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July 21, 2017

VIA E-MAIL: *ITP.Laws@noaa.gov*

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

Re: Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Geophysical Surveys in the Atlantic Ocean (82 FR 26244; June 6, 2017)

Dear Ms. Harrison:

The Attorneys General of Maryland, Connecticut, Delaware, the District of Columbia, Massachusetts, New York, North Carolina, Pennsylvania, and Rhode Island ("State AGs") appreciate this opportunity to comment on the proposal by the National Marine Fisheries Service ("NMFS") to issue incidental harassment authorizations ("IHA") to take marine mammals incidental to conducting geophysical survey activities in the Atlantic Ocean (82 FR 26244; June 6, 2017). Five applicants – Spectrum Geo Inc., TGS-NOPEC Geophysical Company, ION GeoVentures, WesternGeco, LLC, and CGG – are proposing to conduct deep penetration seismic surveys using air-gun arrays as an acoustic source. The State AGs strongly oppose these seismic survey proposals, as they are contrary to public policy and science. We urge NMFS to deny the IHA applications.

The proposed, two-dimensional seismic surveys pose a real danger to the Atlantic coastline. Vessels tow large arrays of seismic air-guns, which emit high energy, low-frequency impulsive sound that travels long distances.[1] These air-guns shoot loud blasts of compressed air

[1] Seismic air-gun sound travels as far as 4,000km, or nearly 2,500 miles, from survey vessels. *See* Nieukirk, S.L., Mellinger, D.K., Moore, S.E., Klinck, K., Dziak, R.P., Goslin, J., Sounds from airguns and fin whales recorded in the mid-Atlantic Ocean, 1999–2009, Journal of the Acoustical Society of America, Volume 131, Issue 2, February, 2012, pp. 1102–1112, http://asa.scitation.org/doi/10.1121/1.3672648. Research demonstrates that sound levels from air-gun blasts do not drop off appreciably as far as 12km (nearly 7.5 miles) away from survey vessels.

through the ocean and miles under the seafloor, every ten seconds for days and weeks on end. The air-gun blasting can cause disruptions of communication, migration, feeding, and reproduction of marine mammals, fish, and creatures on the ocean floor.[2] These sounds can cause marine mammals and fish to lose hearing and die.[3]

Seismic blasts may hinder recovery of threatened or endangered marine mammal species. The risk of *any* adverse impact to the critically endangered North Atlantic right whale could have devastating consequences, especially because the remaining population of 500 whales faces many other threats that imperil the species' survival.[4] Last year, twenty-eight marine biologists with right whale expertise expressed "profound concern" over the impacts of seismic surveys along the Atlantic coast.[5] Even with proposed mitigation, these scientists warned that "widespread seismic air-gun surveys may well represent a tipping point for survival of this endangered [North Atlantic right] whale, contributing significantly to a decline toward extinction."[6]

The detrimental impact of seismic surveys has been studied and documented in peer-reviewed scientific literature. In a study published earlier this year, investigators from the National Oceanic and Atmospheric Administration (the agency that oversees NMFS) and two of the country's most prominent marine research universities concluded that reef fish abundance

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Madsen, P.T., Johnson, M., Miller, P.J.O., Aguilar Soto, N., Lynch, J., Tyack, P., Quantitative measures of air-gun pulses recorded on sperm whales (*Physeter macrocephalus*) using acoustic tags during controlled exposure experiments, Journal of the Acoustical Society of America, Volume 120, Issue 4, June, 2006, pp. 2366–2379, http://dx.doi.org/10.1121/1.2229287.

[2] *See e.g.*, Castellote, M., Clark, C. W., Lammers, M. O., Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise, Biological Conservation, Volume 147, Issue 1, March, 2012, pp. 115-122, https://doi.org/10.1016/j.biocon.2011.12.021; Cerchio, S., Strindberg, S., Collins, T., Bennett, C., Rosenbaum, H., Seismic surveys negatively affect Humpback Whale singing activity off northern Angola, *PLOS ONE*, March 11, 2014, https://doi.org/10.1371/journal.pone.0086464.

