mississippi Sound and Mobile Bay maintaining the oyster fishery and Essential Fish Habitat from Dauphin Island to the shoreline of South Mobile County.

Total Cost: $38,000,000. Implementation is scalable into multiple phases based on the section of beach, with 97% of these funds being used for implementation. Priority would be based on the most vulnerable areas of the island from breaching and landholder participation. However, there is an economy of scale once a dredge is mobilized.

Timeline: 5 years.

Proposed Methods :

The goal of the project is to restore 3.5 miles of barrier island and 200 acres of sandy water bottoms and beach and dune habitat while protecting the Mississippi Sound estuarine habitats of seagrasses, oysters, and marshes, as well as 30,000 acres of mainland conservation lands. This will be achieved through specific objectives including:

1. Restoration of 40 acres of benthic sand habitat.
2. Restore 160 acres of beach and dune habitat to support an adequately wide beach to absorb the energy of storms and to restore littoral down drift in the northern Gulf barrier island complex.
3. Creation of 3.5 miles of linear dune to protect infrastructure and promote natural dune habitat and function.
4. Perform implementation monitoring to document project performance and required adaptive management measures.

Benthic Sand Habitat and Beach and Dune Habitat Restoration

The project is being designed to work with natural processes controlling the beach and dune

system of the west end of Dauphin Island. These beaches are partially controlled by a unique, cyclical, geologic phenomenon which happens every 150 years or so. Pelican Island migrates north and merges onto Dauphin Island and Pelican Passage closes. This is the phenomenon that has left the island's fishing pier landlocked since 2008, as predicted over a decade earlier (Douglass 1994, Sanchez and Douglass 1996). The ongoing migration of Pelican Island is slowly feeding roughly 3 million cubic yards of sand to the beaches of Dauphin Island. Most of this sand will move west functioning as a very slow, natural beach nourishment project for the west end. Leveraging the extensive dredging operations in the region, this project will beneficially use dredged material to place 2.4M cubic yards of sand to restore 3.5 miles of barrier island and 200 acres of sandy water bottoms and beach and dune habitat while protecting the Mississippi Sound estuarine habitats of seagrasses, oysters, and marshes using dredge material that has been specifically sourced to meet the criteria for sand specific to Dauphin Island (APTIM 2022). A sand beach restoration project along this far west reach is anticipated to migrate 45% to the east and 55% to the west resulting in a net westerly migration. The easterly migration will meet the naturally migrating 3 million cubic yards of Pelican Peninsula sand bringing the natural and engineered beach together in the west in the decades to come. This strategy will optimize the engineered restoration project within budget constraints for implementation whilst taking advantage of the natural nourishment process. The beneficial use of dredged material for restoration of the beach and dune habitat is based on USACE recommendations (USGS, 2020) and aligns with the planning efforts and restoration priorities of multiple agencies and stakeholders.

Creation of 3.5 miles of linear dune

This component will enhance an existing linear dune feature that is intended to provide dune habitat while simultaneously protecting Town infrastructure. Similar to beach restoration, dune features are critical for retaining sand on the Gulf-facing beach during typical storm events and for protecting community assets behind the dunes. Without elevated dune habitat, overwash and breaching will be more common, infrastructure will incur expensive repair costs, and the building stock, which serves as the Town's primary economic engine, will face more frequent and extensive damages. Recognizing the value of a continuous elevated dune habitat for their long-term resilience, the project is proposing to elevate the access points for side roads. This will complement efforts by private landowners to also elevate access points on private property. Access points through the dune act as a funnel for seawater during high tide events, high wind events, and tropical systems that create saltwater flooding of and sediment deposition on public and private property, damaging critical infrastructure and economically essential building stock. Access points will be raised to connect the established healthy dune habitat on either side of the access points, enhancing the function of the linear dune feature while still providing public access.

Baseline monitoring and implementation monitoring will be conducted. See Monitoring section below.

The planning, design and permitting for this project is underway and has been funded by National Fish and Wildlife Foundation Gulf Environmental Benefit Fund (NFWF GEBF) and Gulf of Mexico Energy Security Act (GOMESA). Sand resources for this project have been identified

and assessed for use on Dauphin Island for beach and dune restoration borrow sites (APTIM 2022). Two large areas of interest (AOI) on the Mobile Ebb Tidal Shoal, Area I & II. The East End Beach and Dune Habitat Restoration estimated a requirement of 1.2 million cubic yards (mcy) of beach-compatible sand from Area I, which is estimated to contain 5.3 mcy. Area II has about 2.5 mcy of beach-compatible sand. Cultural resource surveys of the borrow sites have been implemented and cleared for extraction (APTIM 2022).

