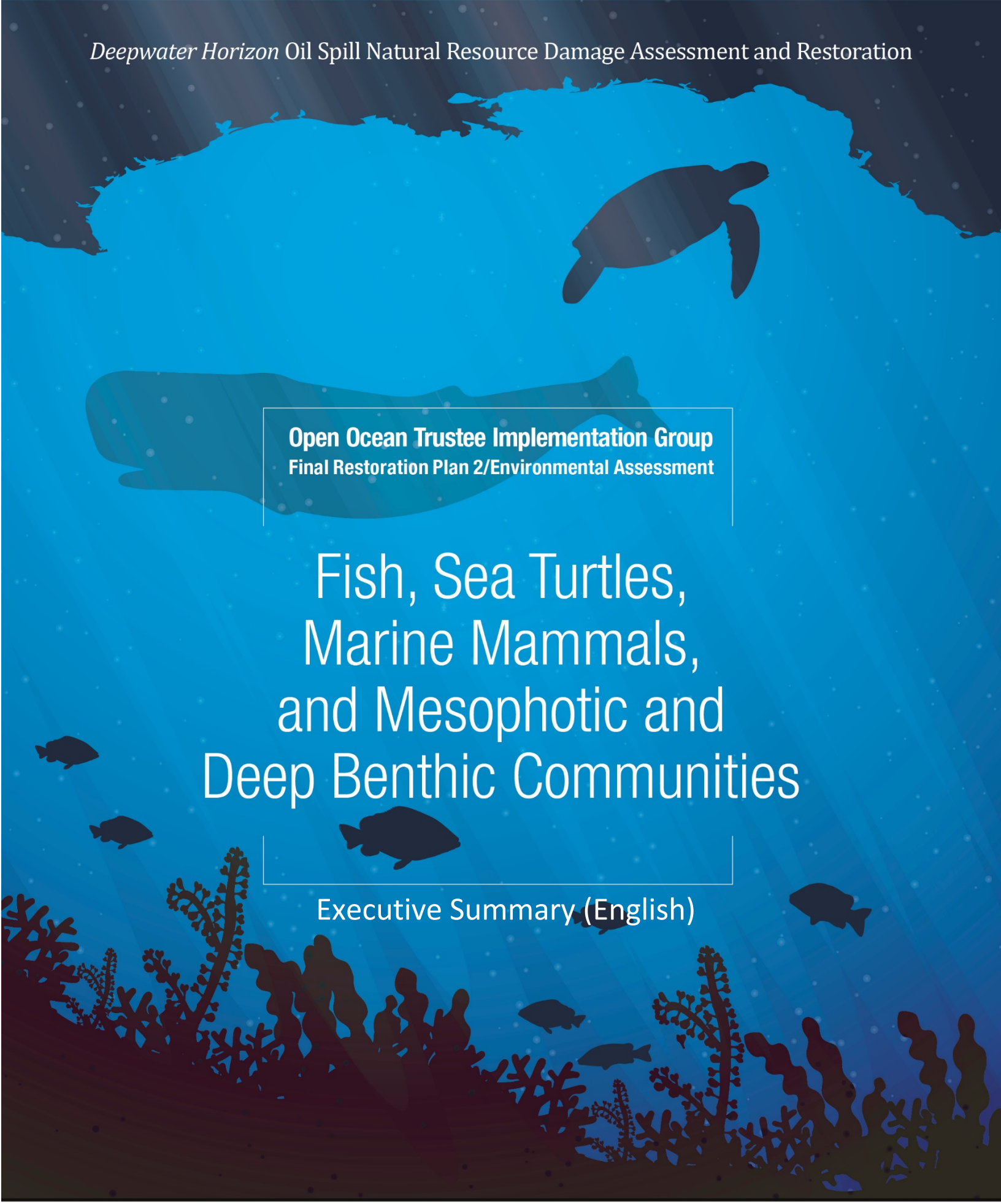
Deepwater Horizon Oil Spill Natural Resource Damage Assessment and Restoration



Open Ocean Trustee Implementation Group
Final Restoration Plan 2/Environmental Assessment

Fish, Sea Turtles, Marine Mammals, and Mesophotic and Deep Benthic Communities

Executive Summary (English)

Open Ocean Restoration Area

November 2019

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Executive Summary

On April 20, 2010, the *Deepwater Horizon* (DWH) mobile drilling unit exploded, resulting in a massive release of oil from the BP Exploration and Production Inc. (BP) Macondo well, causing loss of life and extensive natural resource injuries. Oil spread from the deep ocean to the surface and nearshore environment from Texas to Florida. Extensive response actions were undertaken to try to reduce harm to people and the environment. However, many of these response actions had collateral impacts on the environment and on natural resource services.