[3] *See e.g.* Gedamke, J., Gales, N., Frydman, S., Assessing risk of baleen whale hearing loss from seismic surveys: The effect of uncertainty and individual variation, Journal of the Acoustical Society of America, Volume 129, Issue 1, February, 2011, pp. 496-506, http://dx.doi.org/10.1121/1.3493445; Castellote, M., Clark, C. W., Lammers, M.O., Potential negative effects in the reproduction and survival on fin whales (*Balaenoptera physalus*) by shipping and airgun noise, International Whaling Commission Working Paper, SC/62/E3, 2010, http://ocr.org/ocr/wp-content/uploads/Manuel_Castellote_Fin_Whales.pdf; McCauley, R. D., Fewtrell, J., Popper, A. N., High intensity anthropogenic sound damages fish ears, Journal of the Acoustical Society of America Volume 113, Issue 1, January, 2003, pp. 638–642, http://dx.doi.org/10.1121/1.1527962.

[4] Since June 1, 2017, six North Atlantic right whales have been reported dead in the Gulf of St. Lawrence. The cause of their deaths is unknown. http://news.nationalgeographic.com/2017/06/north-atlantic-right-whale-deaths-st-lawrence-spd/

[5] A letter to President Obama on the impact of seismic surveys on whales, April 14, 2016, https://nicholas.duke.edu/about/news/letter-to-obama-seismic-effects-whales.

[6] *Id.*

declined 78% during seismic surveying.[7] And just last month, scientists for the first time found that air-gun blasts kill large numbers of zooplankton, the invertebrates at the base of the marine food chain necessary to the survival of many marine species, including fish and baleen whales.[8] Finding that zooplankton declined by 64% as far as 4,000 feet away from the air-gun blast source, the study concluded that "there is a significant and unacknowledged potential for ocean ecosystem function and productivity to be negatively impacted by present seismic technology."[9] These recent studies demonstrate that seismic surveys have immediate and far-reaching effects on commercial fishing, charter boat operators, recreational anglers, restaurants, and visitors to coastal communities. The adverse effects of seismic surveys on fish species and zooplankton may also harm marine mammals by reducing or disrupting the food sources on which they prey.[10]

In a 2015 letter, seventy-five of the world's leading marine scientists stated that the Interior Department's finding that seismic surveys along the mid-Atlantic and south Atlantic coasts would have a negligible effect on marine life was "not supported by the best available science."[11] On the contrary, the proposed seismic surveys were, according to these scientists, "likely to have significant, long-lasting, and widespread impacts on the reproduction and survival of fish and marine mammal populations."[12]

Even if seismic surveys were warranted, which they are not, NMFS has failed to meet its responsibility under the Marine Mammal Protection Act to effect "the least practicable adverse impact on such species or stock and its habitat." (§ 101(a)(5)(A)(i)(II)(aa)). For example, new and evolving quieting technologies, such as marine vibroseis, could minimize marine mammal impacts associated with current air-gun technologies.[13] NMFS appears not to have considered

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[7] Avery B. Paxon, J. Christopher Taylor, Douglas P. Nowacek, Julian Dale, Elijah Cole, Christine M. Voss, Charles H. Peterson, Seismic survey noise disrupted fish use of a temperate reef, Marine Policy, Volume 78, April 2017, pp. 68-73, https://doi.org/10.1016/j.marpol.2016.12.017.

[8] McCauley, R. D., Day, R. D., Swadling, K. M., Fitzgibbon, Q. P., Watson, R. A., Semmens, J. M., Widely used marine seismic survey air gun operations negatively impact zooplankton, Nature Ecology & Evolution, Volume 1, Number 0195, June 22, 2017, http://dx.doi.org/10.1038/s41559-017-0195.

[9] *Id*.

[10] *See* Gordon, J., Gillespie, D., Potter, J., Frantzis, A., Simmonds, M. P., Swift, R., Thompson, D., A review of the effects of seismic surveys on marine mammals, Marine Technology Society Journal, Volume 37, Number 4, Winter 2003, pp. 16-34, http://dx.doi.org/10.4031/002533203787536998.

[11] Letter urging the President to reject seismic oil and gas surveys in the Atlantic, March 5, 2015, http://news.neaq.org/2015/03/full-text-letter-urging-president-to.html.

[12] *Id*.

