Clean Ocean Action

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Ocean Advocacy Since 1984

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May 17, 2009

Regional Supervisor, Leasing and Environment (MS 5410)
Minerals Management Service
Gulf of Mexico OCS Region
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123–2394.

RE: Comments on the Programmatic Environmental Impact Statement (PEIS) Scope for Future Industry G & G Activity on the Mid- and South Atlantic OCS

VIA ELECTRONIC MAIL TO GGEIS@MMS.GOV

Dear Regional Supervisor:

Clean Ocean Action's submits for your review these written comments on the Scoping for a Programmatic Environmental Impact Statement (PEIS) for future industry geological and geophysical (herein "G & G") activity on the Mid- and South Atlantic OCS.[1] COA strongly opposes the G & G activities related to oil, gas and minerals exploration and extraction in the previously protected areas of the Atlantic OCS.

Furthermore, we reject the need for the inclusion of renewable energy activities in this PEIS process. As renewable energy does not require such invasive, intensive, region-wide surveys, it must not become mired in this process, nor should it be lumped in with oil, gas and minerals development. Clearly, any G&G activities for offshore renewable projects must comply with the National Environmental Policy Act (NEPA) requirements on a project by project basis.

Clean Ocean Action (herein "COA") is a broad-based coalition of 125 conservation, environmental, fishing, boating, diving, student, surfing, women's, businesses, service, and community groups, as well as many concerned citizens and businesses. Our goal is to improve the degraded water quality of the marine waters off the New Jersey/New York coast. It is COA's mission to investigate, review, and question proposals that may affect ocean water quality in the New York/New Jersey Bight.[2]

The PEIS for G&G ACTIVITIES in the ATLANTIC MUST NOT PROCEED
In light of the environmental disaster of the Deepwater Horizon drilling tragedy, this process that leads to more exploration activity and environmental harms must be

[1] Fed. Reg. Vol. 75 (63) pg. 16830-16833
[2] Visit http://www.cleanoceanaction.org for more information.

stopped. The MMS regulatory process and oversight is highly suspect given the grossly inadequate safety requirements and response efforts to control and contain the spill. A hold must be placed on all regulatory or planning actions that would advance any future offshore activity for Outer Continental Shelf (OCS) Oil and Gas Leasing Program until further investigations have been completed on the ongoing catastrophe in the Gulf of Mexico and any additional areas adversely affected.

COA previously submitted comments opposing the inclusion of all new areas (including two in the Atlantic Region) in the draft Proposed 5-Year Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2007-2012 Preliminary Revised Program (PRP) that were previously afforded protection through Congressional Moratorium and Presidential Executive Order. Inclusion of these areas flies in the face of over 25 years of good governance policies to protect environmentally sensitive areas and puts the regional economic and environmental productivity and potential at risk. The long-standing moratoria for the Atlantic Ocean must be reinstated.

THE MMS EIS PROCESS IS NOT RELIABLE and AGENCY REFORMS Are NEEDED

The U.S. Government Accountability Office has identified several problems with MMS's National Environmental Policy Act (NEPA) procedures.[3] The report's statement:

> "*MMS has been subjected to allegations by stakeholders and former MMS scientists of suppression or alteration of their work on environmental issues*"

is cause for concern. We support the report's recommendation that national MMS comprehensive guidance handbook on how to implement NEPA is needed and that:

> "*Such guidance should detail procedures for conducting and documenting NEPA-required analyses, including how determinations of significance are to be made and how scientific findings are to be reviewed*."

Without meaningful and extensive reforms to the agency and NEPA process, MMS cannot be trusted to fulfill its environmental obligations and legal requirements.

