

## RECORD OF DECISION

### Atlantic OCS Proposed Geological and Geophysical Activities Mid-Atlantic and South Atlantic Planning Areas, Final Programmatic Environmental Impact Statement (PEIS)

#### DECISION

In accordance with Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA), 40 CFR § 1505.2, I am selecting Alternative B of the PEIS. The PEIS was issued in February 2014 and evaluates three alternatives: A, B, and C. Alternative A was denoted as the proposed action in the PEIS. Alternative B is the preferred alternative and is environmentally preferable to Alternative A. Alternative C, the “No Action” Alternative, which maintains the status quo, is the most environmentally preferable of the three alternatives, but does not meet the purpose and need for the action.

Pursuant to this selection, the Bureau of Ocean Energy Management (BOEM) will consider permit applications for oil and gas geological and geophysical (G&G) activities and other proposed G&G activities throughout the Mid-Atlantic and South Atlantic Planning Areas (referred to as the Area of Interest or AOI), subject to appropriate mitigation measures such as those set forth in the PEIS for Alternative B. The AOI extends from the Delaware Bay to just south of Cape Canaveral and from the inner edge of Federal waters along that coastline to 403 miles offshore. The activities covered in the PEIS include G&G surveys undertaken for oil and gas, renewable energy, and marine minerals. All practicable means to avoid or minimize environmental harm from Alternative B have been adopted. The principle standard mitigation measures under Alternative B for G&G activities within the AOI are summarized below.

This decision does not by itself authorize, or impose requirements on, any G&G activities on the Atlantic OCS. The mitigation measures may be supplemented by additional requirements or otherwise adjusted as site-specific circumstances warrant in permits or other specific authorizations after BOEM completes additional environmental review. BOEM will monitor implementation of these mitigation measures, and, if warranted, will modify them as described in provisions of the PEIS addressing “adaptive management.”

#### Mitigation Measures for All G&G Activities

Subject to site-specific analysis, the following mitigation measures apply to all G&G activities within the AOI for which BOEM authorization is required:

1. **Guidance for vessel strike avoidance.** Vessel operators, regardless of vessel size, must maintain a vigilant watch for all marine mammals and sea turtles to avoid strikes while in transit. Speed must be reduced to 10 knots or less when within designated time/area closures for North Atlantic Right Whales (NARWs) or when mother/calf pairs, pods, or large groups of any cetaceans are observed nearby. A minimum distance of 500 meters must be kept from

any NARW sighted, 100 meters from other whale species listed under the Endangered Species Act (ESA), and 50 meters from all other marine mammals and sea turtles.

2. **Guidance to avoid disturbing special areas in surveys within the AOI for oil, gas, or marine minerals, whether or not leased; and for renewable energy surveys within leased areas of the AOI.** Based on site-specific information, BOEM will require G&G activities to avoid disturbing special areas, such as sensitive benthic (seafloor) biological communities, national marine sanctuaries, historic and prehistoric sites, and cables or other infrastructure.
3. **Guidance to prevent discharge of marine debris.** All vessel operators, employees, and contractors who actively engage in G&G surveys must be briefed on trash and marine debris and made aware of their responsibility to ensure that trash and other debris is not intentionally or accidentally discharged into the sea.
4. **Guidance for military and National Aeronautics and Space Administration (NASA) coordination.** All vessel and aircraft operators will be required to establish and maintain early contact and coordination with the appropriate military command headquarters or NASA points of contact. BOEM and the Department of Defense are coordinating with each other and other agencies through interagency working groups formed to avoid conflicts and also through established state-federal interagency task forces and regional planning efforts.

#### **Mitigation Measures for Seismic Airgun Surveys**

The following mitigation measures apply to authorizations of seismic airgun surveys within the AOI.

