UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT
GULF OF AMERICA REGION
NEW ORLEANS, LOUISIANA

SITE-SPECIFIC ENVIRONMENTAL ASSESSMENT

OF

EXPLORATION PLAN
NO. A-00062

FOR

BP EXPLORATION & PRODUCTION INC.

September 30, 2025

RELATED ENVIRONMENTAL DOCUMENTS

Gulf of Mexico OCS Proposed Geological and Geophysical Activities
Western, Central, and Eastern Planning Areas, Final Programmatic Environmental Impact Statement
(OCS EIS/EA BOEM 2017-051)

Gulf of Mexico OCS Oil and Gas Lease Sales: 2017-2022
Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261
Final Environmental Impact Statement
(OCS EIS/EA BOEM 2017-009)

Gulf of Mexico OCS Lease Sale, Final Supplemental Environmental Impact Statement 2018
(OCS EIS/EA BOEM 2017-074)

Biological Opinion Oil and Gas Leasing, Exploration, Development, Production, Decommissioning, and All Related Activities in the Gulf of Mexico Outer Continental Shelf
(FWS April 20, 2018)

Gulf of Mexico OCS Oil and Gas Lease Sales 259 and 261: Final Supplemental Environmental Impact Statement
(OCS EIS/EA BOEM 2023-001)

Biological and Conference Opinion on Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement's Oil and Gas Program Activities in the Gulf of America
(NMFS May 20, 2025)

Gulf of America Regional OCS Oil and Gas Lease Sales and Post Lease Activities Final Programmatic Environmental Impact Statement
(OCS EIS/EA BOEM 2025-042)

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

The Bureau of Ocean Energy Management (BOEM) has prepared a Site-Specific Environmental Assessment (SEA) for the activities proposed in ancillary exploration plan A-00062 complying with the National Environmental Policy Act (NEPA) at 42 United States Code (U.S.C.) §§ 4321 *et seq*. The United States Department of the Interior (DOI) NEPA implementing regulations at 43 Code of Federal Regulations (CFR) Part 46 and BOEM policy require an evaluation of proposed major Federal actions, which under BOEM jurisdiction includes oil and gas exploration or development activity on the Outer Continental Shelf (OCS).

Secretary of the Interior Doug Burgum issued Secretary's Order 3423, which directed the renaming of the Gulf of Mexico to the Gulf of America. As a result, BOEM updated existing content while legacy content such as previously published reports, studies, and NEPA documents remain unchanged.

The potential effects or impacts caused by similar actions to that proposed were examined at a basin-wide scale on the OCS in the following documents, from which this SEA is tiered:

- GOM G&G PEIS – Gulf of Mexico OCS Proposed Geological and Geophysical Activities Western, Central, and Eastern Planning Areas Final Programmatic Environmental Impact Statement (OCS EIS/EA BOEM 2017-051)
- Multisale EIS – Gulf of Mexico OCS Oil and Gas Lease Sales 2017-2022 Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261 Final Environmental Impact Statement (OCS EIS/EA BOEM 2017-009)
- 2018 SEIS – Gulf of Mexico Lease Sale Final Supplemental Environmental Impact Statement 2018 (OCS EIS/EA BOEM 2017-074)
- 2023 SEIS – Gulf of Mexico OCS Oil and Gas Lease Sales 259 and 261 Final Supplemental Environmental Impact Statement 2023 (OCS EIS/EA BOEM 2023-001)

This SEA also considers the impacts of the proposed action and incorporates by reference the evaluations below:

- 2018 FWS BO – Biological Opinion Oil and Gas Leasing, Exploration, Development, Production, Decommissioning, and All Related Activities in the Gulf of Mexico Outer Continental Shelf, United States Fish and Wildlife Service (FWS) April 20, 2018
- 2021 BEBR – Biological Environmental Background Report for the Gulf of Mexico OCS Region (OCS Report 2021-015)
- 2025 NMFS BiOp – Biological and Conference Opinion on Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement's Oil and Gas Program Activities in the Gulf of America, National Marine Fisheries Service (NMFS) May 20, 2025
- 2025 GOA PEIS – Gulf of America Regional OCS Oil and Gas Lease Sales and Post Lease Activities Final Programmatic Environmental Impact Statement (OCS EIS/EA BOEM 2025-042)

Proposed Action: BP Exploration & Production Inc. (BP) proposes to conduct a 3D Distributed Acoustic Sensing (DAS) borehole seismic survey using a moving marine vibratory (MMV) source array consisting of six M72-15 C-BASS units and two M72-30 C-BASS units (Proposed Action). The DAS borehole seismic survey will be conducted in Green Canyon Block 743 Wells DC213, DC215, and DC228. The vessel *Armada 7802,* a light-crewed, robotic survey vessel with remote source control, will be used to conduct the survey with remote protected species observer (PSO) monitoring. The Proposed Action is located south of Port Fourchon, Louisiana in the Central Planning Area.

The project area is approximately 121 miles (195 kilometers) from the nearest shoreline and in water depths ranging from 4,265 - 8,202 feet (1,300 - 2,500 meters). Site-specific analysis was completed using BP's description of the proposed operations; however, specific technical information regarding the geological and geophysical (G&G) activities described in the permit application is proprietary and therefore is not included in this document. The proposed survey is expected to take approximately 14 days to complete and will begin in October 2025.

Factors Considered in this Determination: The impacts from the proposed action are further analyzed at the site-specific level in this Environmental Assessment. The impact analysis for the proposed activity focused on the geological and geophysical activities and the resources that may be potentially impacted. The impact producing factors (IPF) include: (1) active acoustic seismic, (2) vessel noise, (3) vessel traffic, and (4) marine trash and debris.

In this SEA, BOEM has considered three alternatives: (1) No Action, (2) Proposed Action as Submitted, and (3) Proposed Action with Conditions of Approval (COAs). BOEM has assessed the impacts of the proposed action on the following resources:

- marine mammals
- sea turtles
- fish

The noise generated from active acoustic sources (MMV sources) is potentially the most disruptive impact for a free-swimming individual or groups of marine mammals, turtles, and fish in proximity to the source in operation. The effect of an active acoustic sound source is weighted most heavily out of all other potential impacting factors. Individual animals are vulnerable to injury if hit by the survey vessel or entangled by debris from the proposed action. COAs include the monitoring of a shutdown zone by a trained protected species observer during pre-clearance, as applicable. Therefore, impacts of the proposed activities from acoustic or vessel noises or marine trash and debris to marine mammals, sea turtles, and fish, have been mitigated to **nominal**. The impacts of the proposed activity from vessel strike have been mitigated to **nominal** to **moderate** for marine mammals, **nominal** to **minor** for sea turtles, and **nominal** for fish. Impact significance levels are explained in **Chapter 3.1** of this SEA.

Our evaluation in this SEA has selected Alternative 3 and serves as the basis for approving the Proposed Action. BOEM concludes that no significant impacts are expected to occur to any affected resources by allowing the proposed action to proceed, provided that the specific COAs and monitoring measures identified below are met by the operator.

- **COMPLIANCE WITH BIOLOGICAL OPINION TERMS AND CONDITIONS AND REASONABLE AND PRUDENT MEASURES:** This approval is conditioned upon compliance with the Reasonable and Prudent Measures and implementing Terms and Conditions of the Biological Opinion (BiOp) issued by the National Marine Fisheries Service (NMFS) on May 20, 2025 (2025 NMFS BiOp). This compliance includes mitigation, particularly any Terms and Conditions applicable to the plan, as well as record-keeping and reporting sufficient to allow BOEM and the Bureau of Safety and Environmental Enforcement (BSEE) to comply with reporting and monitoring requirements under the BiOp, and any additional reporting required by BOEM or BSEE developed as a result of BiOp implementation. The 2025 NMFS BiOp may be found here: https://www.fisheries.noaa.gov/resource/document/biological-and-conference-opinion-bureau-ocean-energy-management-and-bureau. The BiOp Attachments and Appendices may be found here: https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.

- **OPERATIONAL NATIONAL MITIGATION PROTOCOLS FOR GEOPHYSICAL SURVEYS:** The applicant will follow the protocols provided under Attachment 1: Operational National Mitigation Protocols for Geophysical Surveys found in the 2025 NMFS BiOp. The protocols can be accessed on the National Oceanic and Atmospheric Administration (NOAA) Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.

- **MARINE DEBRIS PROTOCOL:** The applicant will follow the protocols provided under Attachment 2: Marine Debris Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **VESSEL-STRIKE AVOIDANCE AND INJURED AND/OR DEAD AQUATIC PROTECTED SPECIES REPORTING PROTOCOLS:** The applicant will follow the protocols provided under Attachment 3: Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **VESSEL TRANSIT WITHIN THE RICE'S WHALE AREA AS IDENTIFIED IN THE 2020 BIOLOGICAL OPINION'S REASONABLE AND PRUDENT ALTERNATIVE:** The applicant will follow the protocols provided under Attachment 4: Vessel Transit within the Rice's Whale Area as identified in the 2020 BiOp Reasonable and Prudent Alternative (2020 RWA) found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **IN-WATER LINE PRECAUTION PROTOCOL:** The applicant will follow the protocols provided under Attachment 5: In-water Line Precaution Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **MOON POOL MONITORING PROTOCOL:** The applicant will follow the protocols provided under Attachment 6: Moon Pool Monitoring Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **SEA TURTLE RESUSCITATION GUIDELINES PROTOCOL:** The applicant will follow the protocols provided under Attachment 10: Sea Turtle Resuscitation Guidelines Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.

Conclusion: BOEM has evaluated the potential environmental impacts of the proposed action. Based on the SEA for ancillary exploration plan A-00062, BOEM has determined that the proposed action with COAs would have no significant impact on the marine, coastal, or human environment provided that the avoidance and mitigation measures required through conditions of approval are met by the operator. Therefore, an Environmental Impact Statement will not be required.

PERRY BOUDREAUX

Digitally signed by PERRY BOUDREAUX
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September 30, 2025

Supervisor, Environmental Assessment Unit 2
Office of Environment
GOA OCS Region
Bureau of Ocean Energy Management

Date

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SITE-SPECIFIC ENVIRONMENTAL ASSESSMENT (SEA)
PREPARED FOR
BP EXPLORATION & PRODUCTION INC.
ANCILLARY EXPLORATION PLAN
NO. A-00062

1. INTRODUCTION

BP Exploration & Production Inc. (BP) has submitted an ancillary exploration plan (A-00062) to conduct a geological and geophysical (G&G) survey on the Outer Continental Shelf (OCS). This Site-Specific Environmental Assessment (SEA) evaluates the specific impacts associated with BP's proposed G&G survey activities. **Chapter 1.3** of this SEA provides specific details on the G&G activities proposed in BP's application.

Secretary of the Interior Doug Burgum issued Secretary's Order 3423, which directed the renaming of the Gulf of Mexico (GOM) to the Gulf of America. As a result, the Bureau of Ocean Energy Management (BOEM) updated existing content while legacy content such as previously published reports, studies, and NEPA documents remain unchanged.

The potential effects or impacts caused by similar actions to that proposed were examined at a basin-wide scale on the OCS in the following documents, from which this SEA is tiered:

- GOM G&G PEIS – Gulf of Mexico OCS Proposed Geological and Geophysical Activities Western, Central, and Eastern Planning Areas Final Programmatic Environmental Impact Statement (OCS EIS/EA BOEM 2017-051) (BOEM, 2017a)
- Multisale EIS – Gulf of Mexico OCS Oil and Gas Lease Sales 2017-2022 Gulf of Mexico Lease Sales 249, 250, 251, 252, 253, 254, 256, 257, 259, and 261 Final Environmental Impact Statement (OCS EIS/EA BOEM 2017-009) (BOEM, 2017b)
- 2018 SEIS – Gulf of Mexico Lease Sale Final Supplemental Environmental Impact Statement 2018 (OCS EIS/EA BOEM 2017-074) (BOEM, 2017c)
- 2023 SEIS – Gulf of Mexico OCS Oil and Gas Lease Sales 259 and 261 Final Supplemental Environmental Impact Statement 2023 (OCS EIS/EA BOEM 2023-001) (BOEM, 2023)

"Tiering" is designed to reduce and simplify the size of environmental assessments by eliminating repetitive discussions of impacts considered in prior NEPA compliance documents, allowing analyses to focus on those site-specific concerns and effects related to the action proposed. Tiering is subject to additional guidance under the United States Department of the Interior (DOI) regulations at 43 Code of Federal Regulations (CFR) § 46.140, wherein the site-specific analysis must note which conditions and effects addressed in the programmatic document remain valid and which conditions and effects require additional review.