The proposed extent and amount of G&G activities is enormous with over 11 proposed applications submitted in response to MMS's 2009 Notice of Intent for the PEIS and Call for Interest in G&G Activity.[4] COA also rejects the contention in the Federal Register Notice that "small-scale, limited permit requests" of G & G activities should be deemed sufficiently minor to qualify for only a cursory Environmental Assessment (EA) analysis, or a "Finding of No Significant Impact" (FONSI). No projects in the Atlantic coast should be given such consideration, especially since MMS identified both the south Atlantic and mid-Atlantic regions as some of the most sensitive to oil and gas activities based on ecological components and/or adjacent coasts.[5]

Thus, COA continues to adamantly oppose the G & G activities related to oil, gas and minerals exploration and extraction in the previously protected areas of the Atlantic OCS. These G & G activities will promote and support oil and gas drilling in this area and must not be allowed. This

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[3] Offshore Oil and Gas Development: Additional Guidance Would Help Strengthen the Minerals Management Service's Assessment of Environmental Impacts in the North Aleutian Basin GAO-10-276 March 8, 2010 http://www.gao.gov/products/GAO-10-276 Accessed May 11, 2010.

[4] http://www.gomr.mms.gov/homepg/offshore/atlocs/gandg.html

[5] Fed. Register Notice Vol. 75 No. 63 p.16834

opposition is also due to the significant harm exploratory activities pose to marine life, including fish and endangered whales.

Our detailed scientific and legal rationale for this opposition follows.

THE ATLANTIC REGION HAS ABUNDANT AND VULNERABLE MARINE LIFE

The Atlantic region encompasses several ecologically rich and unique marine systems, diverse habitats and protected areas. The New York Bight *"has one of the highest diversities of marine mammals and sea turtles reported anywhere in the United States."*[6] The region supports more than 300 species of fish, nearly 350 species of birds, 5 species of sea turtles, and many marine mammals, with over 20 species of whales and dolphins, a porpoise, and 4 species of seals that frequent the region. In the coastal region from Virginia to New York, there are eleven National Wildlife Refuges, and a series of barrier islands that make up the International Shorebird Reserve designated by the United Nations as a World Biosphere Reserve. These national and international designations are designed to protect thousands of acres of coastal wetland and tidal marshes that are considered critical feeding habitat for millions of migratory birds that travel the Atlantic Flyway. The Delaware Bay and surrounding coastlines support the second largest population of migrating shorebirds in North America.[7] Delaware Bay is also the world's largest spawning ground for horseshoe crabs which lay their eggs along the shoreline and are essential for migratory birds and serve as an important food source for sea turtles.[8,9] There are extensive areas within the Atlantic and along the coastline designated as essential fish habitat. Fish, marine mammals, and sea turtles inhabit and migrate through the region. In the Atlantic, the North Atlantic right whale, is one of the most vulnerable endangered species, as the small population is already under pressure from ship strikes and traffic noise[10] as well as from Liquefied Natural Gas (LNG) tankers at offshore terminals in Massachusetts Bay. Seismic surveys are proposed for the right whale's calving grounds off Florida and Georgia and migration route through the Mid-Atlantic, where it travels to areas off Cape Cod and Nova Scotian Shelf and then returns south again.[11] Proposed oil and gas exploration activities threatens the coastal habitats and waters of the entire region and the organisms that depend on them.

PEIS RECOMMENDATIONS

COA opposes oil, gas and minerals exploration and extraction related G & G activities in the Atlantic OCS and, therefore, rejects the need for this PEIS. However, if the PEIS proceeds against sound science, good governance and better judgment to protect marine resources, the following must be incorporated.

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[6] U.S. Fish and Wildlife Service, 1997. Significant Habitats and Habitat Complexes of the NY Bight Watershed, , http://training.fws.gov/library/pubs5/web_link/text/int_fish.htm#Marine%20Mammals%20and%20Sea%20Turtles (accessed July 24, 2008).

[7] http://www.fws.gov/northeast/pdf/horseshoe.fs.pdf Accessed 5/7/10.

[8] http://www.fws.gov/northeast/pdf/horseshoe.fs.pdf Accessed 5/7/10.

[9] http://horseshoecrab.org/nh/eco.html Accessed 5/7/10.

[10] Clark, C.W., Ellison, W.T., Southall, B.L., Hatch, L., Van Parijs, S.M., Frankel, A., and Ponirakis, D. (2009). Acoustic masking in marine ecosystems: Intuitions, analysis, and implication. *Marine Ecology Progress Series* 395: 201-222.

[11] http://www.whoi.edu/page.do?pid=12639&tid=441&cid=5487&ct=61&article=2482 Last updated March 8, 2010, Accessed on April 26, 2010.

