



**Mid-Atlantic Fishery Management Council**

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## MEMORANDUM

**Date:** March 25, 2024  
**To:** Council  
**From:** Julia Beaty, staff  
**Subject:** Impacts of Offshore Wind Energy Construction Sounds on Behavior of Longfin Squid and Black Sea Bass

Construction of offshore wind energy projects will produce a variety of noise impacts, with pile driving of turbine and offshore substation foundations being of particular concern due to the intensity of the noise produced. On Wednesday, April 10, the Council will receive a presentation from Dr. Aran Mooney with the Woods Hole Oceanographic Institution on multiple studies that examined the impacts of offshore wind energy construction sounds on the behavior of longfin squid and black sea bass. These studies were funded by the Bureau of Ocean Energy Management. A report summarizing the initial studies is available at [https://espis.boem.gov/final%20reports/BOEM\\_2022-004.pdf](https://espis.boem.gov/final%20reports/BOEM_2022-004.pdf). The presentation will also touch on additional studies for which reports are forthcoming.

These studies focused on potential impacts of pile driving sounds on black sea bass and longfin squid given their ecological, commercial, and, in the case of black sea bass, recreational importance, as well as the overlap of their distributions with several planned offshore wind energy projects. As described in more detail in the report linked above, these studies measured several behavioral responses to recorded sounds in a laboratory setting. Results showed significant changes in black sea bass behavior when exposed to pile driving, including decreased activity and movement from foraging areas. Longfin squid exhibited a variety of alarm responses at the onset of noise exposure; however, those responses rapidly diminished within the first minute and did not appear to have substantial energetic consequences. Nor was hearing loss induced.

The authors concluded that the results for both species suggest that “responses to sound are most likely to occur at the onset of noise, rapid habituation is expected, with some re-sensitization, and reproductive behaviors may be relatively resilient to noise stressors for semelparous species that have limited opportunity to reproduce.” The authors also “suggested that missed opportunities for prey capture and lower feeding rates could lead to reduced growth and survival. Considering the metabolic requirements of both species, especially in [longfin squid] to feed often, there exists the potential for population level reductions in abundance if wild animals similarly are disrupted from feeding due to a sudden onset of anthropogenic noise. Yet in a reproductive context, [longfin squid] retain appropriate reproductive behaviors during noise. Therefore, pile driving noise is not expected to reduce the reproductive output of wild populations as far as behaviors up through egg laying are concerned.”