

OPEN OCEAN RESTORATION AREA TRUSTEE IMPLEMENTATION GROUP
of the
DEEPWATER HORIZON TRUSTEE COUNCIL

In re: Oil Spill by the Oil Rig “Deepwater Horizon” in the
Gulf of Mexico on April 20, 2010,
Civil Action Nos. 10-4536; 10-04182; 10-03059; 13-4677; 13-158; 13-00123 (ED. La.)
MDL No. 2179

Resolution #OO-2023-009

**Open Ocean Trustee Implementation Group Approval of Implementation Activities by the
Mesophotic and Deep Benthic Communities Projects:
Habitat Assessment and Evaluation
Active Management and Protection
Mapping, Ground-truthing, and Predictive Habitat Modeling,
Coral Propagation Technique Development**

1. In accordance with the Oil Pollution Act of 1990 (OPA), the National Environmental Policy Act (NEPA), the *Deepwater Horizon* (DWH) Oil Spill Final Programmatic Damage Assessment and Restoration Plan and Programmatic Environmental Impact Statement (Final PDARP/PEIS), the Trustee Council Standard Operating Procedures for Implementation of the Natural Resource Restoration for the DWH Oil Spill, August 2, 2021 (TC SOPs), and the Consent Decree entered in *United States v. BPXP et al.*, Civ. No. 10-4536, centralized in MDL 2179, In re: Oil Spill by the Oil Rig “Deepwater Horizon” in the Gulf of Mexico, on April 20, 2010 (E.D. La.) (Consent Decree), the undersigned representatives of the Open Ocean Trustee Implementation Group (OO TIG) hereby approve the actions set forth below to support the restoration of natural resources and services injured or lost as a result of the DWH oil spill, which occurred on or about April 20, 2010, in the Gulf of Mexico.
2. The National Oceanic and Atmospheric Administration (NOAA) and the Department of the Interior (DOI) are the implementing trustees for the following four Mesophotic and Deep Benthic Communities Projects (MDBC Projects) selected in the *Deepwater Horizon Oil Spill Open Ocean Trustee Implementation Group Final Restoration Plan/Environmental Assessment 2: Fish, Sea Turtles, Marine Mammals, and Mesophotic and Deep Benthic Communities* (OO RP2/EA):
 - a. Habitat Assessment and Evaluation (HAE Project, ID 232)
 - b. Active Management and Protection (AMP Project, ID 233)
 - c. Mapping, Ground-truthing, and Predictive Habitat Modeling (MGM Project, ID 234)
 - d. Coral Propagation Technique Development (CPT Project, ID 235).
3. The MDBC Projects support restoration planning and implementation to carry out the restoration goals identified in the Final PDARP/PEIS and the Record of Decision that provide and explain the Trustees’ selection of the Preferred Alternative (Alternative A) for the Programmatic Restoration Plan

in the Final PDARP/PEIS. The MDBC Projects are also consistent with the Consent Decree resolving the civil actions referenced above.

4. The MDBC Projects were developed as long-range activities in the OO RP2/EA. The NEPA analysis in the OO RP2/EA included an evaluation of a broad range of activities for the MDBC Projects that would be refined over time. The NEPA analysis for a set of site-specific actions is provided in the document entitled *Mesophotic and Deep Benthic Communities Restoration Projects: National Environmental Policy Act and Environmental Compliance Review of Implementation Activities (January 2022)*, approved by the OO TIG in Resolution OO-2022-001. The OO TIG found those actions to be consistent with the OPA evaluation and environmental compliance provided in the OO RP2/EA and that no additional NEPA analysis or public review was necessary.
5. The Implementing Trustees identified additional activities that will be conducted during the remainder of the implementation phase of the MDBC Projects. The attached document, *Mesophotic and Deep Benthic Communities Restoration Projects: National Environmental Policy Act and Environmental Compliance Review of Implementation Activities 2023-2027 (April 2023)* (evaluation memo) describes and evaluates implementation activities the MDBC Projects to be undertaken during the remainder of the implementation phase that were not previously evaluated for environmental consequences. It also incorporates by reference and extends evaluations developed in prior reviews.
6. Through the evaluation of the planned field operations provided in the attached evaluation memo, the Implementing Trustees find that the MDBC Projects' planned field operations are consistent with the OPA evaluation in the OO RP2/EA and there is no new or additional information to consider that alters the OPA evaluation of each project alternative in the OO RP2/EA. In addition, the potential environmental effects of planned field operations are consistent with the environmental review provided in the OO RP2/EA, or with other relevant NOAA NEPA documents, which are incorporated by reference in the attached evaluation memo. There are no significant new circumstances or information relevant to environmental concerns not addressed in the OO RP2/EA impact analysis. No further analyses under OPA or NEPA are necessary and modifications to the final restoration plan are not required. In addition, the original public comment period conducted for the OO RP2/EA solicited public input on the project and comments were supportive with no controversial issues identified.
7. At the time this Resolution was approved, environmental compliance with federal regulations was not yet complete for all MDBC Projects' planned activities. The Implementing Trustees will ensure that all applicable regulatory compliance activities will be complete prior to undertaking any regulated activities for the MDBC Projects and that the terms and conditions of all federal, state, and local permits will be complied with in the course of implementation. All compliance documents will be posted to the Administrative Record.
8. No changes are requested to the total authorized budgets for each of the four MDBC Projects; however, the Implementing Trustees request that funds be reallocated between the two Implementing Trustees, as specified in the following table to support continued implementation. Reallocated funds may be used only to implement and monitor the MDBC Projects according to the Final RP2/EA, the TC SOPs, approved Project Implementation Plans, and as applicable, corrective action approved by the OO TIG. Any other use of these reallocated funds pursuant to this Resolution is prohibited. Any

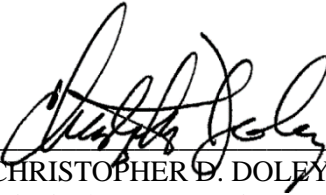
non-authorized use of project funds must be reported to the full OO TIG immediately upon discovery of the unauthorized use.

Project	Current DOI Authorized Budget	Revised DOI Authorized Budget	Current NOAA Authorized Budget	Revised NOAA Authorized Budget	Total Project Authorized Budget
HAE Project (Portal ID 232)	\$5,826,394	\$12,728,466	\$46,812,606	\$39,910,534	\$52,639,000
AMP Project (Portal ID 233)	\$ 951,485	\$306,000	\$ 19,737,515	\$20,383,000	\$20,689,000
MGM Project (Portal ID 234)	\$ 825,534	\$1,483,588	\$35,083,466	\$34,425,412	\$35,909,000
CPT Project (Portal ID 235)	\$1,513,679	\$2,858,030	\$15,437,321	\$14,092,970	\$16,951,000

9. The Implementing Trustees will notify the OO TIG of proposed material changes before taking further action on the MDBC Projects. Notification will include a brief description of the change, impacts, and proposed path forward. Any material change must be approved by the OO TIG. The Implementing Trustees may modify in writing the Implementation Plans if the modification is minor and consistent with the OO RP2/EA. Approval of these minor modifications by the OO TIG may be communicated verbally during an OO TIG meeting and memorialized with a memorandum to the Administrative Record, by email, or through other procedures agreed to by the OO TIG that result in a written record of the decision.

10. It is resolved that after review of this Resolution and the attached *Mesophotic and Deep Benthic Communities Restoration Projects: National Environmental Policy Act and Environmental Compliance Review of Implementation Activities 2023-2027 (April 2023)*, the duly authorized officials for the OO TIG (i) approve the changes in trustee authorized budgets as specified in Paragraph 8 and (ii) affirm the actions described in the attached evaluation memo are consistent with the evaluation provided in the OO RP2/EA or other relevant NOAA NEPA documents incorporated by reference in the attached memo and that no additional OPA or NEPA analyses or public review are necessary. This review will be shared with the public via posting to the Gulf Spill Restoration website. This Resolution may be authorized in counterparts. The effective date of this Resolution is the last date of signature below.

