



MARINE MAMMAL COMMISSION

31 July 2014

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Five Year Program Manager (HM-3120)

Mr. James F. Bennett, Chief
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Dear Ms. Hammerle and Mr. Bennett:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the Bureau of Ocean Energy Management's (BOEM) request for information and comments on the preparation of the 2017-2022 Outer Continental Shelf (OCS) oil and gas leasing program. The following recommendations and rationale respond to several of the types of information requested by BOEM in the *Federal Register* notice, including—

- National energy needs and the role of OCS oil and gas leasing activities in achieving national energy policy goals;
- Potential impact of oil and gas exploration and development on marine mammals;
- The adequacy of existing baseline information on marine mammals and the need for expanded industry contributions to support environmental baseline data collection, environmental research, and long-term monitoring;
- The relative sensitivity of marine mammals to oil and gas development in each of the OCS planning areas and further studies to be conducted;
- Consideration of different approaches to conducting lease sales.

The Commission anticipates providing further comments on information that should be considered by BOEM in the five-year program when BOEM publishes its notice of intent to prepare the programmatic environmental impact statement (PEIS) for the leasing program.

RECOMMENDATIONS AND RATIONALE

The need for a clear national energy policy

Energy development in the United States and globally is currently in a state of flux. New developments and efficiencies in horizontal drilling and hydraulic fracturing technologies have led to a significant increase in U.S. onshore production of crude oil and natural gas since 2010,¹ contributing to a decrease in oil and gas imports and heightened interest in expanding U.S. exports

¹ <http://www.eia.gov/todayinenergy/detail.cfm?id=15351&src=Natural-b2>

of natural gas. The moratorium on offshore deepwater oil drilling imposed in the aftermath of the Deepwater Horizon oil spill led to a temporary decrease in U.S. offshore oil and gas production, but those appear to be once again on the rise.² Continued political unrest in the Middle East and Russia, rising demand for oil and gas resources in developing countries, decreasing popularity of nuclear energy, the emergence of clean coal technologies, slow but steady growth in renewable energy sources, increasing exploration and production costs (especially in frontier areas), decreased energy use per capita, and access to economic subsidies and tax incentives -- these and other factors will determine industry interest in U.S. offshore oil and gas leasing and development during the next five-year program. However, based on current trends, it is clear that the United States will continue to rely on oil and gas and other fossil fuels as primary energy sources for decades to come (U.S. EIA 2014).

Expanded leasing and development of OCS oil and gas resources provide significant opportunities to meet U.S. energy security goals and promote economic recovery. However, continued expansion of OCS oil and gas development is likely not sustainable over the long term and presents significant risks to human, marine, and coastal environments. The Outer Continental Shelf Lands Act (OCSLA; 43 U.S.C. 1331 et seq., as amended) requires that BOEM strike a balance between development and protection of these environments. Despite a heightened emphasis on drilling safety and the implementation of extensive new regulations to reform offshore oil and gas production in the aftermath of the Deepwater Horizon oil spill, those regulations have not prevented a continued shift in oil and gas development into areas where drilling and production present increased risks, such as into deep water environments and the Arctic.

In addition, continued reliance by the U.S.³ and other countries⁴ on fossil fuels as primary energy sources is contributing significantly to greenhouse gas emissions and accelerating global warming. The President's 2013 Climate Action Plan⁵ promotes clean energy production and increased energy efficiency as two important means to reduce greenhouse gas emissions, but does not include mention of reduced production of oil reserves as a way of reducing emissions and stemming the pace of global warming.

As BOEM embarks on planning for its 2017-2022 leasing program, the Commission recommends that it work with the White House, the Department of Energy, and other agencies, as appropriate, to develop a publicly-vetted national energy policy that will provide clear guidance regarding the relative contribution that oil, gas, and other energy sources should have to the nation's overall energy mix, with consideration to the threats of OCS oil and gas development to human, marine, and coastal environments and its contributions to global warming.