The PEIS must evaluate anticipated G & G activities from oil, gas and minerals exploration and extraction, including, but not limited to: **seismic and other sonar surveys, electromagnetic surveys, and geological and geochemical sampling**, each of which carries with it a range of adverse impacts on the marine environment. **All noise related impacts of these G & G activities must be assessed for the entire biota of the Atlantic region**, including cumulative effects from other G & G survey methods which may be used simultaneously or successively (electromagnetic, aeromagnetic, and gravity surveys) and the additional noise sources from helicopters and aircraft and boats.

The PEIS also needs to include the availability of sufficient baseline data identifying preferred feeding, breeding, or nursery habitats for marine mammals, sea turtles and fish, as well as sensitive benthic habitats in study area. At its December 2008 MMS workshop held in Williamsburg, Virginia, presenters indicated that there are very significant scientific data gaps for the entire Atlantic coastline which need to be filled prior to OCS oil and gas leasing going forward, and we would further assert that these same data gaps will need to be addressed prior to the completion of a PEIS on G&G activities in this region. Abundance and distribution data is needed for the various life stages of fish, whales, dolphins, porpoises, seals, squid, sea turtles, and many other organisms that would be affected by exploration activities. At a December 2008 MMS Workshop on Environmental Research Needs in Support of Potential Virginia Offshore Oil and Gas Activities, scientists identified these major data gaps and called for the collection of more data on the seasonal distribution of marine life, migration patterns, and spawning periods over multiple years for species ranging in size from tiny plankton to whales.[12]

More scientific information is critical to ensure protection of endangered and threatened populations and their distributions. The 2009 report of the MMS workshop noted that:

> *"sightings and distribution data is 20-30 years old, and may not be relevant to contemporary patterns. In addition, there is little or no survey effort beyond 50 miles…"*

There are insufficient data even to determine population trends for several whales (blue, fin, sperm and sei whales) in the western Atlantic Ocean according to NOAA, and many populations are already small, with only approximately 350 North Atlantic right whales left.[13] A 2009 shipping traffic assessment also highlighted the lack of data:[14]

> *"information on whale distribution in the area offshore of the Chesapeake Bay approach and in the mid-Atlantic region in general, is essentially non-existent."*

The Marine Mammal Protection Act (16 U.S.C. 1362) was enacted due to concerns about declines in marine mammals and recognition of the need for their protection.[15] Takings and

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[12] Díaz, R.J., K.W. Able, L. Atkinson, D. Austin, R. Brill, S.D. Kraus, D. Lipton, and L.C.Schaffner. 2009. Workshop on Environmental Research Needs in Support of Potential Virginia Offshore Oil and Gas Activities. Final Report. OCS Study MMS 2009-011. U.S. Dept. of the Interior Minerals Management Service, Herndon, VA. 42 pp., plus Appendices.

[13] http://www.nmfs.noaa.gov/pr/sars/species.htm#cetaceans

[14] Barco, S.G. G.G. Lockhart, K. M. Lagueux, A. R. Knowlton and W.M. Swingle. 2009. Characterizing Large Vessel Traffic in the Chesapeake Bay ocean approach using AIS and RADAR. Final Report for NFWF Award#2006-0093-009 and VDGIF Contract #2007-10280. VAQF Scientific Report 2009-05. Virginia Beach, VA. 42pp.

[15] http://www.nmfs.noaa.gov/pr/pdfs/laws/mmpa.pdf

damages from these noise intensive activities (seismic testing, platform anchoring etc) and chronic noise need to be estimated. The Act states that:

> *"species and population stocks should not be permitted to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part, and, consistent with this major objective, they should not be permitted to diminish below their optimum sustainable population."*

Given the current lack of information and the low populations of several endangered whales, how will MMS even be able to assess the impacts of exploratory surveys and ensure that requirements of this Act are indeed met?

Additional environmental protection laws must also be complied with, including the Endangered Species Act, Coastal Zone Management Act, the Magnuson-Stevens Act, and others.