OPEN OCEAN RESTORATION AREA TRUSTEE IMPLEMENTATION GROUP



CHRISTOPHER D. DOLEY

Principal Representative, National Oceanic and Atmospheric Administration



MARY JOSIE BLANCHARD

Principal Representative, Department of the Interior



RONALD HOWARD

Alternate to Principal Representative, U.S. Department of Agriculture



MARY KAY LYNCH

Alternate to Principal Representative, U.S. Environmental Protection Agency

DATE OF LAST SIGNATURE: April 17, 2023

**Open Ocean Trustee Implementation Group
Mesophotic and Deep Benthic Communities
Restoration Projects:**

**National Environmental Policy Act and
Environmental Compliance Review of 2023-2027
Implementation Activities**

April 2023

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1. Background and Purpose of this Document

The Open Ocean Trustee Implementation Group (TIG) selected four Mesophotic and Deep Benthic Communities (MDBC) restoration projects in the 2019 Final Open Ocean Restoration Plan 2/Environmental Assessment: Fish, Sea Turtles, Marine Mammals, and Mesophotic and Deep Benthic Communities (OO RP2/EA) to support the restoration of natural resources and services injured or lost as a result of the Deepwater Horizon (DWH) oil spill. The four projects are the Mapping, Ground-truthing, and Predictive Habitat Modeling (MGM) project (Project ID #234), the Habitat Assessment and Evaluation (HAE) project (Project ID #232), the Coral Propagation Technique Development (CPT) project (Project ID #235), and the Active Management and Protection (AMP) project (Project ID #233).

As described in the Deepwater Horizon Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (PDARP/PEIS), the restoration of MDBC is complicated by a limited understanding of key biological functions, limited experience with restoration at the depths at which they occur, and remote locations that limit accessibility. Therefore, the Open Ocean TIG's evaluation of restoration alternatives for these resources determined that MDBC projects should include phased implementation to allow for data collection to address critical uncertainties and inform adaptive decision-making.

Implementation of the projects includes an initial two-year planning and design stage, followed by a five-year field and lab-based implementation stage, and a final stage of one to two years for reporting and project close-out. The MDBC project teams have completed the initial planning phase of the projects and the first year of the five-year implementation phase. The work performed during the planning phase and the initial year of the implementation phase was described and evaluated for environmental consequences in the following National Environmental Policy Act (NEPA) review documents:

- “Mesophotic and Deep Benthic Communities (MDBC) Restoration Projects: National Environmental Policy Act and Environmental Compliance Review of Implementation Activities” dated January 2022.
- “Summary of environmental compliance for coral sampling activity by technical divers in support of MDBC portfolio planning phase activities” dated March 10, 2021.
- “Environmental compliance analysis for coral sampling activity by ROV in support of MDBC portfolio planning phase activities” dated May 28, 2021.

This document incorporates by reference and extends the evaluations developed in those prior reviews. It provides summaries of the results of the completed planning phase of the projects and of the work performed in the first year of implementing the projects, which the project teams plan to continue performing for the duration of the implementation phase of the projects throughout 2023-2027. This document also describes and evaluates additional implementation activities the project teams plan to undertake during the remainder of the implementation phase of the projects that were not previously evaluated for environmental consequences. This information has informed the Open Ocean TIG's determination about the consistency of the ongoing and new operational activities with the environmental review and NRDA evaluation conducted in OO RP2/EA.

Implementation Planning Phase

MDBC project implementation planning phase work was completed in 2022 and established foundational project and portfolio management plans, data management systems and standards, best practices, stakeholder engagement and project management strategies that leverage shared resources and needs across the portfolio of projects. The NEPA and environmental compliance analysis captured in this document is also a key output of the implementation planning phase of the MDBC projects.

Key activities completed during the planning phase, to inform operational activities for the implementation phase of the MDBC projects, as described in the January 2022 Review of Implementation Activities, included:

- development of data inventories, data acquisitions, and analyses to support identification of data gaps, establish data collection standards, identify best practices, and select priority areas and information needs for the projects;
- identification of priority areas consistent with the objectives of the MDBC portfolio through the collection of standardized recommendations from regional experts indicating the data and modeling products they recommended for specific geographic locations and the aspects of the MDBC portfolio those recommendations supported;
- assessment of operational requirements and completion of detailed mission plans and budgets, data management and analysis plans, other operational work plans, vessel requests, contract obligations and other agreements for necessary operational support, and environmental compliance for field expeditions that began in 2022;
- management and analyses of data collected during field operations and conducting adaptive management workshops with partners and stakeholders to evaluate operations and inform future operational planning and prioritization of sites and activities;
- establishment of a network of federal and non-governmental labs to develop and apply best practices, requirements, protocols, procedures, and operational specifications for mesophotic and deep sea coral husbandry; and
- development of an extensive stakeholder engagement process, development of project management plans detailing project objectives, work elements, sequencing, performance criteria, and budgets for the full implementation phase.

Activities completed during field operations in 2022 matched the planned field activities described in the January 2022 Review of Implementation Activities, with the exception of a cruise that was planned to be performed under a contract managed by the Office of Coast Survey. That mission was not performed due to the lack of available contractor resources (vessels and sensors) to conduct the work within the field season.

2. Planned Implementation Activities

Project objectives are described in *“Mesophotic and Deep Benthic Communities Restoration Projects: National Environmental Policy Act and Environmental Compliance Review of Implementation Activities January 2022.”* Field operations in 2023-2027 are anticipated to continue those previously analyzed for 2022 operations. The geographic area targeted for field

operations for the remainder of the implementation phase from 2023-2027 is consistent with the area described in the January 2022 Review of Implementation Activities (see the description and figure under the subheading “Geographic Areas for Field Operations” on pages 10-11 in Section 5).

The first field work undertaken as part of the implementation phase of the MDBC projects was performed in 2022. Additional work to perform activities described in the implementation plans using the same methods in the same action area, as well as the expanded scope of activities described below, will proceed for the duration of the implementation phase of the projects from 2023-2027. Any additional permits such as Scientific Research Permits (SRPs) or sanctuaries permits will be in place prior to implementation.

Table 1. MDBC missions planned for the 2023 field season.

Vessel	Projects	Tentative Dates	Mission Execution Days (does not include transit to/from homeport, potential in-port days, etc.)	Max Depth	Comments and activities
RV <i>Point Sur</i>	HAE, CPT, MGM	5/15 - 5/28	14	~400m	AUV <i>Mola Mola</i> , ROV <i>Beagle</i> ; mapping, sample for reproduction, deploy/recover data loggers; outplant live corals, sample diversity. eDNA, CTD, DeSoto Rim, W FL Slope.
RV <i>Point Sur</i>	HAE, CPT	6/6-6/20	15	~1500	ROV <i>GE</i> : soft sediment transects, core sampling, CTD, sub-bottom profiling; DWH wreck site characterization & live coral collection @ Dauphin Dome
RV <i>Pelican</i>	HAE, CPT	6/XX - 6/XX	15	~400m	ROV <i>Beagle</i> , CTD, transects and sampling for diversity; shelf edge between Bright & Ewing banks
NOAA Ship <i>Pisces</i>	HAE, MGM	6/12 - 6/30	45	300-1000m	ROV <i>Mohawk</i> , AUV Remus 600, CTD, MBES, landers, microbiology; Viosca Knoll, W FL slope
RV <i>Point Sur</i>	HAE, MGM	8/08 - 8/30	21	~1500-2000m	USM/OECI sediment, revisit 34 priority stations, CTD, sub-bottom profiling
NOAA Ship <i>Nancy Foster</i>	HAE, MGM	8/21-10-17	55	~1500-2000m	ROV <i>Global Explorer</i> sampling, AUV <i>Sentry</i> transects, Deep DeSoto Canyon, W FL escarpment, Henderson Ridge, impacted areas.
RV <i>Point Sur</i>	CPT, HAE	10/08 - 10/18	10	~1000m	ROV <i>Mohawk</i> live coral sampling & microbiology; mesophotic Northern Gulf, DeSoto Rim, Pinnacles Trend
TBD	AMP, HAE, CPT	10/x - 10/x+20	30	<200m for diving, ~2000m for ROV	Saturation diving, Pinnacles Trend, Bright Bank. ROV/AUV, multi project and threat reduction ops (e.g., mooring installations, invasive spp removal)