This SEA also incorporates by reference the evaluations from the relevant environmental documents listed below:

- 2018 FWS BO – Biological Opinion Oil and Gas Leasing, Exploration, Development, Production, Decommissioning, and All Related Activities in the Gulf of Mexico Outer Continental Shelf, United States Fish and Wildlife Service (FWS) April 20, 2018 (FWS, 2018)
- 2021 BEBR – Biological Environmental Background Report for the Gulf of Mexico OCS Region (OCS Report 2021-015) (BOEM, 2021)
- 2025 NMFS BiOp – Biological and Conference Opinion on Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement's Oil and Gas Program Activities in the Gulf of America, National Marine Fisheries Service (NMFS) May 20, 2025 (NMFS, 2025a) and Appendices and Attachments (NMFS, 2025b)

- 2025 GOA PEIS – Gulf of America Regional OCS Oil and Gas Lease Sales and Post Lease Activities Final Programmatic Environmental Impact Statement (OCS EIS/EA BOEM 2025-042) (BOEM, 2025)

For this SEA, all of the analyses prepared in the GOM G&G PEIS, Multisale EIS, 2018 SEIS, 2018 FWS BO, 2021 BEBR, 2023 SEIS, 2025 NMFS BiOp, and 2025 GOA PEIS (referenced hereafter as relevant NEPA compliance documents) are sufficiently comprehensive and adequate to support decision making for BP's proposed activities, with the following exceptions:

- **Active Acoustic Sound Sources and Vessel Noise and Traffic Impacts on Marine Mammals –** the environmental baseline since completion of the programmatic analyses may have experienced slight changes and/or new information has become available
- **Active Acoustic Sound Sources and Vessel Noise and Traffic Impacts on Sea Turtles –** the environmental baseline since completion of the programmatic analyses may have experienced slight changes and/or new information has become available
- **Active Acoustic Sound Source Impacts on Fish and Fisheries –** the environmental baseline since completion of the programmatic analyses may have experienced slight changes and/or new information has become available

Marine mammals, sea turtles, fish, and commercial and recreational fisheries, as indicated in the GOM G&G PEIS, are susceptible to impacts from geophysical activities that may be considered adverse, but not significant. Impacts to fishes and commercial and recreational fisheries from the proposed activities are not expected due to the temporary nature of the operations. Impacts to other uses (military) are not expected because the proposed activities are not located within military warning or Eglin water test areas. This SEA considers the potential for change in the status of resources and the potential for increased sensitivity of those resources to impacts from G&G activities.

Chapter 3 of this SEA will focus on new information relative to the cumulative environmental effects of this action. Where applicable, relevant affected environment discussions and impact analyses from relevant NEPA compliance documents are summarized and utilized for this site-specific analysis and are incorporated by reference into this SEA. Appropriate conditions of approval (COAs) and monitoring measures identified in the relevant NEPA compliance documents have been considered in the evaluation of the proposed action.

1.1. BACKGROUND

BOEM and the Bureau of Safety and Environmental Enforcement (BSEE) are mandated to manage the development of OCS oil, gas, mineral resources, and renewable energy resources while ensuring safe operations and the protection of the human, marine, and coastal environments. One purpose of BOEM's regulatory program is to ensure that the G&G data is obtained in an environmentally safe manner. BOEM and BSEE regulate leasing, exploration, development, production, and decommissioning, and they perform environmental analyses during each of these phases. BOEM's Resource Evaluation Program oversees "speculative" G&G data acquisition and permitting activities pursuant to 30 CFR Parts 551 and 580. Specifically, 30 CFR Part 551 regulates prelease G&G exploratory operations for oil, gas, and sulfur resources and 30 CFR Part 580 regulates prelease prospecting activities. BOEM's Office of Leasing and Plans oversees "on-lease" or "ancillary" G&G data acquisition pursuant to 30 CFR Part 550, which applies to postlease G&G exploratory operations.

The scope of the effects on resources from activities proposed in BP's ancillary exploration plan, A-00062, were fully discussed and analyzed in the GOM G&G PEIS. Neither the specific location, equipment, nor the duration of this proposal will result in impacts different from those discussed in the relevant NEPA compliance documents. Existing peer-reviewed literature and environmental monitoring suggests the proposed activity will not result in a different cumulative impact conclusion from what was made in the relevant NEPA compliance documents. This information was not available or considered during the preparation of the GOM G&G PEIS. Therefore, this

SEA was prepared by BOEM to evaluate the operator's proposed ancillary activities in light of any new changes in the baseline and/or new information.

1.2. Purpose of and Need for the Proposed Action

BP has submitted ancillary exploration plan A-00062 to conduct a G&G activity on the OCS. BP proposes to conduct a 3D Distributed Acoustic Sensing (DAS) borehole seismic survey using a moving marine vibratory (MMV) source array. This information can be utilized to evaluate the potential for, and develop plans for, the development and production of hydrocarbons or mineral resources on the OCS, which would help satisfy the Nation's need for energy or coastal restoration resources. Additional information regarding other survey activities can be found in the GOM G&G PEIS.

The need for this action is established by BOEM's responsibility under the Outer Continental Shelf Lands Act (OCSLA) to make OCS lands available for expeditious and orderly development, subject to environmental safeguards, in a manner that is consistent with the maintenance of competition and other national needs. Section 11 of the OCSLA at 43 United States Code (U.S.C.) 1340 requires anyone seeking to conduct such activities to first obtain approval from BOEM. The Secretary of the Interior oversees the OCS oil and gas program, and BOEM and BSEE are the agencies charged with this oversight and regulated management of the permitted or otherwise authorized oil and gas activities. The Secretary is required to balance orderly resource development with protection of the human, marine, and coastal environments while ensuring that the U.S. public receives a fair return for resources discovered on and produced from public lands (43 U.S.C. 1332[3]).

In response to the proposed action in BP's application, BOEM has regulatory responsibility, consistent with the OCSLA and other applicable laws, to approve, approve with modifications or COAs, or deny the application. BOEM's regulations provide criteria that BOEM will apply in reaching a decision and providing for any applicable COAs.

1.3. Description of the Proposed Action

BP proposes to conduct a 3D DAS borehole seismic survey using an MMV source array consisting of six M72-15 C-BASS units and two M72-30 C-BASS units (Proposed Action). The DAS borehole seismic survey will be conducted in Green Canyon Block 743 Wells DC213, DC215, and DC228. The vessel *Armada 7802,* a light-crewed, robotic survey vessel with remote source control, will be used to conduct the survey with remote protected species observer (PSO) monitoring. The Proposed Action is located south of Port Fourchon, Louisiana in the Central Planning Area.

The project area is approximately 121 miles (195 kilometers) from the nearest shoreline and in water depths ranging from 4,265 - 8,202 feet (1,300 - 2,500 meters). Site-specific analysis was completed using BP's description of the proposed operations; however, specific technical information regarding the G&G activities described in the permit application is proprietary and therefore is not included in this document. The proposed survey is expected to take approximately 14 days to complete and will begin in October 2025. (BP, 2025).

Moving Marine Vibratory Source

As stated in ancillary plan A-00062, the global energy transition attempts to balance the energy trilemma: security, equity, and sustainability of supply. New technology will be key for accelerating a transition to net zero while making acceptable trade-offs within this trilemma. Subsurface imaging remains a critical technology, both for improving the efficiency and emissions of current hydrocarbon production, and for underpinning the economics of renewables (offshore wind farm foundations, offshore storage of carbon and hydrogen). Low margin renewables may benefit from investment of profits from existing hydrocarbon projects, as well as from lower cost of new technology which has been developed on higher margin hydrocarbon production.

BP is developing and testing a novel smaller seismic source with favorable characteristics for use with MASS (marine autonomous surface ships). This trial is currently undergoing US regulatory engagements for execution in late 2024, with systems integration trials between the lean-crewed vessel and remotely operated source throughout the year, and subsequent moving marine

vibrator 3D processing to follow compared to a conventional source data. Additional details on the specifics of the MMV source are found in BP's ancillary plan A-00062 (BP, 2025).

2. ALTERNATIVES CONSIDERED

2.1. NO ACTION ALTERNATIVE

Alternative 1 –If this alternative is selected the applicant would not undertake the proposed activity. This alternative might prevent the exploration and development of hydrocarbons or mineral resources, resulting in the potential loss of royalty income and energy resources for the United States.

2.2. PROPOSED ACTION AS SUBMITTED

Alternative 2 – If this alternative is selected the applicant would undertake the proposed activity as requested in the application. No conditions of approval would be required by BOEM.

2.3. PROPOSED ACTION WITH CONDITIONS OF APPROVAL

Alternative 3 – This is BOEM's *Preferred Alternative*. If this alternative is selected the applicant would undertake the proposed activity, as requested in the application, but with the COAs identified by BOEM and in accordance with the 2025 NMFS BiOp and 2024 NMFS Incidental Take Regulation (ITR) (listed in **Chapter 2.4** below and described in the effects analyses), to fully address the site- and project-specific impacts of the proposed action.

2.4. SUMMARY AND COMPARISON OF THE ALTERNATIVES

If selected, Alternative 1, the No Action Alternative, would prevent the applicant from acquiring the proper permits and the subsequent collection of geophysical data on the OCS. The information would not be available to industry and government to assist in their evaluation of offshore oil and gas resources, geologic hazards, or potential renewable energy sites in a particular area. Alternative 1 would not result in any impacts to the environmental resources analyzed in **Chapter 3**; however, it does not meet the underlying purpose and need.

If selected, Alternative 2 would allow for the collection of seismic, as requested in the application, but would not include any COAs or monitoring measures. Alternative 2 meets the underlying purpose and need of the proposed action but could cause unacceptable impacts to the environmental resources analyzed, as described in **Chapter 3** (e.g., hearing loss in marine mammals, injuries to marine mammals and sea turtles from vessel strikes). Alternative 2 would not require the implementation of COAs and monitoring measures developed by BOEM, in coordination with the NMFS, to limit the potential for lethal and sublethal impacts to marine mammals and sea turtles.

Alternative 3 is the Preferred Alternative, based on the analysis of potential impacts to resources described in **Chapter 3**, because it meets the underlying purpose and need, and also implements COAs and monitoring measures that adequately limit or negate potential impacts. Implementation of these standard mitigation and monitoring measures was assumed as part of the analysis in the 2025 NMFS BiOp, and BOEM is committed to requiring their implementation. NMFS provided a response to the Step-Down Review of A-00062 on September 22, 2025, concurring that, with implementation of the COAs and monitoring measures below, the proposed action is within the scope of NMFS effects analysis considered for the 2025 NMFS BiOp.

The COAs and monitoring measures were identified and will need to be imposed to provide further protection for marine mammals per the 2024 NMFS ITR (NMFS, 2024a) (see **Chapter 3.2**). The ancillary activities proposed will provide BP with sufficiently accurate data to determine the location, extent, and properties of potential hydrocarbon or mineral resources. Additionally, the collected data supports BOEM's regulatory and oversight responsibilities while promoting the development of hydrocarbon or mineral resources, potentially resulting in increased royalty income as well as energy or mineral resources for the United States.

Other alternatives regarding Agency oversight of the G&G permitting program, identified in Chapter 2 of the GOM G&G PEIS, were reviewed with the alternatives listed above chosen as reasonable for the current proposed action.