LEVELS, DURATION, and EXTENT of NOISE IMPACTS

Noise pollution from exploratory surveys can have devastating and far reaching environmental impacts and must not be allowed in the Atlantic Ocean. Noise travels about five times faster in seawater than air. It also travels farther. Air gun noise from seismic surveys has been recorded over 3,000 km from it origin.[16] This is more than double the distance of the area opened from Delaware to mid-Florida. Ocean waters of the New York Bight off the Jersey Shore would be affected by even the southern-most surveys proposed.

Beyond several miles, the repetitive airgun blasts become a continuous noise blocking communication of species such as endangered whales that use low frequency sound to function.[17] Airguns can produce 256 decibels of peak pressures of sound.[18] For comparison, sounds can be hazardous to human hearing at 80 decibels and painful noises for people start at 120 decibels which is equivalent to a jet airplane take-off or a rock concert.[19] Because the decibel scale is logarithmic, the peak pressures of air guns are orders of magnitude louder than 120 decibels.

The long-term effects of chronic noise are only now beginning to be investigated and studied, and the risks of chronic noise are thought to be more substantial than acute stressors.[20] Chronic noise pollution is already a serious problem in the Atlantic region and the global ocean. A single seismic survey can raise the noise level two orders of magnitude higher than normal levels, 20 decibels, over vast areas.[21] The industrial noise rising in many coastal regions, which has "*increased 100-fold at some locations over the last 50 years*", has been compared by scientists to

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[16] Nieukirk. S. et al. 2004. Low frequency whale and seismic airgun sounds recorded in the mid-Atlantic Ocean. *Journal of Acoustical Soc. of America.* 115:4:1832-1843.

[17] Weilgart, L. ed. (2010). Report of the workshop on alternative technologies to seismic airgun surveys for oil and gas exploration and their potential for reducing impacts on marine mammals, 31 Aug. – 1 Sept., 2009, Monterey, Calif. Darmstadt: Okeanos – Foundation for the Sea. 35pp.

[18] Ibid. p.11.

[19] http://www.asha.org/public/hearing/disorders/noise.htm

[20] Tyack, P.L. 2008. Implications for marine mammals of large-scale changes in the marine acoustic environment. *Journal of Mammalogy* 89(3): 549-558

[21] International Whaling Commission 2005 J. Cetacean Res. Management 7:267-305 *In* Weilgart 2007. Can. J. Zool. 85(11): 1091–1116 (2007)

a continuous fog that is shrinking the sensory range of marine animals.[22] The persistent noise of seismic surveys over extensive time periods and vast areas of the ocean will further degrade these already noisy coastal and ocean environments.

CUMULATIVE IMPACTS

A baseline study of current anthropogenic noise levels in the entire U.S. Atlantic coastal/ocean region is needed.

The cumulative affects and extent of noise pollution from exploration, construction, drilling, and reservoir surveys must be considered for the Mid- and South Atlantic regions, the adjacent regions, and larger Atlantic Ocean.

The PEIS must consider all cumulative impacts, including, but not limited to, any concurrent acoustic surveys (including all non-oil and gas surveys), multiple noise sources (military activities, offshore LNG facilities such as those off Massachusetts, shipping traffic, and port areas), multiple proposed offshore wind/wave facilities in the region, and climate change (including the effect from underwater sounds travelling further with increases in ocean acidification[23]). As G & G activities will likely involve consecutive years of intensive seismic surveying in these same waters, the PEIS must account for all foreseeable future seismic surveys in the entire Atlantic region.

According to a 2009 MMS report:[24]

> *"The cumulative impacts from all of these activities are adding to the ambient noise levels in the ocean and are steadily eroding marine mammal's abilities to communicate. At some point this acoustic smog (Clark et al., 2007) will start to affect the abilities of whales to find food and mates. When that happens (and that point may be near), human noise pollution in the oceans will have significant, long-lasting, population level consequences on the survival of some marine mammals."*

IMPACTS TO MARINE BIOTA

In the light-limited ocean environment, marine organisms, such as whales, dolphins, and fish depend on sound for survival. And its not just marine mammals - over 700 fish species produce low frequency, species-specific sounds.[25] Noise pollution from seismic surveys can mask and interfere with vital animal communication functions, create stress, cause loss of hearing, injure,

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[22] Bode, M., Clark, C.W., Cooke, J., Crowder, L.B., Deak, T., Green, J.E., Greig, L., Hildebrand, J., Kappel, C., Kroeker, K.J., Loseto, L.L., Mangel, M., Ramasco, J.J., Reeves, R.R., Suydam, R., Weilgart, L. 2009. Statement to President Barack Obama of Participants of the Workshop on Assessing the Cumulative Impacts of Underwater Noise with Other Anthropogenic Stressors on Marine Mammals. 2pp. http://www.okeanos-stiftung.org/download/CI_en.pdf (Accessed May 10, 2010.)