MGM = Mapping, Groundtruthing, and Predictive Habitat Modeling; HAE = Habitat Assessment and Evaluation; CPT = Coral Propagation Technique Development; AMP = Active Management and Protection; ROV= Remotely operated vehicle; AUV = autonomous underwater vehicle; CTD = conductivity, temperature, depth; eDNA = environmental DNA; SPB = sub-bottom profiler

Vessels involved in MDBC field work generally transit to and from the following ports: Pascagoula, MS; Gulfport, MS; Houma/Cocodrie, LA; Fourchon, LA; Panama City, FL; Houston/Galveston, TX; Tampa, FL. Tentative 2023 work is described in Table 1, above. A similar level of effort (i.e., up to 200 days at sea annually) is projected for performing project activities annually from 2024 to 2027 and we anticipate using similar size class vessels and

similar or the same assets (ROVs/AUVs) as those identified above for the duration of the MDBC projects.

Additional Activities for 2023-2027

Habitat Assessment and Evaluation project objectives, in conjunction with a related, proposed DWH Open Ocean Monitoring and Adaptive Management Activity, expand the scope of project activities to be undertaken in 2023-2027 to include water column community sampling above MDBC sites using Multiple Opening/Closing Net and Environmental Sampling System (MOCNESS) transects paired with the water column acoustic sampling previously described in the January 2022 Review of Implementation Activities. Briefly, MOCNESS nets are used to collect midwater column fishes and invertebrates at discrete depth intervals by actively sequencing the opening and closing of nets at user selected depths. MOCNESS sampling does not contact the bottom. The MOCNESS can be deployed and used from surface waters (0 m) down to depths of ~1,500m. For this work, a MOCNESS with 10m² mouth is generally towed at a speed of 1.5 kts or less (slower if the vessel is capable) while ship's speed and winch speed are continuously adjusted during deployment and retrieval to maintain a constant mouth angle. MOCNESS sampling will be conducted during daytime and nighttime hours to capture differences in vertical distribution of the targeted fishes and water column invertebrates. The HAE project team anticipates 3 years of sampling at 2-3 locations (one sampling event annually at each location), each with 5 stations with 10 trawl tracks (5 day, 5 night) per location, for a total of up to 30 trawls annually from 2024-2026, and up to 90 trawls in total. Precise sampling sites have not yet been selected, but the following sites are being considered: Viosca Knolls East, DeSoto Canyon slope, and a site such as Assumption Dome in the northwest banks region, which are all within the geographic area described in the January 2022 Review of Implementation Activities.

Coral Propagation Technique Development project objectives likewise expand on 2022 operations during the 2023-2027 period to include diver- and ROV-deployed field propagation tests of lab-reared coral propagules and lab-reared or in situ fragments placed within one kilometer of the sites where "mother" colonies have previously been collected. This activity will be co-located with the previously described in situ substrate placement tests. Figure 1, below, shows locations where live corals were collected in 2022 for use in lab husbandry operations. Field propagation tests will be performed in 2023 at a subset of these locations. Propagation tests are planned to be experimental in scale, with footprints up to 100 square meters at any single test site and placed to avoid existing hard bottom and biogenic structured habitats. Tests are intended to compare performance of methods and materials for enhancement of growth, reproduction, recruitment, and survival of target propagation coral species.

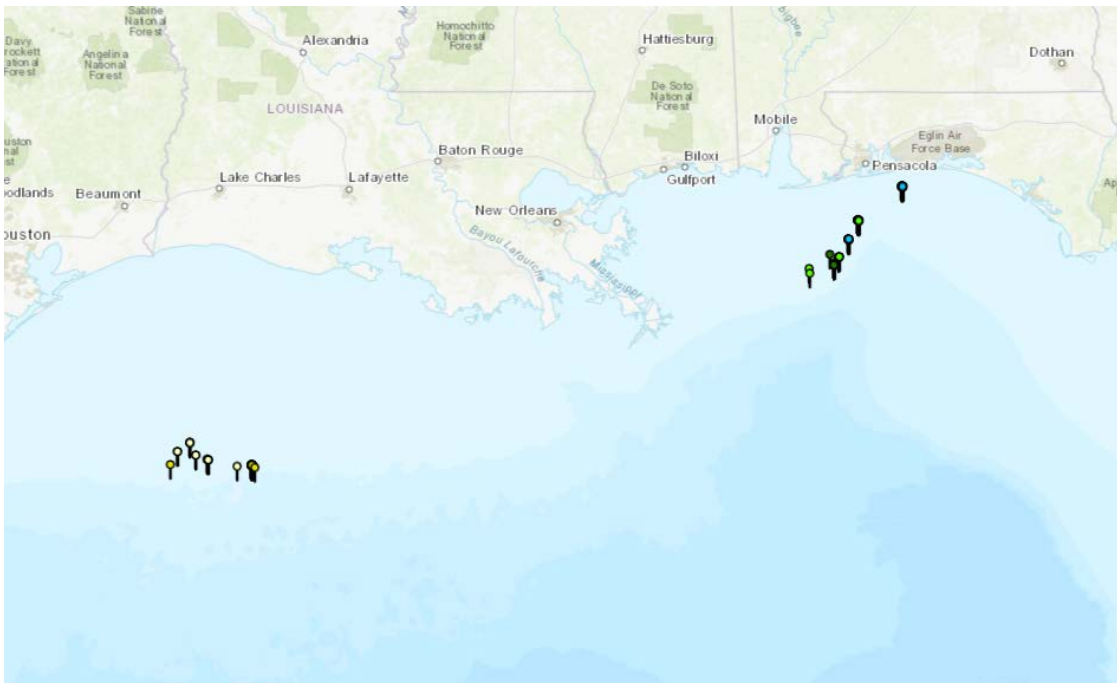


Figure 1. Locations of live coral collections for use in lab husbandry operations by MDBC projects in 2022.

Management activities included in the AMP project for directly addressing threats to MDBC will also be undertaken in 2023-2027. These include mooring buoy installations to reduce damage to MDBC from anchoring, removal of invasive species such as lionfish, documentation and removal of marine debris and derelict fishing gear, assessing and remediating risks associated with leaking and abandoned oil and gas infrastructure, and enhancing enforcement capacity for protection and management of MDBC. These activities are planned in areas where the respective threats to MDBC habitats are documented.

Permanent mooring buoy installations will be performed in areas where anchor damage has been documented due to heavy use for activities such as fishing and diving. For example, installations are planned in and around the banks included in the recent expansion of the Flower Garden Banks National Marine Sanctuary, to ensure the general public has a safe way to visit these areas by vessel without damaging the fragile mesophotic habitats below by using mooring buoys instead of their vessels' anchors. Mooring design and placement will follow typical practice of the Office of National Marine Sanctuaries for installations for use by vessels up to 100 feet in length. As shown in Figures 2 and 3, below, each buoy is anchored to the sea floor by a long line attached to a large, metal u-bolt cemented into relic reef rock (i.e., not live rock). Mooring anchor lines will be thick, straight, taught lines that cannot form loops or otherwise entangle marine species. A short, floating pennant line is attached to the top of the buoy to provide a mooring point for vessels. Moorings will not be placed in the vicinity of any ESA-listed corals, and no buoys will be installed in the Rice's whale core distribution area (CDA).