Potential impact of oil and gas exploration and development on marine mammals

Oil and gas development in the marine environment creates risks for marine mammals at every stage of development, from exploration to decommissioning. Table V-1 summarizes the

² http://www.data.bsee.gov/homepg/data_center/production/production/summary.asp

³ http://www.eia.gov/totalenergy/data/monthly/pdf/flow/total_energy.pdf

⁴ <http://www.sankey-diagrams.com/primary-to-use-world-energy-flows/>

⁵ <http://www.whitehouse.gov/sites/default/files/image/president27climateactionplan.pdf>

environmental effects of concern at each stage of oil and gas development. A more detailed summary of activities associated with each stage of development and the environmental effects of concern for marine mammals was provided in the Commission's 2010/2011 annual report (Marine Mammal Commission 2013a).

Table 1. Stages of oil and gas development and associated activities, the purpose of each activity, and potential environmental effects of concern for marine mammals

Stage of oil and gas development and activity	Purpose of activity	Environmental effects of concern for marine mammals
EXPLORATION		
Seismic surveys	Locate and characterize geological structures that may contain hydrocarbon reserves	Acoustic disturbance/injury from seismic sound source
		Disturbance from vessel and aircraft activity
		Collisions with survey and support vessels
Sediment sampling	Coring or sampling of surface and subsurface sediments to determine geophysical properties	Physical alteration or disturbance of bottom habitat
High-resolution site clearance/shallow hazards surveys	Provide imagery of the sub-seafloor to locate and characterize geological features and hazards, biologically sensitive areas, and archaeological resources	Acoustic disturbance from sound source
		Disturbance from vessel activity
		Collisions with survey and support vessels
Exploratory drilling	Confirm presence of hydrocarbons; characterize physical properties of reservoir to determine economic feasibility	Disturbance from vessel and aircraft activity
		Collisions with support vessels
		Physical alteration or disturbance of bottom habitat
		Chemical alteration and/or contamination of water or bottom habitat (from drilling muds and waste)
		Pollution from trash and debris
Vertical seismic profiling	Determine the structure of a particular petroleum-bearing zone	Acoustic disturbance/injury from seismic sound source
		Collisions with survey and support vessels
Well abandonment	Temporary or permanent capping and abandonment of exploratory well	Oil and gas spills and leaks
CONSTRUCTION AND INSTALLATION OF PLATFORMS, PIPELINES, AND OTHER EQUIPMENT		
High-resolution site	Provide imagery of the sub-	Acoustic disturbance from sound

Stage of oil and gas development and activity	Purpose of activity	Environmental effects of concern for marine mammals
clearance/shallow hazards surveys	seafloor to locate and characterize geological features and hazards, biologically sensitive areas, and archaeological resources	source Disturbance from vessel and aircraft activity Collisions with survey and support vessels
Platform and equipment installation	Install and anchor drilling platform and equipment to seafloor to support long-term hydrocarbon production, storage, and offloading	Acoustic disturbance/injury from pile driving or platform construction Disturbance from vessel and aircraft activity Collisions with support vessels Physical alteration or disturbance of bottom habitat Discharges prior to a disposal well being serviceable Pollution from trash and debris Oil and gas spills and leaks
Pipeline seafloor survey	Locate and avoid bottom hazards, bottom-set fishing gear, biologically sensitive areas, and archaeological resources	Acoustic disturbance Disturbance from vessel and aircraft activity
Pipeline installation	Install pipeline for transport of hydrocarbons to an onshore facility port or refinery	Acoustic disturbance/injury from pile driving (where applicable) Disturbance from vessel and aircraft activity Physical alteration or disturbance of bottom habitat or ice and mobilization of sediments (and potentially toxins) into the water column Pollution from trash and debris Oil and gas spills and leaks
PRODUCTION AND TRANSPORT OF HYDROCARBONS		
Seismic surveys	Monitor distribution, volume, and pressure of the reserve during extraction	Acoustic disturbance/injury from seismic sound source Disturbance from vessel and aircraft activity Collisions with survey and support vessels
Drilling	Extraction of oil and gas reserves for refinement and commercial sale	Disturbance from vessel and aircraft activity Collisions with support vessels Physical alteration or disturbance of bottom habitat