[23] Hester, K.C, et al. 2008. Unanticipated consequences of ocean acidification: A noisier ocean at lower pH. *Geophysical Research Letters* 35, L19601

[24] Díaz, R.J., K.W. Able, L. Atkinson, D. Austin, R. Brill, S.D. Kraus, D. Lipton, and L.C.Schaffner. 2009. Workshop on Environmental Research Needs in Support of Potential Virginia Offshore Oil and Gas Activities. Final Report. OCS Study MMS 2009-011. U.S. Dept. of the Interior Minerals Management Service, Herndon, VA. 42 pp., plus Appendices.

[25] Luczkovich, J. J. D. A. Mann. R. A. Rountree. 2008. Passive Acoustics as a Tool in Fisheries Science. Transactions of the American Fisheries Society 137:533–541

and in severe cases be fatal to sealife.[26,27] Human-induced noise can also cause avoidance over large distances and displacement of marine mammals from critical habitats.[28] Both acute and chronic environmental impacts from seismic surveys must be assessed.

Acute noise and multiple sonar use has led to whale strandings and mass beachings.[29,30] Seismic surveys have been implicated in the loss of cetacean biodiversity off the coast of Brazil.[31] In response to a single seismic survey, endangered fin and humpback whales have stopped vocalizing over an area *at least* 100,000 square nautical miles in size.[32]

Noise can induce stress responses in marine mammals[33] and may affect physiology without necessarily resulting in behavioral change.[34] According to the National Research Council's review of ocean noise, "*when the perturbation is frequent, outside the normal physiological response range, or persistent, the stress response can be pathological*."[35]

Air gun blasts can damage fish hearing organs.[36] Commercial fishing catch rates have been observed to decrease by 40-80 % over thousands of square kilometers around a single airgun array.[37,38,39] Fishermen in some parts of the world are seeking and getting industry compensation for their losses.

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[26] National Research Council, 2003. *Ocean Noise and Marine Mammals*, National Academy Press, Washington, D.C. http://www.nap.edu/catalog.php?record_id=10564#toc

[27] Weilgart 2007. The Implications of anthropogenic ocean noise on cetaceans and implications for management. Can. J. Zool. 85(11): 1091–1116 (2007)

[28] Tyack, P.L. 2008. Implications for marine mammals of large-scale changes in the marine acoustic environment. *Journal of Mammalogy* 89(3): 549-558

[29] Robin Nixon, Oil Drilling: Risks and Rewards, LiveScience, June 25, 2008, http://www.livescience.com/environment/080625-oil-drilling.html (accessed Jan. 6, 2009);

[30] Parsons, Dolman, Wright, Rose, Burns, 2008. Navy sonar and cetaceans: Just how much does the gun need to smoke before we act? Marine Pollution Bulletin 56: 1248–1257

[31] Parente, C.L., Pauline de Araújo, J., and Elisabeth de Araújo, M. (2007). Diversity of cetaceans as tool in monitoring environmental impacts of seismic surveys. *Biota Neotropica* 7(1).

[32] Clark, C.W., and Gagnon, G.C. (2006). Considering the temporal and spatial scales of noise exposures from seismic surveys on baleen whales. IWC/SC/58/E9. Submitted to Scientific Committee, International Whaling Commission. 9pp.

[33] National Research Council, 2003. *Ocean Noise and Marine Mammals*, National Academy Press, Washington, D.C. http://www.nap.edu/catalog.php?record_id=10564#toc

[34] Wright et al. 2007 Anthropogenic Noise as a Stressor in Animals: A Multidisciplinary Perspective International Journal of Comparative Psychology, 20(2)

[35] National Research Council, 2003. *Ocean Noise and Marine Mammals*, National Academy Press, Washington, D.C. http://www.nap.edu/catalog.php?record_id=10564#toc

[36] McCauley, R.D., J. Fewtrell, & A.N. Popper, 2003. High Intensity Anthropogenic Sound Damages Fish Ears, *J. ACOUST. SOC. AM.* 113:1:638-642

[37] Engås, A., Løkkeborg, S., Ona, E., and Soldal, A.V.,1996. Effects of seismic shooting on local abundance and catch rates of cod (*Gadus mor-hua*) and haddock (*Melanogrammus aeglefinus*). *Canadian Journal of Fisheries and Aquatic Sciences* 53: 2238-2249.

[38] Skalski, J.R., Pearson, W.H., and Malme, C.I.,1992. Effects of sounds from a geophysical survey device on catch-per-unit-effort in a hook-and-line fishery for rockfish (*Sebastes ssp.*). *Canadian Journal of Fisheries and Aquatic Sciences* 49: 1357-1365.

[39] Løkkeborg, S., and Soldal, A.V. 1993. The influence of seismic exploration with air guns on cod (*Gadus morhua*) behaviour and catch rates. ICES Mar. Sci. Symp. 196: 62.67. *In* Engas et al 1996. *Canadian Journal of Fisheries and Aquatic Sciences* 53: 2238-2249.

Important impacts of seismic activity on marine biota in the Atlantic region that must be assessed for both acute and chronic effects include, but are not limited to, the following:

- Risk of strandings to marine mammals and fish,
- Mortality, both direct and indirect (resulting from disruption of growth/feeding) of fish eggs, larvae and fry
- Disruption of biologically important behaviors (mating, feeding, nursing or migration, including loss of efficiency in conducting these behaviors) due to temporary hearing loss or impairment including impacts due to:
    - separation of calves from mothers or separation of individuals from pods/groups (and resulting risk of predation, starvation, stranding, etc.)
    - inability to hunt or capture prey, these assessment must include impacts during critical life stages (i.e. larvae, juveniles, nursing mothers) and critical seasons (i.e. pre and post migration, calving/nursing)
    - inability to detect predators and consequent risk of predation (although noise generation from seismic activity may be transient, if organism is consumed due to hearing difficulties, the impact is obviously permanent)
    - failure to detect mating calls (again transient noise from seismic activity during mating season can result in a loss of mating opportunities for the entire season/year)
    - failure to maintain normal migration routes either due to avoidance or disorientation caused by noise generated during seismic activity.
- Declines in availability and viability of prey species due to avoidance of impacted area,
- Ecosystem impacts of large scale movement of marine mammals and fish away from areas experiencing intense acoustic activity
- Habituation (causing animals to remain near damaging levels of sound)

IMPACTS TO COMMERCIAL & RECREATIONAL FISHING

In addition, the PEIS on seismic activity in the Atlantic region must examine the impact to both commercial and recreational fisheries catch rates caused by large scale movement of fish away from areas experiencing intense acoustic activity and/or other negative impacts such as organ damage, communication masking, or negative impacts to developing eggs and larvae. Assessments must include, but are not limited to, the geographic extent of avoidance, length of time for full stock recovery in the affected area, and consequent reductions in commercial and recreational catch rates.

CONFLICT WITH ONGOING AND PREVIOUS MILITARY ACTIVITIES

The sediments of the Atlantic OCS contain numerous mapped and unmapped disposal sites for unexploded military ordinance and chemical weapons, and the PEIS must consider the effect of induced acoustic impacts in potentially discharging such devices on the seabed. How will extensive exploratory surveys affect submarine surveillance for the entire East Coast? In addition, mission-critical homeland security operations areas occur in the Atlantic region, including instrumentation and equipment testing and training activities uses associated with the U.S. Navy's Virginia Capes Operations Area (herein "VACAPES"), and activities associated with the Wallops Island NASA facility. The U.S. Navy previously determined that military activities in the VACAPES area "*have the potential to interfere with or interrupt exploration and*

drilling operations."[40] Therefore, the PEIS must address potential risks of G & G activities to all ongoing and previous military activities in the Atlantic OCS.

MITIGATION MEASURES DO NOT PROTECT MARINE LIFE

Current mitigation measures, which rely on visual monitoring in limited areas, are inadequate and do not protect marine life.