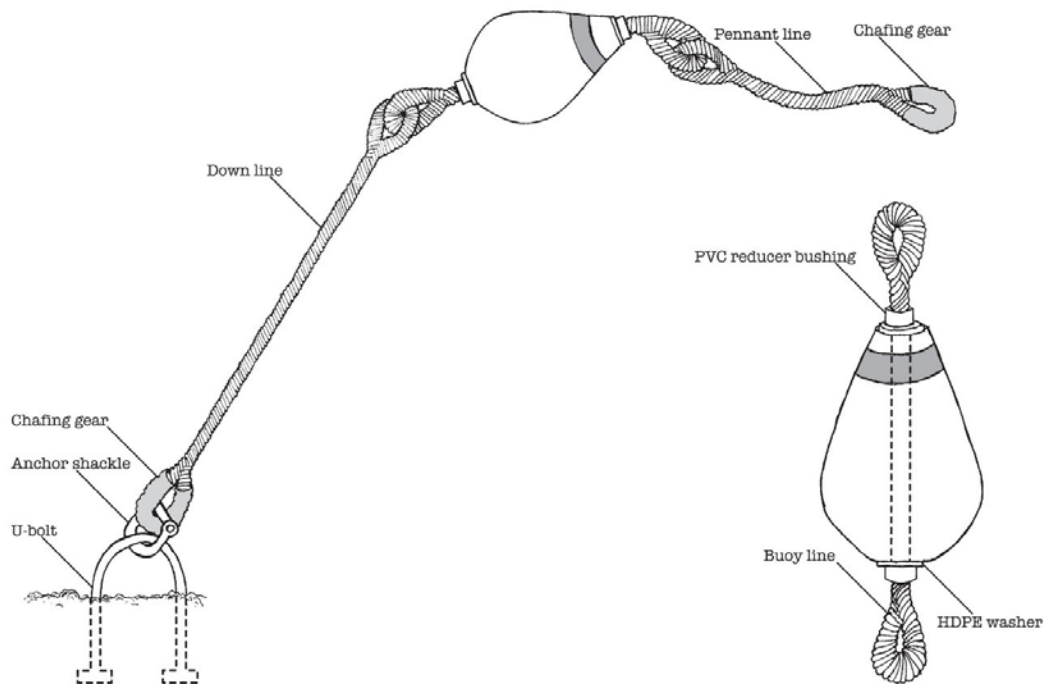


Figure 2. Typical mooring buoy assembly employed by Flower Garden Banks National Marine Sanctuary.

Mooring installations even at heavily visited sites such as FGBNMS comprise less than 10 moorings at any given site (e.g., 5 at Stetson Bank, 5 at West Flower Garden Bank, and 7 at East Flower Garden Bank). Mooring installations undertaken through MDBC activities are anticipated to be performed with similar distributions at MDBC sites.



Figure 3. Divers use a coring drill bit to drill into dead reef rock to install a mooring buoy anchor.

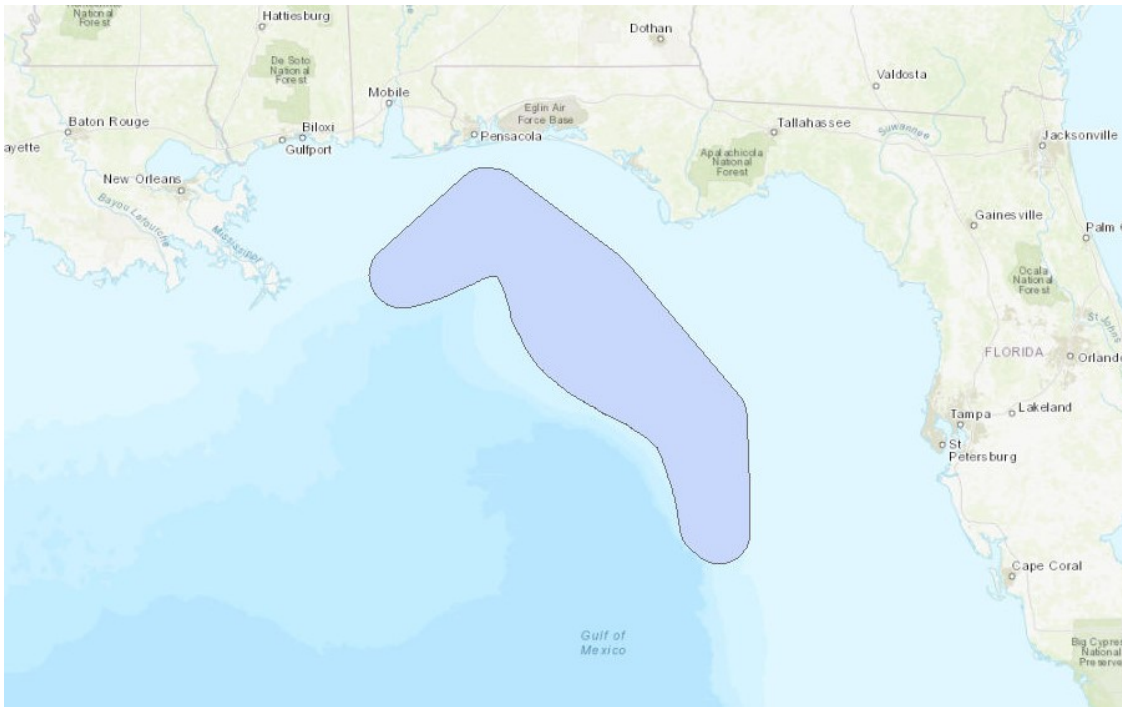


Figure 4. Rice’s whale core distribution area to be avoided.

3. Consistency with OO RP2/EA OPA Evaluation

The Trustees conducted Oil Pollution Act (OPA) evaluations (see 15 CFR 990.54) for the range of project alternatives as described in Chapter 3 of the OO RP2/EA. The MDBC projects were approved as long-range actions structured to include a full lifecycle of activities such as initial project design and assessment, tool design, and tool testing through long-term site-specific project implementation. Therefore, the following OPA evaluation factors were considered through a programmatic lens for the MDBC projects: Cost Effectiveness; Trustee Restoration Goals and Objectives; Likelihood of Success; Avoid Collateral Injury; Benefits Multiple Resources; and Public Health and Safety.

The Trustees determined that the projects have a strong nexus to the injury, meet the Trustees’ goals at reasonable and appropriate costs, have a high likelihood of success, and provide potential benefits to more than one natural resource or service. In addition, the Trustees determined that the projects are not expected to have negative impacts to public health and safety and would avoid collateral injury by evaluating environmental consequences of techniques during the project planning and design activities and by identifying BMPs to minimize potential collateral injury. Additionally, the Trustees recognized that the MDBC projects will increase scientific understanding of restoration and better characterize the status, trends, and spatiotemporal distributions of injured resources and habitats. Together they will improve the Trustees’ ability to target restoration activities and track resource and ecosystem recovery.

The MDBC project teams performed detailed implementation planning after the publication of OO RP2/EA that strengthened the projects’ ability to meet OPA evaluation factors. The Implementing Trustees have established best practices, best available science, and proven

techniques to cost-effectively accomplish restoration goals while minimizing potential environmental consequences or collateral injury.

The Implementing Trustees have also identified best practices and techniques to minimize potential environmental consequences by reviewing other NEPA documents as described in Section 5 (below).

The inventory, gap analysis, prioritization process, and engagement with subject-matter experts have improved the projects' likelihood of successfully meeting project objectives, including filling data gaps to evaluate sites for restoration and protection, providing data to detect and quantify trends affecting MDBC habitats, and identifying impacts and assessing threats to these communities.

In addition, project implementation activities planned for 2023-27 inform one another through ongoing cross-project coordination feedback cycles begun with the planning phase and 2022 implementation activities, to address key questions and ensure appropriate deployments of equipment to ensure cost-effectiveness and increase likelihood of success. Field operations will be performed in remote offshore areas by experienced, licensed crews applying rigorous safety plans and standard operating protocols. The Implementing Trustees will ensure personnel are properly trained, that appropriate equipment and safety standards are employed, and that routine safety inspections are performed to minimize any risks to public health and safety.

