



## Louisiana and Open Ocean Trustee Implementation Groups

### Joint Restoration Plan and Environmental Assessment #1:

Restoring Wetlands, Coastal, and Nearshore Habitats, Federally Managed Lands, Fish and Water Column Invertebrates, Sea Turtles, Submerged Aquatic Vegetation, and Birds of the Chandeleur Islands

Photo: Todd Baker - CPRA



### THE CHANDELEUR ISLANDS

The Chandeleur Islands, which mark the outer boundary of the Chandeleur Sound off the southeast coast of Louisiana, were some of the first coastal habitats to experience oil exposure from the Deepwater Horizon (DWH) oil spill.

The barrier island habitats, including associated seagrass beds, are collectively managed by the United States Fish and Wildlife Service and Louisiana Department of Wildlife and Fisheries as the Breton National Wildlife Refuge (NWR). Restoration in the Chandeleur Islands would provide ecosystem-level benefits to multiple resources.

### PLAN DESCRIPTION

The Louisiana and Open Ocean Trustee Implementation Groups (TIGs) propose to implement two projects:

- Construction of the **Chandeleur Islands Habitat Restoration Project**, including island restoration features such as beach and dune fill, marsh fill, rock breakwaters and revetment
- Implementation of the **Chandeleur Islands Fisheries Engagement and Restoration Project**, involving education, engagement, and communication with stakeholders to restore Fish and Water Column Invertebrates (FWCI) from human-use related impacts of fishing, boating, and ecotourism

The **Habitat Restoration Project** would **expand bird and sea turtle nesting habitat**, addressing a primary threat (loss or degradation of nesting beach habitat) to sea turtles and restoring habitat on which birds injured by the DWH oil spill rely. The project would also provide resiliency and sustainability to adjacent **submerged aquatic vegetation (SAV)** beds to help restore the ecological functions of this component of the **island system's integrated habitat complex**. These restoration efforts would take place within the Breton NWR, thereby restoring for injuries to **federally managed lands**.

The **Fisheries Engagement and Restoration Project** would further the ecosystem restoration benefits from restoring the Chandeleur Islands by benefiting a suite of **priority fish species** as well as sensitive habitats, such as SAV, on which they depend.

### Programmatic Restoration Goals and Types

#### Restore and Conserve Habitat

- Wetlands, Coastal, and Nearshore Habitats
- Habitat Projects on Federally Managed Lands

#### Replenish and Protect Living Coastal and Marine Resources

- Submerged Aquatic Vegetation
- Sea Turtles
- Birds
- Fish and Water Column Invertebrates

# Louisiana and Open Ocean Restoration Areas



## PROJECT DESCRIPTIONS

PREFERRED ALTERNATIVES	DESCRIPTION	RESTORATION TYPE	PROPOSED TIG FUNDING
<p><b>Chandeleur Islands Habitat Restoration:</b></p> <p><b>Alternative 5: Beach, Dune, Marsh, Sand Reservoirs, Pocket Marsh, Feeder Beach, and New Harbor Island</b></p>	<p>This alternative would include construction of several restoration features on North Chandeleur Island: beach and dune fill, marsh/mangrove fill, sand reservoirs and/or pocket marshes, and a feeder beach to create approximately 1,840 acres of beach/dune habitat and 595 acres of marsh habitat. This habitat construction would protect and enhance approximately 5,080 acres of existing SAV.</p> <p>Sand reservoirs are stockpiles of sand that would function as future sediment supplies as the Island naturally migrates westward. Pocket marshes are small areas of restored marsh. A feeder beach is a large stockpile of sand that would naturally distribute sand north and south to nourish barrier island beach over time.</p> <p>This alternative also includes restoration and protection of mangrove habitat on New Harbor Island. Restoration features include a shoreline rock revetment off the western side of the island, detached rock breakwaters off the eastern shore of the island, and placement of fill material between the constructed rock revetment and existing habitat to create approximately 145 acres of marsh/mangrove habitat.</p>	<ul style="list-style-type: none"> <li>Wetlands, Coastal, and Nearshore Habitats</li> <li>Habitat Projects on Federally Managed Lands</li> <li>Submerged Aquatic Vegetation</li> <li>Sea Turtles</li> <li>Birds</li> </ul>	\$237 M*
<p><b>Chandeleur Islands FWCI Restoration:</b></p> <p><b>Alternative 2: Fisheries Engagement and Restoration Project</b></p>	<p>This alternative would fund the development and implementation of a Fisheries Engagement and Restoration Plan to conduct education, engagement, communication, and voluntary fishing-related restoration activities with stakeholders to restore FWCI.</p> <p>During its first year, this project would conduct a planning process to create a plan focused on the Chandeleur Sound area of the Breton NWR. The planning phase would engage fishing organizations, subject matter experts, and resource agencies, to assist in the identification and development of activities, education and outreach methods, and partnership opportunities.</p> <p>Following development of this plan, the project would transition into implementation of selected priority actions for up to 10 years.</p>	<ul style="list-style-type: none"> <li>Fish and Water Column Invertebrates</li> </ul>	\$10 M