Stage of oil and gas development and activity	Purpose of activity	Environmental effects of concern for marine mammals
		Chemical alteration and/or contamination of water or bottom habitat (from drilling muds and waste) Pollution from trash and debris Oil and gas spills and leaks Reef effects of platforms (e.g., attraction of certain fish and other species, changes in community composition and dynamics)
Transport	Transport of hydrocarbons to port or processing site via pipelines or tankers	Disturbance from vessel activity (tankers) Oil and gas spills and leaks (tankers and pipelines) Attraction of certain fish and other species, changes in community composition and dynamics Invasive species from tankers
DECOMMISSIONING AND SITE CLEARANCE		
Explosive removal	Remove structures or equipment from seafloor	Acoustic disturbance/injury from explosives Disturbance from vessel and aircraft activity Pollution from trash and debris Oil and gas spills and leaks
Non-explosive removal	Remove structures or equipment from seafloor	Disturbance from vessel and aircraft activity Pollution from trash and debris Oil and gas spills and leaks
Well abandonment	Permanent capping and abandonment of well	Oil and gas spills and leaks
Platform re-purposing (i.e., Rigs-to-Reefs)	Convert obsolete or non-productive platforms to artificial reefs	Reef effects of platforms (e.g., attraction of certain fish and other species, changes in community composition and dynamics)

In addition to risks posed by routine oil and gas operations, environmental effects can occur as a result of hydrocarbon and other chemical spills and leaks. Oil spills and leaks can cause acute injury or mortality of marine mammals or longer term, sublethal effects; they can also degrade marine habitats (see MMC 2011 for a summary of oil spill related impacts on marine mammals). Bottlenose dolphins and other cetaceans in the northern Gulf of Mexico experienced higher than average stranding rates after the Deepwater Horizon oil spill, and continued high stranding rates

have led to this being one of the longest unusual mortality event in recent history.⁶ Health assessment studies of bottlenose dolphin populations in coastal habitats known to be exposed to the spill indicate poor body condition, compromised immune system, respiratory and liver damage, and a higher prevalence of disease as compared to dolphins from unexposed areas (Schwacke et al. 2013). Preliminary results from tagging of sperm whales both before and after the spill site indicate that although whales remained in the area after the oil spill, they avoided the most heavily surface-oiled areas.⁷

Methane and other gas leaks, because of their volatility and rapid dissipation, are generally less problematic for marine organisms than oil or other chemicals; however, methane is a greenhouse gas and a significant contributor to climate disruption (Reay et al. 2010). Response activities to contain oil spills and clean up surface, subsurface, or shoreline oil also have the potential to affect marine species through increased vessel and air traffic and noise. During the Deepwater Horizon spill, chemical dispersants were used both at the surface and at depth to disperse oil. However, little is known about the direct effect of dispersants on the marine environment (National Research Council 2005). The use of booms and skimmers to contain and collect surface oil and the in-situ burning of oil have the potential to disturb marine species. Burning reduces the overall amount of oil in the marine environment, but it also leaves behind a residue of uncertain composition and toxicity (Benner et al. 1990, Wang et al. 1999) and puts additional chemicals into the air.

Adequacy of existing information and commitments to long-term monitoring

A thorough evaluation of the potential and actual impacts of leasing and development on coastal and marine environments will depend on the availability of biological and ecological information collected prior to leasing activities (i.e., baseline information) and during the entire life cycle of oil and gas exploration, development, production, and decommissioning. The information collected should be sufficient to identify and minimize potentially harmful effects on marine organisms, their habitats, and prey species. It also should be collected at temporal and spatial scales necessary to characterize the inherent variability in the potentially affected ecosystems and to distinguish the effects of energy development from that variability.

