

Seismic source vessels move along a survey tract in the water creating a line of seismic impulses. As the seismic source vessel is in motion, each signal is short in duration, local, and transient. There is no conclusive evidence showing long-term or permanent displacement of fish.<sup>39</sup> Similar seismic surveys conducted for research in the Atlantic OCS did not result in any detectable effects on commercial or recreational fish catch, based on a review of NMFS's data from months surveys were conducted, which noted that "there was absolutely no evidence of harm to marine species" (including fish).<sup>40</sup> Additionally, in the GOM, where G&G activities have routinely occurred for over 40 years, seafood harvested from the OCS is worth approximately \$980 million annually and the fishing industry directly supports in excess of 120,000 jobs, suggesting that G&G activities can occur without negatively impacting commercial fisheries.

Finally, seismic and other geophysical surveys also do not result in closing areas to commercial or recreational fishing. During surveys, the survey crews work diligently to maintain a vessel exclusion zone around the survey vessel and its towed streamer arrays to avoid any interruption of fishing operations, including the setting of fishing gear. As with all multiple uses of offshore waters, there must be a certain level of coordination by all parties. At sea, coordination is regulated by the U.S. Coast Guard under the International Regulations for Preventing Collisions at Sea, requiring a Local Notice to Mariners specifying survey dates and locations.

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Ona, 1996. *Seismic investigations and damages on fish eggs and larvae; an evaluation of possible effects on stock level*. *Fisken og Havet* 1996:1-17, 1-8.

<sup>39</sup> Although some studies have shown that various life stages of fish and invertebrate species can be physically affected by exposure to sound, in all of these cases the subjects were very close to the seismic source or subjected to exposures that are virtually impossible to occur under natural conditions. For example, frequently cited experimental studies such as Skalski et al. (1992), Lokkeborg et al. (2010), Engas (1996), and Wardle (2001) employed artificially concentrated sound within hundreds of meters of the fish under observation and the fishing vessels. As Lokkeborg et al. (2012) noted in a recent review of the literature, "Seismic air gun emissions distributed over a large area may thus produce lower sound exposure levels and thus have less impact on commercial fisheries." As another example, Aguilar de Soto (2013) exposed scallop larvae to noise at loud volume for up to 90 hours at a distance of 9 centimeters, which is virtually impossible to occur outside of experimental settings.

<sup>40</sup> See *New Jersey v. Nat'l Sci. Found.*, No. 3:14-cv-0429 (D. N.J.), Federal Defendants' Brief in Opposition to Plaintiffs' Motion for Declaratory and Injunctive Relief at 25-26 (citing Exhibit D, Higgins Decl. ¶ 21, Exhibit D, Mountain Decl. ¶ 8 (July 7, 2014)).

For these reasons, the effects of seismic activities on fish and fish resources are most accurately described as “nominal” (to use the DPEIS’s impact categorization values). We therefore object to the mischaracterization of impacts to commercial fisheries as “minor.” See DPEIS at 2-35.

#### **J. The Adaptive Monitoring Program Must Be Consistent with Applicable Law**

The DPEIS states that BOEM and NMFS are presently developing an “adaptive monitoring program” that will be implemented for the life of the anticipated MMPA incidental take regulations and “will outline high-level monitoring objectives focused on understanding how and to what extent G&G activities may affect marine mammals in the Gulf of Mexico.” DPEIS at 1-13. However, the DPEIS includes very little information about the adaptive monitoring plan because, according to the DPEIS, “an opportunity for public input on the monitoring plan would occur through the process that NMFS undertakes in response to BOEM’s petition for rulemaking under the MMPA.” DPEIS at 1-14.

The Associations have a strong interest in environmental monitoring—both to better understand the environment in which our members work, but also to mitigate potential risks of activities to living marine resources. The Associations support efforts that improve the quantity and quality of information related to determining the nature and magnitude of the potential effects of offshore G&G activities on marine mammals. Such information assists with developing reasonable and workable incidental take MMPA authorizations, including appropriate mitigation measures to minimize incidental take, and correctly assessing the type and amount of incidental take that occurs in the course of G&G operations. In this light, the Associations support both ongoing and future research endeavors by industry and its partners that help to inform the understanding and mitigation of potential effects of G&G activities on marine life in the GOM. We also support agency efforts to improve the collection and use of the best available science consistent with the requirements and limits of the MMPA.

Nonetheless, the Associations have expressed concern on multiple occasions that the agencies’ envisioned monitoring requirements for the forthcoming MMPA regulations for geophysical surveys in the GOM will exceed the authority granted to NMFS. We have explained in detail that the MMPA does not authorize NMFS to require as a condition of an ITA the preparation or development of a large-scale, expansive monitoring plan that reaches beyond the time and area in which site-specific activities are undertaken or the performance of actions related to such a plan. The comments detailing these concerns are attached as Attachment F so that they may be included in the administrative record supporting the final PEIS. The Associations look forward to working collaboratively with BOEM and NMFS to complete the preparation of a legally compliant and operationally effective monitoring program.