1. **Airgun seismic survey protocol.**
  - a. **Acoustic exclusion zone around vessels.** All airgun seismic activities will be subject to an acoustic exclusion zone around vessels that disallows those activities if marine mammals and sea turtles are present within the zone to ensure that those animals are not exposed to sound pressure levels of 180 decibels re 1  $\mu$ Pa-m rms (hereinafter referred to as decibels) or more—the level that the National Marine Fisheries Service (NMFS) has concluded may damage marine mammal hearing. The size of the zone may vary with the source level of airguns used, but in any event the zone's boundary cannot be less than 500 meters from the source.
  - b. **Visual monitoring by protected species observers (PSOs) on vessels.** Visual monitoring will be required by trained PSOs during daylight hours before and during seismic surveys.
  - c. **Halting airgun use when animals get too close.** Airgun seismic survey activities must be shut-down if a marine mammal or sea turtle enters the exclusion zone and may not be re-started until the zone has been clear for at least 60 minutes. An exception will be made for dolphins voluntarily approaching the

vessel or the equipment towed, which happens frequently without apparent harm to the dolphins.

- d. **Ramping-up airguns.** Airgun arrays will be required to ramp-up incrementally for at least 20 minutes before reaching maximum source level.
- e. **Passive acoustic monitoring (PAM).** PAM refers to use of microphones in the water to listen for marine mammal vocalizations. PAM will be required during all airgun surveys and will use towed or stationary hydrophones that will monitor for marine mammal vocalizations.
- f. **Geographic separation of simultaneous surveys.** A 40-km geographic separation distance may be required between simultaneously operating deep penetration seismic surveys within the AOI. The use of this mitigation measure will be evaluated on a case-by-case basis.

## 2. Airgun seismic survey time-area closures for NARWs.

- a. **Critical habitat.** NMFS has designated critical habitat for the NARW offshore the coast of southern Georgia and northern Florida. Airgun surveys within the designated area will be prohibited between November 15 and April 15, when NARWs are present to breed, give birth, and nurse calves.
- b. **All-coast seasonal management area (SMA).** A SMA with time closures will be observed for waters seaward from the coastline to 20 nm offshore along the entire coast of the AOI from the entrance to Delaware Bay to just south of Cape Canaveral in Florida. G&G survey vessel speed will be limited to 10 knots or less, and airgun seismic surveys will be prohibited by BOEM during time closures to avoid migrating NARWs or NARWs with calves on wintering grounds. The time closures for the SMA will be from November 1 to April 30 between the Delaware Bay and Brunswick, Georgia, and from November 15 through April 15 for the portion of the SMA south of Brunswick, including NARW critical habitat.
- c. **Dynamic management areas (DMAs).** DMAs are areas that may be temporarily designated by NMFS after NARWs are observed in those areas. Vessel operators are required to avoid DMAs or reduce speed to 10 knots or less when transiting DMAs. All sound sources within a DMA must cease within 24 hours of its designation.
- d. **Sound limits for airgun surveys outside of time-area closures.** Survey operators will also be required to ensure that sound from surveys outside of NARW critical habitat, the SMA, or DMAs does not exceed 160 decibels at the boundaries of these areas— the limit currently advanced by NMFS as the threshold for assuring no disruption of marine mammal behavior.

3. **Airgun seismic survey time-area closure for sea turtles.** To protect nesting sea turtles, which breed in the thousands at Archie Carr National Wildlife Refuge, airgun seismic surveys will be prohibited between May 1 and October 31 in a zone extending to 5.9 miles offshore Brevard County, Florida.

### **Mitigation Measures for High Resolution Geophysical (HRG) Surveys**

The following mitigation measures apply to authorizations of HRG surveys within the AOI:

1. **Restrictions in NARW critical habitat for non-airgun HRG surveys below 30 kHz.** Non-airgun HRG surveys using frequencies lower than 30 kHz will be prohibited in NARW critical habitat from November 15 to April 15, unless BOEM determines that survey information is critically needed. In such a case, BOEM will require additional mitigation measures that may be needed to avoid impacts.
2. **Restrictions in DMAs.** Survey vessels using HRG non-airgun sound sources in or near DMAs will be subject to the same restrictions as vessels using airguns.
3. **Acoustic exclusion zone size.** A 200-meter minimum exclusion zone for marine mammals and sea turtles will be required for HRG surveys operating at 200 kHz or lower frequencies. Larger zones will be required if field observations or modeling indicate that sound pressure levels may exceed 180 decibels beyond 200 meters from the HRG survey activities.
4. **Acoustic exclusion zone monitoring.** Exclusion zones must be monitored by trained PSOs. If BOEM authorizes nighttime operations or if operations continue during periods of reduced visibility, then shipboard lighting and equipment must be used to enhance the PSO's ability to visually monitor the exclusion zones, and PAM may also be required.
5. **Notice to NMFS.** BOEM must provide NMFS with advance notice of at least 30 days before any HRG surveys begin.

### **DISCUSSION**

BOEM has prepared the PEIS to assess environmental impacts of authorizing G&G activities in the AOI between 2012 and 2020. The PEIS covers G&G activities conducted under BOEM's oil and gas, renewable energy, and marine minerals programs. The PEIS also addresses impacts in adjacent State waters because environmental impacts of G&G activities in the AOI, such as seismic surveys, could impact resources within a State's jurisdiction. The purpose and need of the proposed action addressed by the PEIS is to gather state-of-the-practice data about the ocean bottom and subsurface of the AOI. These data are needed to inform government and business decisions regarding resource availability and use.

The PEIS evaluates three potential alternatives: to authorize G&G activities with specified time-area closures and standard mitigation measures, (Alternative A, the Proposed Action); to authorize G&G activities as described in Alternative A with additional time-area closures,

geographic separation of simultaneous seismic airgun surveys, and use of passive acoustic monitoring (Alternative B, the Preferred Alternative); and no action—the status quo (Alternative C). Alternatives A and B are identical with respect to the G&G activities that could be conducted and the expected activity levels during the 2012-2020 period. They differ in that Alternative B would expand the time-area closure for North Atlantic right whales (NARW) provided in Alternative A; add a time-area closure offshore Brevard County, Florida, to protect nesting sea turtles; consider a 40-km (25-mi) separation between concurrent seismic airgun surveys; require passive acoustic monitoring (PAM) in seismic airgun surveys; and also require use of PAM or similar equipment in some HRG surveys. Alternative B was identified as the Preferred Alternative in the PEIS. Alternative C is the “No Action” Alternative required by CEQ regulations implementing NEPA. Under this alternative, no G&G activities associated with oil and gas exploration would occur in the AOI, but G&G activities for renewable energy development and marine minerals use would continue on a site-specific basis. Several additional alternatives were identified during the scoping process, but they were eliminated from detailed analysis for the reasons identified in Chapter 2.5 of the PEIS.

Alternative B was selected because it meets the purpose and need for the proposed action, which includes the gathering of state-of-the-practice data about the ocean bottom and subsurface necessary to make informed decisions related to business, engineering, and construction for oil and gas, renewable energy, and marine minerals programs and projects. It includes measures to minimize the potential environmental and socioeconomic impacts. In addition, Alternative B supports the Secretary of the Interior’s strategy to develop modern, robust scientific information about the scope and location of potential oil and gas resources on the Mid- and South Atlantic OCS as outlined in the *Proposed Outer Continental Shelf Oil & Gas Leasing Program: 2012-2017* (USDOJ BOEM, 2011) and *Proposed Final Outer Continental Shelf Oil & Gas Leasing Program: 2012-2017* (USDOJ BOEM, 2012a).