Human observers cannot see marine life underwater and cannot see surfacing of marine species beyond relatively short distances. Ramping up noise does not guarantee that marine life will move out of the area, and many marine organisms that are benthic or planktonic are incapable of moving significant distances away from the noise source.

In a 2009 review of international mitigation measures for noise pollution during seismic surveys and UK guideline which serve as their basis, the following critique was made:[41]

> "*relatively few aspects of these measures have a firm scientific basis or proven efficacy. Existing guidelines do not offer adequate protection to marine mammals, given the complex propagation of airgun pulses; the difficulty of monitoring in particular the smaller, cryptic, and/or deep-diving species, such as beaked whales and porpoises; limitations in monitoring requirements; lack of baseline data; and other biological and acoustical complications or unknowns."*

Any proposed mitigation measures must be scientifically proven to be effective through the peer review process prior to adoption and use.

USE OF MOST RECENT AVAILABLE LITERATURE

The 2004 Programmatic Environmental Assessment for Seismic Activity in the Gulf of Mexico OCS failed to utilize the most recent and up to date information and scientific literature available at the time. Therefore, any analysis of potential impacts from G & G activities in the Atlantic region must utilize the most recent available literature, including, but not limited, on the distribution and abundance of marine life that would be affected by introduced noise over large regions of the Atlantic Ocean, as well as to the following related to G&G activity impacts:

1) Barco, S.G. G.G. Lockhart, K. M. Lagueux, A. R. Knowlton and W.M. Swingle. 2009. Characterizing Large Vessel Traffic in the Chesapeake Bay ocean approach using AIS and RADAR. Final Report for NFWF Award#2006-0093-009 and VDGIF Contract #2007-10280. VAQF Scientific Report 2009-05. Virginia Beach, VA. 42pp.
2) *Bioacoustics* Volume 17 No 1-3 (2008) Special issue: International Conference on the Effects of Noise on Aquatic Life, Nyborg, Denmark, August 13-17, 2007
3) Clark, C.W., and Gagnon, G.C., 2006. Considering the temporal and spatial scales of noise exposures from seismic surveys on baleen whales. IWC/SC/58/E9. Submitted to Scientific Committee, International Whaling Commission. 9pp.

[40] Outer Continental Shelf Oil and Gas Leasing Program 2007-2012, Draft Environmental Impact Statement, July 2006, Page IV-2, U.S. Department of the Interior, Minerals Management Service.

[41] Parsons, Dolman, Jasny, Rose, Simmonds, and Wright, 2009. A critique of the UK's JNCC seismic survey guidelines for minimising acoustic disturbance to marine mammals: Best practise? Marine Pollution Bulletin 58 (2009) 643–651

4) Engås, A., Løkkeborg, S., Ona, E., and Soldal, A.V.,1996. Effects of seismic shooting on local abundance and catch rates of cod (*Gadus mor-hua*) and haddock (*Melanogrammus aeglefinus*). *Canadian Journal of Fisheries and Aquatic Sciences* 53: 2238-2249.
5) Engel, M.H., M.C.C. Marcondes, C.C.A. Martins, F. O Luna, R.P. Lima, and A. Campos, 2004. "Are seismic surveys responsible for cetacean strandings? An unusual mortality of adult humpback whales in Abrolhos Bank, Northeastern coast of Brazil," Paper submitted to the IWC Scientific Committee, SC/56/E28.
6) Greenpeace, 2004. Sonic Impacts: A precautionary assessment of noise pollution from ocean seismic surveys
7) Hatch, L. et al. 2008. Characterizing the Relative Contributions of Large Vessels to Total Ocean Noise Fields: A Case Study Using the Gerry E. Studds Stellwagen Bank National Marine Sanctuary. *Environmental Management* 42(5): 735-742
8) Hester, K.C, et al. 2008. Unanticipated consequences of ocean acidification: A noisier ocean at lower pH. *Geophysical Research Letters* 35, L19601
9) Hildebrand, J. 2004 "Impacts of Anthropogenic Sound on Cetaceans," IWC Doc. SC/56/E13
10) Hildebrand, J., 2004 "Impacts of anthropogenic sound on cetaceans," Paper submitted to the IWC Scientific Committee, SC/56/E13.
11) International Whaling Commission 2005. *J. Cetacean Res. Management* 7:267-305
12) Ketten, D R. 2008. Underwater ears and the physiology of impacts: Comparative liability for hearing loss in sea turtles, birds, and mammals. *Bioacoustics*. 17(1-3):312-315
13) Løkkeborg, S., and Soldal, A.V. 1993. The influence of seismic exploration with air guns on cod (*Gadus morhua*) behaviour and catch rates. *ICES Mar. Sci. Symp.* **196**: 62.67.
14) Luczkovich, J. J. D. A. Mann. R. A. Rountree. 2008. Passive Acoustics as a Tool in Fisheries Science. *Transactions of the American Fisheries Society* 137:533–541
15) McCauley, R.D. J. Fewtrell, & A.N. Popper, 2003. High Intensity Anthropogenic Sound Damages Fish Ears, *J. Acoust. Soc. Am.* 113:1:638-642
16) Hatch, L. et al. Characterizing the Relative Contributions of Large Vessels to Total Ocean Noise Fields: A Case Study Using the Gerry E. Studds Stellwagen Bank National Marine Sanctuary. *Environmental Management* 42(5): 735-742 (2008)
17) McCauley, et. al, 2003. High Intensity Anthropogenic Sound Damages Fish Ears. *J. Acoust. Soc. Am*. 113
18) NMFS, Assessment of Acoustic Exposures on Marine Mammals in conjunction with USS Shoup Active Sonar Transmissions in the Eastern Strait of Juan de Fuca and Haro Strait, Washington (May 2003)
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CONCLUSION

We support the finding of scientists attending a recent seismic workshop:

> *"The most effective acoustic mitigation remains not exposing marine life (i.e., through avoidance) to additional anthropogenic noise."*[42]

There is substantial scientific evidence that demonstrates that seismic surveys required for oil and gas exploration cause significant harms to marine life. The proposed scale and amount of the G & G surveys is enormous and these activities will likely involve many years of intensive seismic survey noise that will have significant impacts on the ecology and economy of the entire region. Offshore renewables do not require such extensive and intense G & G surveys, and must meet NEPA requirements on a project by project basis. Therefore, G & G surveys for oil and gas exploration and minerals extraction must not be allowed off the Atlantic Coast which supports extensive marine life resources.

[42] Weilgart, L. ed. (2010). Report of the workshop on alternative technologies to seismic airgun surveys for oil and gas exploration and their potential for reducing impacts on marine mammals, 31 Aug. – 1 Sept., 2009, Monterey, Calif. Darmstadt: Okeanos – Foundation for the Sea. 35pp.

COA strongly urges MMS to rescind this Programmatic Environmental Impact Statement (PEIS) for future industry geological and geophysical activity on the Mid- and South Atlantic OCS. G & G activities and offshore development for oil and gas promotes our dependency on fossil fuels, fails to consider viable fuel efficiency alternatives and, most importantly, unnecessarily puts at risk an area that is economically and environmentally dependent upon clean coastlines and ocean waters. In addition, the U.S. Atlantic coast contains too little fossil fuel resources[43,44,45] to justify the expense and environmental risk of offshore drilling activities when there are economically and technically feasible alternatives available.

Thank you for the opportunity to comment on the planned preparation of a PEIS for the Atlantic Region by the Minerals Management Service. Please send a written response to Clean Ocean Action, 18 Hartshorne Dr., Suite 2, Highlands, NJ 07732, or email at science@cleanoceanaction.org.

Sincerely,

Cindy Zipf
Executive Director

Jennifer Samson, Ph.D.
Principal Scientist

Heather Saffert, Ph.D.
Staff Scientist

cc: NJ US Congressional Delegation
open letter

[43] Annual Energy Outlook 2007, Issues in Focus, Table 10. U.S. Department of the Interior, DOI/EIA 0383 (2007) http://www.eia.doe.gov/oiaf/archive/aeo07/pdf/issues.pdf
[44] Annual Energy Outlook 2007, Issues in Focus, Table 10. U.S. Department of the Interior, DOI/EIA 0383 (2007)
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