



August 28, 2015

Jolie Harrison
Chief, Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

RE: Notice of Receipt of Applications for Incidental Harassment Authorization (“IHA”) for Geophysical Surveys in the Atlantic Ocean, 80 Fed. Reg. 45,195 (July 29, 2015)

Dear Ms. Harrison,

On behalf of the North Carolina Coastal Federation, I am submitting these comments in response to the National Marine Fisheries Service (NMFS) and National Oceanic and Atmospheric Administration’s (NOAA) request for public comments and information in regards to the receipt of applications for incidental harassment authorization for geophysical surveys in the Atlantic Ocean.

Based upon the best available science, the federation urges your agencies to consider the following literature and information while assessing the proposed seismic survey applications.

Cumulative Impacts

None of the Incidental Harassment Authorizations (IHAs) being reviewed analyze the potential for these surveys to be occurring simultaneously with other seismic surveys. The combined effect of several surveys occurring during the same time period, in the same general areas in the Atlantic, is an unknown variable that has not been adequately assessed.

Typically, the potential impacts of anthropogenic noise sources (including seismic surveys) are assessed as a result of individual activities (e.g., a single survey).¹ Not only are the environmental assessments focusing on a single survey, they are focusing only on the loudest source (i.e., seismic airguns). This consideration largely overlooks the potential cumulative noise disturbance when considering additional vessel traffic related to seismic surveys, in addition to normal shipping traffic in the Atlantic. The additional ambient noise of sub-bottom profilers and undersea communication systems must also be considered. In short, all aforementioned noise sources must be analyzed in combination with the proposed seismic surveys to adequately estimate the potential impact on marine life, specifically marine mammals.²

¹ HESS (High Energy Seismic Survey) Team. 1999. High energy seismic survey review process and interim operational guidelines for marine surveys offshore southern California. Camarillo, CA: California State Lands Commission and U.S. Minerals Management Service.

² Southall BL, Rowles T, Gulland F, *et al.* 2013. Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon-headed whales (*Peponocephala electra*) in Antsohihy, Madagascar. Cambridge, UK: International Whaling Commission.



Currently, the NMFS is solely considering the four proposed seismic surveys. This ignores the additional four applications that the Bureau of Ocean Energy Management (BOEM) is currently considering. Considering these four surveys currently under review at NMFS, three of the four IHA permit applications propose seismic surveys in overlying areas and times. To be able to consider the true cumulative impacts, the best available science provides considerably effective tools that are able to analyze these impacts.³

Threshold Level

Under the Marine Mammal Protection Act (MMPA) 1994 Amendments, harassment is statutorily defined as, any act of pursuit, torment, or annoyance which:

Level A Harassment - has the potential to injure a marine mammal or marine mammal stock in the wild; or,

Level B Harassment - has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.

The description of Level A harassment clearly demonstrates that Level A takes severely handicap or subsequently kill a marine mammal. Level B takes are much more difficult to observe and quantify, as these generally occur outside of the monitoring zones in the vicinity of these activities.

As such, it is clear that the best available science shows that behavioral disruptions are occurring at much lower noise exposure levels than what NMFS has currently adopted as regulatory thresholds for Level B harassment.⁴

Using the 160 dB level as a threshold for behavioral disturbance is an inaccurate assessment, based upon the best available science, as referenced below:

1. Bowhead whales (*Balaena mysticetus*) increase call rates at initial detection of airguns at 94 dB, then decrease after 127 dB, and stop calling above 160 dB.⁵
2. Harbor porpoise feeding notifications decreased 15% with exposure to seismic airguns at 130-165 dB.⁶

³ Christiansen, F., Bertulli, C. G., Rasmussen, M. H., & Lusseau, D. (2015). Estimating Cumulative Exposure of Wildlife to Non-Lethal Disturbance Using Spatially Explicit Capture–Recapture Models. *Journal of Wildlife Management*, 1–14. <http://doi.org/10.1002/jwmg.836>

⁴ 160dB_{RMS} re: 1μPa for behavioral disruption for impulsive noise (e.g., impact pile driving), 120dB_{RMS} re: 1μPa for behavioral disruption for non-pulse noise (e.g., vibratory pile driving, drilling) (MMPA 2007).

⁵ Blackwell SB, Nations CS, McDonald TL, Thode AM, Mathias D, Kim KH, et al. (2015) "Effects of Airgun Sounds on Bowhead Whale Calling Rates: Evidence for Two Behavioral Thresholds." *PLoS ONE* 10(6): e0125720.

⁶ Pirodda E, Brookes KL, Graham IM, Thompson PM. 2014 "Variation in harbour porpoise activity in response to seismic survey noise." *Biol. Lett.* 10: 20131090. <http://dx.doi.org/10.1098/rsbl.2013.1090>

3. Blue whales ceased their calls on 143 dB exposure to airguns.⁷

The federation urges your agency to use the best available science to analyze these IHA applications. Based upon the aforementioned literature, it is clear that the 160 dB threshold for Level B takes is inaccurate and outdated.

MMPA and Level A takes of the North Atlantic Right Whale

Under the MMPA, the NMFS is allowed to issue an IHA only if the proposed activity take level meets the following criteria:

The take must:

1. *be of small numbers;*
2. *have no more than a "negligible impact"⁸ on those marine mammal species or stocks, and;*
3. *not have an "unmitigable adverse impact"⁹ on the availability of the species or stock for "subsistence" uses.*

According to BOEM's Final Programmatic Environmental Impact Statement (2014) assessing the proposed seismic surveys, the North Atlantic Right Whale (NARW) population in the Atlantic will experience the following take levels over an 8 year period (originally 2012-2020):

"... Level A incidental takes of 0-2 NARW individuals/year using NMFS's 180-dB criterion and less than one individual using the Southall et al. (2007) criterion. Level B incidental takes of the NARW are estimated by the models to range from 0 to 224 individuals/year."

The MMPA defines the "Potential Biological Removal (PBR)" level as: "the maximum number of animals, not including natural mortalities that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population." For the NARW, the PBR is .9.¹⁰ Further according to the 2013 stock assessment: "any mortality or serious injury to this species can be considered significant."

Therefore, based upon the current stock assessment it is clear that approving an IHA for the current seismic survey applicants could have long-term, detrimental impacts on the existing endangered NARW population, in addition to other marine mammal species.

⁷ Mark A. McDonald, John A. Hildebrand, and Spahr C. Webb "Blue and fin whales observed on a seafloor array in the Northeast Pacific." J. Acoustical Society of America, 98:1 1995

⁸ " An impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival." (NOAA)

⁹ " An impact resulting from the specified activity that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (1) causing marine mammals to abandon or avoid hunting areas, (2) directly displacing subsistence users; or, (3) placing physical barriers between the marine mammals and the subsistence users; AND (4) cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met." (NOAA)

¹⁰ NMFS, Marine Mammal Stock Assessment Reports, http://www.nmfs.noaa.gov/pr/sars/2013/ao2013_rightwhale-west-atl.pdf.

Given assessment of the best available science, the federation urges you to consider the aforementioned information and literature while making your determinations on the current seismic survey applications.

Sincerely,

A handwritten signature in black ink, appearing to read "Ladd Bayliss". The signature is fluid and cursive, with the first name "Ladd" being more prominent than the last name "Bayliss".

Ladd Bayliss
Coastal Advocate