Environmental Benefits:

Dauphin Island and the remainder of the barrier islands fronting the Mississippi Sound have been historically eroding and their capacity to protect mainland natural resources and infrastructure is diminishing (Byrnes et al., 2010). Moreover, loss of barrier island area threatens the estuarine ecosystem goods and services of Mississippi Sound and exposes the mainland coast and its associated wetlands and coastal habitats to increasing saltwater intrusion and damage from future storms and storm surges (USACE, 2009; USACE & USGS, 2020). (USACE & USGS, 2020)) documents various restoration scenarios that increase island sustainability and restores vital habitats. Barrier islands and associated habitats provide essential ecosystem services, such as water purification, carbon sequestration, fish and wildlife habitat, and ecological diversity that supports biodiversity. While beach and dune restoration would not eliminate shoreline loss or reduce shoreline recession rates, it would reduce loss of landward beach, dune, barrier flats, and intertidal marsh habitats under rising sea levels. On-the-ground implementation of this restoration project will result in a high likelihood of strengthened barrier island ecosystem resilience and direct benefits to the barrier island species and fisheries.

Metrics:

Metric Title: HR002 : Shoreline restoration - Miles of shoreline stabilized and restored

Target: 3.5

Narrative: Miles of linear dune to protect infrastructure and promote natural dune habitat and function.

Metric Title: HR013 : Wetland restoration - Acres restored

Target: 200

Narrative: Acres of submerged habitat, and beach and dune habitat to support an adequately wide beach to absorb the energy of storms and to restore littoral down drift in the northern Gulf barrier island chain.

Risk and Uncertainties:

Sea-level rise and storm surge are two risks and uncertainties to project implementation performance. Storm surge associated with hurricanes and tropical storms poses a threat to restoration beach and dune habitat during and after project construction. Engineering and design will utilize best practices from similar projects and is based on best available science and factors such as wave and wind energies to minimize these risks as much as possible. USACE & USGS (2020) the future of Dauphin Island without restoration (i.e., no action). was evaluated to determine which island habitat features were vulnerable to degradation or loss under the various sea level change (SLC) and storm scenarios. Results indicate that increases in storms (frequency and strength) and SLC, both independently and in combination, contribute to increased island degradation and loss of habitat (Mickey et al., 2020, Enwright et al., 2020). The proposed restoration actions are critical in providing wave dissipation, stabilization to the shoreline, sediment retention, and shelter for the marsh and meadows that naturally occur behind the beach and dunes. For example, the restoration of 200 acres of beach and dune habitat reduces the risk of island breaching, which has become more common in recent years. Risk reduction to storms for the most vulnerable part of the island is reduced with the restoration of intertidal marsh, beaches, dunes and barrier island flats versus no action (USGS 2020).

Dauphin Island is part of the littoral sand system that moves from east to west from Pensacola Bay to Mobile Bay (Stone et al. 1992). The Mobile Bay ship channel dredge material, deposited in part by the littoral sand system, has been dredged and placed offshore for decades, starving the east end of Dauphin Island and the down stream islands, of essential sand resources that balance erosion on the barrier islands.

The Town of Dauphin Island has been working closely with the US Army Corp of Engineers (USACE) to enter into a Memorandum of Agreement (MOA). This MOA will include a mechanism in which Dauphin Island can receive sediments that are dredged by the USACE. The MOA is being pursued to address long-term sustainability of several project sites including, but not limited to, the West End, East End, Graveline Bay, Aloe Bay, and Little Dauphin Island. Once the Town secures a programmatic permit and funding is available, these USACE dredge events can be beneficially utilized to place sediments on appropriate project sites dependent on sediment types and volumes.

Monitoring and Adaptive Management:

Monitoring and adaptive management will be implemented during pre-construction, project-construction, and post-construction phases and monitoring plans will be updated regularly to reflect new information, including significant progress or resolution of recognized uncertainties, as well as any new uncertainties that might emerge during and following project construction (Steyer et al.
2020).