As part of a 2016 settlement, BP agreed to pay a total of $8.1 billion in natural resource damages (inclusive of Early Restoration funding) over a 15-year period, and up to an additional $700 million for adaptive management or to address injuries to natural resources that are presently unknown but may come to light in the future. The settlement allocated a specific sum for restoration within specific Restoration Areas and Restoration Types.

This *Deepwater Horizon* Oil Spill Open Ocean Trustee Implementation Group Final Restoration Plan 2/Environmental Assessment: Fish, Sea Turtles, Marine Mammals, and Mesophotic and Deep Benthic Communities (RP/EA) was prepared by the Open Ocean Trustee Implementation Group (TIG) to conduct planning and restoration of lost natural resources in the Open Ocean Restoration Area as a result of the DWH oil spill. The Open Ocean TIG is responsible for restoring the natural resources and services within the Open Ocean Restoration Area that were injured by the April 20, 2010, DWH oil spill and associated spill response efforts. The Open Ocean TIG has prepared this RP/EA to 1) inform the public about its DWH natural resource damage assessment (NRDA) restoration planning efforts, and 2) present analysis on the potential restoration benefits and environmental consequences of the alternatives.

The purpose of restoration, as discussed in this document and detailed more fully in the *Deepwater Horizon* Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (PDARP/PEIS), is to make the environment and the public whole for injuries resulting from the oil spill by implementing restoration actions that return injured natural resources and services to baseline conditions and compensate for interim losses in accordance with the Oil Pollution Act of 1990 (OPA) and associated NRDA regulations. The PDARP/PEIS and Record of Decision (ROD) can be found at: https://www.gulfspillrestoration.noaa.gov/restoration-planning/gulf-plan/

The Open Ocean TIG includes four federal Trustee agencies: U.S. Department of Commerce (DOC), represented by the National Oceanic and Atmospheric Administration (NOAA); U.S. Department of the Interior (DOI), represented by the U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), and the Bureau of Land Management (BLM); U.S. Department of Agriculture (USDA); and U.S. Environmental Protection Agency (EPA). NOAA is the lead federal Trustee for preparing this RP/EA pursuant to the National Environmental Policy Act (NEPA). The federal agencies of the Open Ocean TIG are acting as cooperating agencies for the purposes of compliance with NEPA in the development of this RP/EA. As federal agencies, each cooperating agency on the Open Ocean TIG adopts the NEPA analyses in this RP/EA. In accordance with 40 CFR §1506.3(a) and the Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the *Deepwater Horizon* (DWH) Oil Spill (DWH 2016b, Section 9.4.2 and Appendix F), each of the three federal cooperating agencies (DOI, USDA, and EPA) participating on the Open Ocean TIG reviewed the RP/EA

for adequacy in meeting the standards set forth in its own NEPA implementing procedures. Accordingly, a Finding of No Significant Impact (FONSI) has been prepared and is included as Appendix H of this RP/EA. Adoption of the environmental assessment is completed via signature on the relevant NEPA decision document. The Open Ocean TIG has undertaken this restoration planning effort to meet the purpose of restoring those natural resources and services injured as a result of the DWH oil spill. Restoration activities are intended to restore or replace natural resources and services to their baseline condition and to compensate the public for interim losses from the time natural resources are injured until they recover to baseline conditions.

In developing a reasonable range of alternatives suitable for addressing the injuries caused by the DWH oil spill, the Open Ocean TIG reviewed the Trustee programmatic restoration goals and Restoration Type specific goals specified in the PDARP/PEIS. The Open Ocean TIG also used criteria identified in the PDARP/PEIS, including evaluation factors in the OPA regulations (15 CFR §990.54), the current and future availability of funds under the DWH NRDA settlement payment schedule, as well as projects already funded or proposed to be funded by the other DWH restoration funding sources.

Projects comprising the reasonable range of alternatives considered in this RP/EA were developed through review of project ideas submitted to the DWH project portal since the DWH restoration planning process was initiated in 2010. The Open Ocean TIG reviewed more than 1,600 restoration project ideas submitted by the public, non-governmental organizations, and local, state and federal agencies.