\*The estimated cost to fully build all restoration features of the Habitat Restoration Project is \$350 M. The TIGs are supporting the Louisiana Coastal Protection and Restoration Authority (CPRA) as CPRA actively seeks additional funding streams to fully construct all project features.





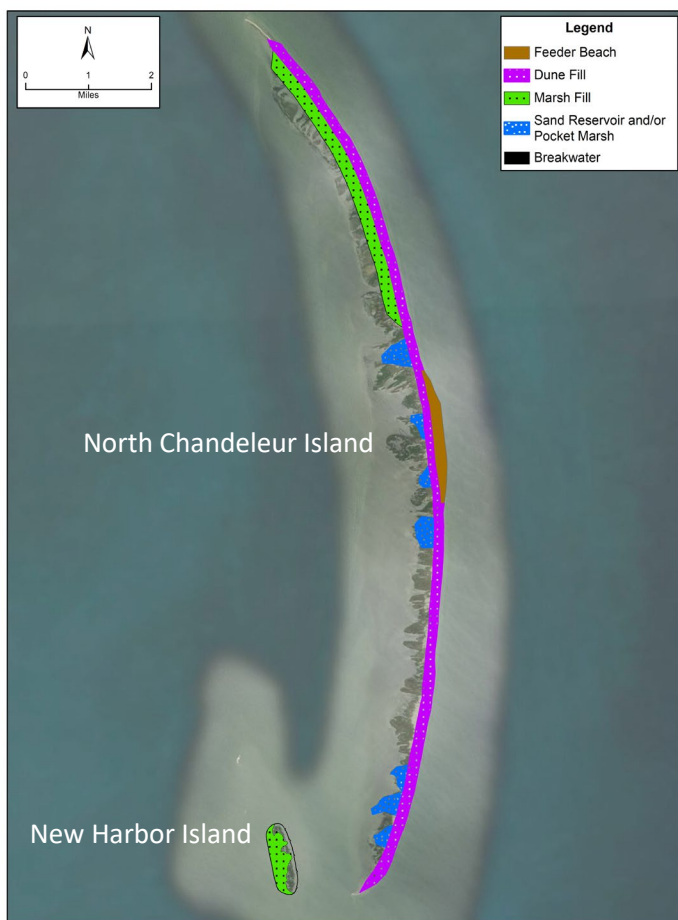
## Chandeleur Islands Habitat Restoration Project

### PROJECT GOALS

The Chandeleur Islands Habitat Restoration Project seeks to address two of the Louisiana and Open Ocean TIG's programmatic goals: **Restore and Conserve Habitat** and **Replenish and Protect Living Coastal and Marine Resources**. Together these goals are intended to benefit injured habitat and living coastal and marine resources such as SAV, birds, sea turtles, and fish on and around the Chandeleur Islands in Breton NWR.