Baseline pre-monitoring will include reference site vegetation and elevation monitoring metrics. Construction monitoring includes as-builts from the construction contractor that will be utilized as the baseline. Implementation monitoring is requested with this grant to monitor performance

metrics of the constructed improvements to determine if targeted outcomes are achieved. Monitoring and Adaptive Management will be based on the 2024 Dauphin Island East End Dune and Beach Habitat Restoration project: Draft Monitoring and Adaptive Management prepared by Moffatt and Nichol (2023 V2) that includes feasibility-level monitoring and adaptive management consistent with National Fish and Wildlife Foundation, Gulf Environmental Benefit Fund Monitoring and Adaptive Management Plan guidelines and consistent with the Water Resources Development Act guidance for U.S. Army Corps of Engineers projects (USACE & USGS, 2020).

Data Management:
To the extent practicable, environmental and biological data generated during monitoring activities will be documented using project-specific standardized digital field datasheets. If digital data sheets are not possible, field data sheets will be entered into spreadsheets.

Original hardcopy datasheets, electronic notes, notebooks, and photographs would be retained by the Contractor. Relevant project data that are handwritten on hardcopy datasheets or notebooks would be transcribed (entered) into standard digital format. All data would have properly documented FGDC/ISO metadata, a data dictionary (defines codes and fields used in the dataset), and a Readme file that contains the information about the data including, how data was collected, QA/QC procedures, date of data collection, date of data entry, identity of scientists participating at each step, and format of data. Electronic data files will be named with the date on which the file was created and by whom, and any explanatory notes on the file contents. If a data file is revised, a new copy will be made and the original preserved. Data will be made publicly available on the Dauphin Island Sea Lab RESTORE data repository.

Collaboration:
This initiative is the culmination of decades of planning efforts informing the most sustainable and adaptive path forward. The initiative builds on completed U.S. Army Corps of Engineers (USACE) and U.S. Geological Survey (USGS) research, including the Alabama Barrier Island Restoration Assessment (ABIRA, USACE & USGS, 2020), under a grant from the National Fish and Wildlife Foundation (NFWF) Gulf Environmental Benefit Fund which identified this as a priority project for restoring this critical barrier island ecosystem. Development of the ABIRA report included a formal outreach and engagement effort including a virtual public meeting and a comment period.

Public Engagement, Outreach, and Education:
Development of the ABIRA report included a formal outreach and engagement effort including a virtual public meeting and a comment period. The town of Dauphin Island has a website page with fact sheets, public meeting slides, FAQs, funding sources and maps for the West End project along with the process for long-term sustainability: https://www.townofdauphinisland.org/westendnourishment.

Leveraging:

Funds: $993,000.00

Type: Leveraging

Status: Received

Source Type: Other

Description: 30% design

Funds: $1,250,000.00

Type: Leveraging

Status: Received

Source Type: Other Federal

Description: 30% - 100% design and permitting

Funds: $30,000,000.00

Type: Leveraging

Status: Received

Source Type: Other

Description: East End restoration and Graveline Bay Marsh Creation

Environmental Compliance:
Environmental compliance activities are underway and are being funded through other funding sources. The project USACE permit is pending (SAM-2024-00553-DJL). Approved permits and applicable documentation will be submitted when received.

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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Barbier E.B., Hacker, S.D., Kennedy, C., Koch, E.W., Stier, A.C., Silliman, B.R. 2011. The value of estuarine and coastal ecosystem services. Ecological Monographs 81(2), 169-193.

Byrnes, M. R., S. F. Griffee, and M. S. Osler. 2010. “Channel Dredging on Geomorphic Response at and Adjacent to Mobile Pass, Alabama,” Technical Report ERDC/CHL-TR-10-8, U.S. Army Engineer Research and Development Center, Coastal and Hydraulics Laboratory, Vicksburg, MS.

Douglass, S.L. 1994. “Beach Erosion and Deposition on Dauphin Island, Alabama, U.S.A.,” Journal of Coastal Research,
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Enwright, N.M., Wang, H., Dalyander, P.S., and Godsey, E., eds., 2020, Predicting barrier island habitats and oyster and seagrass habitat suitability for various restoration measures and future conditions for Dauphin Island, Alabama: U.S. Geological Survey Open-File Report 2020–1003, 99 p., https://doi.org/10.3133/ofr20201003

Gittman, R.K., Popowich, A.M., Bruno, J.F., Peterson, C.H., 2014. Marshes with and without sills protect estuarine shorelines from erosion better than bulkheads during a Category 1 hurricane. Ocean & Coastal Management, 102, 94-102.