All of the project field operations described in Section 3 remain consistent with the OPA findings per the OO RP2/EA and fully meet OPA evaluation criteria. They are consistent with the activities that were anticipated to be conducted for the MDBC portfolio in OO RP2/EA and therefore meet the goals and objectives of each project. Therefore, there is no new or additional information to consider that alters the OPA evaluation of each project alternative in the OO RP2/EA Sections 3.8.1.3, 3.8.2.3, 3.8.3.3, and 3.8.4.4.

4. Consistency with OO RP2/EA and Other Relevant NEPA Evaluation

Introduction

This Section reviews the affected environment and the findings of the OO RP2/EA. Additionally, it summarizes and incorporates by reference other NEPA evaluations of field methodologies that will be used in completion of these projects. It concludes with affirming the project activities are consistent with existing NEPA evaluations and no additional environmental analyses are needed. The Trustees consider the evaluations of activities considered in the January 2022 Review of Implementation Activities to be wholly consistent and applicable in considering the implementation of those same activities during the remainder of the implementation phase (2023-2027) of the MDBC projects. Those evaluations are incorporated here by reference. Detailed evaluations are also provided below for the additional activities planned to be performed in 2023-2027 as described in Section 3.

Activity Description

Field operations for the four selected MDBC restoration projects are based on a coordinated and phased cross-project planning effort described in OO RP2/EA and above in Section 3. The coordinated management of project infrastructure and capacity requirements (e.g., vessel time,

scientific vehicles and instruments, information technology infrastructure, research facilities, and standards for monitoring and data management) have been considered to maximize efficiencies and cost-effectiveness during planned field operations. Operations to be performed from 2023-2027 will be conducted as multi-mission cruises (e.g., Table 1) during which the operations described in Section 3, above, are to be undertaken.

Affected Environment

The additional MDBC project activities planned to be performed in 2023-2027 do not modify the MDBC areas and habitats described in the Affected Environment section of the January 2022 Review of Implementation Activities.

Existing Relevant Environmental Evaluations

In OO RP2/EA, the projects in the MDBC portfolio are described as “long-range activities” and are evaluated from a programmatic perspective. Section 4.1.2 required a process by which the Open Ocean TIG would affirm consistency with that programmatic environmental review (or provide supplemental environmental compliance, if necessary) once site-specific actions were fully developed in the out years of the long-ranging projects. Following are the specific methodologies for the additional MDBC implementation activities planned to be performed in 2023-2027 and review of existing environmental compliance to support an affirmation of consistency with prior analyses.

The additional project activities to be performed in 2023-2027 were programmatically evaluated in the OO RP2/EA. These activities have also been programmatically evaluated in the NOAA Restoration Center’s Programmatic Environmental Impact Statement (OHC 2015) and in the NOAA Coral Reef Conservation Program’s Final Programmatic Environmental Impact Statement (OCM 2020). The environmental consequences in OO RP2/EA relied on analyses conducted in the Trustee’s PDARP/EIS, analysis in the plan, and, for the MDBC portfolio, incorporated environmental consequences by reference from the Final Programmatic Environmental Assessment for Fisheries and Ecosystem Research Conducted and Funded by the Southeast Fisheries Science Center (SEFSC 2020) and the Programmatic Environmental Assessment of Field Operations in the Southeast and Gulf of Mexico National Marine Sanctuaries (ONMS 2018).

This document describes the field methodologies and additional implementation activities that will be performed from 2023-2027 for scientific data collection and resource protection/threat reduction and have been previously evaluated for potential environmental consequences. Table 2 below presents a crosswalk of existing relevant NEPA analyses. Those analyses are further summarized below and are incorporated by reference. No methods or instrumentation are expected to be modified beyond the typical approaches previously evaluated and consequently are not expected to have environmental consequences beyond those evaluated in the noted existing NEPA reviews.

Table 2. Activity-based Environmental Consequences cross-walk to OO RP2/EA and other NEPA documents that are Incorporated by Reference.

Activity and Instrumentation	OO RP2/EA Analysis References	Other NEPA Incorporation References
MOCNESS water column sampling	N/A	SEFSC 2020: 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7, 4.3.8
<i>In situ</i> coral propagation testing	4.4.6.3.1, 4.4.6.3.2, 4.4.6.3.3	OHC 2015: 4.5.2.6.1; ONMS 2018: 4.1, 4.2, 4.3, 4.4; OCM 2020: 4.3, 4.4, 4.5, 4.6, 4.7
Mooring Buoy Installations	4.4.6.4.1, 4.4.6.4.2, 4.4.6.4.3	ONMS 2018: 4.1, 4.2, 4.3, 4.4; OCM 2020: 4.3, 4.4, 4.5, 4.6, 4.7
Invasive species removal	4.4.6.4.1, 4.4.6.4.2, 4.4.6.4.3	OHC 2015: 4.5.2.4.1; ONMS 2018: 4.1, 4.2, 4.3, 4.4
Marine debris removal	4.4.6.4.1, 4.4.6.4.2, 4.4.6.4.3	OHC 2015: 4.5.2.2; ONMS 2018: 4.1, 4.2, 4.3, 4.4; OCM 2020: 4.3, 4.4, 4.5, 4.6, 4.7
Assessment and remediation of leaking and/or abandoned oil and gas infrastructure	4.4.6.4.1, 4.4.6.4.2, 4.4.6.4.3	ONMS 2018: 4.1, 4.2, 4.3, 4.4
Enhancements to enforcement capacity	4.4.6.4.1, 4.4.6.4.2, 4.4.6.4.3	ONMS 2018: 4.1, 4.2, 4.3, 4.4

[Summary of Environmental Consequences Evaluated Programmatically in OO RP2/EA](#)

The following resource categories were evaluated with respect to additional MDBC implementation activities planned to be performed in 2023-2027 and the environmental consequences associated with those actions. Summaries of those findings include:

Physical Resources

The additional MDBC implementation activities planned for 2023-2027 may have short-term, localized, and minor adverse impacts to geology, substrates, and noise, with long-term benefits to geology and substrates. All of the activities may result in temporary, short-term, minor changes to the acoustic environment in the areas where work is performed, leading to disturbances to fish, sea turtles, and marine mammals. Short-term, localized, minor adverse impacts to the benthos may occur depending on which types of debris would be removed. The placement of coral outplants (propagules and substrates) would displace soft substrate communities in favor of hard outplanting substrates, which are limited relative to soft substrates in the GOM. This would result in long-term benefits to more structurally complex hard bottom communities including through provision of propagation and recruitment surfaces for corals and associated biota. Mooring buoy installations may cover soft bottom substrate at mooring anchor points, causing a long-term, minor adverse effect to the localized area; however the footprint of these materials is expected to be minimal in comparison to the benthic landscape and would not be placed on sensitive benthic habitat. Moorings would

provide long-term benefits by reducing anchor impacts to the surrounding coral communities from vessels on the surface.

Biological Resources

The additional MDBC implementation activities planned for 2023-2027 are projected to have both long-term benefits and short-term, minor adverse impacts to habitats, marine fauna, protected species, benthic habitats and communities. Long-term benefits associated with protection and management of these communities are also anticipated. The placement of coral outplants or mooring buoys may cover soft bottom substrate, causing long-term, minor adverse impacts to benthic habitats and short-term, minor adverse impacts to marine benthic fauna (e.g., sessile species) in the localized area. Coral outplant or mooring deployments onto/into benthic habitats and communities (sessile marine fauna) may cause short-term, localized, minor adverse impacts to these resources and also short-term, minor adverse impacts to protected species such as marine mammals and sea turtles based on the adverse impacts to the noise environment. Long-term benefits are also expected, including increases in coral cover over time, increased fish biomass and abundance, and improved habitat for protected species through restoration, protection, and management.

Human Uses and Socioeconomics

The additional MDBC implementation activities planned for 2023-2027 are not expected to adversely impact marine management, tourism and recreation, and fisheries resources but would have long-term benefits to these resources. The activities are expected to result in short-term to long-term, minor to moderate adverse impacts and short-term to long-term benefits to socioeconomic resources from coral outplanting and threat reduction activities. The activities are expected to have the potential for long-term, minor adverse impacts from disturbance to cultural resources (minimized through planning and application of best practices), but also with potential long-term benefits to cultural resources should previously unknown cultural resources be revealed.