### PROJECT BENEFITS

- **Beach and Dune construction:** 1,841 acres
- **Marsh construction:** 740 acres (includes 145 acres of marsh/mangrove habitat at New Harbor Island)
- **Submerged Aquatic Vegetation protection and enhancement:** 5,084 acres



### PROPOSED NORTH CHANDELEUR ISLAND FEATURES

- Placement of beach and fill along the existing shoreline using compatible sediments
- Placement of marsh fill behind the constructed beach and dune fill along existing sandy intertidal platform
- Placement of a feeder beach to provide a sustainable source of sediment to the system through longshore transport
- Placement of "sand reservoirs" and/or "pocket marshes"
  - Sand reservoirs are sand stockpiles that would disperse sand into the system as the Island naturally migrates
  - Pocket marshes are small areas of restored marsh

### PROPOSED NEW HARBOR ISLAND FEATURES

- Placement of fill on the western side of the island to protect existing mangrove habitat and restore eroded avian habitat
- Construction of rock revetment along the western fill placement boundary
- Construction of rock breakwaters to reduce wind and wave action erosion along the eastern shoreline

This project provides suitable nesting habitat for birds and sea turtles while increasing overall acreages of beach, dune, and marsh habitat. It would provide benefits to SAV by adding longevity to the island footprint and providing low-energy/low-turbidity conditions that allow SAV to thrive. This habitat restoration and protection is also expected to benefit a range of other supported avian species, fishes, and crustaceans that rely upon this complex of integrated habitats.



## Chandeleur Islands Fisheries Engagement and Restoration Project

### PROJECT GOALS

The Chandeleur Islands Fisheries Engagement and Restoration Project seeks to further address the *Replenish and Protect Living Coastal and Marine Resources* goal and fully realize the ecosystem restoration benefits from restoring the Chandeleur Islands by improving fisheries resources through development and implementation of a plan to conduct education, engagement, communication, and voluntary fishing-related restoration activities with stakeholders to restore fish and water column invertebrates.

### PROJECT DETAILS

Fishing, boating, and ecotourism are important economic drivers in coastal Louisiana. This project would increase local capacity to engage with fishing communities and other stakeholders and provide information and tools to help improve the health of fish populations and their habitats.

During its first year, this project would conduct a planning process to create a Fisheries Engagement and Restoration Plan focused on the Chandeleur Sound area of the Breton NWR. Following development of this plan, the project would transition into implementation of selected priority actions for up to 10 years.

*Sources of fish mortality include bycatch, post-release mortality, and stressors such as marine debris and habitat impacts. Outreach and education would provide ways to reduce these stressors and in turn reduce impacts on fish populations.*

### This strategy would focus on sharing voluntary tools and techniques to:

- Reduce post-release mortality in recreational fisheries;
- Reduce bycatch in commercial fisheries;
- Prevent and reduce marine debris and vessel related pollution;
- Prevent and reduce impacts on important fishery habitats such as seagrass meadows; and
- Increase awareness and compliance with fisheries regulations.

### PLANNING PHASE

The planning phase would engage fishing organizations, subject matter experts, and resource agencies to assist in the identification and development of activities, education and outreach methods, and partnership opportunities. An education, communication, and engagement strategy focused on fishing communities would be the central component of the plan.

This plan would identify activities to effectively maintain low levels of impact, or even reduce impacts on fish species, their habitats and ecosystems, while continuing to provide valuable services and opportunities to users of the Breton NWR and Chandeleur Sound. The identified activities would support sustainable fishing practices through collaborations with recreational and commercial fishery user groups. Through engagement during the planning phase and ongoing adaptive management during implementation, this project would seek to implement a range of the FWCI restoration approaches and techniques that can best meet FWCI restoration goals.

### IMPLEMENTATION PHASE

The plan is anticipated to include a description of current fish populations, fisheries, and habitat conditions, a description of goals and objectives and their relationship to other ongoing restoration in the project area, implementation budget recommendations, an engagement strategy, and a review of and recommendations for monitoring and adaptive management, including opportunities for citizen science and other methods for engagement. Following development of the Fisheries Engagement and Restoration Plan, the project would transition into an implementation phase for identified priority activities.