Conditions of Approval Required under the Preferred Alternative

The need for and utility of the COAs and monitoring measures are discussed in the relevant impact analysis sections of this SEA. The following COAs and reporting requirements were identified to ensure adequate environmental protection and post-activity compliance:

- **Compliance with Biological Opinion Terms and Conditions and Reasonable and Prudent Measures:** This approval is conditioned upon compliance with the Reasonable and Prudent Measures and implementing Terms and Conditions of the Biological Opinion (BiOp) issued by the National Marine Fisheries Service (NMFS) on May 20, 2025 (2025 NMFS BiOp). This compliance includes mitigation, particularly any Terms and Conditions applicable to the plan, as well as record-keeping and reporting sufficient to allow BOEM and BSEE to comply with reporting and monitoring requirements under the BiOp, and any additional reporting required by BOEM or BSEE developed as a result of BiOp implementation. The 2025 NMFS BiOp may be found here: https://www.fisheries.noaa.gov/resource/document/biological-and-conference-opinion-bureau-ocean-energy-management-and-bureau. The BiOp Attachments and Appendices may be found here: https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **Operational National Mitigation Protocols for Geophysical Surveys:** The applicant will follow the protocols provided under Attachment 1: Operational National Mitigation Protocols for Geophysical Surveys found in the 2025 NMFS BiOp. The protocols can be accessed on the National Oceanic and Atmospheric Administration (NOAA) Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **Marine Debris Protocol:** The applicant will follow the protocols provided under Attachment 2: Marine Debris Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **Vessel-Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols:** The applicant will follow the protocols provided under Attachment 3: Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **Vessel Transit Within the Rice's Whale Area as Identified in the 2020 Biological Opinion's Reasonable and Prudent Alternative:** The applicant will follow the protocols provided under Attachment 4: Vessel Transit within the Rice's Whale Area as identified in the 2020 BiOp Reasonable and Prudent Alternative (2020 RWA) found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **In-Water Line Precaution Protocol:** The applicant will follow the protocols provided under Attachment 5: In-water Line Precaution Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.

- **MOON POOL MONITORING PROTOCOL:** The applicant will follow the protocols provided under Attachment 6: Moon Pool Monitoring Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.
- **SEA TURTLE RESUSCITATION GUIDELINES PROTOCOL:** The applicant will follow the protocols provided under Attachment 10: Sea Turtle Resuscitation Guidelines Protocol found in the 2025 NMFS BiOp. The protocols can be accessed on NOAA Fisheries internet website at https://www.fisheries.noaa.gov/resource/document/attachments-and-appendices-2025-gulf-america-oil-and-gas-biological-opinion.

2.5. ALTERNATIVE CONSIDERED BUT NOT ANALYZED IN DETAIL

A viable alternative is required to be a logical option for carrying out the proposed action, ensure that the purpose of and need can be met, and be feasible under the regulatory directives of the OCSLA and all other applicable guidance. As such, other alternatives regarding Agency oversight of the G&G permitting program, identified in Chapter 2 of the GOM G&G PEIS, were reviewed with the alternatives listed above chosen as reasonable for the current proposed action. Several other alternatives were considered and reviewed during the coordination of the resource reviews, but they were ultimately dismissed and not analyzed further since they did not meet the aforementioned requirements. The following alternative was considered and given review; however, it was not accepted for the reasons discussed below.

Alternative Requiring Shut-Down Conditions for Delphinids

This analysis also considered whether to apply the shutdown conditions to delphinids. From a biological standpoint, the best available information suggests that delphinids are considered high-frequency specialists (i.e., auditory bandwidth of 150 Hz to 160 kHz) (Southall et al., 2007; 2019; 2021; NMFS, 2024b). Low frequency seismic arrays, such as the one considered for use under this proposed action, generally operate in the frequency range of 20 Hz to 20 kHz (Goold and Fish, 1998) and may extend well into the ultrasonic range up to 50 kHz (Sodal, 1999). Therefore, while the majority of the seismic noise occurs at frequencies below that of delphinids, there are some components that may enter into the hearing range of delphinids (Goold and Fish, 1998). These higher frequency components would be at lower intensity levels (i.e., not as loud). It is unclear, though, from a scientific standpoint whether any of the seismic noise that might be heard by delphinids is in fact disruptive.

Delphinids are known to bow ride on operating seismic vessels. BOEM funded data synthesis studies on the effectiveness of seismic survey mitigation measures and marine mammal observer reports (Barkaszi et al., 2012; Barkaszi and Kelly, 2019) that analyzed protected species observer (PSO) data collected from 2002 to 2008 and 2009 to 2015 in the Gulf. From 2002 to 2008, approximately 58% of all dolphin sightings occurred within the 500 m exclusion zone (now referred to as “shutdown zone”), and of these, 33% were exhibiting bow-riding behavior (Barkaszi et al., 2012). To note, prior to 2014, operators were not requested to specify bow-riding behavior (Barkaszi and Kelly, 2019). Barkaszi and Kelly (2019) found that approximately 67% of dolphin sightings occurred in the 500 m exclusion zone and 68% of all dolphin sightings were recorded as positive for bow-riding. Dolphins’ proclivity for bow-riding likely increases the number of sightings within the 500 m exclusion zone (Barkaszi and Kelly, 2019).

Looking at these records for a typical year (2009), approximately 400 (~27%) were delphinids within the 500 m exclusion zone with operating airguns. In that same year, there were 55 records of shutdowns for whales within the 500 m exclusion zone. If sources had also been shut down for the 400 sightings of delphinids, this would have resulted in a 7-fold increase in the number of shutdowns. There is little doubt then that a shutdown provision for delphinids within the shutdown zone would have a significant impact on seismic operations, such as those under the proposed action.

BOEM next considered whether a provision could be applied to allow for a reasonable exception for bow riding delphinids. For example, a provision could be considered that would allow PSOs to call for a power down (versus immediate shutdown) of the seismic source to the smallest airgun should any delphinid enter, or come close to entering, the 500 m shutdown zone referenced under the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys. If the delphinids leave the shutdown zone or engage in bow riding behavior, then the PSO could call for the immediate return of the array to full power. This would allow for an opportunity for the PSO to determine if the behavior of the animal(s) warranted a shutdown and if not would allow the applicant to return to full power more quickly (versus a shutdown followed by a 30 minute clearance of the zone and a no less than 20 minute ramp up procedure).

Based on the PSO sighting records, it is clear that shutdowns for delphinids would result in an impact to industry activities. Unlike other sound producing activities (e.g., sonar), seismic surveys occur on specified tracklines that need to be followed in order to meet the data quality objectives of the survey. In other words, seismic vessels in operation cannot simply divert away from nearby marine mammals without a loss in data quality. As stated above, an analysis of 2009 PSO data (Barkaszi et al., 2012) indicates that if shutdowns for delphinids within the shutdown zone were employed, there would have been a 7-fold increase in shutdowns of seismic arrays that year. Shutdowns of 30 minutes or longer would have required an additional 30 minute observation period to ensure animals have left the exclusion area followed by a no less than 20 minute ramp up procedure. In all likelihood, these shutdowns would then have required the applicants to return to an earlier point in the track line and resurvey the area again. This not only results in substantially more expense in downtime and repositioning of seismic arrays and streamers but would also likely increase the duration of and amount of total seismic noise for each affected survey area.

Conclusion

Based on the analysis above, BOEM believes it is essential to more fully investigate and vet the application of shutdown conditions to delphinids before requiring it as a COA (under Alternative 3) or considering it as an additional alternative to the proposed action. It is BOEM's intention, therefore, to fully analyze the application of this condition of approval.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

3.1. INTRODUCTION

The discussion below will: (1) describe/summarize the pertinent potentially affected resources; (2) determine whether the proposed G&G activities and their impact-producing factors (IPF) will have significant impacts on the marine, coastal, or human environments; and (3) identify significant impacts, if any, that may require further NEPA analysis in an EIS. The description of the affected environment and impact analysis are presented together in this section for each resource.

For each potentially affected resource, BOEM staff reviewed and analyzed all currently available peer-reviewed literature and integrated these data and findings into the analyses below. The analyses cite the best available, relevant scientific literature. BOEM performed this analysis to determine whether BP's proposed survey activities will significantly impact the marine, coastal, or human environments. For the impact analysis, resource-specific significance criteria were developed for each category of the affected environment. The criteria for impacts to environmental resources are generally classified into one of the three following levels:

- ***Significant Adverse Impact*** (including those that could be mitigated to nonsignificance)
- ***Adverse but Not Significant Impact***
- ***Negligible Impact***.

Preliminary screening for this assessment was based on a review of previous SEAs, relevant NEPA compliance documents, and relevant literature pertinent to historic and projected activities. BOEM initially considered the following resources for impact analysis:

- marine mammals, including Endangered Species Act (ESA) listed species and strategic stocks
- sea turtles (all are ESA listed species)
- fishes, including listed species and ichthyoplankton
- commercial and recreational fisheries
- coastal and marine birds, including ESA listed species
- benthic communities
- archaeological resources
- military uses
- recreational and commercial diving
- marine transportation
- geology/sediments
- air and water quality.

In the GOM G&G PEIS, the impact analysis focused on a broad group of G&G activities (including other survey types) and resources with the potential for non-negligible impacts. First, a matrix identifies impact agents associated with each type of G&G activity. The IPFs include: (1) active acoustic sound sources, (2) vessel and equipment noise, (3) vessel traffic, (4) aircraft traffic and noise, (5) stand-off distance, (6) vessel discharges, (7) trash and debris, (8) seafloor disturbance, (9) drilling discharges, (10) entanglement, and (11) accidental fuel spills. The preliminary analysis in the GOM G&G PEIS considers surveys of the type proposed by BP as well as impacts to resources by type of activity. To assist with subsequent coordination, the GOM G&G PEIS' analysis further defines the level of impact associated with each interaction as follows:

- **Nominal:** little or no measurable/detectable impact
- **Minor**: impacts are detectable, short term, extensive or localized, but less than severe
- **Moderate**: impacts are detectable, short term, extensive, and severe; or impacts are detectable, short term or long lasting, localized, and severe; or impacts are detectable, long lasting, extensive or localized, but less than severe
- **Major**: impacts are detectable, long lasting, extensive, and severe.

The GOM G&G PEIS notes that seismic surveys have historically covered a large area of the region each year and, when unmitigated, have the greatest potential for "significant" impacts to protected and other sensitive marine species in comparison with other OCSLA-approved activities, including, but not limited to, exploration and development drilling. Further, it acknowledges increasing concerns in the regulatory and scientific communities regarding acoustic impacts on marine life, including marine mammals, turtles, and fishes. Species of particular concern are those whose hearing capabilities (based on vocalization characteristics) fall within the low frequencies introduced into the marine environment by G&G activities. The GOM G&G PEIS provides a comprehensive characterization of biological resources that may be adversely affected by G&G activities. This information is summarized in the various resource-specific descriptions of the affected environment and impact analyses in the chapters that follow.

However, for the purposes of this SEA, BOEM has not included analyses on resource areas that were evaluated and considered under the GOM G&G PEIS as having nominal impacts or determined the resource would not be impacted by the proposed action. Such a procedure is consistent with the NEPA concept of tiering. Additionally, since no expansion or modification of support bases or related vessel construction work are proposed as a result of this activity, socioeconomic effects were not analyzed due to the type, the temporary nature, and employment

size of the survey activity. The most recent evaluation of the best available peer-reviewed scientific literature continues to support this conclusion for the following resource categories:

- commercial and recreational fisheries
- coastal and marine birds, including ESA listed species
- benthic communities
- archaeological resources
- recreational and commercial diving
- marine transportation
- geology/sediments
- air and water quality

For this SEA, BOEM evaluated the potential impacts from the applicant's proposed G&G activities on the following resource categories:

- marine mammals, including threatened/endangered and non-ESA listed species
- sea turtles (all are ESA listed species)
- fish and fisheries, including listed species and ichthyoplankton

3.2. MARINE MAMMALS

3.2.1. Description

The marine mammal community is diverse and distributed throughout the northern Gulf waters. The marine mammals are represented by members of the taxonomic order Cetacea, including suborders Mysticeti (i.e., baleen whales) and Odontoceti (i.e., toothed whales), as well as the order Sirenia (i.e., manatee). Twenty-one species of cetaceans and one species of Sirenia regularly occur in the region and are identified in the NMFS Gulf of Mexico Stock Assessment Reports (Hayes et al., 2024). A complete description of marine mammals can be found in the relevant NEPA compliance documents and is incorporated by reference.