Summary of Environmental Consequences Evaluated by Field Methodology

The planned field methodologies are conventional approaches that have been previously evaluated in relation to other marine and oceanographic field operations. The following existing NEPA analyses were reviewed for relevant analyses of such methodologies in preparing this document, and their evaluations are summarized and those findings incorporated by reference to inform this affirmation of prior NEPA consideration:

- NOAA Restoration Center Programmatic Environmental Impact Statement (OHC 2015);
- NOAA Coral Reef Conservation Program Final Programmatic Environmental Impact Statement (OCM 2020);
- Programmatic Environmental Assessment of Field Operations in the Southeast and Gulf of Mexico National Marine Sanctuaries (ONMS 2018);
- Final Programmatic Environmental Assessment for Fisheries and Ecosystem Research Conducted and Funded by the Southeast Fisheries Science Center (SEFSC 2020).

Those NEPA analyses conclude that there would be no or negligible adverse impacts to human uses and socioeconomic resources associated with the activities planned for the MDBC portfolio; therefore, the summary below focuses on the physical and biological resource environmental consequences analyses from those documents.

Summary of Environmental Consequences from Existing NOAA NEPA Evaluations

Physical resource impacts of MOCNESS water column sampling:

SEFSC 2020 concluded that MOCNESS water column sampling would result in negligible to minor adverse impacts to physical resources (benthos and water column), with small but measurable changes to the resource over a small geographic area and for a temporary duration. The limited geographic scope and duration of sampling, avoidance of bottom contact with the gear, and spill and emergency preparedness of survey crews reduce the likelihood of impacts. SEFSC 2020 also notes that, in contrast to these adverse effects, the scientific data generated from MOCNESS survey activities would contribute to beneficial effects on special resource areas through their contribution to science-based conservation management practices.

Biological resource impacts of MOCNESS water column sampling:

SEFSC 2020 concluded that MOCNESS water column sampling would result in negligible to minor adverse impacts to biological resources (fish, marine mammals, birds, sea turtles, invertebrates, and plants), with small but measurable changes to the resource over a small geographic area and for a temporary duration. The limited geographic scope and duration of sampling, avoidance of bottom contact with the gear, and spill and emergency preparedness of survey crews reduce the likelihood of impacts. SEFSC 2020 also notes that, in contrast to these adverse effects, the scientific data generated from MOCNESS survey activities would contribute to beneficial effects on biological resources including protected species through their contribution to science-based conservation management practices.

Physical resource impacts of *in situ* coral propagation testing:

Consistent with evaluations of this activity in OORP2/EA, OHC 2015 and OCM 2020 concluded that *in situ* coral propagation would result in short-term to long-term, localized, minor adverse impacts to physical resources through displacement of soft substrate communities in favor of hard outplanting substrates placed in propagation sites, as well as long-term benefits through provision of propagation and recruitment surfaces for corals and associated biota. OHC 2015 and OCM 2020 also concluded that *in situ* coral propagation would result in direct, short term, localized, negligible to minor adverse impacts to physical resources (geology and soils, water, and air) due to disturbance of propagation sites while outplanting work is being performed. OHC 2015 also noted direct and indirect, long-term, localized, moderate to major beneficial impacts to physical resources from this activity. OCM 2020 determined these benefits to be short and long-term, and negligible to minor, based on the small geographic scope of individual projects.

Biological resource impacts of *in situ* coral propagation testing:

Consistent with evaluations of this activity in OORP2/EA, OHC 2015 and OCM 2020 concluded that *in situ* coral propagation would result in short-term, localized, minor adverse impacts to biological resources through displacement of soft substrate communities in favor of hard outplanting substrates placed in propagation sites, as well as long-term benefits through provision of propagation and recruitment surfaces for corals and associated biota. OHC 2015

also concluded that *in situ* coral propagation would result in direct, short term, localized, minor adverse impacts to biological resources (living coastal and marine resources [LCMR], essential fish habitat [EFH]) due to disturbance of propagation sites while outplanting work is being performed. OHC 2015 also concluded that indirect, long-term, moderate beneficial impacts to biological resources could result beyond project sites (LCMR, EFH, and threatened and endangered species [T&E spp]) from this activity. OCM 2020 concluded this activity would result in short or long-term, local, negligible to moderate adverse impacts to corals and associated invertebrates and algae, as well as beneficial impacts that are direct and indirect, short-and long-term, local to large scale, and negligible to moderate. OCM 2020 also concluded this activity would result in direct and indirect, short-term, local, and negligible to minor adverse impacts as well as direct and indirect, short-and long-term, local to large scale, and negligible to major beneficial impacts to fish. Mitigating measures for coral outplanting identified in OHC 2015 will be followed to the extent that they are applicable.

Physical resource impacts of threat reduction activities:

Existing NOAA NEPA evaluations of the physical resource impacts of threat reduction activities are consistent with evaluations of these activities (mooring buoy installations, invasive species removal, marine debris removal, assessment and remediation of leaking and/or abandoned oil and gas infrastructure, and enhancements to enforcement capacity) in OORP2/EA. OHC 2015 concluded debris removal would produce direct, long-term, localized, minor to moderate beneficial impacts to geology and water with the application of BMPs to avoid adverse impacts such as site disturbance/compaction, sedimentation, injury to biota colonizing debris as a settlement substrate or for other habitat services, or the release of contaminants; and direct, short-term, minor adverse impacts to air beyond project sites due to emissions from equipment used in the removal work. OHC 2015 found that invasive species removal would result in direct, short-term, localized, moderate adverse impacts to geology and air and direct, short-term, moderate adverse impacts to water beyond project sites, from site disturbance during removal efforts (compaction, sedimentation, turbidity, contamination). OHC 2015 also found that invasive species removal would result in moderate beneficial impacts to geology and water that are direct, long-term, localized (geology) and beyond project sites (water), based on improvements to habitat function promoted by diverse native species assemblages. OHC 2015 found that infrastructure improvements such as mooring installations would have direct, short-term, localized, minor adverse impacts to physical resources (geology, water, air) due to site disturbance during project activities; direct, long-term, localized, moderate and major beneficial impacts to geology from reduced anchor damage; and indirect, long-term, moderate beneficial impacts to air beyond project sites from use of moorings. OCM 2020 concluded that mooring installations, debris removal, and invasive species removal would result in direct, short-term, local, negligible to minor adverse impacts to sediments and water quality due to disturbance during project activities. OCM 2020 also concluded that mooring installations, debris removal, and invasive species removal would result in direct, short-term to long-term, localized, negligible to moderate beneficial impacts to sediments protected from anchor damage and debris accumulations and negligible to minor beneficial impacts to water quality from substrate stabilization reducing sediment disturbance and suspension in the water column. ONMS 2018 concluded that short-term, low-intensity, localized adverse impacts to physical resources (geology, water quality, air quality, and acoustics) would result from seafloor disturbance and vessel and other operations at the project sites during marine debris removal, mooring buoy installations, and deployment of remote sensing equipment. ONMS 2018 also concluded that short-term, localized, minor beneficial impacts to physical resources (geology) would result from the threat-reducing nature of these activities.

