Deepwater Horizon

Open Ocean Trustee Implementation Group

PLANNING PROJECT IMPLEMENTATION PLAN:

CHARACTERIZATION OF CARIBBEAN FISHERIES INTERACTIONS WITH HIGHLY MIGRATORY SPECIES

January 2023

Characterization of Caribbean Fisheries Interactions with Highly Migratory Species

1. Introduction

The Deepwater Horizon (DWH) oil spill settlement in 2016 provides the Natural Resource Damage Assessment (NRDA) Trustees (Trustees) up to $8.8 billion, distributed over 15 years, to restore natural resources and services injured by the spill. As described in the DWH oil spill Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (PDARP/PEIS; DWH NRDA Trustees. 2016a), the Trustees selected a comprehensive, integrated ecosystem approach to restoration. The Final PDARP/PEIS considers programmatic alternatives, composed of Restoration Types, to restore natural resources, ecological services, and recreational use services injured or lost as a result of the DWH oil spill. As shown in the PDARP/PEIS, the injuries caused by the DWH oil spill affected such a wide array of linked resources over such an enormous area that the effects must be described as constituting an ecosystem-level injury. The PDARP/PEIS and information on the settlement with BP Exploration and Production, Inc. (called the Consent Decree) are available at the Gulf Spill Restoration website.

The Trustees also established a governance structure that assigned a Trustee Implementation Group to each of the eight designated Restoration Areas, including the Open Ocean Restoration Area. Each TIG conducts restoration planning for the funding allocated to its Restoration Area. The Open Ocean Trustees Implementation Group (TIG) includes the four federal Trustee agencies: U.S. Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); U.S. Department of the Interior (DOI); U.S. Department of Agriculture (USDA); and U.S. Environmental Protection Agency (EPA). The Open Ocean TIG is responsible for restoring the natural resources and services within the Open Ocean Restoration Area that were injured by the DWH oil spill and associated spill response efforts.

The DWH Trustees opened a publicly available Administrative Record for the NRDA of the DWH oil spill, including restoration planning activities, concurrently with publication of the 2010 Notice of Intent (pursuant to 15 CFR § 990.45). DOI is the lead federal Trustee for maintaining the Administrative Record, which can be found at http://www.doi.gov/deepwaterhorizon/adminrecord. This administrative record is used by the Open Ocean TIG to provide the public with information about DWH restoration planning. Additional information is also provided at http://www.gulfspillrestoration.noaa.gov. Information about restoration projects and Monitoring and Adaptive Management (MAM) activities, including any data and/or analyses produced and annual reports, are made publicly available via the Data Integration Visualization Exploration and Reporting portal (DIVER), available at https://www.diver.orr.noaa.gov/web/guest/deepwater-horizon-nrda-data.

1.1. Restoration Planning Need:

The DWH Open Ocean TIG and a planning team composed of representatives from federal trustee agencies, developed a strategic plan to inform future Fish and Water Column Invertebrates (FWCI) restoration under the Natural Resource Damage Assessment (NRDA). The Open Ocean TIG identified blue marlin and yellowfin tuna as priority species for restoration based on multiple criteria such as level of injury caused by the oil spill, species vulnerability, conservation concern, fishery importance, and restoration opportunities (DWH Open Ocean TIG, 2022).

International fisheries represent a particular opportunity for restoration of Atlantic Highly Migratory Species (HMS), such as blue marlin and yellowfin tuna. The U.S. catch for these species accounts for only a small fraction of mortality, suggesting the potential for significant restoration opportunities in international fisheries. Stakeholders have identified that voluntary adoption of conservation measures in some international fleets would be beneficial to injured populations. Additionally, ongoing restoration projects with domestic fleets may limit the ability to implement additional projects with domestic commercial fleets in the near future, because of the capacity of longliners to participate in multiple projects simultaneously. While international fleets have been identified for their restoration opportunity, the limited availability of comprehensive, high-quality catch, discard, and discard mortality data have currently limited restoration planners' ability to effectively evaluate what fisheries will provide the greatest chance for restoration benefit. Data products may be unavailable because of either a lack of data collection or a lack of access and analysis of existing data.