Threatened or Endangered Marine Mammal Species

Only two cetaceans, the sperm whale (*Physeter macrocephalus*) and the Rice's whale (*Balaenoptera ricei*) (previously named the GOM Bryde's whale [*Balaenoptera edeni*]), regularly occur in the region and are listed as endangered under the ESA. The Florida manatee (*Trichechus manatus latirostris*), a subspecies of the West Indian manatee (*Trichechus manatus*), has been documented all along the Gulf in nearshore waters, typically less than 4 m (13 ft) deep and within 1,000 m (328 ft) of the shore (Slone et al., 2022). West Indian manatees are currently listed as threatened. However, the Florida manatee subspecies is proposed to be listed as threatened and the Antillean manatee (*Trichechus manatus manatus*) subspecies as endangered, which would replace the listing of the West Indian manatee (FWS, 2025). The sperm whale was listed as endangered throughout its range on December 2, 1970. The GOM Bryde's (now Rice's) whale was listed as endangered on May 15, 2019 (NMFS, 2019). The Rice's whale critical habitat is currently proposed by NMFS in the northern Gulf from the 100 to 400 m (328 to 1,312 ft) isobath (NMFS, 2023c).

The only commonly occurring baleen whale in the northern Gulf is the Rice's whale. The majority of Rice's whale detections are limited to the northeastern Gulf along the continental shelf between roughly 100 and 400 m depths (Garrison et al., 2024; NOAA Fisheries, 2025), though there have been some detections outside of this area in the northwestern and northcentral Gulf (Soldevilla et al., 2022; Rappucci et al., 2023; Soldevilla et al., 2024; NOAA Fisheries, 2024). Predicted densities and occurrence of Rice's whales remain highest in their northeastern Gulf habitat (Farmer et al., 2022; Garrison et al., 2024). Sperm whales in the Gulf are not evenly distributed, showing greater densities in areas associated with oceanic features that provide the best foraging opportunities (Garrison et al., 2018).

Non-ESA-Listed Marine Mammal Species

Nineteen toothed cetaceans (including beaked whales and dolphins) regularly occur in the region but are not ESA-listed. Despite being non-listed, the Marine Mammal Protection Act (MMPA) of 1972 protects all marine mammals.

Unusual Mortality Events (UME)

An UME is defined under the MMPA as a "stranding that is unexpected, involves a significant die-off of any marine mammal population, and demands immediate response." A list of active and closed UMEs with updated information can be found at: https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events. There are currently no active UMEs in the Gulf.

Marine Mammal Hearing

Marine mammals are highly dependent on acoustic cues as a primary means of communicating and assessing their environment. For example, toothed whales use echolocation clicks to navigate their surroundings and locate prey, demonstrating the sophisticated use of sound in their ecological interactions (Madsen and Surlykke, 2013). An animal's auditory sensitivity to a sound depends on the spectral, temporal, and amplitude characteristics of the sound (Richardson et al., 1995). Baleen whales (i.e., Rice's whales) are classified within the low-frequency cetacean (LFC) hearing group (7 hertz (Hz) to 36 kilohertz (kHz)); dolphins, beaked whales, and toothed whales (e.g., sperm whales) are classified within the high-frequency cetacean (HFC) hearing group (150 Hz to 160 kHz); and *Kogia* are classified within the very high-frequency (VHF) cetacean hearing group (200 Hz to 165 kHz) (NMFS, 2024b).

3.2.2. Impact Analysis

The IPFs associated with the proposed action that could affect marine mammals are primarily active acoustic sound sources and vessel noise from survey activities, collisions with survey vessels, and marine trash and debris. The GOM G&G PEIS contains a discussion of the potential impacts from survey operations on marine mammal resources. Additional information about routine impacts from oil and gas activity on marine mammals is addressed in the relevant NEPA compliance documents. The discussions are summarized below and are incorporated by reference into this SEA.

3.2.2.1. Alternative 1

If Alternative 1, the No Action Alternative, is selected the applicant would not undertake the proposed activities; therefore, the IPFs to marine mammals would not occur. For example, there would be no vessel noise or acoustic noise that would result in behavioral change, masking, or non-auditory effects to marine mammals, no long-term or permanent displacement of the animals from preferred habitats, and no destruction or adverse modification of any habitats. In addition, there would be no survey related debris that could result in endangerment to marine mammals and no additional vessel traffic related to the towing of the survey equipment, so there would be no risk of collisions with marine mammals.

3.2.2.2. Alternative 2

If Alternative 2, the Proposed Action as Submitted, is selected the applicant would undertake the proposed activities as requested and conditioned in the application. Examples of potential impacts to marine mammals without implementation of the 2025 NMFS BiOp protocols include, but are not limited to, injury from vessel strikes, disruption of feeding and other behaviors from the survey noise and vessel presence, and marine trash and debris impacts. This Alternative would not adequately limit or negate potential impacts to marine mammals.

3.2.2.3. Alternative 3

If Alternative 3, the Proposed Action with COAs, is selected the applicant would undertake the proposed activities as requested and conditioned in the application; however, the applicant would be required to undertake protocols identified by BOEM and in accordance with the 2025 NMFS

BiOp consultation requirements and 2024 NMFS ITR. For the reasons set forth below, inclusion of these protocols under Alternative 3 limits or minimizes potential impacts to marine mammals.

Potential Impacts to Marine Mammals from Active Acoustic Sound Sources

In 2018, BOEM and NMFS began collaborating to improve efficiency and consistency in joint ESA Section 7 consultations, MMPA authorizations, and BOEM permits related to the oil and gas program and other program areas. The effort was designed to specifically address actions for which the two agencies have regulatory authority, and those that would have the greatest long-term impact to increase efficiency, resolve regulatory issues, and complete actions. From this effort, a peer-reviewed technical paper analyzing active acoustic sources and ascribing them to tiers based on potential level of impact to marine mammals was developed and published (Ruppel et al., 2022). An encyclopedic-like resource describing the sound sources and how they are typically used by different industries was also published (BOEM, 2023b). Jointly developed standard operational protocols which already incorporated tiers for mitigating and monitoring the effects of geophysical surveys, including those from seismic airguns and HRG equipment, are found in the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys, with *de minimis* (i.e., unlikely to result in incidental take) activity characterized (Tier 4).

The potential for noise impacts from anthropogenic sound sources on marine mammals is highly variable and depends on the specific circumstances of a given situation (Nowacek et al., 2007; Southall et al., 2007; 2019; 2021, Erbe et al., 2025). The potential effects of underwater sound from an active acoustic source could result in auditory injury, PTS, TTS, behavioral disturbance, stress, masking, and nonauditory physical or physiological effects (Nowacek et al. 2007; Southall et al. 2007; 2019; 2021; Erbe et al. 2025). The degree of the potential impact depends on the species' hearing frequency, sound characteristics, received level, distance of the animal from the sound source, and duration of the sound exposure.

HRG Sources

Although some geophysical sources can be detected by marine mammals, given several key physical characteristics of the sound sources (including source level, frequency range, duty cycle, and beamwidth), Ruppel et al., (2022) concluded that most HRG sources, even without mitigation, are unlikely to result in substantial behavioral disturbances of marine mammals. Sources having transmission frequencies higher than 180 kHz are deemed inaudible by marine mammals and therefore, their effects are considered *de minimis* (Ruppel et al., 2022). Several electromechanical sound sources, including a 400-kHz side-scan sonar, and a 200-kHz CHIRP subbottom profiler, would operate within a frequency range that is inaudible to marine mammals within the Gulf (BOEM, 2017a). Primary impacts to permanent and temporary hearing loss, behavioral response, and masking would not be expected.

HRG equipment other than sparkers, boomers, and/or bubble guns (Tier 4 under the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys) operate at sound levels resulting in no effect (i.e., the sound source occurs outside the hearing range of ESA-listed species) or a discountable effect (i.e., the sound sources produce very short isopleth distances to thresholds of disturbance for ESA-listed species and, therefore, exposure is highly unlikely) and are therefore considered *de minimis*. HRG surveys are conducted by moving vessels so any noise exposure would be temporary and marine mammals would not experience continuous exposure. Boomers, sparkers, and bubble guns (Tier 3 under the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys) will have discountable (i.e., unmeasurable) effects with implementation of applicable mitigation that requires the use of at minimum one visual protected species observer (PSO), pre-start clearance, ramp-up procedures, and shutdown zones for marine mammals.

Seismic Sources

Because most of the energy from airguns is radiated at frequencies below 200 Hz, low-frequency cetaceans (e.g., Rice's whales) would most likely hear the acoustic source since it falls within their hearing range. High-frequency cetaceans (e.g., sperm whales and beaked whales) have auditory bandwidths that partially overlap with the frequencies of maximum airgun output. Further,

because mysticetes (e.g., Rice's whales) produce calls that span a low-frequency range (20 Hz to 30 kHz) with their best hearing abilities presumably falling into this range as well, they would be most likely to experience impacts from the low-frequency sounds produced by seismic surveys (Richardson et al., 1995). In contrast, odontocetes produce calls and hear best at mid to high frequencies (Richardson et al., 1995) and appear less vulnerable to low-frequency sound sources than mysticetes. There is evidence that some whales' closest points of approach to airgun arrays during seismic operations are substantially farther during full- power operations than during silence, indicating that there may be some avoidance response to the full-power operations (Barkaszi and Kelly, 2019).

BOEM applies the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys to mitigate effects of noises less than 180 kHz and requires PSOs. Under this protocol, airguns are categorized as Tier 1 or 2, depending on total volume. Sources having transmission frequencies higher than 180 kHz are deemed inaudible by marine mammals and therefore their effects are considered *de minimis* (Ruppel et al., 2022). With the application of protocols requiring vessels to maintain distances from marine mammals if within a specific Tier (when applicable) or shutdown of airgun source, the potential for impacts to marine mammals from ancillary G&G activities is reduced or eliminated. The primary impacts expected are behavioral and short-term due to the transient nature of the sound source, and the wide-ranging distributions and movements of marine mammals in the Gulf.

By selecting Alternative 3, the operator is required to follow the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys and 2024 NMFS ITR. With these protocols in place, the impacts to marine mammals are determined to be **nominal** to **minor**.

Potential Impacts to Marine Mammals from Vessel Noise

Vessel noise from the proposed action will produce low levels of noise, generally in the 150 to 170 dB re 1 µPa-m at frequencies below 1,000 Hz. Vessel and equipment noises are transitory and generally do not propagate at great distances from the vessel. The intensity of noise from service vessels is roughly related to ship size and speed (Erbe et al., 2019). For a given vessel, relative noise tends to increase with increasing speed. Seismic operations with towed gear generally are conducted at relatively slow speeds of 4 to 6 knots, with a maximum speed of less than 8 knots. A comprehensive review of the literature on marine mammals and vessel noise (Erbe et al., 2019; 2025) revealed that changes in behavior vary widely across species and are heavily dependent on context. Vessel noise could interfere with marine mammal communication either by masking important sounds from conspecifics (a member of the same species), masking sounds from predators, or it may trigger animals to alter their vocalizations (Tyack, 2008). There is the possibility of short-term disruption of movement patterns and/or behavior caused by vessel noise and disturbance. The behavioral disruptions potentially caused by noise and the presence of vessel traffic will therefore have **nominal** effects on cetacean populations in the northern Gulf.

Potential Impacts to Marine Mammals from Vessel Traffic

All marine mammals are vulnerable to accidental vessel strike. However, some marine mammal species may be more vulnerable than others to possible vessel strike with all vessels operating at speed, including primarily slow-moving species (e.g., manatees) or those that spend extended periods of time at the surface (e.g., Rice's whales), and deep-diving species (e.g., sperm whales) while on the surface (Vanderlaan and Taggart, 2007). For example, Rice's whales may spend up to 88 percent of their time at night, and 70 percent of their time overall, within 15 m (39 ft) of the ocean surface (Soldevilla et al., 2017), making them vulnerable to collisions with large vessels (Stevens et al., 2024).