Biological resource impacts of threat reduction activities:

Existing NOAA NEPA evaluations of the biological resource impacts of threat reduction activities are consistent with evaluations of these activities (mooring buoy installations, invasive species removal, marine debris removal, assessment and remediation of leaking and/or abandoned oil and gas infrastructure, and enhancements to enforcement capacity) in OORP2/EA. OHC 2015 concluded debris removal would produce indirect, long-term, moderate beneficial impacts to LCMR, EFH, and T&E spp from reduced potential for entanglement, ingestion, or other injury from debris, with the application of BMPs to avoid adverse impacts such as site disturbance/compaction, sedimentation, injury to biota colonizing debris as a settlement substrate or for other habitat services, or the release of contaminants. OHC 2015 also concluded that marine debris removal would result in direct, short-term, localized, minor adverse impacts to LCMR and direct and indirect, short-term moderate adverse impacts to T&E spp beyond project sites due to disturbance at restoration sites during the removal process. OHC 2015 found that invasive species removal would result in direct, short-term, moderate adverse impacts to LCMR, EFH, and T&E spp beyond project sites, from potential impacts of removal activities on non-target species. OHC 2015 also found that invasive species removal would result in direct, long-term major beneficial impacts to these biological resources, and extend beyond project sites, based on improvements to habitat function promoted by diverse native species assemblages. OHC 2015 found that infrastructure improvements such as mooring installations would have direct, short-term, localized, minor adverse impacts to LCMR and EFH due to site disturbance during project activities, and indirect, long-term, moderate beneficial impacts to LCMR, EFH, and T&E spp beyond project sites from reductions in habitat damage from anchoring by surface vessels due to use of moorings. OCM 2020 concluded that mooring installations, debris removal, and invasive species removal would result in direct, short- or long-term, local, negligible to moderate adverse impacts to corals and associated invertebrates and algae, as well as direct and indirect, short-term, local, and negligible to minor adverse impacts to fish, due to disturbance during project activities. OCM 2020 also concluded that mooring installations, debris removal, and invasive species removal would result in direct and indirect, short-term to long-term, localized to large scale, negligible to moderate beneficial impacts to corals and associated invertebrates and algae protected from anchor damage, debris accumulations, and alterations to community assemblages induced by invasive species, and negligible to major beneficial impacts to fish from improved habitat for foraging, refuge, and spawning. ONMS 2018 concluded that short-term, low-intensity, localized adverse impacts to biological resources (habitat, invertebrates, fish, birds, and protected species) result from seafloor disturbance and vessel and other operations at the project sites during marine debris removal, mooring buoy installations, and deployment of remote sensing equipment. ONMS 2018 also concluded that short-term, localized, minor beneficial impacts to biological resources result from the threat-reducing nature of these activities.

Best Management Practices

Federal regulatory agencies provide guidance on best management practices (BMPs) as part of the environmental compliance process. BMPs include design criteria, lessons learned, expert advice, tips from the field, and more. DWH Trustees use appropriate BMPs to avoid or minimize impacts to natural resources, including protected and listed species and their habitats. These include mitigation measures for protected species identified in Sections 2.2.2 and 2.2.3 of SEFSC 2020, incorporated here by reference.

BMPs identified in required permits, consultations, or environmental reviews, including those described in Appendix 6.A of the PDARP/PEIS that are relevant to a MDBC project, will be applied. Through technical assistance with regulatory agencies, additional BMPs may be identified for implementation and would be catalogued in compliance documents and mission plans. In addition to the BMPs identified in the PDARP/PEIS, project-specific BMPs will be followed during MDBC project activities. The status of other required consultations and associated BMPs is provided below in Section 6.

Project field operations will be conducted under the direction of NOAA and DOI project team members and contracted partners. Project team members are staff and contractors of NOAA's Office of Habitat Conservation (OHC), National Centers for Coastal Ocean Science (NCCOS), Southeast Fisheries Science Center (SEFSC), and Office of National Marine Sanctuaries (ONMS), as well as the Department of Interior's US Geological Survey (USGS), Bureau of Ocean Energy Management (BOEM), and Bureau of Safety and Environmental Enforcement (BSEE). Project partners include NOAA's Office of Coast Survey (OCS), Office of Ocean Exploration and Research (OER), and Office of Marine and Aviation Operations (OMAO). External project partners include members of NOAA's Ocean Exploration Cooperative Institute, staff and contractors to the Smithsonian National Museum of Natural History, the National Marine Sanctuary Foundation, and the US Navy.

MDBC project team members will carry all necessary permits with them during operations as required based on the nature and location of the project work to be performed onboard. Such permits may include a scientific research permit from the NMFS Southeast Regional Office, a permit issued by NOAA's Office of National Marine Sanctuaries for work affecting National Marine Sanctuary resources, and/or a permit issued by the US Army Corps of Engineers for activities affecting navigable waters of the United States.

BMPs identified in required permits, consultations, or environmental reviews will be followed to reduce or eliminate potentially adverse environmental impacts. For example, BMPs identified for other similar work and from consultations conducted for that work include:

- MDBC field vessels will operate at slow speeds (4-8 knots) by necessity to achieve high-resolution data during survey operations, which minimizes the risk for a ship strike.
- To further mitigate the potential for a ship strike, a lookout observer will be present on the vessel to alert the vessel operator if a marine mammal or sea turtle appears in the path of the vessel during the survey. A designated lookout observer will be required to stand watch on the ship's bridge during transit and survey operations, scanning the water for humans, animals, vessels, and other objects.
- Personnel on board NOAA and contractor vessels are required to monitor and report locations of marine mammal sightings as part of their regular operational protocol. Currently, the lookout records any sightings of marine mammals on either a paper marine mammal log or by an automated marine mammal report logging system such as AMVER/SEAS, which many NOAA ships also use for weather reporting. The observation report records the species, number of animals, behavior, time, and location of the sighting.
- *Mitigation Measures:* The sampling conducted during each cruise will be limited to minimize impacts. For example, operators using ROVs for sample collection control the

altitude of the ROV above the seabed using thrusters to avoid contact with benthos and select soft-bottom sites for landing to perform collection to avoid impacts to sensitive benthic resources. The altitude above the sea floor of AUVs collecting remotely sensed data is controlled by navigational algorithms that respond to sensors for obstacle detection and collision avoidance, and force the vehicle to surface in the event of hardware or software failure.

5. Compliance with other environmental laws and regulations

Compliance Complete at Issuance of Final OO RP2/EA

OORP2/EA documented the evaluation of potential environmental consequences and compliance requirements of the MDBC portfolio. The following regulatory compliance reviews were determined not applicable to the projects in the portfolio:

- Bald and Golden Eagle Protection Act (USFWS)
- Migratory Bird Treaty Act (MBTA) (USFWS)
- Rivers and Harbors Act/Clean Water Act (USACE permit)

OORP2/EA documented determinations that the following projects do not require a consistency determination or a negative determination was made under the Coastal Zone Management Act (CZMA):

- Mapping, Ground-truthing, and Predictive Habitat Modeling (see update below)
- Habitat Assessment and Evaluation
- Coral Propagation Technique Development

For the Active Management and Protection project, CZMA consistency determinations were affirmed by the states bordering the Gulf of Mexico at the time OO RP2/EA was finalized.

For compliance reviews that were not completed at the time OO RP2/EA was issued, the status of reviews for the following statutes are discussed below:

- National Historic Preservation Act (NHPA)
- Endangered Species Act (ESA) - Section 7 (NMFS)
- Endangered Species Act (ESA) – Section 7 (USFWS)
- Magnuson Stevens Act (EFH) (NMFS)
- Marine Mammal Protection Act (MMPA) (NMFS)
- Marine Mammal Protection Act (MMPA) (USFWS)

Compliance Reviews for ESA, EFH, MMPA and NHPA/106

Technical assistance reviews for compliance are ongoing at this time with NOAA and DOI. The status will be updated as technical assistance is completed and further compliance is identified as needed.

At the time the OO RP2/EA was finalized, environmental compliance under some statutes was deemed “not applicable” or “complete,” while others were determined to be “in progress” or “phased.” For “phased” compliance, the Open Ocean TIG determined that future activities would be evaluated further once methodologies and locations were developed. In 2022, once locations and methodologies were known, the reviews were completed for the portfolio of MDBC projects as described below.

ESA Under NMFS Jurisdiction

All MDBC project field operations, including the additional MDBC implementation activities planned for 2023-2027 as described in Section 3 above, were evaluated for potential for effects to ESA-listed species and habitat under NMFS’ jurisdiction. Based on the NOAA Restoration Center’s review with technical assistance and concurrence from the NMFS Southeast Regional Office Protected Resources Division, the Restoration Center made the determination that project activities are not likely to adversely affect any ESA-listed species and/or designated critical habitats under NMFS jurisdiction. Any project activities taking place in the Rice’s whale core distribution area identified by NMFS/SERO/PRD will follow all BMPs determined necessary in consultation with NMFS/SERO/PRD. For work carried out by other NOAA offices, ESA Section 7 consultations with NMFS were completed in 2022 and 2023 by the NOAA Restoration Center and any BMPs or conditions set forth in the consultation will be followed during field operations.

