



June 17, 2016

Ms. Abigail Hopper
Director, Bureau of Ocean Energy Management
U.S. Department of the Interior
1849 C Street, N.W.
Washington, DC 20240

RE: Request for a Supplemental Programmatic Environmental Impact Statement (PEIS) and the Bureau of Ocean Energy Management's (BOEM's) Formal Consultation with National Marine Fisheries (NMFS) on Essential Fish Habitat (EFH) Related to the Proposed Mid- and South Atlantic Geological and Geophysical (G&G) Activities

Dear Ms. Hopper,

We understand that the Bureau of Ocean Energy Management (BOEM) is in the process of preparing project-level environmental assessments (or EAs) relevant to the proposed Mid- and South Atlantic geological and geophysical (G&G) oil and gas surveys.

We request that BOEM suspend these project-level EAs until: (1) a new or supplemental Programmatic Environmental Impact Statement (PEIS) has been completed to reflect new and relevant data not included in the original PEIS, and (2) a formal consultation for Essential Fish Habitat (EFH) by NOAA is completed.

In order to meet its continuing obligations pursuant to National Environmental Policy Act (NEPA), BOEM cannot rely on the Atlantic Geological & Geophysical Programmatic Environmental Impact Statement ("Atlantic G&G PEIS) that was finalized in 2014.¹ NEPA requires a supplement to an Environmental Impact Statement (EIS) when significant new information implicates significant changes in the environmental analysis. The NEPA regulations require that:

(1) Agencies...[s]hall prepare supplements to either draft or final environmental impact statements 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. (2) [Agencies] may also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.²

¹ See *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 374 (1989) (an agency must "take a 'hard look' at the environmental effects of their planned action, even after a proposal has received initial approval").

² 40 C.F.R. § 1502.9 (2015). See also *Friends of the River v. F.E.R.C.*, 720 F.2d 93, 109 (D.C. Cir. 1983).



The use of the word “shall” is mandatory: it creates a duty on the part of the agency to prepare a supplemental EIS in light of significant new information that are relevant to environmental concerns.³ In determining whether new information is significant, a court should look to the NEPA “significance factors” found in 40 C.F.R. § 1508.27(b) (1978).⁴

When determining if new circumstances or new information require an agency to issue a supplemental EIS, a court should consider the following factors: (a) the environmental significance of the new information; (b) its probable accuracy; (c) the degree to which the agency considered the new information and considered its impact; and (d) the degree to which the agency supported its decision not to supplement its impact statement.⁵

Courts have repeatedly recognized that supplementation of an EIS is required where the new information reveals a “seriously different picture of the environmental impact of the proposed project from what was previously envisioned.”⁶

Furthermore, the “hard look” required in an EIS under NEPA obligates BOEM to obtain high-quality information and accurate scientific analysis, 40 C.F.R. § 1500.1(b), and to include a “full and fair discussion” of the direct and indirect environmental impacts of the proposed activity. 40 C.F.R. § 1502.1. That duty is ongoing. 40 C.F.R. § 1502.9; *see Marsh*, 490 U.S. at 374; *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 557 (9th Cir. 2000) (explaining that “an agency that has prepared an EIS . . . must be alert to new information that may alter the results of its original environmental analysis”).

Impact to Commercial and Recreational Fisheries

The PEIS states that anthropogenic noise associated with the use of seismic survey equipment may affect the behavior of certain species of fish and their prey. These fish and subsequent prey species are incredibly important to the recreational and commercial fishing industries that depend on North Carolina’s offshore waters. Catch rates have the potential to decline if any vessel is operating seismic survey equipment in an area that is experiencing peak periods of fishing activity.

Several areas in the grids outlining proposed survey activity are identified as EFH. These areas are subject to annual closures that effect both commercial and recreational fishermen. The PEIS states that the Area of Interest (AOI) supports several important fisheries, and in 2012 commercial landings within

³ *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 372 (1989) (recognizing the duty where there are significant new circumstances or information); *see also Dubois v. U.S. Dep’t. of Agric.*, 102 F.3d 1273, 1292 (1st Cir. 1996).