Accidental vessel strike on a marine mammal can result in injury, mortality, or no apparent injury (Laist et al., 2001; Van Waerebeek et al., 2007; Vanderlaan and Taggart, 2007; Pace, 2011). Three fundamental components are essential to understanding and assessing vessel strike risk to any marine mammal population: 1) distribution, occurrence, and habitat selection of the population; 2) dive and surface behavior of individuals; and 3) vessel characteristics, activity, and mitigation measures (Stevens et al., 2024). Further, several factors affect the risk and severity of

vessel strike to marine mammals, including species type, speed, health, and behavior of the animal and the path, speed, size, and number of vessels (Laist et al., 2001; Vanderlaan and Taggart, 2007; Martin et al., 2016). Vessel speed and vessel size are of note when assessing strike risk (Stevens et al., 2024; Garrison et al., 2025). Most global reports of vessels striking marine mammals involve large whales, though strikes with smaller species also occur (Van Waerebeek et al., 2007). Most severe and lethal whale injuries involve large ships (>80 m [262 ft]) at higher speeds. Eighty-nine percent of ship strike records show that vessels were moving at greater than 14 knots (16 mph), most strikes occurred over or near the continental shelf, and the whales were usually not seen beforehand or were seen too late to be avoided (Laist et al., 2001; Van Waerebeek et al., 2007). Seismic operations with towed gear generally are conducted at relatively slow speeds of 4 to 6 knots, with a maximum speed of less than 8 knots.

The proposed activities are located outside of the area where the Rice's whale is likely to be present. The operator has not proposed any service vessels or vessel traffic within the Rice's whale area. Under Alternative 3, the operator is required to provide notification and concurrence to fulfill the Rice's Whale reporting requirements to BOEM and BSEE prior to any vessel transit changes, per the 2025 NMFS BiOp protocol Vessel Transit within the Rice's Whale Area as identified in the 2020 RWA. The operator is also required to follow the 2025 NMFS BiOp Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols, which would prevent or substantially reduce marine mammal interactions with vessels by requiring separation distances, speed restrictions, and the use of onboard observers for monitoring during certain activities. NMFS also provides all boat operators with whale watching guidelines, which are derived from the MMPA. These guidelines suggest safe navigational practices based on speed and distance limitations when encountering marine mammals. With these protocols in place and considering the wide range of marine mammals in the Gulf, the impacts to marine mammals are determined to be **nominal** to **moderate**[1].

Potential Impacts to Marine Mammals from Marine Trash and Debris

Marine debris, such as plastics, can affect marine mammals through entanglement and/or ingestion (e.g., choking or intestinal blockage) (Gall and Thompson, 2015). Entanglement in marine debris could lead to injury, infection, reduced mobility, increased susceptibility to predation, decreased feeding ability, fitness consequences, and mortality (e.g., drowning) (Gall and Thompson, 2015). In addition, marine debris ingestion could lead to intestinal blockage, which can impact feeding ability and lead to injury or death (Senko et al., 2020). The discharge of marine debris by the offshore oil and gas industry and supporting activities is subject to several laws and treaties. By selecting Alternative 3, the operator is required to follow the 2025 NMFS BiOp Marine Debris Protocol, which is designed to prevent or minimize accidental marine debris. With this protocol in place, the impacts to marine mammals are determined to be **nominal**.

Conclusion

Given the scope, timing, and transitory nature of the proposed action and given the protocols in place, the impacts related to the proposed ancillary G&G activities are not expected to rise to the level of significance. Seismic noise has the potential, individually or cumulatively, to result in impacts to marine mammal species commonly found in the proposed action area. However, BOEM finds that the potential for such effects from the proposed action is unlikely to rise to significant levels for the following reasons:

- Mysticetes, as low-frequency hearing specialists, are the species group most likely to be susceptible to impacts from non-pulse sound (intermittent or continuous) given that their hearing ranges overlap most closely with the noise frequencies produced from G&G survey-related noise (Richardson et al., 1995; Southall et al., 2007; 2019; 2021). However, most mysticeti species that may occur in the Gulf (i.e., North Atlantic right, blue, fin, sei, humpback,

[1] In the unlikely (i.e., not reasonably foreseeable) event of a strike on an ESA-listed whale that results in mortality, the determination could be major.

and minke) are considered either extralimital, rare, or uncommon within the region (Hayes et al., 2024). The only commonly occurring baleen whale in the northern Gulf is the Rice's whale, which is mostly found in the northeastern Gulf. Given the small geographic scope of the proposed action, as well as the operator proposing no survey activity or service vessels through the Rice's whale area, the presence of these species within the action area is unlikely. The potential for significant impacts is prevented or minimized given the implementation of the Operational National Mitigation Protocols for Geophysical Surveys under Alternative 3.

- Manatees are typically uncommon in the proposed action area, though some deepwater sightings have occurred. As they predominantly inhabit only coastal marine, brackish, and freshwater areas, they are not expected to occur regularly in the area of the proposed action.
- The remaining marine mammal species in the Gulf are considered either HFC hearing specialists (e.g., sperm whales, beaked whales, and dolphins) with hearing ranges that partially overlap with the frequencies of maximum airgun output (Richardson et al., 1995; Southall et al., 2007; 2019; 2021) or VHF hearing specialists (e.g., *Kogia* spp.). Therefore, the potential for seismic noise produced from this proposed action to cause auditory and non-auditory effects, PTS, TTS, behavioral changes, or masking on these species is further limited.
- BOEM requires compliance to protocols under Alternative 3, the 2025 NMFS BiOp, and the 2024 NMFS ITR. The protcols are expected to prevent or minimize duration of exposure to G&G survey-related noise, when implemented in accordance with NMFS Incidental Take Authorizations (ITA) under the MMPA.

The geographic scope of the proposed action is small in relation to the ranges of marine mammals. The proposed ancillary G&G activities are not expected to cause long-term or permanent displacement of the animals from preferred habitats, nor will they result in the destruction or adverse modification of any habitats. Ancillary G&G activities will involve limited slow-moving vessel traffic related to the towing of the sound sources that carries some risk of collisions; however, animals may avoid the moving vessels, reducing the likelihood of collision. The operator is required to follow the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys, which will prevent or minimize/negate potential acoustic impacts to marine mammals. BOEM has adopted requirements from the 2025 NMFS BiOp to prevent or minimize/negate the chance of vessel strike to marine mammals with the Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols. Also, BOEM has adopted requirements from the 2025 NMFS BiOp to prevent or minimize/negate the chance of marine trash and debris impacts to marine mammals with the Marine Debris Protocol.

3.2.3. Cumulative Impact Analysis

The relevant NEPA compliance documents address the cumulative impacts on marine mammals as a result of oil and gas leasing, exploration, development and production activities, including G&G activities.

Activities considered under the cumulative scenario which include the oil and gas program and other anthropogenic and natural activities, including the proposed action, may affect protected marine mammals or critical habitat. Marine mammals could be impacted by the degradation of water quality resulting from operational discharges; vessel traffic; noise generated by platforms, drilling rigs, helicopters, vessels, and seismic surveys; explosive structure removals; oil spills; oil-spill response activities; loss of debris from service vessels and OCS structures; commercial fishing; capture and removal; and pathogens. The cumulative impact on marine mammals is expected to result in a number of chronic and sporadic sublethal effects (i.e., behavioral effects and nonfatal exposure to or intake of OCS-related contaminants or discarded debris) that may stress and/or weaken individuals of a local group or population and predispose them to infection from natural or anthropogenic sources.

Few deaths may occur from chance vessel collisions, ingestion of plastic material, commercial fishing, and pathogens. Deaths as a result of structure removals are not expected to occur due to protocols that the operator must adhere to during operations. Disturbance (noise from vessel traffic and drilling operations, etc.) and/or exposure to sublethal levels of toxins and anthropogenic

contaminants may stress animals, weaken their immune systems, and make them more vulnerable to parasites and diseases that normally would not be fatal. The net result of any disturbance will depend upon the size and percentage of the population likely to be affected, the ecological importance of the disturbed area, the environmental and biological parameters that influence an animal's sensitivity to disturbance and stress, or the accommodation time in response to prolonged disturbance (Geraci and St. Aubin, 1980). Natural phenomena such as tropical storms and hurricanes do occur in the region, though impacts remain difficult to quantify.

Incremental effects from the proposed action on marine mammals are expected to be **nominal** for vessel noise and marine trash and debris and **nominal** to **minor** for active acoustic sound sources. Incremental effects from the proposed action on marine mammals are expected to be **nominal** to **moderate** for vessel strike, though not rise to the level of significance because of the limited scope, duration, and geographic area of the proposed action, the wide-ranging movements of marine mammals in the Gulf, and the required 2025 NMFS BiOp protocols.

Conclusion

The effects of the proposed action, when viewed in light of the effects associated with other relevant activities, may impact marine mammals. With the implementation of the required protocols for active acoustic sound sources and vessel operations under Alternative 3, as well as the limited scope, timing, and geographic location of the proposed action, and considering the wide range of marine mammals in the Gulf, effects from the proposed survey activities on marine mammals will be **nominal** for vessel noise and marine trash and debris, **nominal** to **minor** active acoustic sound sources, and **nominal** to **moderate** for vessel strike. For animals that may be continuing to experience stress/sublethal impacts from natural or anthropogenic stressors, the protocols should act to further reduce impacts and provide an abundance of precaution.

3.3. SEA TURTLES

3.3.1. Description

The life history, population dynamics, status, distribution, behavior, and habitat use of sea turtles can be found in the relevant NEPA compliance documents and are incorporated by reference into this SEA. Of the extant species of sea turtles, five are known to inhabit the waters of the region (Pritchard, 1997): the leatherback (*Dermochelys coriacea*), green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), Kemp's ridley (*Lepidochelys kempii*), and loggerhead (*Caretta caretta*). These five species are all highly migratory, and individual animals will migrate into nearshore waters as well as other areas of the North Atlantic Ocean, Gulf, and Caribbean Sea. Garrison et al. (2020) found that spatial and seasonal variation in loggerheads in the northern Gulf represents the shift in habitats and behavioral modes across seasons, with animals moving into deeper waters and spending progressively less time at the surface during cooler months. Further, Lamont and Hart (2023) found that time at the surface was greater for loggerhead, Kemp's ridley, and green turtles in summer, though did not differ between BOEM's Eastern Planning Area (EPA) and CPA, except for Kemp's ridleys, which spent more time at the surface in the Western Planning Area (WPA) than the EPA.

All five species of sea turtles found in the Gulf have been federally listed as endangered or threatened since the 1970s. The North Atlantic Distinct Population Segment (DPS) of green turtles is ESA-listed as threatened. Hawksbill turtles, Kemp's ridley turtles, leatherback turtles, and the Northwest Atlantic Ocean DPS of loggerhead turtles is ESA-listed as endangered. Floating *Sargassum* patches are federally designated under the ESA as critical habitat for loggerhead turtles (NMFS, 2014) and proposed for green turtles (NMFS, 2023b).

Sea Turtle Hearing

There is limited data available on sea turtle hearing abilities. While the general importance of sound to sea turtles is not well understood, there is a growing body of knowledge suggesting that sea turtles use sound in a multitude of ways. Sea turtles may use sound for navigation, locating prey or preferred habitat, predator avoidance, and environmental awareness (Piniak et al., 2016). There are few studies reporting sound production in sea turtles, despite their ability to hear sounds

in both air and water. In general, sea turtles in water hear best at levels between 100 to 750 Hz, do not hear well above 1 kHz, and are generally less sensitive to sound than marine mammals (Papale et al., 2020; Reese et al., 2023).

3.3.2. Impact Analysis

The diversity of a sea turtle's life history leaves it susceptible to many natural and human impacts, including impacts while it is on land, in the benthic environment, and in the pelagic environment. The IPFs associated with the proposed action that could affect sea turtles include (1) active acoustic sound sources, (2) vessel noise, (3) vessel traffic, and (4) marine trash and debris. The GOM G&G PEIS contains a discussion of the potential impacts from survey operations on sea turtles (BOEM, 2017a). Additional information about routine impacts from oil and gas activity on sea turtles is addressed in the relevant NEPA compliance documents. The discussions are summarized below and are incorporated by reference into this SEA.

3.3.2.1. Alternative 1

If Alternative 1, the No Action Alternative, is selected the applicant would not undertake the proposed activities; therefore, the IPFs to sea turtles would not occur. For example, there would be no vessel, HRG, or seismic airgun noise that would result in behavioral change, masking, or non-auditory effects to sea turtles, no long-term or permanent displacement of the animals from preferred habitats, and no destruction or adverse modification of any habitats. Since there would be no vessel traffic related to the towing of the HRG equipment or an airgun array, there would be no risk of collisions with sea turtles.