1.2. Project Summary

This planning project will support Objective 3 in the Fish and Water Column Invertebrates Strategic Plan: *Develop tools and techniques to reduce uncertainty in restoration and encourage best practices among stakeholders and fishing communities to reduce fisheries impacts.* Specifically, the project will compile data from the International Commission for the Conservation of Atlantic Tunas (ICCAT) Contracting Party or Cooperating non-Contracting Party, Entity or Fishing Entity (CPCs), put this data in an accessible format (such as the ICCAT database), improve applications to easily produce simple queries, tables, and graphs, and conduct analysis on the data to support restoration planning for priority species such as blue marlin and yellowfin tuna, with secondary benefits to dolphinfish and other living marine resources. The analysis would simultaneously include an assessment of the existing data collection programs and identify limitations that might represent challenges for restoration planning. These data and subsequent analysis will help restoration planners to identify specific Caribbean fisheries, and specific types of fishing threats in order to support future restoration planning. Identifying specific types of fishing threats (such as fishing mode, scale of bycatch, geography) will allow planners to design methods to reduce unintended fishing impacts occurring in international waters for injured species, particularly for undersized fish, and to understand the factors that influence fishery efficiency (including catch and bycatch) to support the identification of restoration opportunities. As one example, the information collected as part of this project could identify opportunities and techniques to improve best practices in Caribbean fisheries that use fish aggregating devices (FADs). This project will also address fish and water column invertebrates restoration goals and approaches and potential actions identified in the Programmatic Damage Assessment and Restoration Plan and Environmental Impact Statement in addition to the objectives in the Fish and Water Column Invertebrate Strategic Plan.

- Goal: Increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources.
- Approaches:
    - Reduce mortality among Highly Migratory Species and other oceanic fishes
    - Voluntary fisheries-related management actions to increase fish biomass
- Potential Actions:
    - Implement projects to reduce unintentional fishing impacts occurring in international waters to highly migratory species.

- Develop techniques to reduce juvenile mortality of yellowfin tuna in international fisheries targeting other tunas, such as techniques related to the number of sets made on mixed-species schools targeting skipjack tuna.
- Provide fishermen and stakeholders with tools, techniques, and information.

1.3. Lead Implementing Trustee: National Oceanic and Atmospheric Administration (NOAA)

1.4. Period of Performance: January 2023 – June 2025

1.5. Total Cost: $382,000

2. Project Overview

2.1. Background

Overfishing can occur because of complex interactions between the environment, fisheries management, and fishing behavior. When harvest levels are too high, with respect to the current population size, environmental conditions, and stressors, a population may not be able to reproduce at levels that can support healthy fisheries. Stressed populations are more susceptible to the risk of further decline due to fishing or from other threats, such as extreme climate events or disease. Threats that cause overfishing risk can emerge due to changes in fishing practices that increase catchability and/or vulnerability of a population to fishing impacts.

Many Caribbean nations operate fisheries in the Western-central Atlantic, Caribbean Sea, and Southern Gulf of Mexico. These fisheries harvest tunas (e.g., yellowfin tuna) and billfishes (blue marlin, white marlin, and sailfish) by artisanal/small-scale longline fleets, drift-gillnet fisheries, and by hand-line (trolling, drop-line); Ramdeen 2012). Often hand lines are used around moored/free-floating Fish Aggregating Devices (FADs). Recreational fisheries can also contribute to billfish catches, and for catch and release, post-release mortality contributes to the total number of removals from the population. In countries such as Barbados, Venezuela, Dominican Republic, Tobago, Curaçao, and Grenada, billfish support local diets through subsistence fisheries and may also be sold commercially.

Critical information on tuna, billfish and other pelagic Caribbean fisheries is unknown or poorly estimated because of limited fisheries monitoring and minimal analysis of existing data sources. In addition to limited data, insufficient methods of data aggregation and compilation limit planners' ability to assess restoration needs and opportunities in Caribbean fisheries, and also to understand the impacts of these fisheries on populations that migrate into the Gulf of Mexico. For fisheries that have insufficient data collection, the risk for overfishing and high bycatch rates is substantial.

The Open Ocean TIG previously identified a need to characterize the nature and frequency of interactions between Open Ocean resources and fisheries in order to address restoration goals. Species prioritized for restoration, such as blue marlin and yellowfin tuna, are managed internationally and have a range that extends beyond the boundaries of the Gulf of Mexico. There is a need to collate and organize data collection efforts in order to accurately represent the full scope, scale and frequency of fishery interactions in the Caribbean. Given the limited information available, the vast majority of ICCAT contracting parties (CPCs) do not have a method to easily estimate or report dead discards. Until the information proposed to be collected in this planning project is synthesized, guidance or requirements

for restoration projects and monitoring will be difficult to make. Outcomes of this planning project will address information deficiencies that affect realization of Open Ocean resource restoration goals.

This planning project will help restoration planners to identify potential restoration opportunities, for example one emerging fishery method in the Atlantic and Caribbean are the expanded use of FADs. FAD use in many fisheries is under limited and inconsistent management across Caribbean nations. With limited management, competition to access FADs often results in inefficient fishing behavior, including "race to fish" scenarios. For example, moored FADs aggregate small tunas and billfish more effectively than they aggregate large tunas, which enables "growth overfishing". Growth overfishing occurs when fish are harvested at an average size that is smaller than the size that would produce the maximum yield per recruit. Data collected through this project can support evaluations of the opportunities to reduce the impacts of FADs.

2.2. Objectives

The overarching objective of the planning project is to collect and evaluate existing fisheries data to identify restoration opportunities and support restoration planning in the Caribbean, and secondarily to establish a baseline for fisheries threats in the Caribbean. The overarching objective will be achieved by accomplishing three steps: 1) compile data into a data system, 2) evaluate the breadth and limitations of the data, and 3) identify the greatest threats (fisheries, geography) in the Caribbean and potential areas of restoration.

Accurate and accessible catch and discard data for yellowfin tuna and blue marlin will be collected from existing sources to help identify fisheries and geographic-specific stressors and risks, understand factors influencing fishery efficiency, and understand the vulnerability of FWCI resources during spawning events. Sources of data may include data repositories such as those managed by ICCAT, fisheries services, and from peer-reviewed sources. Data harmonization has been long identified as an important step to better utilize Caribbean data but solutions have only been evaluated for a few Caribbean nations (Arocha 2019). Harmonization of data will be accomplished during the compilation step. Once compiled, catch and discard information will be used by the TIG to assess the restoration opportunities (e.g., location, scope, and fishery) for blue marlin and yellowfin tuna in Caribbean fisheries and help support the evaluation of restoration projects reducing the impacts of stressors on Open Ocean resources. Compiling and analyzing data related to the location and intensity of stressors in the Caribbean region will also allow the Trustees to assess changes in stressors over the life of the DWH restoration program. Fisheries interaction data would also allow the Trustees to evaluate the combined outcomes of projects over the life of the restoration program.

2.3. Project Tasks

Task 1: Develop information systems (e.g., support database updates, queries, and user interface) to organize longline and other HMS fishing effort (i.e., FAD, drift-gillnet fisheries, and by hand-line (trolling, drop-line), and recreational), dead discard, and live release data that can be used to estimate total discards and live releases. Applications will help expedite data extraction and analysis. These data are often submitted to ICCAT by CPCs (Contracting Party or Cooperating non-Contracting Party, Entity or Fishing Entity). In some cases, parties are unable to submit data because of limited capacity. This project would also seek to collect data from countries where interactions with these species are expected, but lack of reporting may contribute to limited catch data. In this instance, fisheries data could be used for

estimating overall fisheries interactions, which would lead to a better understanding of fisheries' threats to living marine resources. The database may also utilize other data collection programs and other sources of data. Data collection activities may be executed by using fisheries-specific liaisons, workshops, or other appropriate means. Support will be necessary for data scientists to improve a database as needed.

Outcomes: Searchable, sortable, Caribbean fisheries statistics that are accessible to restoration planners. The system will allow comparisons of fisheries data across Caribbean nations, and between fishing modes. Application may be developed to present data in easily interpreted ways, including graphs and tables.

Timeline: Jan 2023- Sep 2023

Task 2: A review of the existing data (as compiled in task 1) in Caribbean HMS fisheries to identify limitations in data and current analysis, with the purpose of identifying fishery risks including bycatch and overfishing potential. For example, an ICCAT CPC could have some capability to collect data, but does not have existing infrastructure to compile information across its fisheries. Identifying these types of data or infrastructure gaps could highlight opportunities for future restoration and inform recommendations proposed in Task 3. This review will be focused on countries that may have interactions with or land substantial amounts of yellowfin tuna and/or blue marlin. The review effort would involve key regional scientists with experience in Caribbean data collection programs.

Outcomes: Report and analysis of Caribbean fisheries data and specific data and data collection limitations.

Timeline: Oct 2023 – July 2024

Task 3: A review of the HMS fishing effort with emphasis on yellowfin tuna and blue marlin throughout the Caribbean (supported by the above steps) to identify what areas may have the highest potential for restoration actions. Fisheries data could be used for estimating overall fisheries interactions, which would lead to a better understanding of fisheries' threats to living marine resources. For example, fisheries that have the highest amount of bycatch could be the focus of future planning. The review would also consider how restoration could benefit other injured species in addition to HMS. This review would be focused on countries that interact with or land substantial amounts of yellowfin tuna and/or blue marlin. The review effort would involve key regional scientists to obtain up-to-date information on fishing efforts and future trends, and leverage outcomes from ICCAT Billfish Species Group Work Plan activities, and other sub-bodies of ICCAT, as appropriate.

Outcomes: An analysis that identifies common trends and themes of catch, landings, and discards useful for restoration planning. The report may make suggestions to potentially inform future restoration planning efforts (species, fisheries, potential projects, etc.).

Timeline: Oct 2023 – July 2024

3. Data Management and Reporting

A data management plan will be developed that documents data standards, quality assurance and quality control, and long-term maintenance and data archiving policies that is consistent with NOAA policies, the guidance provided in the Monitoring and Adaptive Management Procedures and Guidelines Manual (DWH NRDA Trustees 2017b), and the Trustee Standard Operating Procedures (August 2021). ICCAT may potentially maintain and house the primary database and associated applications. Data management would be consistent with ICCAT standards. NOAA would maintain the ability to utilize the database and application for restoration planning purposes.

NOAA will submit annual reports to the publicly available DWH DIVER Portal available at https://www.gulfspillrestoration.noaa.gov/restoration-areas/open-ocean. NOAA Implementation Team will prepare a final summary report synthesizing the findings of the Activity, including inferences and considerations for Living Marine Resource restoration. All eligible data will be archived with the National Center for Environmental Information (NCEI) and a link to the datasets will be provided in the DIVER Restoration Portal.

4. Open Ocean Restoration Area Goals Addressed

This planning project will address the Open Ocean Trustees Monitoring and Adaptive Management goal of characterizing the nature and frequency of interactions between Open Ocean resources and fisheries, in particular recreational, longline and emerging fishing methods. Developing effective voluntary solutions to reduce fisheries bycatch and interactions is dependent on first characterizing the scope, scale, and frequency of interactions; and then identifying the areas and the times of year when interactions are most likely to occur. Ultimately, subsequent actions may support the Fish and Water Column Invertebrate goal to increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. The Open Ocean Trustees can work with Caribbean fisheries to implement voluntary restoration activities that may reduce impacts on multiple Open Ocean resources, including fish and water column invertebrates, marine mammals, and/or sea turtles; this project will support the identification of potential actions.

5. Consistency with the DWH Programmatic Restoration Plan

The PDARP/PEIS establishes goals for restoration planning and adaptive management at project and programmatic scales across restoration activities in the northern Gulf of Mexico related to resources injured by the Deepwater Horizon oil spill. This planning project is designed to support a primary component of restoration planning and adaptive management – by collecting and analyzing information to direct future restoration activities and create baselines to evaluate restoration success. Therefore, this planning project is consistent with the PDARP/PEIS. This is also consistent with the Open Ocean Fish and Water Column Invertebrate Strategic Plan (DWH Open Ocean TIG, 2022).

6. National Environmental Policy Act (NEPA)

The Trustees' approach to compliance with NEPA summarized in this section is consistent with, and follows where applicable, the PDARP/PEIS Section 6.14.4. Resources considered and impacts definitions (minor, moderate, major) align with the PDARP/PEIS. Relevant analyses from the PDARP/PEIS are

incorporated by reference. Such incorporation by reference of information from existing plans, studies or other material is used in this analysis to streamline the NEPA process and to present a concise document that briefly provides sufficient evidence and analysis to address the Open Ocean TIG's compliance with NEPA (40 CFR § 1506.3, 40 CFR § 1508.9). All source documents relied upon are available to the public and links are provided in the discussion where applicable.

As discussed in Chapter 6 of the PDARP/PEIS, a TIG may propose funding a planning phase (e.g., initial engineering, design, and compliance) in one plan for a conceptual project, or for studies needed to maximize restoration planning efforts. This would allow the TIG to develop information needed leading to sufficient project information to develop a more detailed analysis in a subsequent restoration plan, or for use in the restoration planning process. Where these conditions apply and activities are consistent with those described in the PDARP/PEIS, NEPA evaluation is complete and no additional evaluation of individual activities is necessary.

6.1. NEPA Review

The proposed project involves data compilation and analysis only; no field work or laboratory work is required. The planning project would be limited to planning, data management activities and travel for workshops for the development of reports and data management products. None of the actions would negatively impact resources or have environmental consequences.

6.2. NEPA Conclusions

After review of the proposed project against those actions previously evaluated in the PDARP/PEIS, the Open Ocean TIG determined that these activities are consistent with the PDARP/PEIS evaluation of preliminary phases of restoration (planning, feasibility studies, design engineering, and permitting activities) provided in Section 6.4.14 of the PDARP/PEIS. Therefore, no further NEPA analysis is required at this time.

7. Compliance with Other Environmental Laws and Regulations

The proposed planning project is a desktop study only and no field or laboratory work is required. The Open Ocean TIG has completed technical assistance with the appropriate regulatory agencies for this planning project based on the description in the restoration implementation plan. Because all proposed activities are desktop activities, NOAA and DOI, on behalf of the Open Ocean TIG determined that no effects to Endangered Species Act-listed species and habitats, designated Essential Fish Habitat and marine mammals protected under the Marine Mammal Protection Act are expected. Thus, consultations and permits from National Marine Fisheries Service and U.S. Fish and Wildlife Service are not required. See the table below for the compliance status by statute at the time of this implementation plan.

Federal environmental compliance responsibilities and procedures follow the Trustee Council Standard Operating Procedures (SOP), which are laid out in Section 9.4.6 of that document. Following the SOP, the Implementing Trustees for each activity will ensure that the status of environmental compliance (e.g., completed vs. in progress) is tracked through the Restoration Portal.

Documentation of regulatory compliance will be available in the Administrative Record that can be found at the DOI's Online Administrative Record repository for the DWH NRDA (https://www.doi.gov/deepwaterhorizon/adminrecord). The current status of environmental compliance can be viewed at any time on the Trustee Council's website: http://www.gulfspillrestoration.noaa.gov/environmental-compliance/.

Table 1. Status of federal regulatory compliance reviews and approvals.

Federal Statute	Compliance Status
Bald and Golden Eagle Protection Act (USFWS)	N/A
Coastal Barrier Resources Act (USFWS)	N/A
Coastal Zone Management Act	N/A
Endangered Species Act (NMFS)	N/A
Endangered Species Act (USFWS)	N/A
Essential Fish Habitat (NMFS)	N/A
Marine Mammal Protection Act (NMFS)	N/A
Marine Mammal Protection Act (USFWS)	N/A
Migratory Bird Treaty Act (USFWS)	N/A
National Historic Preservation Act	Complete
Rivers and Harbors Act/Clean Water Act	N/A
National Environmental Policy Act	Complete, see analysis above.

8. References

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