In this RP/EA, the Open Ocean TIG identified and evaluated 23 different projects in the range of reasonable alternatives, as well as a No Action alternative and a Natural Recovery alternative. The projects evaluated in this RP/EA are consistent with the restoration approaches described in the PDARP/PEIS for the Fish and Water Column Invertebrates, Sea Turtles, Marine Mammals, and Mesophotic and Deep Benthic Communities Restoration Types. This Final RP/EA selects 18 preferred alternatives identified for implementation, at a total estimated cost of $225,776,700 (Table ES-1). This RP/EA also includes Monitoring and Adaptive Management Plans for all preferred projects, as Appendix A to this document.

The Draft RP/EA was available for a 79-day public comment period from May 15, 2019 through August 2, 2019. During the public comment period, the Open Ocean TIG held one public meeting and two public webinars to facilitate the public review and comment process. The Open Ocean TIG accepted public comments through the Trustee Council's website, via U.S. mail, and during public meetings and webinars. Overall, the Open Ocean TIG received a total of 53 comments via the public meetings, webinars, and web submissions. Chapter 1 of this document provides further detail on the public comment process and key changes. Chapter 5 provides the Open Ocean TIG's responses to public comments.

The public, government agencies, and other entities have identified and continue to identify a large number of potential restoration projects for consideration during the restoration planning process. Projects not selected in the Final RP/EA, may continue to be considered in future restoration planning efforts.

Table ES-1. Alternatives considered in this RP/EA. Asterisk (*) indicates preliminary phase restoration alternatives.

Project Alternative	Preferred/ Not Preferred	Estimated Project Costs
Fish and Water Column Invertebrates		
Reduction of Post-release Mortality from Barotrauma in Gulf of Mexico Reef Fish Recreational Fisheries	Preferred	$30,011,000
Better Bycatch Reduction Devices for the Gulf of Mexico Commercial Shrimp Trawl Fishery	Preferred	$17,171,000
Communication Networks and Mapping Tools to Reduce Bycatch—Phase 1*	Preferred	$4,416,000
Restoring for Bluefin Tuna via Fishing Depth Optimization	Preferred	$6,175,000
Reduce the Impacts of Ghost Fishing by Removing Derelict Fishing Gear from Marine and Estuarine Habitats	Not Preferred	$6,128,000
Sea Turtles		
Gulf of Mexico Sea Turtle Atlas*	Preferred	$5,700,000
Identifying Methods to Reduce Sea Turtle Bycatch in the Reef Fish Bottom Longline Fishery*	Preferred	$290,000
Developing a Gulf-wide Comprehensive Plan for In-water Sea Turtle Data Collection*	Preferred	$655,000
Developing Methods to Observe Sea Turtle Interactions in the Gulf of Mexico Menhaden Purse Seine Fishery	Preferred	$3,000,000
Reducing Juvenile Sea Turtle Bycatch through Development of Reduced Bar Spacing in Turtle Excluder Devices	Preferred	$2,249,000
Long-term Nesting Beach Habitat Protection for Sea Turtles	Preferred	$7,000,000
Reducing Sea Turtle Entanglement from Recreational Fishing Debris	Not Preferred	$1,113,600
Reducing Sea Turtle Bycatch at Recreational Fishing Sites*	Not Preferred	$1,329,000
Marine Mammals		
Reducing Impacts to Cetaceans during Disasters by Improving Response Activities	Preferred	$4,287,000
Compilation of Environmental, Threats, and Animal data for Cetacean Population Health Analyses*	Preferred	$5,808,500
Reduce Impacts of Anthropogenic Noise on Cetaceans	Preferred	$8,992,200
Reduce and Mitigate Vessel Strike Mortality of Cetaceans	Preferred	$3,834,000
Assessment of Northern Gulf of Mexico Shelf Small Cetacean Health, Habitat Use, and Movement Patterns	Not Preferred	$4,620,000
Mesophotic and Deep Benthic Communities		
Mapping, Ground-truthing, and Predictive Habitat Modeling	Preferred	$35,909,000
Habitat Assessment and Evaluation	Preferred	$52,639,000
Coral Propagation Technique Development	Preferred	$16,951,000
Active Management and Protection	Preferred	$20,689,000
Habitat Characterization at Known High Priority Sites	Not Preferred	$21,500,000
	Sum (Preferred)	**$225,776,700**

A summary of the anticipated environmental consequences of these projects is provided in Table ES-2. The six preliminary phase restoration projects identified in Table ES-1 are not included as they fall within the previous analysis in Section 6.14.4 of the PDARP/PEIS.

Table ES-2. Summary of environmental consequences for alternatives considered in this RP/EA.

	PHYSICAL RESOURCES				BIOLOGICAL RESOURCES				HUMAN USE AND SOCIOECONOMIC RESOURCES								
ALTERNATIVE	**Geology and Substrates**	**Hydrology and Water Quality**	**Air Quality**	**Noise**	**Habitats**	**Wildlife Species (birds)**	**Marine and Estuarine Fauna**	**Protected Species**	**Socioeconomics/ Environmental Justice**	**Cultural Resources**	**Infrastructure**	**Land and Marine Management**	**Tourism and Recreational Use**	**Fisheries**	**Marine Transportation**	**Aesthetics and Visual Resources**	**Public Health and Safety**
Fish																	
Reduction of Post-release Mortality from Barotrauma in Gulf of Mexico Reef Fish Recreational Fisheries	NE	NE	NE	NE	s	NE	+/s	+/s	+	NE	NE	NE	+	+	NE	NE	NE
Better Bycatch Reduction Devices for the Gulf of Mexico Commercial Shrimp Trawl Fishery	NE	NE	NE	NE	NE	+	+	+	+	NE	NE	NE	+	+	NE	NE	NE
Restoring for Bluefin Tuna via Fishing Depth Optimization	NE	NE	NE	NE	NE	NE	+/s	+/s	+	NE	NE	NE	+/s	+/s	NE	NE	NE
Reduce the Impacts of Ghost Fishing by Removing Derelict Fishing Gear from Marine and Estuarine Habitats	+/s	+/s	NE	NE	+/s	+	+/s	+/s	+	NE	NE	NE	+	+	NE	NE	NE
Sea Turtles																	
Developing Methods to Observe Sea Turtle Interactions in the Gulf of Mexico Menhaden Purse Seine Fishery	NE	NE	NE	NE	NE	NE	+	+	NE	NE	NE	NE	NE	NE	NE	NE	NE
Reducing Juvenile Sea Turtle Bycatch through Development of Reduced Bar Spacing in Turtle Excluder Devices	s	s	NE	NE	s	NE	+/s	+	NE	NE	NE	NE	NE	NE	NE	NE	NE
Long-term Nesting Beach Habitat Protection for Sea Turtles	+	+	NE	NE	+	+	+	+	l	NE	NE	+	+	NE	NE	NE	NE
Reducing Sea Turtle Entanglement from Recreational Fishing Debris	NE	NE	NE	NE	+/s	+	+	+	+	NE	NE	NE	+	+	NE	NE	NE
Marine Mammals																	
Reducing Impacts to Cetaceans during Disasters by Improving Response Activities	s	s	NE	NE	s	NE	s	+/s	+	NE	NE	NE	NE	NE	NE	NE	NE
Reduce Impacts of Anthropogenic Noise on Cetaceans	s	NE	NE	+/s	s	NE	NE	+/s	NE	NE	NE	NE	NE	NE	+/s	NE	NE
Reduce and Mitigate Vessel Strike Mortality of Cetaceans	NE	NE	NE	NE	NE	NE	+	+	NE	NE	NE	NE	NE	NE	l	NE	NE
Assessment of Northern Gulf of Mexico Shelf Small Cetacean Health, Habitat Use, and Movement Patterns	NE	NE	NE	NE	NE	NE	NE	+/s	NE	NE	NE	NE	NE	NE	NE	NE	NE
Mesophotic and Deep Benthic Communities																	
Mapping, Ground-truthing, and Predictive Habitat Modeling	+/s	NE	NE	s	+	NE	+/s	+/s	NE	+/l	NE	+	+	+	NE	NE	NE
Habitat Assessment and Evaluation	+/s	NE	NE	s	+/s	NE	+/s	+/s	NE	+/l	NE	+	+	+	NE	NE	NE
Coral Propagation Technique Development	+/s/l	NE	NE	s	+/s	NE	+/s	+/s	NE	+/l	NE	+	+	+	NE	NE	NE
Active Management and Protection	+/s/l	NE	NE	s	+/l	NE	+/s	+/s	NE	+/l	NE	+	+	+	NE	NE	NE
Habitat Characterization at Known High Priority Sites	+/s	NE	NE	s	+	NE	+/s	+/s	NE	+/l	NE	+	+	+	NE	NE	NE
No Action	s/l	s/l	NE	S/L	**S/L**	S/L	S/L	S/L	s/l	+/l	NE	s/l	s/l	s/l	s/l	NE	NE

Notes: + Beneficial effect; NE No effect; s - short-term, minor adverse effect; S - short-term, moderate adverse effect; **S - short-term, major adverse effect**; l - long-term, minor adverse effect; L - Long-term, moderate adverse effect; **L - Long-term, major adverse effects**