⁴ *Natural Res. Def. Council v. Lujan*, 768 F. Supp. 870, 886 (D.D.C. 1991) (a new report that contained a substantially different estimate of the amount of oil expected to be found in Alaska required the preparation of an SEIS).

⁵ *Warm Springs Dam Task Force v. Gribble*, 621 F.2d 1017, 1025 (9th Cir. 1980); *Commonwealth of Massachusetts v. Watt*, 716 F.2d 946 (1st Cir. 1983).

⁶ *Hickory Neighborhood Defense League v. Skinner*, 893 F.2d 58, 63 (4th Cir.1990); *see City of Olmsted Falls, OH v. Fed. Aviation Admin.*, 292 F.3d 261, 274 (D.C. Cir. 2002); *Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7th Cir.1984); *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5th Cir. 1987); *Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 557 (9th Cir. 2000).

the AOI (294,404 metric tons) were valued at approximately \$432.3 million. Between 2009 and 2013, commercial fishermen landed an average of 63,071,410 pounds of seafood from North Carolina waters, with an ex-vessel value of \$75,984,821. From 2009-2013, an average of 3,232,603 recreational trips occurred in the offshore waters of North Carolina. Average recreational landings from the ocean were 10.6 million pounds for the years 2009-2013. Approximately 34% of recreational ocean landings were from for-hire boats fishing in waters greater than three miles offshore, with peak activity occurring from May to October.

These aforementioned EFH areas have closures to both gear and species harvest, including the Mid-Atlantic bottom longline closure and shallow water grouper spawning season closure. Both of these closures are in place to protect species from harvest and disturbance during spawning periods in both EFH and Habitat Areas of Particular Concern (HAPC). The commercial Mid-Atlantic bottom longline closure from January 1-January 31 was established for the protection of the sandbar and dusky shark nursery and pupping areas. This closure is within a large portion of the proposed survey areas, for example. The shallow water grouper closure for both recreational and commercial fishermen prevents the harvest of gag, scamp, black grouper, red grouper, coney, graysby, red hind, rock hind, yellowmouth grouper and yellowfin grouper during their spawning season. This closure applies to all state and federal waters.

These closures demonstrate that disturbance of any kind in these areas of concentrated fish use that result in the displacement of fish could impact local fish abundance by deterring foraging, refuge, and spawning activities in preferred habitat areas. Impacting this fish abundance would have a direct impact on catch when these areas reopen to commercial and recreational activity.

A Supplemental Programmatic Environmental Impact Statement is Necessary in Light of New Information.

While Appendix J in BOEM's 2014 Programmatic EIS (entitled *Fish Hearing and Sensitivity to Acoustic Impacts*) includes several important scientific studies relevant to the effect of sound on fish species, several relevant research documents were not included, including several recent studies on this issue. We believe these documents, summarized below, detail important research that further emphasizes the potential adverse impacts of seismic surveys on fish and other marine life, which, given the proposed survey areas of private G&G companies, has every potential to adversely affect EFH areas. This new information is "relevant to environmental concerns" and has a "bearing on the proposed action [and] its impacts."⁷

- (1) A study⁸ completed in 2000 examines the effects of seismic surveying sounds on fish species. It is well understood that adults, juveniles and eggs of fish typically experience instant mortality within the close range of an airgun discharge. An additional consideration factor is that delayed mortality is a result of these types of exposures; in other words, death can be a secondary effect of seismic exposure in fish by way of physiological damage and behavioral change. Laboratory conditions of most scientific studies regarding anthropogenic sound and its effects on fish are

⁷ 40 C.F.R. § 1502.9 (2015).

