

April 14, 2016

Dear Mr. President,

We, the undersigned, are marine biologists with specific expertise on the North Atlantic right whale. We are writing out of profound concern over the impacts on this species from the introduction of seismic surveys for oil and gas exploration in the mid and south-Atlantic planning areas, which the Interior Department has proposed. Last month, your administration decided to remove the mid- and southeast Atlantic regions from offshore oil and gas leasing over the next five years. As right whale scientists, we believe it is imperative that you follow this action by suspending seismic oil and gas surveys in the Atlantic as well.

The North Atlantic right whale is among the most endangered whales on the planet, with only about 500 individuals remaining. Despite 40 years of federal protections under the Endangered Species Act and Marine Mammal Protection Act, recovery of the species has been painfully slow and, worryingly, the latest data indicate that the population *is no longer increasing in abundance, but may now actually be declining in numbers*.^{1,2,3} The right whale's declining population growth rate is thought to be directly linked to the disproportionately high level of human activity occurring along its east coast range, resulting in entanglements in fishing gear, underwater noise impacts, and exposures to other chronic stressors. Adding another major stressor to their environment in the form of seismic surveys would, we believe, substantially increase the risk that the population will slip further into decline and would jeopardize its survival.

Airgun surveys used for oil and gas exploration are known to have large-scale effects on baleen whale species, including the disruption of activities vital to foraging and reproduction over vast ocean areas.^{4,5,6} Most recently they have been linked to significant reductions in the probability of calf survival in western Pacific gray whales, another endangered baleen whale population.⁷ The ensonification of right whale habitats by seismic exploration is likely to disrupt essential behavior and degrade important habitat notwithstanding the mitigation measures proposed by the Interior Department, causing significant levels of stress that will further reduce right whale health and, consequently, fitness. There is already evidence that increased noise in right whale habitat causes chronic stress in this species,⁸ which has negative effects on animal health.

Notably, according to analysis by the New England Aquarium, even a small decline of only ten percent in right whale health can impair reproduction or eliminate it entirely.⁹ A newly published study shows that a population-wide deterioration in North Atlantic right whale health from 1998 to 2000 was correlated with a drastic drop in calving rates, further indicating that factors influencing health can be responsible for suppressing reproduction.⁹ Any meaningful environmental assessment of airgun surveys in the Atlantic must include a conservative, quantitative evaluation of its cumulative impacts on the whales' health and reproductive rates over time, which the Interior Department has not done. A responsible approach would defer any

such analysis until after the National Oceanic and Atmospheric Administration's (NOAA) next right whale status review, which is scheduled for 2017.

A responsible analysis of oil and gas survey impacts must also take account of new information on fishing gear entanglements in assessing the species' current viability, the baseline against which the introduction of any additional stressor must be measured. Important new findings, based on a data set spanning 30 years compiled by the New England Aquarium, indicate that entanglements pose a greater threat to right whale viability than was previously known. Adult right whales freed from serious entanglement, where the whale is observed carrying fishing gear or bearing deep wounds, typically exhibit poorer health for years afterwards, reducing their survival rates and reproduction. This new finding adds to recently published analyses of right whale calves, showing that serious entanglement significantly reduces the probability of calf survival beyond one year.¹⁰ Right whale entanglements have significantly increased in number over the past three decades, with calves and juveniles affected at even greater rates than adults.¹⁰ This trend, combined with the new information about the long-term effects of entanglement on survival and reproduction, raises alarm about the species' long-term viability.

In light of the desperate level of endangerment of the North Atlantic right whale and the serious consequences of entanglement, it is critical that other major stressors are minimized or removed to ensure the recovery and long-term survival of this species. The additional stress of widespread seismic airgun surveys may well represent a tipping point for the survival of this endangered whale, contributing significantly to a decline towards extinction.

Last year, a group of 75 marine scientists, expressing concern over "significant, long-lasting, and widespread impacts [from seismic surveys]" on the region's marine mammal and fish populations, called on your administration "to reject the Interior Department's environmental analysis and its decision to introduce seismic oil and gas surveys in the Atlantic." That request is all the more urgent in light of the new information now available on the vulnerability of North Atlantic right whales. As you know, your administration's decision to exclude the Atlantic from oil and gas leasing over the next five years does not affect the ongoing permitting process for seismic exploration. We therefore respectfully ask you to withdraw the Interior Department's 2014 decision to introduce oil and gas surveys, which is based on an inadequate and outdated environmental impact statement, and to halt the permitting of oil and gas surveys off the east coast.

Sincerely,

Christopher Clark, Ph.D.
Johnson Senior Scientist
Bioacoustics Research Program
Cornell Lab of Ornithology
Cornell University

Scott Kraus, Ph.D.
Vice President of Research
John H. Prescott Marine Laboratory
New England Aquarium

Doug Nowacek, Ph.D.
Repass-Rodgers Chair of Marine Conservation Technology
Nicholas School of the Environment & Pratt School of Engineering
Duke University

Andrew J. Read, Ph.D.
Stephen Toth Professor of Marine Biology
Division of Marine Science and Conservation
Nicholas School of the Environment
Duke University

Aaron Rice, Ph.D.
Science Director
Bioacoustics Research Program
Cornell University

Howard C. Rosenbaum, Ph.D.
Director, Ocean Giants Program
Global Conservation Programs
Wildlife Conservation Society

Mark Baumgartner, Ph.D.
Associate Scientist
Biology Department
Woods Hole Oceanographic Institution

Ingrid Biedron, Ph.D.
Marine Scientist, Climate and Energy, Oceana
Lecturer, Boston University Marine Program

Elizabeth A. Burgess, Ph.D.
Post-Doctoral Researcher
John H. Prescott Marine Laboratory
New England Aquarium

Moira Brown, Ph.D.
Senior Scientist
John H. Prescott Marine Laboratory
New England Aquarium

Timothy Frasier, Ph.D.
Department of Biology and Forensic Sciences Program
Saint Mary's University

Caroline Good, Ph.D.
Adjunct Research Professor
Nicholas School of the Environment
Duke University

Philip Hamilton, M.S.
Research Scientist
John H. Prescott Marine Laboratory
New England Aquarium

Mark Johnson, Ph.D.
Senior Research Fellow
Scottish Oceans Institute
University of St Andrews

Robert D. Kenney, Ph.D.
Emeritus Marine Research Scientist
Graduate School of Oceanography
University of Rhode Island

Amy Knowlton, M.M.A.
Research Scientist
John H. Prescott Marine Laboratory
New England Aquarium

Nadine S. Lysiak, Ph.D.
Faculty, University of Massachusetts (Boston)
Research Associate, New England Aquarium

Charles Mayo, Ph.D.
Director, Right Whale Ecology Program
Center for Coastal Studies

William A. McLellan
Master Necropsy Team Leader
NC State Stranding Coordinator
Department of Biology and Marine Biology
University of North Carolina, Wilmington

Brenna McLeod, Ph.D.
Research Associate
Nova Scotia Museum of Natural History

Carolyn A. Miller, Ph.D.
Marine Mammal Center Postdoctoral Scholar
Woods Hole Oceanographic Institution

Michael J. Moore, Vet. M.B., Ph.D.
Biology Department
Woods Hole Oceanographic Institution

D. Ann Pabst, Ph.D.
Professor, Biology and Marine Biology
University of North Carolina, Wilmington

Susan Parks, Ph.D.
Assistant Professor
Department of Biology
Syracuse University

Roger Payne, Ph.D.
Founder and President
Ocean Alliance

Daniel E. Pendleton, Ph.D.
Research Scientist
New England Aquarium

Denise Risch, Ph.D.
Postdoctoral Research Associate in Underwater Noise
Scottish Association for Marine Science
Scottish Marine Institute

Rosalind Rolland, D.V.M.
Senior Scientist and Director, Ocean Health Program
John H. Prescott Marine Laboratory
New England Aquarium

CITATIONS

1. North Atlantic Whale Consortium 2015 Annual Report Card. Report to the North Atlantic Right Whale Consortium, Nov. 2015. Available at: www.narwc.org/pdf/2015%20Report%20Card.pdf.
2. Kraus SD, Kenney RD, Mayo C, McLellan WA, Moore MJ, and Nowacek DP (2016). Letter submitted to the National Marine Fisheries Service (NMFS) Office of Protected Resources (OPR) in response to the NMFS OPR draft strategic plan. Feb. 26, 2016.
3. Atlantic Scientific Review Group (2016). Letter submitted to Eileen Sobeck, Assistant Administrator for Fisheries, National Marine Fisheries Service. Apr. 4, 2016.
4. Castellote M, Clark CW, and Lammers MO (2012). Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise. *Biological Conservation*, **147**, 115-122.
5. Cerchio S, Strindberg S, Collins T, Bennett C, and Rosenbaum H (2014). Seismic surveys negatively affect humpback whale singing activity off Northern Angola. *PLoS ONE*, **9(3)**, e86464.doi:10.1371/journal.pone.0086464.
6. Blackwell SB, Nations CS, McDonald TL, Thode AM, Mathias D, Kim KH, Greene Jr. CR, and Macrander AM (2015). Effects of airgun sounds on bowhead whale calling rates: Evidence for two behavioral thresholds. *PLoS ONE*, **10(6)**, e0125720.doi:10.1371/journal.pone.0125720.
7. Cooke JG, Weller, DW, Bradford AL, Sychenko O, Burdin AM, Lang AR, and Brownell Jr. RL (2015). Updated population assessment of the Sakhalin gray whale aggregation based on the Russia-US photoidentification study at Piltun, Sakhalin, 1994-2014. Western Gray Whale Advisory Panel Doc. GWAP/16/17, Nov. 2015.
8. Rolland RM, Parks SE, Hunt KE, Castellote M, Corkeron PJ, Nowacek DP, Wasser SK, and Kraus SD (2012). Evidence that ship noise increases stress in right whales. *Proceedings of the Royal Society B: Biological Sciences*, **279**, 2363-2368.
9. Rolland RM, Schick RS, Pettis HM, Knowlton AR, Hamilton PK, Clark JS, and Kraus SD (2016). Health of North Atlantic right whales *Eubalaena glacialis* over three decades: From individual health to demographic and population health trends. *Marine Ecology Progress Series*, **542**, 265-282.
10. Knowlton AR, Hamilton PK, Marx MK, Pettis HM, and Kraus SD (2012). Monitoring North Atlantic right whale *Eubalaena glacialis* entanglement rates: A 30-yr retrospective. *Marine Ecology Progress Series*, **466**, 293-302.