Mendelssohn, I.A., Andersen, G.L., Baltz, D.M., Caffey, R.H., Carman, K.R., Fleeger, J.W., Joye, S.B., Lin, Q., Maltby, E., Overton, E.B., Rozas, L.P. 2012. Oil impacts on coastal wetlands: implications for the Mississippi River delta ecosystem after the Deepwater Horizon oil spill. Bioscience 62 (6), 562-574

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Park, K, Powers, S.P., Bosarge, G.S., and Jung, H-S., 2014. Plugging the leak: barrier island restoration following Hurricane Katrina enhances loarval retention and improves salinity regime for oysters in Mobile Bay, Alabama. Mar. Envion. Res. 94:48-55.

Purcell, A.D., Khanal, P.N., Straka, T.J., Willis, D.B. 2020. Valuing ecosystem services of coastal marshes and wetlands.Clemson (SC): Clemson Cooperative Extension, Land-Grant Press by Clemson Extension; LGP 1032.https://doi.org/10.34068/report4. Last accessed: 6.9.2020

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Steyer, G.D., Meyers, M.B. and Spear, K.A., 2020. Alabama Barrier Island Restoration Assessment Monitoring and Adaptive Management Plan, Appendix L, 26 p.,
https://gom.usgs.gov/DauphinIsland/data/AppL_MAMPlan_2020April20_Final.pdf

Stone, G., Stapor, F., and Morgan, J. 1992. Multiple sediment sources and a cellular, non-integrated, longshore drift system: Northwest Florida and southeast Alabama coast, USA. Marine Geology 105:141-154.

U.S. Army Corps of Engineers (USACE). 2009. Mississippi Coastal Improvements Program (MsCIP), Hancock, Harrison, and Jackson Counties, Mississippi, Comprehensive Plan and Integrated Programmatic Environmental Impact Statement. Main report and appendices. June.

U.S. Geological Survey (USGS) and U.S. Army Corps of Engineers (USACE), 2020. Final Alabama Barrier Island Restoration Assessment Report, 102 p., https://gom.usgs.gov/DauphinIsland/data/ALBarrierIslRestoFinalRpt_2020.pdf

Budget

Project Budget Narrative:
A total of $38,000,000 is being requested from 2026 FPL to fund construction activities. This project is scalable, and there is an economy of scale once a dredge is mobilized. The funds being requested are solely intended to be used for construction/implementation. Any additional leveraging and cost sharing, from respective entities or additional Deepwater Horizon related funding streams are not part of this request. An estimated 97% is being requested for construction and project implementation. An estimated 1% is being requested for Construction Engineering Inspection (CEI). An estimated 2% is being requested for monitoring and adaptive management activities to ensure enhancement and restoration of barrier island sand movement and barrier island processes, reducing symptoms of sand starvation on Dauphin Island.