With regard to marine mammals, the most important biological information for assessing status and vulnerability to short- and long-term effects includes stock structure, distribution and seasonal movements, abundance and trends, frequency and causes of mortality, vital rates (e.g., survival, reproduction, emigration, immigration), and health status (e.g., body condition, contaminant burden). An ecosystem-based management approach requires additional information on habitat-use patterns and trophic relationships. The collection of broad-scale biological and environmental information throughout the entire life cycle of oil and gas development requires both an immediate and long-term commitment of effort and resources to collect the data and to identify and minimize potential adverse impacts associated with energy development. It also requires the

⁶ http://www.nmfs.noaa.gov/pr/health/mmume/cetacean_gulfofmexico.htm

⁷ www.gulfspillrestoration.noaa.gov/wp-content/uploads/2012/05/2011_10_12_MAMMAL_Sperm_Whale_Tagging_LA-signature_Redacted3.pdf

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flexibility to adapt management measures as needed to respond to new information as well as changes in environmental conditions.

Information on the majority of marine mammal species and stocks that occur within the OCS falls short of that required to assess their population status and vulnerability to various risk factors, and to assess and detect changes over time that may be caused by the proposed action. Many species/stocks have abundance estimates derived from infrequent or outdated surveys, and for other species no reliable abundance estimates are available. The Commission has long argued that the industry and regulatory agencies have a shared responsibility to collect the information needed to ensure that precautionary management measures for minimizing risks to marine mammals are in place and are effective. BOEM's Environmental Studies Program has committed significant funding to the study of marine mammals in OCS planning areas and the effects of energy development on key species such as sperm whales, bowhead whales, and North Atlantic right whales. These studies have been conducted in collaboration with other federal agencies, academic institutions, research organizations, and industry, and have improved the quality of information available for regulators and decision-makers.

BOEM and the industry need to find additional means of supporting essential research and monitoring. The industry, in particular, should provide multi-year financial support to meet the highest priority data needs in areas where oil and gas leasing or exploration activities are proposed. The Commission does not consider the cost of collecting such information to be exorbitant, particularly when viewed in the context of the billions of dollars involved in oil and gas development. In 2009, the total reported funding for marine mammal research and conservation programs was approximately 125 million dollars (Marine Mammal Commission 2013b). In contrast, the revenues of five of the top-ranked oil companies were each in the tens of billions of dollars in 2013 (Ernst and Young 2014). Furthermore, the failure to invest in the necessary studies undermines the ability to manage marine resources on the basis of sound science. The industry should consider periodic surveys, along with other monitoring and research activities to address and manage risks to marine mammals and marine habitats, as a cost of doing business.

The Commission understands that BOEM has authority under 43 U.S.C. § 1473 to accept and use contributions from public and private sources for environmental assessments and studies and related research in support of BOEM's regulatory and statutory authority and requirements under OCSLA. This authority could be used to further develop public-private partnerships between BOEM and the oil and gas industry to expand environmental research, population assessments, and long-term monitoring. Mechanisms that facilitate collection of environmental baseline data and long-term monitoring of potential impacts would ensure that the decisions regarding proposed and ongoing leasing activities are guided by the best available scientific information. The Commission recommends that BOEM work with the oil and gas industry and other organizations to ensure the availability of adequate environmental baseline information and to secure a commitment to funding environmental research and long-term monitoring prior to conducting additional lease sales. The Commission further recommends that BOEM consider using its OCS Scientific Committee or establish a separate independent scientific body to (1) advise BOEM on the pooling and distribution of funds contributed under 43 U.S.C. § 1473 or other statutory authorities, and (2) ensure that any funded research or monitoring programs are subject to the highest scientific and technical standards

and do not create a conflict or the appearance of a conflict of interest between BOEM and its regulated entities.

Planning areas to be included in the next five-year program, further studies to be conducted, and consideration of different leasing approaches

Decisions regarding the inclusion of specific leasing areas are required under OCSLA to be based on resource recovery potential balanced against environmental sensitivity of offshore environments and species. Resource recovery potential is informed by periodic assessments of undiscovered technically recovered oil and gas resources. BOEM's most recent assessment indicated that the highest estimated oil and gas resources on the OCS are in the Western and Central Gulf of Mexico, followed by the Arctic, Southern California, and the Eastern Gulf of Mexico; other areas of the OCS are estimated to have much lower oil and gas resources (BOEM 2012). In addition to estimated resources, the extent and pace of development should be based on demonstrated industry compliance with safety and environmental management systems and the availability and effectiveness of oil spill response technology.