Alternative B provides the highest practicable level of mitigation measures proposed for airgun acoustic sources (mainly used in oil and gas operations) and the most reasonable level of mitigation measures for non-airgun sources (used across all three program areas). Alternative B would reduce the risk of acoustic and vessel strike impacts to NARWs and some other marine mammals by precluding certain surveys in a portion of the AOI during certain times of the year. Alternative B would reduce the risk of disrupting sea turtle nesting in an area that is estimated to support 25 percent of all loggerhead turtle nesting in the U.S. Although the sea turtle closure would affect only a small portion of the AOI (0.15%), the reduction of potential impacts on sea turtles is expected to be substantial. It is anticipated that the required use of PAM as part of the Seismic Airgun Survey Protocol under Alternative B would improve the effectiveness of detecting marine mammals. It is expected that some Level A incidental takes of marine mammals that might otherwise occur will be avoided by the use of PAM, given the greater probability of detecting marine mammals in the smaller Level A exclusion zone, particularly at night or other periods of low visibility.

After site-specific review, applicable mitigation measures under Alternative B will be enforced as conditions of any permits or other authorizations issued by BOEM for G&G activities within the Mid-Atlantic or South Atlantic Planning Areas. BOEM will monitor compliance with imposed mitigation measures by requiring lessees and permittees to submit reports on the survey

activities. Lessees and permittees will submit Observer Effort Reports, identifying environmental conditions during seismic survey operations; Survey Reports, recording ramp-up and shutdown events and marine mammal and sea turtle observations during seismic operations; and Sighting Reports, documenting sightings and behaviors of marine mammals and sea turtles during operations and transit of airgun and HRG surveys. BOEM will cooperate with the Bureau of Safety and Environmental Enforcement (BSEE) to assist BSEE, as needed, when BSEE takes enforcement actions to enforce the requirements that apply to any permits or other specific authorizations, including the applicable mitigation measures described in Alternative B.

Alternative B includes a survey protocol for geographic separation of concurrent seismic airgun surveys. However, due to the uncertainty of the effectiveness of a 40-kilometer (km) separation distance between concurrent seismic surveys, as described in Alternative B, BOEM may or may not apply this specific mitigation measure. The PEIS concluded that the 40-km separation distance between concurrent seismic surveys would only potentially slightly reduce acoustic impacts on marine mammals, sea turtles, and other marine biota. BOEM will consider the value of this measure in site-specific environmental analyses, as well as any new information available at that time, and will decide whether to require the measure as a condition of a permit.


Alternative A, the proposed action in the PEIS, contains some but not all of the mitigation measures contained in Alternative B. It would meet the purpose and need of the action, but was not selected because the impacts of airguns on marine mammals, sea turtles, and marine protected areas are expected to be higher under Alternative A than from Alternative B. The risk of acoustic and vessel strike impacts on other marine mammals would be higher for Alternative A than for Alternative B because Alternative A would allow some surveys during certain times of the year that would be precluded by Alternative B. Alternative A would provide less protection to sea turtles because it does not include sea turtle closure areas provided for in Alternative B. Passive acoustic monitoring would be required under Alternative B but would be optional under Alternative A, except in conditions of reduced visibility. Most other impacts would be similar between Alternative A and Alternative B. Overall, Alternative A provides fewer mitigation measures and therefore less environmental protection than Alternative B.

Alternative C is considered the environmentally preferable alternative because it maintains the status quo. By maintaining the status quo, BOEM would not authorize G&G activities associated with oil and gas within the AOI, but G&G activities for renewable energy development and marine minerals would continue on a site-specific basis. However, Alternative C was not selected because its selection would not allow BOEM to permit G&G activities related to oil and gas exploration and development, and would not meet the purpose and need of the proposed action. If Alternative C were selected, new oil and gas G&G information would not be available for future decision-making under the Outer Continental Shelf Lands Act (OCSLA). Advances in instrumentation and technology, which have resulted in data gathering techniques, equipment, and imaging technology that are able to provide more accurate and reliable data, would not be available for data acquisition. The current practice of evaluating potential prospects using three-dimensional seismic data would not be available. If Alternative C were selected, operators would reprocess existing data. Reliance on existing data or digitally reprocessed data does not meet the stated purpose and need for the action because it does not provide the best available data on which to base regulatory and industry decisions. Alternative C

would not provide guidance regarding standard mitigation measures and survey protocols for operators planning surveys on the Outer Continental Shelf.