[13] One of the inventors of the seismic air-gun is among those developing this new technology designed to be much less harmful and disruptive to the marine environment. *See* Neel Keller, *Could New Technologies Make Seismic Testing Safer*, Outer Banks Sentinel, May. 3, 2016, http://www.obsentinel.com/news/could-new-technology-make-seismic-testing-safer/article_433a122e-f5c9-11e5-b119-1b520f9b596a.html. Recent research suggests that marine vibroseis may be less environmentally impactful than seismic air-guns. Duncan, A., Weilgart, L., Leaper, R., Jasny, M., Livermore, S., A modelling comparison between received sound levels produced by a

them in proposing these authorizations. The proposals also make no effort to eliminate overlapping survey areas. The five applicants appear to be proposing to conduct seismic surveys in the same general areas collecting essentially the same data. This senseless redundancy increases the potential for significant long-lasting impacts on the marine mammal populations off the coasts of our states.

The proposed seismic surveys are designed to acquire data over large areas to screen for potential oil and gas drilling and would be conducted in an area extending from Delaware to Florida. These authorizations are a precursor and, in fact, were integral to any campaign to allow oil and gas drilling in the Atlantic. That plan, however, was roundly rejected when, after an extensive public input process, the Bureau of Ocean Energy Management removed from the Five-Year Program (2017-2022) the sale that was proposed for the Mid- and South Atlantic area. The Bureau's decision to remove the Atlantic program area from this most recent leasing plan acknowledged that drilling off the Atlantic coast is ill-advised due to market dynamics, strong local opposition, and conflicts with competing commercial and military ocean uses.

Every step of the oil and gas exploration process threatens irreplaceable natural resources, including the testing and drilling needed to locate deposits; extraction, transfer, and transport of fuels; and the inevitable spills and blowouts that occur during drilling activity. As you know, these risks are not theoretical. As manifested in Prince William Sound following the Exxon Valdez spill and along the Gulf Coast following the Deepwater Horizon disaster, they are concrete, enduring, and profound. These risks have prompted more than 120 East Coast communities, including the City of Baltimore and Ocean City, Maryland, as well as local, state, and federal elected officials to formally oppose oil and gas exploration, including seismic survey activities. More than 35,000 businesses and 500,000 commercial fishing families along the Atlantic Coast from Maine to Florida oppose seismic testing and offshore oil and gas drilling exploration because it threatens the coastal ecosystem on which 1.4 million commercial fishing, tourism, and recreation jobs depend.[14]

The Atlantic shoreline boasts some of the most pristine beaches in the country, as well as some of the most historically productive estuaries, including the Chesapeake Bay. The well-documented injury to marine resources presented by seismic testing could adversely impact fisheries and tourism industries along the Atlantic coast, and put at risk billions of State and federal dollars invested in the restoration and maintenance of coastal resources.

Simply put, the harassment of marine life to be authorized under this proposal is unjustified and unwarranted. For all of the above reasons, the proposed seismic surveys present

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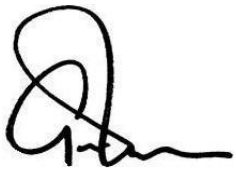
marine vibroseis array and those from an airgun array for some typical seismic survey scenarios, Marine Pollution Bulletin, Volume 119, Issue 1, June 15, 2017, pp. 277-288, https://doi.org/10.1016/j.marpolbul.2017.04.001.

[14] Business Alliance for Protecting the Atlantic Coast, http://protectingtheatlanticcoast.org/about-us/. *See also New Jersey Chamber Exec Elected Chair; Business Alliance Formally Organized*, Cape May County Herald, March 15, 2017, http://www.capemaycountyherald.com/community/business/article_c0b9cebc-0999-11e7-a75d-27d7076a9cc4.html.

risks to the affected regions that far outweigh any benefit. Accordingly, all five pending applications should be denied.

Sincerely,

BRIAN E. FROSH
Attorney General of Maryland



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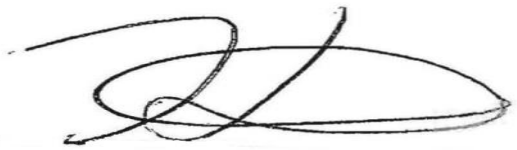

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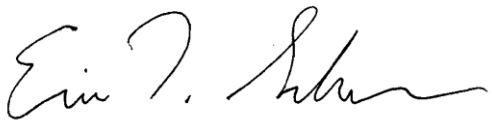

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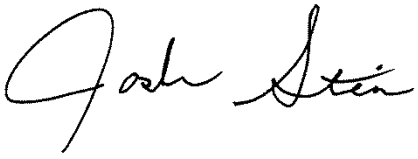

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