Total FPL Project/Program Budget Request:
$ 38,000,000.00

Estimated Percent Monitoring and Adaptive Management: 2 %

Estimated Percent Planning: 1 %

Estimated Percent Implementation: 97 %

Estimated Percent Project Management: N/A

Estimated Percent Data Management: N/A

Estimated Percent Contingency: N/A

Is the Project Scalable?:
Yes

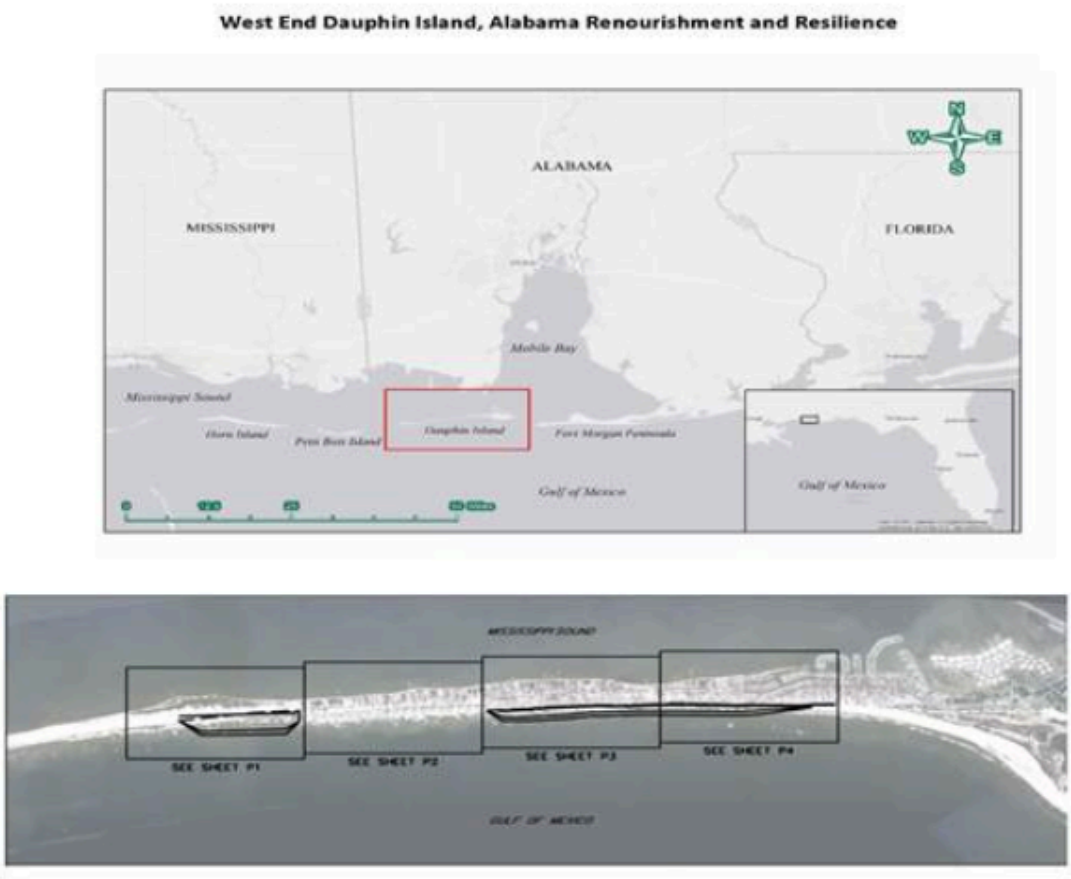
If yes, provide a short description regarding scalability.:
This project is scalable, and there is an economy of scale once a dredge is mobilized.

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	The project USACE permit is pending (SAM-2024-00553-DJL).
Endangered Species Act	N/A	Note not provided.
National Historic Preservation Act	N/A	Note not provided.
Magnuson-Stevens Act	N/A	Note not provided.
Fish and Wildlife Conservation Act	N/A	Note not provided.
Coastal Zone Management Act	N/A	Note not provided.
Coastal Barrier Resources Act	N/A	Note not provided.
Farmland Protection Policy Act	N/A	Note not provided.
Clean Water Act (Section 404)	N/A	Note not provided.

River and Harbors Act (Section 10)	N/A	Note not provided.
Marine Protection, Research and Sanctuaries Act	N/A	Note not provided.
Marine Mammal Protection Act	N/A	Note not provided.
National Marine Sanctuaries Act	N/A	Note not provided.
Migratory Bird Treaty Act	N/A	Note not provided.
Bald and Golden Eagle Protection Act	N/A	Note not provided.
Clean Air Act	N/A	Note not provided.
Other Applicable Environmental Compliance Laws or Regulations	N/A	Note not provided.

Maps, Charts, Figures



Caption : Dauphin Island West End Map

Other Uploads

GIS Data_1:
DI_Coastal_Resilience_GIS_Template.gdb.zip
Caption : N/A
Link to Download
http://www.restorethegulf.gov/apps/piper/web/Uploads/Download/proposal/4079/89

Council Staff Review: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)

FPL Internal Staff Review

Project/Program	West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)		
Primary Reviewer	Matt Love	Sponsor	Alabama
EC Reviewer	John Ettinger	Co-Sponsor	

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	Yes

the proposed activity?	
Notes	

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.

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	Proposal seeks FPL Category 2 funding only.