Marine mammals are found in each of the OCS planning areas. Oil and gas development in some of the planning areas may have more of an effect on marine mammals than others based on the species found in those areas, their population status, their sensitivities to anthropogenic sound or oil spills, impacts from other human activities, vulnerability to climate-induced changes to habitat, availability of prey species, and our ability to respond to mishaps should they occur. Following is a discussion of the major OCS planning areas, the status and vulnerability of marine mammals in each area, and recommendations for the inclusion of each area in the 2017-2022 leasing program. This information will hopefully aid BOEM in determining the most environmentally responsible way to manage oil and gas development in areas where there are considerable species vulnerabilities.

Cook Inlet. Cook Inlet is heavily industrialized compared to other planning areas in Alaska. The Commission is concerned that expanded oil and gas leasing, when added to the existing baseline of other human activities in state and federal waters of Cook Inlet, will pose significant risks to the endangered resident beluga whale population and adversely affect important habitat areas. The beluga population in Cook Inlet declined precipitously during the 1990s, primarily due to overharvesting, and was expected to rebound after subsistence hunting was brought under control in 1999. Since then, subsistence hunters reportedly have taken only five whales, but the population has not grown as expected. In fact, it declined at an average rate of 1.1 percent per year between 2000 and 2011 (Hobbs et al. 2011). Information regarding this population's ecology, life history, and reproductive potential is limited and factors adversely affecting the population and its habitat have yet to be definitively identified. However, oil and gas activities in state waters were among the factors identified by the National Marine Fisheries Service (NMFS) as possibly contributing to the population's observed decline (NMFS 2008). Given the precarious status of the Cook Inlet beluga whale population, any additional activity that may contribute to or that may worsen the observed decline could place this population at significant risk of extirpation. For these reasons, as well as BOEM's low estimated oil and gas recovery potential in federal waters of Cook Inlet (BOEM 2012), the Commission recommends that BOEM omit the Cook Inlet planning area from the 2017-2022 leasing program until such time that the causes for the decline of the Cook Inlet beluga whale

population are identified and addressed and progress in recovery of this species has been demonstrated.

Arctic. The protection of vulnerable marine mammal species is critical in the Arctic planning areas, where local communities are highly dependent on many species of marine mammals for subsistence (Braund and Associates 2010), and access to food from other means is limited and expensive. The Arctic is also on the front line of climate change. The precipitous decline of multi-year sea ice⁸ will result, or has already resulted, in habitat loss and changes in foraging patterns for ice dependent species such as walrus, ringed seals, bearded seals, and polar bears (Schliebe et al. 2006, Kelly et al. 2010, Jay et al. 2012, Pagano et al. 2012, MacIntyre et al. 2013). Other species, such as gray whales, humpback whales, fin whales, and killer whales, appear to have altered their migration patterns and are now more prevalent in Arctic waters, perhaps to take advantage of increased opportunities for foraging in ice-free waters (Perryman et al. 2002, Stafford et al. 2007, Clark et al. 2013, Moore et al. 2014: Fig 11.10).

BOEM, the National Oceanic and Atmospheric Administration (NOAA), the Fish and Wildlife Service (FWS), the U.S. Geological Survey, the state of Alaska, the North Slope Borough, the oil and gas industry, and others have made significant investments in research to gather baseline information on the distribution and movements of marine mammals, better characterize the large-scale physical and biological processes of the Beaufort and Chukchi Sea, and monitor the changes occurring as seasonal sea ice declines and ocean temperatures increase. Nevertheless, considerable uncertainties remain regarding how best to mitigate potential short-term, long-term, and cumulative impacts of oil and gas development on marine mammals and Alaska coastal communities (Holland-Bartels and Pierce 2011, Clement et al. 2013).