BOEM's selection of Alternative B, the Preferred Alternative, reflects a balance of the orderly development of BOEM-managed resources with the protection of the human, marine, and coastal environments by allowing G&G activities to occur while ensuring that appropriate mitigation measures are implemented to reduce impacts to the environment.

A summary of public comments on the final PEIS and a discussion of several specific public comments are provided in the addendum below.

  
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Walter D. Cruickshank  
Acting Director

Date: 7-11-2014

## **ADDENDUM: DISCUSSION OF PUBLIC COMMENTS**

### **Comment on the Final PEIS**

On March 7, 2014, BOEM published a notice of availability (NOA) of the final PEIS in the Federal Register (79 FR 13074) and provided a comment period, which closed on April 7, 2014. During the initial 30-day review period, BOEM received five requests to extend the comment period, ranging from 15 to 60 days. BOEM granted a 30-day extension, closing the comment period on May 7, 2014. BOEM received 67,518 comments during the 60-day comment period. Of those comments, 19,156 supported G&G activities, 48,358 opposed G&G activities, and 4 did not state a position on G&G activities. Comments were received as emails, hard-copy letters, and electronically through regulations.gov. Most of the email comments were formulaic. The majority of emails supporting seismic surveying referenced potential economic benefits for the commenter's home state if oil and gas production commences. Many commenters who opposed oil- and gas-related G&G activities were also opposed to any future oil and gas development activities. Of the 67,518 total comments, 850 comments were specific or unique. Many of the technical comments expressed similar concerns to those received on the draft PEIS.

### **Discussion of Specific Public Comments**

#### ***Comments Regarding Preparation of a Supplemental EIS***

Some commenters recommended that BOEM prepare a supplemental EIS because of new information about NARW distribution and new information about the impacts of some particular geophysical noise sources that was either available, and not considered, or that became available after the final PEIS was published.

CEQ regulations at 40 CFR § 1502.9 provide that a supplemental environmental impact statement (EIS) may be required if (i) the agency makes substantial changes in the proposed action that are relevant to environmental concerns or (ii) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. A supplemental EIS provides an analysis of one or more significant adverse environmental impacts that were not addressed or that were inadequately addressed in the EIS.

BOEM has determined that a supplemental EIS is not warranted. The final PEIS fully addresses the potential environmental impacts of the action alternatives, and the action proposed in the draft PEIS was not substantially changed in the final PEIS. Moreover, there are no significant new circumstances or information relevant to environmental concerns that were not considered in the PEIS. Available, timely, significant, relevant, peer-reviewed information has been addressed in the final PEIS. For example, while preparing the final PEIS, BOEM reviewed and incorporated new information on NARW habitat use found in Whitt et al. (2013) into Chapter 4.2.2.1. Whitt et al. (2013) documented the occurrence of individual NARWs utilizing near-shore waters of New Jersey, areas that are a part of the NARW's migratory corridor, for non-migratory purposes. This information supported observations previously outlined in the draft PEIS related to NARW use of coastal waters in Massachusetts Bay as non-migratory habitat. BOEM also noted in Chapter 4.2.2.1 that additional unpublished studies suggest that NARW may be using the Mid-Atlantic area year round and have been detected up to 63 miles offshore. Future published data will be incorporated into site-specific NEPA evaluations.

BOEM has also considered new information or circumstances that became available only after BOEM concluded preparation of the PEIS (i.e., final document review and preparation for printing and distribution). None of that information has the necessary indicia of scientific reliability or finality to warrant consideration at this time. The information either has not been peer-reviewed, or involves criteria that have not been approved or finalized by other regulatory agencies. Nevertheless, the information may be considered in future environmental reviews for potential authorizations to the extent BOEM determines the information to be relevant, significant, and final.

For example, the National Marine Fisheries Service (NMFS) has released Acoustic Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Species acoustic criteria. NMFS is currently developing this new acoustic criteria and has released draft Level A criteria for review and comment. As indicated in Chapter 1.7.7 and Appendix M of the final PEIS, BOEM is monitoring the development of new acoustic criteria and intends to use the new criteria, when finalized, for subsequent NEPA analyses.