Summary of Best Available Science Review: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)

The Dauphin Island restoration proposal was generally well-received in reviews from in-state, out-of-state, and out-of-Gulf reviewers, all affirming that it is grounded in peer-reviewed and publicly available science. The project is supported by extensive prior studies, including the Alabama Barrier Island Restoration Assessment (ABIRA), and is recognized as a product of decades of planning and evaluation. The methods proposed are appropriate for the Gulf Coast region and reflect best practices from similar past efforts. Reviewers found that citations were complete and unbiased, though some suggested adding specific references (e.g., for oyster benefits) and further detail on construction methods and monitoring protocols.

The proposal's goals and objectives were clearly defined, and environmental benefits particularly to barrier island habitats and estuarine species were well articulated. Long-term risks such as sea level rise and storm impacts were acknowledged, though reviewers requested more detailed discussion on how these risks would affect beach and dune systems. Some uncertainties were noted around landowner participation and adaptive management strategies, and additional information was suggested on mitigation planning and data housing.

Monitoring strategies were described, but could be enhanced by including more detail on site plantings, adaptive management actions, and data access (e.g., collaborating with the Dauphin Island Sea Lab). While the proposal draws from relevant scientific and historical information, reviewers emphasized the value of adding outreach efforts to raise local awareness. Overall, the proposal is seen as scientifically sound and implementation-ready, with a few areas particularly risk mitigation, monitoring specifics, and community engagement—where additional clarity would strengthen it.

Summary of Alabama's Response to BAS Comments: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)

The state provided targeted responses to comments on the Best Available Science (BAS) review for the Dauphin Island restoration project. Regarding land ownership, it was clarified that the majority of the project area is owned by the Town of Dauphin Island or the Property Owners Association (POA), with one construction easement still pending. Concerning sea level rise (SLR) and coastal flooding, the state explained that sediment in this littoral system is not lost but redistributed, and the project along with others like the East End and West End restorations—will help replenish the sediment-starved system. A comprehensive monitoring plan, modeled after the East End project, will include pre-construction, construction, and post-construction phases using surveys, aerial photography, and vegetation transects. Construction will involve dredging sand from a borrow area and shaping the dune system with heavy equipment, followed by extensive planting. Past project lessons, including failures like the "FEMA berms," have informed a more sustainable design with better fill density and drainage. Adaptive management will be part of the required USACE permit plan and will include long-term nourishment in partnership with USACE. Public outreach is robust, involving meetings, press releases, an updated website, fact sheets, and public hearings scheduled for Winter 2025.

Best Available Science Review Forms: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)

Proposal Title: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)
Location (If Applicable): West end of Dauphin Island, AL in south Mobile County. Lat/Long: 30.25°N,88.17°W
Council Member Bureau or Agency: Alabama Department of Conservation and Natural Resources
Type of Funding Requested: Implementation

Reviewed by: In State
Date of Review: 9/22/2024

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:	

The proposal discusses several previous actions, public plans, and research (inc. USACE and USGS, and specifically the Alabama Barrier Island Restoration Assessment (ABIRA)) that support the project and have identified the action in this proposal as a priority project for restoring this critical barrier island ecosystem.

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:	
This proposal directly pertains to the Gulf Coast region. The proposal's methods complement those done east of the project at Pelican Island and will continue to help other barrier islands to the west in MS that are part of the National Seashore as the sand migrates. It also aid in dampening wave and storm energy reaching south Mobile County, an area where livelihoods are inherently linked with the water and that is underserved.	

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:	
There is discussion and referencing of several public actions, plans, and research, as well as citations for environmental impacts and benefits, that effectively support the proposed actions and ultimate outcomes.	

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 mentions working with landowners to elevate access points along the dune to limit gaps that allow for saltwater overflow and sedimentation. It does not mention how many landowners, timing for agreements that may be needed, or the risk of landowners not participating.

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:	
The proposal clearly identifies the plans and research that support the proposed actions. The protective value for oysters was highlighted as well known in the literature and models, but references were not provided for that benefit. The proposal would be strengthened by that addition.	

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:	
The proposal clearly highlights science backing up storm-related impacts, environmental benefits to habitats and species, and climate impacts. These were well stated within the specific proposal sections.	

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:	
The proposal clearly states that this project will not solve all issues with shifting sands along barrier islands, but targets meeting impacts with sea level rise and strengthening habitats for future impacts and change.	

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:	
The proposal alludes to past experience and use of best practices from them. The proposal does not clear identify similar past experiences and would benefit from that inclusion.	