EFH Under NMFS Jurisdiction

All MDBC project field operations, including the additional MDBC implementation activities planned for 2023-2027 as described in Section 3 above, were evaluated for potential for effects to EFH under NMFS’ jurisdiction. Work that will take place in any National Marine Sanctuary, Habitat Area of Particular Concern (HAPC), or other designated marine protected area will follow all permitting and BMP requirements of the relevant management authority (NOAA/ONMS/FGBNMS and/or NOAA/NMFS/SERO). Based on the NOAA Restoration Center’s review with technical assistance from the NMFS Southeast Regional Office Habitat Conservation Division, the NOAA Restoration Center determined that the project activities described in Section 3 above may have minor and temporary effects from water column sampling, placement of coral outplants, landers, or mooring buoys, and marine debris removal, but will not have adverse effects on EFH. Successful development of coral propagation techniques would lead to additional restoration and management opportunities in the future. Therefore, the cumulative project activities will provide additional information about the mesophotic and deep benthic communities in the project area, and propagation and eventual planting of corals will provide a long-term restoration benefit to designated EFH.

MMPA Under NMFS Jurisdiction

The project field operations, as described in Section 3 above, were evaluated for potential for effects to marine mammals protected under the Marine Mammal Protection Act (MMPA) and under NMFS’ jurisdiction. Any project activities taking place in the Rice’s whale core distribution area identified by NMFS/SERO/PRD will follow all BMPs determined necessary in

consultation with NMFS/SERO/PRD. Project activities described in Section 3 will not result in take of marine mammals protected under the MMPA and reviews are complete.

MMPA and ESA Under USFWS Jurisdiction

The project field operations, as described in Section 3 above, were evaluated for potential for effects to marine mammals protected under the MMPA and ESA under USFWS's jurisdiction. There is the potential that manatees may be affected by vessel transits to and from ports in the Gulf of Mexico, therefore ESA informal consultation and review under MMPA are in progress.

National Historic Preservation Act

The project field operations, described in Section 3 above, were evaluated for the potential to effect known and unknown historic or cultural resources protected under the NHPA. The operations will be performed in a deep water, offshore area where few known cultural or historic resources are present on the sea floor.

There are a number of historically significant shipwrecks known to exist throughout the area planned for MDBC field operations, and project activities will be avoided in proximity to these shipwrecks. Project activities (e.g., sediment core collection, lander deployment, ROV landing) will only minimally disturb the bottom and are unlikely to potentially impact any unknown, buried cultural or historic resources. In 2022, the Department of the Interior determined that no further review of the project activities under Section 106 of the NHPA is warranted.

Coastal Zone Management Act

At the conclusion of OO RP2/EA as noted above, it was determined the MGM project either did not require a consistency determination or a negative determination was made under the Coastal Zone Management Act (CZMA). However, in preparing for implementation, NOAA determined that a portion of the planned mapping operations to be conducted by NOAA's Office of Coastal Survey (OCS) may take place in state waters. Therefore, NOAA OCS requested and received consistency determinations from each Gulf state, in collaboration with the Open Ocean TIG, for this work. The balance of activities is not anticipated to impact coastal resources as defined by each Gulf state. As such, additional consistency determinations for those activities are not necessary.

[Additional Permits](#)

Scientific Research Permits

The project field operations, as described in Section 3 above, may require a scientific research permit under the Magnuson-Stevens Fishery Conservation and Management Act for research activities such as coral collections. If a permit is determined necessary, it will be obtained from NMFS Southeast Region Office prior to the commencement of field operations.

National Marine Sanctuary Permits

The project field operations, as described in Section 3 above, will require a permit or permits from the Flower Garden Banks National Marine Sanctuary (FGBNMS) for field operations that take place within the boundaries of the FGNMS. Any necessary permits will be obtained prior to the commencement of field operations.

U.S. Army Corps of Engineers Permits

Should project field operations, as described in Section 3 above, require a permit from the U.S. Army Corps of Engineers (USACE), permits will be obtained from the appropriate USACE District Office prior to the commencement of field operations.

Compliance Review for Future Activities

Future field operations to support the suite of mesophotic and deep benthic projects in OO RP2/EA may be developed during the course of this 2023-2027 implementation phase of the MDBC projects, or may take place beyond 2027. If these future operations are using the same methods and are within the same locations as described in Section 3, it is likely that those operations will fall within the NEPA, ESA, EFH, NHPA/106, and MMPA reviews completed within this document. The Trustees will affirm consistency with this evaluation prior to taking any actions beyond 2027 using the same methods and within the same locations as those described in Section 3.

For future operations that do not fall within the methods and locations described in this document, those operations will be evaluated when they are proposed to determine if they fit within existing analyses, or if additional environmental compliance reviews under one or more statutes are necessary.

Completed consultations and final compliance memos will be provided to the Open Ocean TIG and submitted to the Administrative Record once available.

6. Conclusions

In OO RP2/EA, the MDBC projects are described as “long-range activities” structured to include a full lifecycle of activities and evaluated from a programmatic perspective. Therefore, the Open Ocean TIG committed to review site-specific actions to be conducted by the MDBC projects to affirm their consistency with the environmental compliance provided in the OO RP2/EA. Through the review described in this document, the Open Ocean Trustees found the following for the planned field operations:

- The planned field operations are consistent with the OPA findings per the OO RP2/EA and fully meet OPA NRDA evaluation criteria. There is no new or additional information to consider that alters the OPA NRDA evaluation of each project alternative in the OO RP2/EA.
- The potential environmental effects of the planned field operations, including anticipated methods and geographic locations, are consistent with the environmental review in the OO RP2/EA or with other relevant NOAA NEPA documents that are incorporated by reference for specific field operations not described in detail in OO RP2/EA. There are no substantial changes that are relevant to environmental concerns, and there are no significant new circumstances or information relevant to environmental concerns not addressed in the OO RP2/EA impact analysis.
- The Implementing Trustees (NOAA and DOI) are in the process of completing environmental compliance. All compliance will be complete prior to implementation of field activities.

No further analyses under OPA or NEPA are necessary and modifications to the final restoration plan are not required. In addition, the original public comment period conducted for the OO RP2/EA solicited public input on the project and comments were supportive with no

controversial issues identified. The Open Ocean TIG will inform the public of the planned field operations and the Trustees' review through an Open Ocean TIG web story, at TIG annual meetings, and through an update to the project DIVER record.

7. Citations

Deepwater Horizon Natural Resource Damage Assessment Trustees. 2016. *Deepwater Horizon oil spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement* (PDARP/PEIS).

NMFS Office of Habitat Conservation Restoration Center. 2015. Final Programmatic Environmental Impact Statement for habitat restoration activities implemented throughout the coastal United States (OHC 2015).

NMFS Southeast Fisheries Science Center. 2020. Final Programmatic Environmental Assessment for Fisheries and Ecosystem Research Conducted and Funded by the Southeast Fisheries Science Center (SEFSC 2020).

NOS Office of Coastal Management. 2020. Coral Reef Conservation Program Final Programmatic Environmental Impact Statement (OCM 2020).

NOS Office of National Marine Sanctuaries. 2018. Programmatic Environmental Assessment of Field Operations in the Southeast and Gulf of Mexico National Marine Sanctuaries (ONMS 2018).

Open Ocean Trustee Implementation Group. 2019. *Deepwater Horizon Oil Spill Natural Resource Damage Assessment, Open Ocean Trustee Implementation Group, Final Restoration Plan 2/ Environmental Assessment: Fish, Sea Turtles, Marine Mammals, and Mesophotic and Deep Benthic Communities* (OO RP2/EA).