⁸ Hirst, Andrew G. and Paul G. Rodhouse. 2000. *Impacts of geophysical seismic surveying on fishing success*. Reviews in Fish Biology and Fisheries. 10: 113-118.

conducted in controlled conditions over short periods, where natural predators are not present and natural mortality rates as a result of increased predation and disease susceptibility (through behavioral changes as a result of sound exposure) and physiological damage may go underestimated.

This study succinctly illustrates that while effects of seismic airgun noise on fish species are difficult to measure and quantify, the exposure to this anthropogenic noise can lead to mortality (in larval, juvenile, and adult fish) immediately, or over time as a result of physiological damage and/or behavioral changes. And, while mortality is almost certain at close range, what is much less understood (and potentially damaging to an entire species) is the diffused behavioral impacts that can occur at much greater distances from the airgun source.

- (2) A study⁹ on cod discovered that exposure to airgun sound at a distance of 2 and 4 meters led to eye damage, transient stunning, and as a result of internal injuries, death within 48 hours. While no exposure levels were determined in this aforementioned study, they are estimated at ~214 to 220dB.
- (3) As mentioned above, the definition of “fish” when referencing EFH and its importance, includes mollusks. A 2013 study¹⁰ provided the first evidence that noise exposure during larval development produces body malformations in marine invertebrates. Scallop larvae that was exposed to recordings of seismic pulses demonstrated significant development delays and 46% developed body abnormalities. Out of 4,881 larvae that were examined in this study, these effects were observed in all independent samples that were exposed to noise, while no malformations were observed in the control groups. This study reinforces the notion that very little is known about noise in the ocean, and its effects on early developmental stages of marine life. For example, crab larvae did not seem to be affected by exposure to a single discharge of a seismic airgun array, while this same exposure can increase mortality in some fish larvae.

Further, both members of the public and the Mid-Atlantic Fisheries Management Council¹¹ have provided anecdotal reports of sea scallop mortalities in the vicinity of seismic surveys conducted in the past, within the proposed AOI.

- (4) A 2015 study¹² was the first to measure the hearing of a free-swimming fish under known acoustic conditions, thus enabling demonstrations that this species can hear even when moving at normal swimming speeds. This is significant, as these highly migratory, widely distributed species, such as tuna, have significant potential to come into contact with acoustic noise generated from activities such as seismic air guns, naval and commercial sonar, etc.

⁹ Matishov, G.G. 1992. *The Reaction of Bottom-Fish Larvae to Airgun Pulses in the Context of the Vulnerable Barent Sea Ecosystem*. Fisheries and Offshore Petroleum Exploitation 2nd International Conference, Bergen, Norway, 6-8 April.

¹⁰ Soto, Aguilar de Natacha, et al. 2013. *Anthropogenic noise causes body malformations and delays development in marine larvae*. Scientific Reports. 3: 2831.

¹¹ Mid-Atlantic Fisheries Management Council Letter to BOEM Regarding Proposed G&G Activities in the Atlantic. Web address: http://usa.oceana.org/sites/default/files/mid_atlantic_fishery_management_council.pdf.

¹² Dale, Jonathan J., et al. 2015. *Hearing thresholds of swimming Pacific bluefin tuna*. Convention on Biological Diversity. J Comp Physiol A 201: 441-454.

- (5) A 2015¹³ review of relevant scientific literature regarding ocean noise and its impacts on marine life reinforces the notion that additional research is needed to gain meaningful conclusions about the true impact of anthropogenic noise (including seismic airguns) on larval, juvenile, and adult marine life.

BOEM further acknowledges in Appendix J that there simply is not enough scientific research to understand the true impacts of anthropogenic sound on fisheries, especially impacts to EFH. BOEM contends that the data obtained on the subject to date is “very limited both in terms of the number of well-controlled studies and in the number of species tested.” Further, the general conclusion goes on to cite the need for more behavioral studies regarding the impact of sound on fish species, since **“the biggest issues are related to effects on behavior since anthropogenic sources could, potentially, impact behavior of fishes over broad areas.”** Continuing on, BOEM concludes that “it is not yet possible to make clear statements about effects of any particular sound source on the behavior of any species and the consequences of observed behavioral responses.” Appendix J contends that it examined the “complete literature” on sound effects on fishes. Based upon the cited literature included above, it is clear that greater bodies of information exist relevant to the effects of sound on fish and other marine life.