3.3.2.2. Alternative 2

If Alternative 2, the Proposed Action as Submitted, is selected the applicant would undertake the proposed activities as requested and conditioned in the application. Examples of potential impacts to sea turtles without implementation of the protocols include, but are not limited to, marine trash and debris impacts, hearing impacts from active acoustic sound sources, injury from vessel traffic, and disruption of feeding and other behaviors from vessel presence. This Alternative would not adequately limit or negate potential impacts to sea turtles.

3.3.2.3. Alternative 3

If Alternative 3, the Proposed Action with COAs, is selected the applicant would undertake the proposed activities as requested and conditioned in the application; however, the applicant would be required to undertake protocols identified by BOEM and in accordance with the 2025 NMFS BiOp consultation requirements. For the reasons set forth below, inclusion of these protocols under Alternative 3 limits or negates potential impacts to sea turtles.

Potential Impacts to Sea Turtles from Active Acoustic Sound Sources

Noise associated with G&G activities may result in behavioral effects (e.g., changes in direction or swimming speed) or auditory masking in sea turtles. The most likely impacts on sea turtles are expected to be short-term behavioral responses.

Several electromechanical sound sources, including a 400-kHz side-scan sonar and a 200-kHz CHIRP subbottom profiler, would operate within a frequency range that is inaudible to sea turtles (BOEM, 2017a). HRG surveys are conducted by moving vessels so any noise exposure to sea turtles would be temporary. Many HRG sources operate at frequencies above the sea turtle hearing range and thus are not expected to affect them. In addition to frequency range, other characteristics of the sources like the source level, duty cycle, and beamwidth make it very unlikely that these sources would result in behavioral disturbance of sea turtles, even without mitigation (Ruppel et al., 2022). Considering the intensity of noise generated by this equipment (Crocker and Fratantonio, 2016) and the short duration of proposed surveys, HRG activities are unlikely to result in TTS or PTS for any turtle species. Although temporary displacement or behavioral responses may occur, these disruptions would be limited in extent, and short term in duration given the movement of the survey vessel and the mobility of the animals. Therefore, they would not result in biologically notable consequences. Tier 4 HRG equipment (per 2025 NMFS

BiOp Operational National Mitigation Protocols for Geophysical Surveys) operates under conditions considered *de minimis* and is expected to have a discountable effect. Potential impacts on sea turtles would have no population-level effects. Boomers, sparkers, and bubble guns (Tier 3 under the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys) are expected to have minimal effects with regularly applied ESA protocols. Further, operators are required to shutdown sound source(s) if applicable when sea turtles are sighted within the vicinity of activities. The effects to sea turtles from HRG noise are therefore expected to be **nominal**.

Studies have demonstrated avoidance behavior of sea turtles to seismic surveys (O'Hara and Wilcox, 1990; Lenhardt, 1994; McCauley et al., 2000a; Piniak, 2012). Sea turtles may alter their behaviors when a seismic vessel approaches, and thereby suspend feeding, resting, or interacting with conspecifics. Such disruptions are expected to be temporary, however, and are not expected to impact the overall survival and reproduction of individual turtles. Seismic operations have the potential to permanently injure sea turtles in close proximity to active airgun arrays (Popper et al., 2014). Subadult and adult turtles may be more likely to be affected by seismic airgun noise than post-hatchling turtles because of the time that they remain submerged and at depth. Post-hatchling turtles generally reside at or near the sea surface and may be less likely to be injured by the sound field produced by an airgun array projecting directionally downward. Sea turtles have been observed to dive immediately following airgun shots, suggesting an avoidance response. Few data are recorded about the potential direct physical injury to turtles from seismic surveys (Nelms et al., 2016).

Airguns are categorized as Tier 1 or 2 (per the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys) depending on total volume. Tier 1 sound sources are high energy surveys that would likely require mitigation and monitoring. Tier 2 sound sources are low to intermediate energy sources. Tier 2 sources are expected to have significantly fewer effects than Tier 1 sources. BOEM applies the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys to mitigate effects of noises less than 180 kHz and requires PSOs. The application of protocols requiring vessels to maintain distances from sea turtles when applicable or mandatory pause of airgun sources would prevent or reduce the potential for impacts. Therefore, potential impacts to sea turtles from seismic surveys are unlikely if sufficiently distanced from the sound source. Given the scope, timing, and transitory nature of the proposed action; the wide-ranging movements of sea turtles in the Gulf; the implementation of Operational National Mitigation Protocols for Geophysical Surveys; and that the best available information indicates that sea turtles do not appear to use environmental sound heavily to meet daily needs for survival, the effects to sea turtles from seismic noise are expected to be **nominal** to **minor**.

Potential Impacts to Sea Turtles from Vessel Noise

The dominant source of noise from vessels is propeller operation, and the intensity of this noise is largely related to ship size and speed. Seismic operations with towed gear generally are conducted at relatively slow speeds of 4 to 6 knots, with a maximum speed of less than 8 knots. Vessel noise from the proposed action would produce low levels of noise, generally in the 150 to 170 dB re 1 µPa-m at frequencies below 1,000 Hz. Vessel and equipment noises are transitory and generally do not propagate at great distances from the vessel. There is no information regarding the long-term consequences that vessel noise may have on sea turtles. Hazel et al. (2007) demonstrated that sea turtles appear to respond behaviorally only to vessels at approximately 33 ft (10 m) or closer. Noise from service vessel activity may elicit a startle response from sea turtles, and there is the possibility of short-term disruption of activity patterns and temporary sublethal stress (National Research Council, 1990). It is conservative to assume that noise associated with survey vessels may elicit behavioral changes, such as evasive maneuvers, in individual sea turtles. The most likely effects of vessel noise on sea turtles could include short-term behavioral changes and possibly auditory masking. Based on the best available information, vessel noise is not expected to significantly disrupt normal behavior patterns in sea turtles that include, but are not limited to, breeding, feeding, or sheltering. Further, vessel noise generated by the proposed action will be localized and short term. It is not expected that vessel noise will have any detectable effect on biologically important behaviors of sea turtles. The effects to sea turtles from vessel noise are therefore expected to be **nominal**.

Potential Impacts to Sea Turtles from Vessel Traffic

Sea turtles are vulnerable to vessel strikes due to the time they spend at the ocean surface. Limited data are available concerning potential sea turtle impacts from vessel strikes due to a lack of studies and the challenges with detecting such impacts (Nelms et al., 2016). Nonetheless, strikes from all types of vessels are known to result in sea turtle injury and mortality in the Gulf (Lutcavage et al., 1997; Work et al., 2010; Nelms et al., 2016). If a sea turtle is struck by a vessel, no apparent injury, minor non-lethal injury, serious injury, or mortality can occur with the associated effects varying based on the size and speed of the vessel. Seismic operations with towed gear generally are conducted at relatively slow speeds of 4 to 6 knots, with a maximum speed of less than 8 knots.

To prevent or minimize the potential for vessel strikes, BOEM requires operators to implement the Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols, which contains vessel strike avoidance measures for sea turtles and other protected species. As per the required reporting under the 2025 NMFS BiOp Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols, BOEM requires that any operator immediately report the striking of any animal. To date, there have been no reported strikes of sea turtles by G&G survey vessels; however, collisions with small or submerged sea turtles may go undetected. Given the scope, timing, and transitory nature of the proposed action, the wide-ranging movements of sea turtles in the Gulf, and adherence to the protocols, effects to sea turtles from vessel strikes are expected to be **nominal** to **minor**.

Potential Impacts to Sea Turtles from Marine Trash and Debris

Marine debris affects sea turtles primarily through entanglement and/or ingestion (e.g., choking or intestinal blockage) (Gall and Thompson, 2015). Entanglement in marine debris could lead to injury, infection, reduced mobility, increased susceptibility to predation, decreased feeding ability, fitness consequences, and/or mortality (e.g., drowning) of sea turtles (Gall and Thompson, 2015). Marine debris ingestion could lead to intestinal blockage, which can impact feeding ability and lead to injury or death (Senko et al., 2020). The discharge of marine debris by the offshore oil and gas industry and supporting activities is subject to several laws and treaties. By selecting Alternative 3, the operator is required to follow the 2025 NMFS BiOp Marine Debris Protocol, which is designed to prevent or minimize accidental marine debris. With this protocol in place, the impacts to sea turtles are determined to be **nominal**.

Conclusion

The sections above discuss sea turtle hearing in general and the potential range of effects to sea turtles from the proposed action, including (1) active acoustic sound sources, (2) vessel noise, (3) vessel traffic, and (4) marine trash and debris.

Effects of HRG survey or seismic noise on sea turtles will not rise to the level of significance for the following reasons:

- The best available scientific information indicates that sea turtles do not greatly use sound in the environment for survival; therefore, disruptions in environmental sound would have little effect.
- BOEM requires compliance with the 2025 NMFS BiOp Operational National Mitigation Protocols for Geophysical Surveys. The protocols are expected to minimize duration of exposure to sounds above threshold.
- The scope, timing, and transitory nature of the proposed action will produce limited amounts of electromechanical noise in the environment.

Effects of vessel noise on sea turtles are considered discountable. The risk of impacts from marine trash and debris would not rise to the level of significance given that BOEM requires compliance with the Marine Debris Protocol. The risk of collisions between sea turtles and vessels associated with the proposed action exists but would not rise to the level of significance given:

- BOEM requires compliance with the Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols, which provide guidelines on monitoring programs to prevent or minimize the risk of vessel strikes to sea turtles and other protected species and the reporting of any observations of injured or dead protected species.
- The scope, timing, and transitory nature of the proposed action, and wide-ranging movements of sea turtles in the Gulf, will result in limited opportunity for vessel strikes on sea turtles.

3.3.3. Cumulative Impact Analysis

The relevant NEPA compliance documents address the cumulative impacts on sea turtles as a result of oil and gas leasing, exploration, development and production activities, including G&G activities. The information from these documents is incorporated by reference in this SEA.

Activities considered under the cumulative scenario which include the oil and gas program and other anthropogenic and natural activities, including the proposed action, may affect protected sea turtles or critical habitat. Sea turtles may be impacted by the degradation of water quality resulting from operational discharges, vessel traffic, noise generated by platforms, drilling rigs, helicopters and vessels, G&G surveys, explosive structure removals, oil spills, oil-spill-response activities, loss of debris from service vessels and OCS structures, commercial fishing, capture and removal, and pathogens. The cumulative impact of these ongoing OCS activities on sea turtles is expected to result in a number of chronic and sporadic sublethal effects (i.e., behavioral effects and nonfatal exposure to or intake of OCS-related contaminants or discarded debris) that may stress and/or weaken individuals of a local group or population and that may predispose them to infection from natural or anthropogenic sources. Through a systematic review, policy comparison, and stakeholder analysis, Nelms et al. (2016) found that potential impacts of seismic surveys on sea turtles vary (i.e., hearing damage, entanglement, and critical habitat exclusion) and can be obscure due to the lack of research. Thus, understanding the impacts on individuals and populations can be challenging, and additional research is needed (Nelms et al., 2016).

Few deaths may occur from chance collisions with vessels, ingestion of plastic material, commercial fishing, and pathogens. Disturbance (noise from vessel traffic and equipment) and/or exposure to sublethal levels of toxins and anthropogenic contaminants may stress animals, weaken their immune systems, and make them more vulnerable to parasites and diseases that normally would not be fatal. The net result of any disturbance depends upon the size and percentage of the population likely to be affected, the ecological importance of the disturbed area, the environmental and biological parameters that influence an animal's sensitivity to disturbance and stress, or the accommodation time in response to prolonged disturbance (Geraci and St. Aubin, 1980).

Natural disturbances such as hurricanes can cause significant destruction of nests and topography of nesting beaches (Pritchard, 1980; Ross and Barwani, 1982; Witherington, 1986). Tropical storms and hurricanes are a normal occurrence in the Gulf and along the Gulf Coast. Some impacts of the hurricanes, such as loss of beach habitat, continue to impact sea turtles that would have otherwise used those areas as nesting beaches. Increases or decreases in beach armoring and other structures may impact all nesting sea turtles in the areas affected. Hurricanes and tropical activity may temporarily remove some of these barriers to suitable nesting habitat.