There is also considerable uncertainty regarding industry's ability to respond to oil spills in the Arctic environment. As evidenced by the low recovery rate of oil during the Deepwater Horizon oil spill (NOAA 2010), current oil spill response technologies are less than adequate for recovery of spilled oil even under ideal conditions. Oil spill response efforts in the Arctic would be additionally hampered by ice and inadequate in-ice response technologies, the remoteness of the spill, extended periods of darkness and severe weather, lack of trained personnel, and lack of equipment and infrastructure (Ebinger et al. 2014). Although there has been considerable research invested in oil spill response and recovery in ice-filled waters, industry and regulators have had only limited ability to test promising technologies and methods in Arctic environmental conditions on operational scales (NRC 2014).

There are currently 487 leases held in the Chukchi Sea and 207 leases in the Beaufort Sea,⁹ and BOEM has additional lease sales scheduled for each of these areas under the current five-year program. Given the increased risk to marine mammals in these waters from loss of habitat, changes in prey availability, and the current lack of adequate oil spill response capability, the Commission recommends that BOEM limit oil and gas development in the Arctic by omitting the Chukchi and Beaufort Sea planning areas from the 2017-2022 leasing program. This would allow responsible

⁸ <http://nsidc.org>

⁹ http://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/Leasing/Historical_Alaska_Region_Lease_Sales.pdf

agencies to collect sufficient baseline information on biological and physical processes and provide industry with the opportunity to demonstrate its ability to produce oil and gas safely on current leases and respond effectively to oil spills. It would also provide a relatively stable foundation for agencies and industry to work together to develop and adapt measures to mitigate and monitor the risks of oil and gas development in this rapidly changing environment.

Other Alaska planning areas. Other planning areas within Alaska also provide important marine mammal subsistence and cultural resources for Alaska Native communities. Expansion of oil and gas activities in these areas and the potential effects of that expansion therefore are of particular concern. In addition, certain areas and species that occur in the Alaska OCS may be more sensitive to oil and gas development. For example, portions of the North Aleutian Basin and Kodiak planning area have been designated as critical habitat for the highly endangered North Pacific right whale (73 Fed. Reg. 19000), a population most recently estimated at about 30 animals (Wade et al. 2011). Although marine mammal populations in the Gulf of Alaska planning area appear to be stable, the slow recovery of sea otters and other marine species after the *Exxon Valdez* oil spill (Bodkin et al. 2002, Esler et al. 2010, Esler et al. 2014, Malakoff 2014) is a strong reminder of the vulnerability of coastal species and habitats to oil spills. Given the low estimated oil and gas recovery potential in the other Alaska planning areas, the risks associated with oil and gas development do not appear to be balanced against the environmental sensitivity of the area. Therefore, the Commission recommends that BOEM and its partner agencies collect baseline physical and biological data and information on subsistence use patterns in other Alaska planning areas to evaluate the resilience of those areas to oil and gas development and other human activities before proposing to include them in future leasing programs.

Atlantic. There are at least 38 species/stocks of marine mammals documented to occur in Atlantic waters, six of which are listed as endangered or threatened under the Endangered Species Act (ESA) (Waring et al. 2000, 2008, 2009, 2010, 2012, 2013). Information on the majority of the species/stocks in the Atlantic falls short of that required to assess their population status and vulnerability to various risk factors, including oil and gas development, and to assess and detect changes over time that may be caused by development. Many species/stocks have abundance estimates derived from infrequent or outdated surveys, and abundance estimates are simply not available for certain species (Waring et al. 2012). BOEM's Environmental Studies Program, in collaboration with the Navy, has provided multi-year funding to NMFS for the Atlantic Marine Assessment Program for Protected Species (AMAPPS). That program involves broad-scale, multi-year, seasonal collection of abundance and distribution data for marine mammals and other wildlife in the U.S. Atlantic, using visual aerial and shipboard surveys with towed passive acoustic arrays. The information from AMAPPS promises to contribute significantly to the quality of baseline information needed for marine mammal stock assessments and to assess impacts of energy development. The Commission is encouraged to learn that BOEM has recently committed to continue funding the program for an additional five years.

That said, the Commission has a number of concerns regarding proposed offshore oil and gas development in the Atlantic. Because this area includes a wide range of marine mammal habitats, the impact of leasing and development is highly dependent on the number and location of lease blocks offered. Coastal areas are inhabited by endangered North Atlantic right whales, which migrate annually between calving grounds off Florida and Georgia to feeding grounds in the Gulf of

Maine. Because of their coastal distribution, they are particularly vulnerable to mortality and serious injury from vessel strikes and entanglement in fishing gear (Kraus and Rolland 2007). Bottlenose dolphins are also coastal in distribution, and are vulnerable to periodic unusual mortality events caused by epizootics such as morbillivirus, as implicated in the ongoing unusual mortality event involving dolphins from Florida to New York¹⁰ as well as previous events dating back to at least the early 1980's (Duignan et al. 1996). Less is known about the distribution and abundance of marine mammals in more offshore waters due to the difficulty and expense in surveying these areas, and the deep-diving nature of certain offshore species such as beaked whales, which makes them less available for detection by visual observation.

BOEM has recently finalized its PEIS on proposed geological and geophysical activities, which includes an evaluation of impacts associated with the use of seismic airguns for oil and gas exploration. The PEIS outlined a number of mitigation measures to minimize impacts to right whales and other species, and the Commission provided extensive comments on the risks geological and geophysical activities in the Atlantic present to marine mammals (letter dated 2 July 2012). The Commission reiterates and expands its recommendation that BOEM and the oil and gas industry provide broader access to seismic data that has been collected in the Atlantic but that may not yet be in the public domain. This could help to focus considerations regarding whether to include any of the Atlantic planning areas in the next five-year program, especially considering that oil and gas resources in the south and mid-Atlantic are estimated to be relatively small (BOEM 2012, Post et al. 2012). The PEIS and the Commission's comments did not consider potential impacts of exploratory drilling or subsequent stages of oil and gas development.

Considerable efforts are underway to develop wind energy resources in the Atlantic OCS planning areas. The process has involved the establishment of state-based regional task forces which have worked with BOEM, other federal and state agencies, and a wide variety of stakeholders to identify specific lease blocks suitable for wind energy development. This geographically targeted approach to identifying wind energy areas for leasing has helped to reduce potential conflicts with other uses of the human, marine, and coastal environments in the Atlantic, such as fishing, shipping, tourism, and military activities. It has also helped to identify areas and times of high use by particularly vulnerable species such as right whales and sea turtles, as well as measures to minimize interactions with these species.

A move away from area-wide leasing and toward a geographically targeted approach is being used to identify specific lease blocks to be offered in the upcoming Chukchi and Beaufort lease sales to "achieve an appropriate balance between making resources available while limiting conflicts with environmentally sensitive areas and subsistence use" (78 Fed. Reg. 59715). Although the Atlantic does not have subsistence use issues, it does have potential conflicts with other long-standing human uses of the marine environment as mentioned above. To avoid such conflicts if any of the Atlantic planning area were to be included in the next five-year program, the Commission recommends that BOEM use a geographically targeted, task force approach to identifying oil and gas lease areas in the Atlantic to reduce the probability of interacting with marine mammals and to minimize conflicts with other human uses of the marine environment.

¹⁰ <http://www.nmfs.noaa.gov/pr/health/mmume/midatldolphins2013.html>

Gulf of Mexico. Leasing in the Gulf of Mexico planning areas follows an annual “area-wide” leasing approach, where all currently unleased blocks are made available for leasing rather than only those blocks nominated by industry and selected by BOEM for leasing. The area-wide leasing approach began in 1983 and was intended to spur interest in oil and gas development (GAO 1985), especially in deep-water environments of the Gulf in which the industry previously had only limited interest (Oil Spill Commission 2011). Given the continued push into deepwater environments and associated technology advancements that have facilitated that expansion, the original impetus for area-wide leasing no longer exists and may in fact be increasing the risk and environmental consequences of a major oil spill. In addition, area-wide leasing may actually be resulting in reduced government leasing revenues¹¹ (Gelso 2008, Freudenburg and Gramling 2010).

The Commission is not aware of any studies that have examined in detail the degree to which the area-wide leasing practice may be influencing industry decisions regarding the exploration and development of oil and gas resources in deepwater or other environments. Given the inherent environmental risks associated with oil and gas development in deepwater environments, a comprehensive analysis of the area-wide leasing approach in the Gulf is warranted and long overdue. The Commission therefore recommends that BOEM undertake a comprehensive analysis of the economic and ecological effects of area-wide leasing versus an industry or alternative lease block nomination process to determine whether the area-wide leasing approach should be continued in the Gulf of Mexico planning areas in the next five-year leasing program.

The Gulf of Mexico is the most productive OCS planning area for oil and gas production, and will likely remain so for many years to come. However, it is probably the least studied of all the OCS planning areas. Despite decades of oil and gas development in the Gulf, there are no systematic surveys of the 22 marine mammal species/57 marine mammal stocks that reside in or regularly visit the inshore, coastal, and offshore waters of the Gulf of Mexico (Waring et al. 2013). As a result, baseline information on abundance, distribution, stock structure, and trends for most of the Gulf’s marine mammal stocks is limited, as is information regarding age structure, reproductive rates, survival rates, and health (nutritional status, immune function, and prior exposure to contaminants, biotoxins, and infections) (Marine Mammal Commission 2011). Without such information, decision-makers have an inadequate basis for determining whether, where, and under what conditions to authorize or conduct activities that could have acute or long-term adverse effects on marine mammals and other marine species.

A long-term and consistent investment in collecting the data needed to generate stock assessments and to evaluate the impacts of oil and gas development on marine mammals in the Gulf would ensure that the decisions regarding proposed activities are guided by the best available scientific information. NMFS’s guidelines for assessing marine mammal stocks suggest that surveys be conducted at least every eight years to enable detection of a 10 percent decline in abundance (NMFS 2005, Moore and Merrick 2011). As noted above, BOEM is supporting broad-scale, multi-year collection of abundance and seasonal distribution data for marine mammals and other wildlife in the Atlantic, and the Commission believes a similar program is long overdue for the Gulf. To support decision-making for continued oil and gas activities in the Gulf, the Commission recommends that BOEM work with NMFS, the Department of Defense, and other relevant entities

¹¹ The analysis did not look at the effect of area-wide leasing on production revenues (i.e., royalties).

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to design a multi-year, Gulf-wide marine assessment program to provide reliable estimates of abundance and distribution for marine mammals and other protected species.

Gulf of Mexico Eastern Planning Area. Only a small portion of the Eastern Gulf of Mexico is available for leasing in the current leasing program. However, the expiration of long-standing moratoria on leasing of that area and BOEM's assessment of potential oil and gas resources (BOEM 2011) could lead to interest in including that area in the next five-year leasing program. One of the most effective ways to limit the harmful effect of oil and gas exploration and development on marine mammals is to restrict activities in areas where vulnerable species are more likely to be present. For example, the northeastern-shelf edge of the DeSoto Canyon area off Florida is the only known presently occupied habitat for Bryde's whales in the Gulf of Mexico (Maze-Foley and Mullin 2006, Waring et al. 2013). Evidence from whale calls detected in nearly all months of the year suggests Bryde's whales may inhabit this particular area of the northern Gulf year-round (Širović et al. 2013). It is not known to what extent Bryde's whales may be affected by exploration or drilling activities, but baleen whales in general are more likely to be affected by seismic airguns and drilling because of their sensitivity to low frequency sounds (Southall et al. 2007). Due to the small size of this stock and its potential vulnerability to oil and gas exploration and development, the Commission recommends that if BOEM considers including the eastern Gulf of Mexico in the next leasing program, that it exclude Bryde's whale habitat from the lease blocks offered for sale.

Pacific. The most recent lease in the Pacific OCS planning area was in 1984 and the Commission does not anticipate the inclusion of this planning area in the 2017-2022 leasing program.

I trust these comments will be helpful. Please let me know if you have any questions with regard to this letter.

Sincerely,

A handwritten signature in blue ink that reads "Rebecca J. Lent". The signature is written in a cursive style.

Rebecca J. Lent, Ph.D.
Executive Director

cc: Dr. William Brown, BOEM Chief Environmental Officer
Mr. Brian Salerno, Bureau of Safety Environmental Enforcement

REFERENCES

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