Formal Consultation for Essential Fish Habitat is Required

The Magnuson-Stevens Fisheries Conservation and Management Act (16 U.S.C. § 1801-1882) was re-authorized and amended by Congress in 1996 as the Sustainable Fisheries Act (SFA). These changes required the National Marine Fisheries Service (NMFS) to create EFH for federally managed species, as well as the requirement to enhance and protect these areas.

Several areas in the proposed survey areas are identified as EFH in Federal waters, including but not limited to: The Point, Ten Fathom Ledge, Big Rock, Charleston Bump Complex, Georgetown Hole. A subset of these areas are classified as Habitat Areas of Particular Concern (HAPC).

EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” [16 U.S.C. § 1801(10)]. Further, “waters” as defined include “aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include aquatic areas historically used by fish where appropriate.” Substrate includes “sediment, hard bottom, structures underlying the waters, and associated biological communities.”

Necessary is defined as “the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem.” “Fish” includes “finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds,” whereas “spawning, breeding, feeding or growth to maturity” covers the complete life cycle of the aforementioned species.

The Magnuson Stevenson Fisheries Conservation and Management Act additionally required Federal agencies to consult with NMFS on activities that “may adversely affect EFH” (MSA section 305(b)(2)).

¹³ Peng, Chao, Xinguo Zhao, and Guangxu Liu. 2015. *Noise in the Sea and its Impacts on Marine Organisms*. International Journal of Environmental Research and Public Health. 12(10): 12304-12323.

According to EFH consultation guidance¹⁴:

“the trigger for an EFH consultation is a Federal action agency’s determination that an action or proposed action, funded, authorized or undertaken by that agency may adversely affect EFH. If a Federal agency makes such a determination, then EFH consultation is required.”

An adverse effect¹⁵ is classified as: “any impact which reduces the quality and/or quantity of essential fish habitat.” Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality and/or quantity of essential fish habitat (EFH). Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. The Federation believes that a formal consultation with NMFS on EFH is absolutely necessary to ensure a thorough review of fisheries impacts as a result of these proposed G&G surveys.

To conclude, the current Atlantic G&G PEIS no longer provides a robust and fair dialogue of significant environmental impacts, informs decision-makers and the public, or adequately minimizes adverse impacts on the environment. Moreover, a revised PEIS utilizing research discussed above substantially alters the agency’s assessment of the proposed seismic activity in the Atlantic, and indicates gaps in research on the effects of seismic surveys on fish and other marine life.

Further, the areas of impact may be increased with the potential for widespread behavioral impacts to fish and other marine life outside of the AOI, as well as the potential for adverse cumulative effects on commercial and recreational fishing industries. In sum, the new data indicate serious environmental, economic, and logistical consequences associated with the proposed activities not envisioned and assessed by the PEIS, requiring supplementation.

In summary, the Federation respectfully requests a supplemental PEIS, as well as a formal consultation on EFH, so as to fully enumerate and make transparent the potential adverse impacts of the current eight seismic surveys proposed in the Mid- and South Atlantic Regions.

Sincerely,



Ladd Bayliss
Coastal Advocate

¹⁴ “Essential Fish Habitat Consultation Guidance.” Version 1.1. April 2004. National Marine Fisheries Service, Office of Habitat Conservation. http://www.habitat.noaa.gov/pdf/efhconsultationguidancev1_1.pdf

¹⁵ “Essential Fish Habitat Consultation Guidance.” Version 1.1. April 2004. National Marine Fisheries Service, Office of Habitat Conservation. http://www.habitat.noaa.gov/pdf/efhconsultationguidancev1_1.pdf