Incremental effects from the proposed action on sea turtles are expected to be **nominal** for HRG sound sources, vessel noise, and marine trash and debris. Incremental effects from the proposed action on sea turtles are expected to be **nominal** to **minor** for seismic sound sources and vessel strikes, though not rise to the level of significance because of the limited scope, duration, and geographic area of the proposed action, wide-ranging movements of sea turtles in the Gulf, and the requirements under the 2025 NMFS BiOp.

Conclusion

The effects of the proposed action, when viewed in light of the effects associated with other relevant activities, may affect sea turtles occurring in the region. With the implementation of the required protocols for HRG and seismic surveys and vessel operations, wide range of sea turtles

in the Gulf, and the scope of the proposed action, incremental effects from the proposed survey activities on sea turtles will be **nominal** for HRG sound sources, vessel noise, and marine trash and debris and **nominal** to **minor** for seismic sound sources and vessel strikes.

3.4. FISH RESOURCES AND ESSENTIAL FISH HABITAT

3.4.1. Description

The life history, population dynamics, status, distribution, behavior, habitat use of fish, and essential fish habitat can be found in the relevant NEPA compliance documents and are incorporated by reference into this SEA.

Threatened or Endangered Species

Three fish species and one elasmobranch species found in the region are protected under the ESA: Gulf sturgeon, smalltooth sawfish, and giant manta ray and the ocean whitetip shark. The Gulf sturgeon (*Acipenser oxyrinchus*) was listed as threatened, effective October 30, 1991, under the ESA in the Federal Register (FR) at 56 FR 49653. The smalltooth sawfish DPS (*Pristis pectinata)* was listed as endangered, effective May 1, 2003, under the ESA at 68 FR 15674. The giant manta ray (*Manta birostris*) was listed as threatened, effective February 21, 2018, under the ESA at 83 FR 2916. The oceanic whitetip shark (*Carcharhinus longimanus*) was listed as threatened, effective March 1, 2018, under the ESA at 83 FR 4153. A detailed description of the Gulf sturgeon and critical habitat, smalltooth sawfish, giant manta ray, and oceanic white tip shark may be found in the 2025 NMFS BiOp.

Gulf sturgeon are predominantly distributed in the nearshore waters of the northeastern Gulf, from Lake Pontchartrain in Louisiana to the Suwannee River in Florida. Currently, the smalltooth sawfish is predominantly distributed in the nearshore waters of south Florida (FWS and Gulf States Marine Fisheries Commission, 1995; NMFS, 2009). The essential fish habitat (EFH) for the oceanic whitetip shark in the project area includes localized areas in the central Gulf and Florida Keys. Although no EFH or critical habitat has been designated, the giant manta rays are widespread in the region. Giant manta rays occupy tropical, subtropical, and temperate oceanic waters and productive coastlines and are commonly found offshore in oceanic waters but are sometimes found feeding in shallow waters (less than 10 m) during the day (Miller and Klimovich, 2016).

Non-ESA-Listed Species

Approximately 1,540 species of fishes are recorded in the Gulf and Florida Keys (McEachran, 2009). NOAA, working with the South Atlantic and Gulf of Mexico Fishery Management Councils, manage 71 and 40 fish and crustacean species, respectively, within the Federal waters of the Gulf. Distinctive fish assemblages are recognized within broad habitat classes including demersal (soft bottom and hard bottom), coastal pelagic, and oceanic pelagic (epipelagic and midwater) species. Fish are also classified by their movement patterns. Billfishes (marlins and sailfish), swordfish, tuna, and many shark species are considered highly migratory, as they are widely distributed geographically and occur from coastal waters seaward into the open ocean. Highly migratory species move vertically in the water column to feed, usually on a daily basis, and move great geographic distances for feeding or reproduction (NMFS, 2006). An example is the Atlantic bluefin tuna, which are known to use the region in the spring for spawning grounds (Teo et al., 2007a and 2007b; Teo and Block, 2010).

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MFCMA), as amended in 1996 by the Sustainable Fisheries Act, mandates that the regional Fishery Management Councils, through Fishery Management Plans, describe and identify EFH for each federally managed species, minimize adverse effects on such habitat caused by fishing, and identify other actions that encourage the conservation and enhancement of such habitats. Almost the entire Gulf is within a designated EFH. Further, the regional Fishery Management Council amended their plans (referred to as Generic Amendment Number 3, 2005) to more specifically designate that habitats less than 100 fathoms (600 ft) are identified and described as EFH.

Fish Hearing

All fish species have hearing and skin-based mechanosensory systems (inner ear and lateral line) used to detect sound in their environment (Fay and Popper, 2000; Popper, 2003). These sounds may be produced by other fish, other organisms (e.g., snapping shrimp, marine mammals), or other naturally occurring sounds such as waves breaking on the shore, rain on the water surface, etc. Many Gulf fish species are known to actively use sound to mediate specific behaviors (e.g., spawning). Anthropogenic (human-generated) sounds may affect fishes through auditory masking, behavioral modification, temporary hearing loss, or physiological injury. Masking of important environmental sounds or social signals could potentially reduce foraging success, increase predation, or disrupt reproduction. Studies suggest responses to anthropogenic sound can vary, even among members of a species. However, startle responses generally include avoidance behaviors away from adverse conditions. Responses may also vary with duration and frequency of exposure to a given signal. Fishes in close proximity to intense sound sources may experience temporarily reduced hearing sensitivity or TTS. These effects depend upon the type of sound, duration of sound, distance of sound, and fish species (Popper and Hastings, 2009). Injury to fishes as a result of rapid changes in pressure (barotrauma) may occur in close proximity to an intense sound source.

Hearing mechanisms in fishes have been studied extensively (Fay and Popper, 2000; Ladich and Popper, 2004; Webb et al., 2008), but the specific capabilities of species and the received-sound levels where potentially adverse impacts may occur are not well known. Furthermore, Popper and Fay (2011) suggest the broad designation of fishes as “hearing specialists” and “hearing generalists” is not sufficient to classify the hearing abilities of fishes. They recommend that the range of hearing capabilities across species is more like a continuum that includes the relative contributions of hydrostatic pressure to the overall hearing capabilities of a species. Although studies have investigated physiological impacts (McCauley et al., 2000b; McCauley et al., 2003) and behavioral response (Skalski et al., 1992; Engås et al., 1996; Slotte et al., 2004; Løkkeborg et al., 2012; Fewtrell and McCauley, 2012) in several species, results are generally inconclusive and cannot be applied at the population level (National Science Foundation, 2011). However, information gaps are widely recognized (Hawkins et al., 2014; Popper et al., 2014) and broad guidance has been developed to minimize potential impacts to fishes and sea turtles resulting from anthropogenic sound exposure. The sections below provide a synopsis of the available information relevant to the effects on fish from exposure to seismic and other anthropogenic sound.

3.4.2. Impact Analysis

Distinctive fish assemblages can be found within a broad range of habitats in continental shelf and oceanic waters. The IPFs associated with the proposed action that could affect fish include (1) active acoustic sound sources, (2) vessel noise, and (3) vessel traffic. The GOM G&G PEIS contains a discussion of the potential impacts from survey operations on fish resources. Additional information about routine impacts from oil and gas activity on fish is addressed in the relevant NEPA compliance documents. The discussions are summarized below and are incorporated by reference into this SEA.

3.4.2.1. Alternative 1

If Alternative 1, the No Action Alternative, is selected the applicant would not undertake the proposed activities; therefore, the IPFs to fish would not occur. For example, there would be no HRG survey or seismic airgun noise that would result in behavioral change, masking, or non-auditory effects to the animals, no long-term or permanent displacement of the animals from preferred habitats, and no destruction or adverse modification of any habitats.

3.4.2.2. Alternative 2

If Alternative 2, the Proposed Action as Submitted, is selected the applicant would undertake the proposed activities as requested and conditioned in the application. As described in the analyses below, impacts to fish from the proposed action (e.g., hearing loss or behavioral disruption from HRG survey or seismic noise), are expected to be short-term, localized and not lead to significant

impacts. Although the COAs and monitoring measures outlined in **Chapter 2.4** and discussed in the marine mammal and sea turtle sections are requisite for permit approval, their implementation will not increase or decrease the potential for effects to fish from the proposed action.

3.4.2.3. Alternative 3

If Alternative 3, the Proposed Action with COAs, is selected the applicant would undertake the proposed activities as requested and conditioned in the application; however, the applicant would be required to undertake COAs and monitoring measures as identified by BOEM and in compliance with the 2025 NMFS BiOp consultation requirements. As described in the analyses below, impacts to fish from the proposed action (e.g., hearing loss or behavioral disruption from HRG survey or seismic noise), are expected to be short-term, localized and not lead to significant impacts. Although the COAs and monitoring measures outlined in **Chapter 2.4** would be included, their implementation would not increase or decrease the potential for effects to fish from the proposed action.

Potential Impacts to Fish from Active Acoustic Sound Sources

Fish ears respond to changes in pressure and particle motions (van Bergeijk, 1967; Schuijf, 1981; Kalmijn, 1988 and 1989; Schellert and Popper, 1992; Hawkins, 1993; Fay, 2005). Fish exposed to natural or manmade sound may experience physical and behavioral effects, ranging in magnitude from negligible to severe.

Noise produced by HRG survey activities are beyond most fishes' hearing ranges and are therefore not expected to impact fish or EFH. Any minor behavioral changes (e.g., moving away from a sound source) would affect a very small number of fish, including protected species, and is not expected to interrupt the ability of an individual to forage, rest, or migrate, or ultimately impact an animal's fitness. Electromechanical sources utilized in the proposed HRG survey are not expected to impact hearing loss, behavioral response, masking, or non-auditory effects for fish resources (BOEM, 2017a). Therefore, the impacts to fish from HRG sound sources are expected to be **nominal**.

The four areas of primary concern for fish exposed to elevated noise levels from seismic sound sources include (1) hearing loss, (2) behavioral response, (3) masking, and (4) non-auditory effects.

Hearing Loss

To result in hearing loss, a sound must exceed the specific hearing threshold of that fish for a certain period of time (Popper, 2005). The consequences of temporary or permanent hearing loss in individual fish or a fish population is largely unknown. However, it likely depends upon the number of individuals affected and whether critical behaviors involving sound (e.g., predator avoidance, prey capture, orientation and navigation, and reproduction) are adversely affected.

McCauley et al. (2003) found that caged pink snapper exposed to airgun sounds (600 pulses with peak-to-peak source levels of approximately 223 dB re 1 µPa) experienced observable anatomical damage to the auditory structures and that this damage did not repair 58 days after exposure. The damage as quantified by missing hair cells was relatively low, but the potential for impaired function in the remaining cells and the wider implications of potentially reduced fitness were not tested. Popper et al. (2005) documented TTS of northern pike and lake chub in the Mackenzie River Delta but found that broad whitefish receiving a source level of 177 dB re 1 μPa^2 s showed no TTS. In both cases, the repetitive exposure to sound was greater than is expected in a typical seismic survey. Fishes involved in the study by Popper et al. (2005) were examined for damage to the sensory cells of the inner ear as a result of exposure to seismic sound, and no damage was observed (Song et al., 2008).

Behavioral Response

Behavioral effects from seismic noise on fishes can include changes in distribution, migration, mating, and ability to be caught. In general, any adverse effects on fish behavior or fisheries due to seismic surveys may depend on the species in question and the nature of the fishery (i.e., season, duration, and fishing method). Responses may also depend on the age of the fish,

motivational state, size, and numerous unknown factors that are difficult, if not impossible, to quantify. Studies investigating the effects of sound (including seismic survey sound) on fish behavior were conducted on both uncaged and caged individuals (Chapman and Hawkins, 1969; Pearson et al., 1992; Santulli et al., 1999; Wardle et al., 2001; Hassel et al., 2003; Boeger et al., 2006) noted that fish typically exhibited a sharp "startle" response at the onset of a sound, followed by a return to normal behavior after the sound ceased. Investigation by Jorgenson and Gyselman (2009) indicated that behavioral characteristics of Arctic riverine fishes were generally unchanged by exposure to airgun sound.