Question B	
Does the project/program have clearly defined goals and objectives?	Yes
Comments:	
The proposal has a very clear goal of restoring beach and dune habitat through sediment placement. This is an implementation project. Planning, designs, and permitting have already been funded through NFWF's Gulf Environmental Benefit Fund and GOMESA. It is truly a shovel-ready project.	

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:	

The actions presented in this proposal appear to have been identified by several public and private entities, all highlighting similar methodologies for the planned actions, thus supporting the methods selected. While this is an expensive project, it seems to reset the clock and the applicant is already working on long term strategies to sustain the benefits from this investment (i.e. MOU with Army Corps of Engineers).

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:	
Environmental benefits to birds, turtles, and fish are well documented in the proposal. This project also provides protective capacity for the highly productive MS Sound estuary, amplifying the benefits to nearshore, estuarine species and oysters, including wild harvest reefs and many off bottom aquaculture operations. The erosion impacts and climate stressors were identified in conjunction with these end benefits.	

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:	
The project has specific metrics for miles of shoreline and acres of wetlands restored, both applicable. For beach and dune habitats, at the access points and other areas, plantings are not mentioned. The addition of plantings to help stabilize the sediment and dunes would strengthen this proposal, especially given known storm and storm surge impacts.	

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)	Yes
Comments:	

The proposal identifies this area on the frontline of the Gulf of America and its past impacts from storms and anthropogenic events. While those events are uncontrollable, it also states that the actions will address sea level rise and strengthen habitats for future climate impacts. The applicant also discusses developing strategies for long term sustainability through an MOU with the Army Corps of Engineers for continued sand placement to protect and sustain this investment.

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 proposal identifies storm impacts, especially storm surge, as an issue during and immediately following construction. It identifies using best practices from past projects to help minimize any storm-related impacts. The proposal does not clearly frame how private landowners (i.e. at access points) will be engaged and how the project might be altered if the landowners choose not to participate.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
The project clearly identifies several tropical storms and the DWH event as recent risks that contributed to the changes in sediment supply, island dynamics, and impacts to beach/dune habitats.	

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 proposal mentions using past experience to implement best practices to minimize impacts during and immediately post construction. Through the various planning efforts, it is implied that past successes and failures were reviewed to arrive at the current plan and methodology.

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)	Need more information

Comments:

Monitoring includes reference site vegetation and elevations. It is still unclear whether planting will occur as part of the proposed actions. The proposal could be strengthened with that addition. Other monitoring seems to be structural on sand placement and movement. No adaptive management actions were identified in the proposal and inclusion could help support the investment in this project.

While the proposal states that the data will be publicly available, it has not identified a specific website or location to house the data. Dauphin Island Sea Lab has data storage capacity and could be approached to house the data for the project.

Please summarize any additional information needed below:

A primary strength of the proposal is the many partners and plans that help support these actions and methodology.

The Public Engagement, Outreach, and Education section identifies many of the contributing partners and plans. It does not outline any outreach for this project specifically. Press releases, newsletter articles, town council meetings, and other outreach on the project could help inform residents and visitors on Dauphin Island, but also the adjacent communities in south Mobile County to raise awareness.

SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)
Location (If Applicable): West end of Dauphin Island, AL in south Mobile County. Lat/Long: 30.25°N,88.17°W
Council Member Bureau or Agency: Alabama Department of Conservation and Natural Resources
Type of Funding Requested: Implementation

Reviewed by: Jose G. Vasconcelos Neto
Date of Review: Out of State

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:	
Yes, this proposal is well substantiated in previous studies, particularly the Alabama Barrier Island Restoration Assessment (ABIRA).	

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 information supporting the proposal is supported in previous studies performed at the selected implementation site.	

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:	
Yes, through the ABIRA report and related appendices much of the needed support of the proposal is provided. A citation for the Mississippi Coastal Improvement Plan would be beneficial.	

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:	
Whereas the risks of storm surges and sea level rise are listed, more discussion could be provided on how coastal flooding created by SLR would impact the proposed beach and dune habitats in the long term.	

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:	
The proposal is well supported by a range of peer-reviewed publications and technical reports.	

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:	
Yes, the proposal data and information management in terms of types of collected data, scope, is adequate for the project goals. One point for improvement is to specify where will data be gathered more specifically, and how this data will be gathered that will ensure the metrics are attained.	

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:	

For the most part, yes. However, more discussion could be provided on how coastal flooding created by SLR would impact the proposed beach and dune habitats in the long term.