BOEM emphasizes that the PEIS establishes a framework for subsequent environmental reviews of site-specific actions by specifying mitigation and monitoring measures to avoid, reduce or minimize impacts from G&G activities. Significant new information will be considered as it becomes available, and mitigation measures will themselves be reviewed as part of BOEM's commitment to adaptive management, as described in the PEIS.



### *Comments Regarding Mitigation Measure Feasibility and Lack of Disclosure of Measures for Public Review*

Some comments raised concerns that the final PEIS included mitigation measures that are infeasible, would impose serious burdens on industry, and were not included for public review in the draft PEIS. Specific mitigation measures that were identified as problematic include the following: dolphin shutdown exemption; 40-km geographic separation distance on concurrent seismic airgun surveys; 60-minute visual clearance of the exclusion zone; requirement to calculate on a survey-specific basis the acoustic exclusion zone, potentially resulting in acoustic exclusion zones that would be greater than 500 meters; sea turtle shutdowns; expanded NARW time-area closures, including DMAs, and a requirement that measured sound levels at boundaries of these areas be no more than 160 decibels; and vessel strike avoidance and passive acoustic monitoring.

As summarized below, the draft PEIS included a discussion of virtually all the types of mitigation measures included in the final PEIS, so the public was provided an opportunity to review and provide comment on the mitigation measures. Some of the mitigation measures were revised from the draft PEIS pursuant to the terms and conditions implementing the reasonable and prudent measures of the Incidental Take Statement of the NMFS Biological Opinion (*see* Appendix A of the PEIS) that was finalized on July 19, 2013, between the draft and final PEIS. BOEM did not republish the draft PEIS with the revisions to the mitigation measures made pursuant to the terms and conditions of the Incidental Take Statement because BOEM must comply with the requirements in order for G&G activities to be exempt from the prohibitions of section 9 of the Endangered Species Act (*see* NMFS Biological Opinion, p. 301). Moreover, public comment on any revisions to mitigation measures made pursuant to the Incidental Take Statement is unnecessary since NMFS is the expert agency that independently determines in what manner activities affecting protected marine mammals may be conducted under the Endangered Species Act.

BOEM discussed the dolphin shutdown requirement in the draft PEIS and included clarifications about the requirement in the Final PEIS. Therefore, the public had an opportunity to comment on this mitigation measure. BOEM also discussed the 40-km geographic separation distance on concurrent seismic airgun surveys in the draft PEIS. BOEM revised the 60-minute visual clearance of the exclusion zone requirement that first appeared in the draft PEIS in accordance with requirements in the biological opinion. The requirement to calculate on a survey-specific basis the acoustic exclusion zone, potentially resulting in acoustic exclusion zones that would be greater than 500 meters, was a requirement from the biological opinion. BOEM discussed the sea turtle shutdown requirement in the draft PEIS and it was also a requirement in the biological opinion. The expanded NARW time-area closures, including DMAs, and a requirement that measured sound levels at boundaries of these areas are no more than 160 decibels were clarifications of requirements that BOEM discussed in the draft PEIS and also were requirements of the biological opinion. BOEM discussed the vessel strike avoidance measures and passive acoustic monitoring requirements in the draft PEIS and they were also required by the biological opinion.

BOEM has reorganized and, in some instances, revised mitigation measures since the publication of the draft PEIS, responding in part to comments requesting more specific information. The final PEIS includes revisions to the HRG protocol that clarify time-area closures for HRG surveys and address the reduced potential for impacts for certain geophysical sources. BOEM discussed the HRG protocol in the draft PEIS and included only minor modifications to the protocol in the final PEIS.

BOEM has reexamined the 40-km geographic separation distance on the concurrent airgun surveys' mitigation measure and has addressed the uncertainty about its effectiveness in Chapter 4 and Appendix L, Table L-6, "Comment Summary and Response Table for Comments Requiring Detailed Technical Response of the final PEIS". BOEM will assess the value of this measure in site-specific environmental analyses, with the benefit of any new information available at that time, and decide whether to include it as a condition of a permit or other authorization. These subsequent evaluations will also consider any potential aggregate effects from existing permitted or authorized surveys.

In sum, the revisions to the mitigation measures do not constitute a substantial change in the proposed action or represent significant new circumstances or information relevant to environmental concerns about the proposed action or alternatives because they were considered in the draft PEIS or are non-discretionary terms of approval identified in the Incidental Take Statement for activities that will "take" endangered or threatened species.

BOEM has determined that the mitigation measures, including those reflecting the terms and conditions implementing the reasonable and prudent measures of the Incidental Take Statement of the NMFS Biological Opinion, are reasonable and appropriately balance the impact to the industry and the potential environmental impacts. This conclusion is reflected in part in the responses provided in Appendix L, Table L-6, "Comment Summary and Response Table for Comments Requiring Detailed Technical Response of the Final Programmatic EIS." The comments received on the final PEIS do not provide information that alters this conclusion.

***Comments Regarding NARW Time-Area Closures and Alternatives Do Not Adequately Reflect New Distribution Data***

During the public review period for the final PEIS, BOEM received comments disputing the effectiveness of the expanded time-area closure for NARWs proposed in Alternative B. The comments suggested that a consideration of new information regarding NARW occurrence by BOEM would have resulted in either a revision of the Preferred Alternative or the development of new mitigation measures. Commenters referenced a recent, unpublished study conducted by Cornell University's Bioacoustics Research Program that indicates the presence of NARWs throughout the year off the Virginia coast, as well as outside the bounds of the time-area closure. Based on these data, the commenters proposed that BOEM reinstate the scoping process to reevaluate the alternatives and associated mitigation measures. The results of the study were presented to BOEM's Deputy Director and other key staff on December 6, 2013. Cornell University has not yet finalized, published, or peer-reviewed its results (Appendix L of the PEIS). However, BOEM considered other newly published information while preparing the final PEIS. As noted above, BOEM incorporated information into the PEIS from a recent study by

Whitt et al. (2013), which documented NARW occurrence in near shore waters of New Jersey. Also, the PEIS observes that, while NARWs can be found outside of the NARW closure areas and throughout the AOI (Chapter 4.2.2.1.1), BOEM still is of the opinion, based on the best available information at this time, that the 20-nmi expanded time-area closure for NARWs provides effective protection to core migratory areas and NARW critical habitat. The final PEIS notes that these time-area closures will be aligned with any future changes in NARW critical habitat, SMA, or DMAs, and it notes that new information about NARW distribution will be considered in site-specific environmental reviews.

The time-area closures associated with Alternative B are primarily intended to serve as an impact mitigation measure for individual NARWs within and adjacent to their designated southeast U.S. critical habitat during their calving-nursing season and within the SMA. These measures are not designed to preclude any possible exposure to airgun noise and potential auditory effects within the AOI during the project period. Individual NARWs and other marine mammals, including other listed Mysticetes that may be found outside of proposed Alternative B time-area closure areas, may avoid or move out of ensonification areas. Recognizing the possibility of impacts, the several mitigation measures for airgun surveys, described above, add important protection in addition to the requirement that airguns not be used in closed areas. These include visual and passive acoustic monitoring, in conjunction with operational mitigation procedures, such as sound source ramp-up and shut-down. Alternative B also provides an additional protective buffer for the NARW, which requires that airgun sound levels measured at time-area closure boundaries from surveys conducted outside of closed areas be no more than the Level B threshold of 160 decibels. Based on the acoustic propagation modeling described in Appendix D, Table D-22 of the PEIS, this protective measure may require airgun surveys to maintain a distance of 4-15 km from closures. Furthermore, as discussed in Chapter 1.7.6 and Section 7 of Appendix C of the PEIS, BOEM is committed to adaptive management and the modification of mitigations if warranted by the facts at the site-specific level.

#### *Comments Regarding the “Negligible Impact” Assessment Level*

Comments received on the final PEIS raised concerns about the potential comparisons between NEPA impact conclusions and determination of negligible impacts under the Marine Mammal Protection Act (MMPA). Comments on the PEIS concerning this issue were not substantially different from those we received on the draft PEIS and our responses can be found in Appendix L, Table L-6, “Comment Summary and Response Table for Comments Requiring Detailed Technical Response,” of the final PEIS.

“Negligible impact” as defined under the MMPA is different from BOEM’s determination of whether impacts are negligible, minor, moderate, or major in the PEIS. The CEQ regulations implementing NEPA do not define impact levels, and the levels defined by BOEM in the PEIS are based on whether activities may have any effect. Chapter 4.0 of the final PEIS provides a detailed description of the NEPA impact assessment process, beginning with a screening of potentially impacted resources, followed by an analysis of impact levels and impact significance criteria, leading to an analysis of impact-producing factors. Regulations implementing the MMPA, in contrast, define “negligible impact” as “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect

the species or stock through effects on annual rates of recruitment or survival.” 50 CFR 216.103. The PEIS concludes that certain impacts to marine mammals are expected to be “moderate.” However, since the impact assessment levels in the PEIS do not correspond to NMFS’ impact definitions, NMFS still may find, consistent with the determination in the PEIS that certain effects will have a “moderate” impact, that the impacts of specific G&G activities result in a “negligible impact” within the meaning of the term as defined in the regulations implementing the MMPA.

Also, BOEM addressed comments regarding the modeled incidental “take” estimates for species protected under the MMPA through airguns and other acoustics sources in the PEIS. These estimates are premised on a range of effects from behavioral disturbance to mortality. The take estimates include modeled numbers of both “Level A” harassment, which is defined as having the potential to injure hearing, and “Level B” harassment, which is defined as having the potential to disturb. Even as defined to include the sensitive threshold of Level B harassment, the numbers estimated for incidental take are higher than BOEM expects would actually occur. The marine mammal take estimates are estimates of potential take. They do not represent expected levels of actual take. They do not, for example, take into account most of the mitigation measures incorporated into Alternative B because the effect of those measures cannot be quantified with statistical confidence at this time. Although all mitigation measures cannot be effective 100 percent of the time, these measures undoubtedly will contribute to species protection, and they will be refined as environmental impacts are evaluated in environmental review for site-specific authorizations, including ESA and MMPA consultations. Furthermore, the take estimates are based on acoustic and impact models that are by design conservative, which results in an over-estimate of take. Each of the inputs into the models is purposely developed to be conservative, and conservative assumptions accumulate throughout the analysis.

These conservative incidental take estimates do not reflect only BOEM’s determination of the impact to marine mammals. BOEM considered the modeled take estimates, the best available information on marine mammal distribution, current science assessing the potential effects of G&G surveys on marine mammals, and an evaluation of how the implementation of mitigation can reduce these effects. This assessment is then compared with the criteria (described in Chapter 4.2.2.2.1 of the PEIS) to identify an anticipated level of impact. Additionally, future site-specific actions proposed by operators must comply with MMPA requirements for incidental take authorizations (ITAs) or incidental harassment authorizations (IHAs), which will entail additional review of potential impacts, and may include mitigation measures in addition to those identified in the PEIS. While NMFS may draw from the PEIS to support decisions on site-specific authorizations under the MMPA, it will in any event determine on a case-by-case basis whether requests for authorization meet the statutory requirements, including whether any “take” would be of small numbers and would have no more than a negligible impact on species or stocks. Chapter 1.7.5 of the PEIS outlines actions that will be required before G&G permits or authorizations may be issued. Chapter 1.7.5 also includes an overview of MMPA authorization requirements and explains how the MMPA authorization process may result in mitigation measures in addition to those included in the PEIS.