Disturbance to fish population structures and distributions could result in reduced catch. An example would be temporary displacement of fish from traditional fishing grounds. Hirsh and Rodhouse (2000) reviewed studies investigating the hypothesis that seismic survey sounds have a deleterious effect on (usually commercial) fishing success. In most cases, these studies (e.g., Skalski et al., 1992; Engås et al., 1996) found that fishing catch of one or more target species declined with the onset of seismic survey operations and remained depressed throughout this activity and for days after. These effects, as reviewed in Boertmann et al. (2010), depend on species, fishing gear, and other environmental parameters. Further, reduced catch rates have been reported in some marine fisheries during seismic surveys; in several cases the findings are confounded by other sources of disturbance (Dalen and Raknes, 1985; Dalen and Knutsen, 1986; Løkkeborg, 1991; Skalski et al., 1992; Engås et al., 1996). No change was determined in catch-per-unit-effort of fish when airgun pulses were emitted, particularly in the immediate vicinity of the seismic survey (Pickett et al., 1994; La Bella et al., 1996; Wardle et al., 2001). For certain species, reductions in catch may have resulted from a change in behavior of the fish, such as a change in vertical or horizontal distribution (Slotte et al., 2004) and simply coincided with the seismic work.

Masking

Masking is defined as the effect of an acoustic source interfering with the reception and detection of an acoustic signal or other sound of biological importance to a receiver. Any sound within an animal's hearing range can mask relevant sounds. Theoretically, the airguns or airgun arrays and vessel sound could contribute minimally to localized, short-term, and transitory masking of sound detection by some marine fishes, at least those species whose sound detection capacities are in the frequency range of the seismic survey sound source(s). However, there have been no documented studies concluding that seismic surveys resulted in the masking of any biologically relevant sounds for any fish species. This is most likely due to the roving nature of the G&G surveys or the limited exposure area where survey-related energy can be found. For example, some surveying technologies (e.g., vibroseis) may have operational frequencies or cycles that present an increased potential for locally masking biologically relevant sounds. For a discussion of the biological relevance of ambient and signal sounds to fish, see Fay and Popper (2000).

Non-Auditory Effects

Existing research suggests there is a potential for non-auditory injury or mortality of fish in the immediate vicinity of a high-energy acoustic source. Airguns and airgun arrays may potentially injure or kill fishes within several meters at the time of discharge (Kostyvchenko, 1973; Dalen and Knutsen, 1986; Booman et al., 1996; Dalen et al., 1996). The potential for injury is greater among fishes with trapped gas pockets or swim bladders that expand and contract with the ambient pressure changes. There are few studies that specifically investigate the effects of airgun sound on fish larvae and eggs, but existing research suggests these life stages are no more vulnerable to intense sound than adult fishes. Other studies document no egg, larvae, or fish mortality resulting from exposure to seismic sources (Falk and Lawrence, 1973; Holliday et al., 1987; La Bella et al., 1996; Santulli et al., 1999; McCauley et al., 2000a and 2000b; Thomsen, 2002; Hassel et al., 2003; McCauley et al., 2003; Popper, 2005; Payne et al., 2009).

Physiological effects may also include cellular and/or biochemical responses by fish to acoustic stress. Such stress potentially affects fish by increasing mortality or reducing reproductive success. However, primary and secondary stress responses of fish after exposure to seismic survey sound appear temporary (Sverdrup et al., 1994; McCauley et al., 2000a and 2000b). The

periods necessary for these biochemical changes to return to normal are variable and depend on numerous aspects of the biology of the species and of the sound stimulus. The effects to fish from seismic sound sources are expected to be **nominal**.

Potential Impacts to Fish from Vessel Noise

Within the area of the proposed action, the Gulf sturgeon may be exposed to vessel noise when support vessels transit across their habitat. While the Gulf sturgeon may be able to detect passing vessels, they are not expected to be affected by the sound. Therefore, the effects to fish from vessel noise are expected to be **nominal**.

Potential Impacts to Fish from Vessel Traffic

In the last five-year NMFS species review, vessel strikes were identified as an emerging threat for Gulf sturgeon. The operator is required to adhere to the 2025 NMFS BiOp Vessel Strike Avoidance and Injured and/or Dead Aquatic Protected Species Reporting Protocols. Compliance with the regulations as clarified in the 2025 NMFS BiOp should reduce or avoid impacts from vessel strikes under this alternative. With this protocol in place, the impacts to the Gulf sturgeon and other fish species are expected to be **nominal.**

Conclusion

Noise from HRG survey activities action is beyond most fishes' hearing range and is not expected to impact fish or EFH. In addition, the use of HRG sound sources would be from a moving vessel and would be temporary and spatially limited. Noise from seismic survey activities could potentially result in acute injury and mortality of a minimal number of individuals of some species of fish, their larvae, and/or eggs when in very close proximity to a high-energy acoustic source. The seismic survey activities may result in short-term, localized behavioral reactions. Highly migratory species like the bluefin tuna are found in the proposed action area at certain times of the year. However, given the small area and timeframe exposed to seismic noise under the proposed action, the transience of the moving seismic source relative to the region, and the small number of fish potentially within this localized area, the chance of non-auditory injury or mortality would be limited to an insignificant number of individuals. Seismic effects on such a small number of individuals would be insignificant at the population scale and considerably smaller than the natural mortality rate. Therefore, based on the limited best available science, seismic surveys are not expected to result in significant auditory or non-auditory injury or mortality on marine fish at the population scale. While the frequency range of some G&G survey equipment (e.g., airguns) overlaps with the likely hearing range of the ESA-listed fish species, these species are not routinely found beyond State waters. Therefore, impacts to fish resources from the proposed activity would be **nominal**.

3.4.3. Cumulative Impact Analysis

Cumulative impacts on fish and EFH that result from oil and gas leasing, exploration, development, and production activity including G&G activities are discussed in the relevant NEPA compliance documents. The information from these documents is incorporated by reference in this SEA.

Activities considered under the cumulative scenario include the OCS oil and gas program and other anthropogenic and natural activities, including the proposed action, which may affect fish and fisheries. Degradation of water quality from multiple human activities as described in the relevant NEPA compliance documents will continually affect fish and fisheries species. The cumulative impact of these ongoing OCS activities on fish and fisheries is expected to result in a number of chronic and sporadic lethal and sublethal (behavioral effects and nonfatal exposure to or intake of OCS-related contaminants or discarded debris) effects that may stress and/or weaken individuals of a local group or population and predispose them to infection from natural or anthropogenic sources. Non-anthropogenic sources such as red tides and tropical storms may add to the cumulative impacts on fish resources in the northern Gulf. The proposed action is a short-term event in a portion of the region; therefore, the effects from the proposed action will be slight in relation to these ongoing impacts.

The net result of any disturbance depends upon the size and percentage of the population likely to be affected, the ecological importance of the disturbed area, the environmental and biological parameters that influence an animal's sensitivity to disturbance and stress, and the accommodation time in response to prolonged stress.

Conclusion

The effects of the proposed action, when viewed in light of the effects associated with other relevant activities, may impact fish and fisheries. However, given the scope of the proposed action, incremental effects from the proposed active acoustic sound survey activities on fish and fisheries will be **nominal**.

3.5. OTHER CONSIDERATIONS

A discussion of the other resources considered but not analyzed under this SEA is found in the relevant NEPA compliance documents.

4. CONSULTATION AND COORDINATION

The information in this SEA was developed by BOEM subject matter experts and in consultation with other Federal agencies, the private sector, and academia personnel and is found in relevant NEPA compliance documents.

The ESA establishes a national policy designed to protect and conserve threatened and endangered species and the ecosystems upon which they depend. Section 7(a)(2) of the ESA requires each Federal agency to ensure that any action that they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the adverse modification of designated critical habitat. BOEM and BSEE engaged in consultation under the ESA with NMFS and the FWS.

On April 20, 2018, the FWS issued a 10-year Biological Opinion (2018 FWS BO) for BOEM and BSEE activities on the OCS, including lease sales and approvals of all "on the water" activities during this time. The 2018 FWS BO does not include any terms and conditions for the protection of endangered species that BOEM, BSEE, the lessees, or operators must implement. The FWS also noted that any future consultations may be informal, dependent upon the likelihood of take of ESA-listed species under that Service's jurisdiction (FWS, 2018). On March 6, 2024, BOEM and BSEE requested reinitiation of consultation with FWS regarding updated oil-spill risk analyses, new listings, and general species information. FWS requested additional information from BOEM and BSEE in a letter dated December 20, 2024; the bureaus responded on February 5, 2025. On March 28, 2025, the FWS sent BOEM a letter with its evaluation of the new information and data, and its determination that nothing considered during the reinitiated consultation changed the conclusions of the 2018 FWS BO and that no further ESA consultation with the Service for the proposed action is necessary. The 2018 FWS BO remains in effect and any future BO amendments or associated COAs will be binding on subsequent post-lease actions.

On May 20, 2025, the NMFS published their Biological and Conference Opinion on Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement's Oil and Gas Program Activities in the Gulf of America and associated Attachments and Appendices (NMFS, 2025), which contain protocols BOEM applies for ESA compliance. The relevant terms and conditions and reasonable and prudent measures, as well as the provisions of the 2020 NMFS BiOp that are a part of the proposed action in the 2025 NMFS BiOp, and other protocols identified in the 2025 NMFS BiOp Attachments and Appendices are made a binding part of the lease in the "Protected Species" Stipulation. In addition, any future BiOp amendments or COAs will be binding on subsequent post-lease actions.

BOEM petitioned NMFS for rulemaking under the MMPA (16 U.S.C. §§ 1361 et seq.) relating to G&G surveys on the OCS in the Gulf. On January 19, 2021, NMFS published in the Federal Register a final ITR, which became effective on April 19, 2021 (NMFS, 2021). A draft revision to this regulation that corrects some calculation errors and therefore adjusts taking allowable under the regulations was published on January 5, 2023 (NMFS, 2023a). On April 24, 2024, NMFS

published in the Federal Register its final rule, “Taking and Importing Marine Mammals: Taking Marine Mammals Incidental to Geophysical Surveys in the Gulf of Mexico” (NMFS, 2024a). The rule is effective from May 24, 2024, through April 19, 2026. There are no changes to the specified activities or the specified geographical region in which those activities would be conducted, nor to the original 5-year period of effectiveness. A new request for MMPA authorization was prepared and submitted by industry in March 2025. On September 3, 2025, NOAA Fisheries announced the receipt of a request from the NOAA Fisheries Office of Policy for the reimplementation of ITRs governing the incidental taking of marine mammals during geophysical surveys conducted on the OCS and invited the public to provide information, suggestions, and comments on the request (NMFS, 2025c).

BOEM completed consultation with NOAA’s NMFS regarding the MFCMA on July 10, 2017, by the receipt of a comment letter from NMFS. The NMFS letter acknowledged their receipt of the EFH Assessment and the supporting 2017-2022 Multisale Lease NEPA document, provided a determination that the Programmatic Consultation was an appropriate mechanism to evaluate EFH impacts and confirmed the adoption of the BOEM/BSEE mitigation measures outlined in the June 8, 2016, BOEM EFH Assessment to ensure adverse impacts are avoided, minimized, and offset. This consultation remains in effect for 2017-2022 activities or earlier but not if modifications are made to the BOEM/BSEE programs that would result in changes to potential adverse effects on EFH which would trigger additional consultation.

In accordance with the National Historic Preservation Act (54 U.S.C. §§ 300101 et seq.), Federal agencies are required to consider the effects of their undertakings on historic properties. The implementing regulations for Section 106 of the National Historic Preservation Act, issued by the Advisory Council on Historic Preservation (36 CFR § 800), specify the required review process. In accordance with 36 CFR § 800.8(c), BOEM intends to use the NEPA substitution process and documentation for preparing an Environmental Impact Statement/Record of Decision or an Environmental Assessment/Finding of No Significant Impact to comply with Section 106 of the National Historic Preservation Act in lieu of 36 CFR § 800.3-800.6.

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