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:	
Yes, through the East End restoration and Graveline Bay Marsh Creation project that is described in the proposal.	

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

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:	

Yes, the proposal presents the methods for aerial habitat restoration and for the linear restoration of dunes. The description is not much focused on construction methods, though. Another point for improvement is to specify where data will be gathered and which type of monitoring will be performed associated with the methods to ensure the metrics are attained.

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 proposal discusses and identifies the various potential environmental benefits. I also appreciated that there is a recognition that the shoreline loss processes will not be eliminated, which helps to delimit the beneficial aspects of the proposed project.	

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, these are clearly identified.	

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:	

As pointed above, more discussion could be provided on how coastal flooding created by SLR would impact the proposed beach and dune habitats in the long term.

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:	
This is properly addressed in the proposal.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
Yes, mainly through the ABIRA and its appendices.	

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:
Partially. East End restoration and Graveline Bay Marsh Creation is an indication of recent past success, but more could have been presented on failures, as a means to identify risks.

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:	
Yes, these are sufficiently identified.	

Please summarize any additional information needed below:
In general, there only a few points in this proposal that could benefit from a little more clarification. The habitat restoration in Dauphin Island has the potential of creating numerous environmental benefits and increased resilience to coastal communities.

SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: West End Dauphin Island, Alabama Renourishment and Resilience (Implementation)
Location (If Applicable): West end of Dauphin Island, AL in south Mobile County. Lat/Long: 30.25°N,88.17°W
Council Member Bureau or Agency: Alabama Department of Conservation and Natural Resources
Type of Funding Requested: Implementation

Reviewed by: Out of Gulf
Date of Review: 30 Sept 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:	
This implementation project is the result of decades of planning and scientific evaluation of resilience needs of the vulnerable western end of Dauphin Island, including federal and state agency and academic work.	

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 supporting material both pertains directly to the Gulf Coast and also to other regions, certainly adaptable to the needs of the northern Gulf of America coastal environment.	

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:	
Citations are complete and thorough, and represent a track of evaluations and science that has stood up to the test of time.	

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:	
Risks are the reason for the proposal, and have been considered in the development of this implementation 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?	Yes
Comments:	
This implementation proposal is based on years of evaluations and science by state and federal agencies and academic scientists, and so has, in effect, been vetted by those approaches and concepts that have survived years of critical evaluation and climatic events that will continue to affect the project area.	

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:	
See comment to Question A.	

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:	
Scientific evaluations from Hurricane Katrina impacts have informed the development of this project, as well as the Alabama Barrier Island Assessment (ABIRA) by USACE and USGS, and related projects evaluated by USGS in the region.	

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 Alabama Department of Conservation and Natural Resources has the expertise and contacts in other state and federal agencies to ensure the success of this project	

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

The goals are clearly defined and have been developed from outside assessments and evaluations in addition to previous funding from the National Fish and Wildlife Foundation Gulf Environmental Benefit Fund (NFWF GEBF) and the Gulf of Mexico Energy Security Act (GOMESA). The result is well informed and vetted project goals.

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:

Methodology for the work follows accepted current practices for such restoration, and has been informed by the extensive vetting of methods and needs assessments from multiple agencies.

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:

Stabilizing this vulnerable part of Dauphin Island reverses sand starvation from channel dredging, and directly addresses well documented regional impacts from island breaching that occurred from hurricane Katrina. The science and regional plans/needs assessments have been previously indicated in comments above.

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:

As an implementation project, the measures of success are well defined for construction/sand placement activities. Long term success is likely given the long history of evaluation of climatic and environmental factors in the region documented in the proposal.

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)	Yes

Comments:

Yes see comment above.

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:

Sea-level rise and strom surge have been identified as major risks to the project. Hurricanes in particular could result in delays and/or need to recoup losses to a partially finished project. Available evaluations from similar projects will be used to accommodate these risks to the extent possible.

Question H

Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes

Comments:

Significant evaluations both historically and spatially across the northern Gulf of America have been cited and will be used in reducing risk.

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:	
See comments above concerning the long history of assessments and planning that are informing this project.	

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 is included in the project for environmental and biological parameters. There is a clear data plan including metadata and QA/QC procedures. Monitoing data will feed into an adaptive management approach to optimize a successful project.	

Please summarize any additional information needed below: