Atlantic Scientific Review Group

February 22, 2022

Ms. Janet Coit
Assistant Administrator for NOAA Fisheries
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Dear Administrator Coit:

The Atlantic Scientific Review Group (ASRG) met via webinar on February 7–9, 2022. We appreciate the work done by NOAA and US Fish and Wildlife Service staff to prepare for this meeting, for their continued high-quality marine mammal science, for their presentations at our meeting, and for their responsiveness to our many questions.

At this meeting, we welcomed our newest member, Francine Kershaw, as well as our returning members Randy Wells, and James Powell. All other members were able to attend the meeting. The meeting was chaired by James Powell.

The ASRG has the following recommendations for NOAA Fisheries:

Barataria Bay bottlenose dolphins—The ASRG was presented information based on recent modeling suggesting that the Mid-Barataria Sediment Diversion would, by the year 2076, lead to a 96% decline in the median predicted stock size across all Barataria Bay.

This is a stock whose future viability has already been imperiled by the impacts of the *Deepwater Horizon* oil spill. Based on the 2021 Stock Assessment Report (SAR), mean annual mortality and serious injury during 2015–2019 due to human-caused sources (fishery takes, fishery research, at-sea entanglements, gunshot wounds, and DWH oil spill) was at least 41 dolphins. This estimate exceeds the stock's Potential Biological Removal (PBR = 18 dolphins) leading the stock to be classified as strategic. Moreover, because this estimate of human-caused mortality and serious injury is greater than 10% of the calculated PBR the level of takes cannot be considered insignificant and approaching the zero mortality and serious injury rate goal.

The ASRG believes that allowing the Project to produce additional mortalities will result in extirpation of the stock and is inconsistent with the Marine Mammal Protection Act (MMPA) waiver condition that "To the extent practicable and consistent with the purposes of the projects, minimize impacts on marine mammal species and population stocks." As such, the ASRG

recommends that NOAA reconsider issuance of the waiver of MMPA moratorium and prohibitions for the project considering this recent information.

We will provide a more detailed request by separate letter to the Assistant Administrator in due course.

Impact of non-lethal entanglement on North Atlantic Right Whales—The ASRG is increasingly concerned about the impact of non-lethal entanglement on the recovery of North Atlantic right whales (NARWs). Entanglements that are not severe enough to cause mortality or serious injury can interfere with foraging success, and the associated drag increases energy expenditures. Entangled whales are in poorer body condition than those not entangled, which lowers fecundity. NARWs today are growing to shorter adult lengths than in earlier decades and are in poorer body condition compared to southern right whales. Effective population recovery will require both a reduction in mortality from severe entanglement and minimizing the impacts on fecundity from sublethal entanglement.

The ASRG recognizes that the SAR is the primary, and sometimes only, source of information for stakeholders to understand what must to be done to recover the NARW population (in this case, equating to the entire species), so we believe the need to reduce sublethal entanglement should be made much more prominent in this Report. We appreciate the response from NOAA to our 2021 recommendation letter, which suggested that we "identify any summary information in particular [from the Hamilton et al. (2020) catalog report] they would like to see in future NARW SARs." The entanglement rates based on scarring analyses in their Table 1 and Table 2 from the Task 2 report, and the temporal trends in these rates, are important and easily understood metrics to track in the SAR, with the expectation that effective management measures would show detectably lower rates of entanglement over time.

The ASRG therefore **recommends** that the existing one-sentence paragraph in the middle of the "Current and Maximum Net Productivity Rates" of the NARW SAR (immediately following Figure 4) be moved to a different place where it would be more prominent and more likely to be read by stakeholders, such as the "Current Population Trend" section. The following is our draft of an enhanced section, which incorporates information on the two entanglement rates from Hamilton et al. (2020) in a simple graph. The objectives would be both to show that the rate of new entanglements has been high, and to provide a place where stakeholders could see the expected decrease in entanglement that should follow substantial risk reduction from new management measures. Hamilton et al. (2020) included only scarring data for 2010–2018, but we suggest that the figure include data from all available years.

> *The available evidence suggests that some of the observed variability in the calving rates of North Atlantic right whales is related to variability in nutrition (Fortune et al. 2013). There is also clear evidence that North Atlantic right whales are growing to shorter adult lengths than in earlier decades (Stewart et al. 2021) and are in poor body condition compared to southern right whales (Christiansen et al. 2020). All these changes may result from a combination of documented regime shifts in primary feeding habitats (Meyer-Gutbrod and Greene 2014; Meyer-Gutbrod et al. 2021; Record et al. 2019), and increased*

energy expenditures related to non-lethal entanglements (Rolland et al. 2016; Pettis et al. 2017; van der Hoop 2017). Only entanglements can be affected by management intervention, and despite recent management actions, overall entanglement rates (as measured by the rate at which scars are acquired by living NARWs; Hamilton et al. 2020; Fig. 5) remain high. As such, entanglement will continue to impact calving rates, and the declining trend in abundance will likely continue.

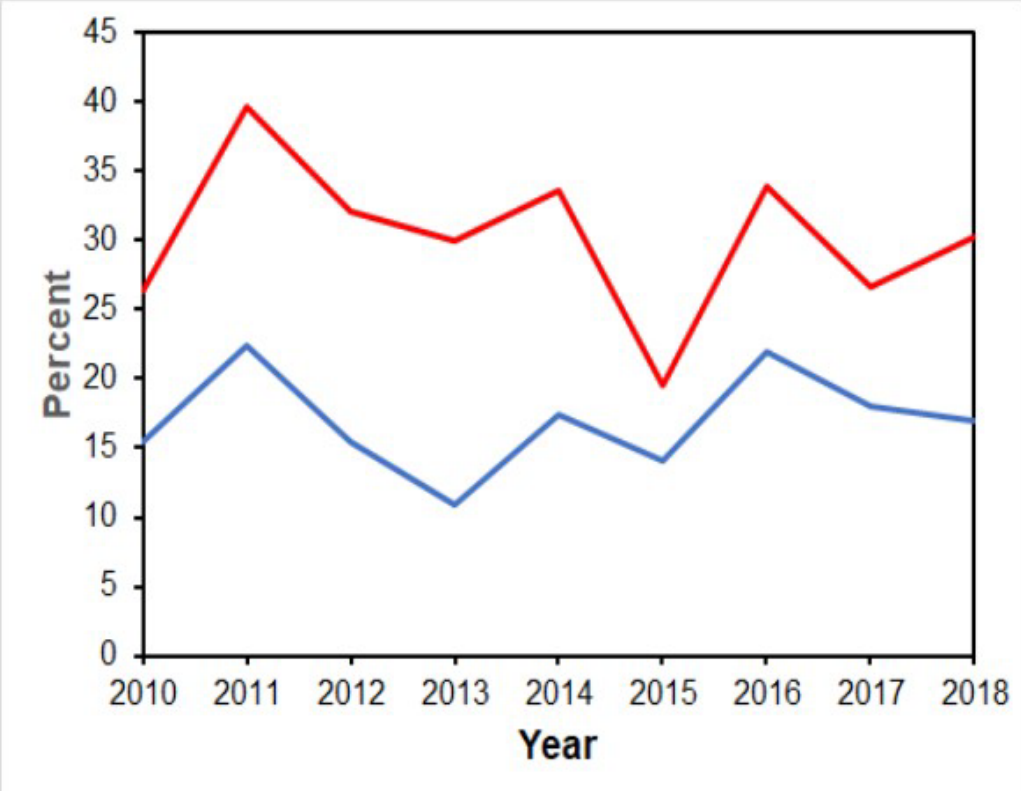

Figure 5. North Atlantic right whale entanglement rates estimated by monitoring scars on living whales: crude entanglement rate (blue line—newly discovered entanglement scars as a proportion of whales seen); annual entanglement rate (red line—proportion of adequately photographed whales with new scars). Data from the NARW catalog using the methods of Hamilton et al. (2020).

Added references:

Christiansen, F., S.M. Dawson, J.W. Durban, H. Fearnbach, C.A. Miller, L. Bejder, M. Uhart, M. Sironi, P. Corkeron, W. Rayment, E. Leunissen, E. Haria, R. Ward, H.A. Warick, I. Kerr, M.S. Lynn, H.M. Pettis, and M.J. Moore. 2020. Population comparison of right whale body condition reveals poor state of the North Atlantic right whale. Marine Ecology Progress Series 640:1–16.

Hamilton, P.K., A.R. Knowlton, M.N. Hagbloom, K.R. Howe, M.K. Marx, H.M. Pettis, A.M. Warren, and M.A. Zani. 2020. Maintenance of the North Atlantic right whale catalog, whale scarring and visual health databases,

anthropogenic injury case studies, and near real-time matching for biopsy efforts, entangled, injured, sick, or dead right whales. Contract report no. 1305M2-18-P-NFFM-0108 to the NMFS Northeast Fisheries Science Center. Anderson Cabot Center for Ocean Life, New England Aquarium, Boston, MA.

Meyer-Gutbrod, E.L., and C.H. Greene. 2014. Climate-associated regime shifts drive decadal scale variability in recovery of North Atlantic right whale population. Oceanography 27(3):148–153.

Meyer-Gutbrod, E.L., C.H. Greene, K.T.A. Davies, and D.G. Johns. 2021. Ocean regime shift is driving collapse of the North Atlantic right whale population. Oceanography 34(3):22–31.

Record, N.R., J. A. Runge, D.E. Pendleton, W.M. Balch, K.T.A. Davies, A.J. Pershing, C.L. Johnson, K. Stamieszkin, R. Ji, Z. Feng, S.D. Kraus, R.D. Kenney, C. Hudak, C.A. Mayo, C. Chen, J. Salisbury, and C.R.S. Thompson. 2019. Rapid climate-driven circulation changes threaten conservation of endangered North Atlantic right whales. Oceanography 32(2):162–169.

Stewart, J.D., J.W. Durban, A.R. Knowlton, M.S. Lynn, H. Fearnbach, J. Barbaro, W.L. Perryman, C.A. Miller, and M.J. Moore. 2021. Decreasing body lengths in North Atlantic right whales. Current Biology 31:3174–3179.

Streamlined SARs—The ASRG supports NOAA's proposal to reduce the number of SAR chapters reviewed each year to only those SARs with significant new data and we welcome the opportunity to devote more time to reviewing individual stocks with new information. We are, however, concerned that this could mean that some stocks (strategic stocks in particular) will receive insufficient attention from the agency. To that end, we **recommend** that prior to each annual meeting, each SRG be informed which SARs will be updated and be given the opportunity to suggest additional focused discussion of any remaining stocks at the annual meeting. This would be facilitated by circulation of a simple spreadsheet of all stocks annotated to show which SARs will be updated, and 2) continued provision of easy access to the most recent SAR chapter for all stocks.

Review of bottlenose dolphin bycatch analysis—The ASRG recognizes the Southeast Regional Office's (SERO) request for a review of the recent analysis by North Carolina Division of Marine Fisheries of North Carolina inshore bottlenose dolphin gillnet bycatch. Our understanding is that this analysis followed the peer-reviewed methods outlined in Lyssikatos & Garrison (2018) for nearshore ocean gillnets, and as such, it is reasonable for the ASRG to review the analysis by correspondence. Note, however, that if the ASRG reviewers find issues with the analysis, it may be necessary for the reviewers to discuss directly with the analysts. We await the materials necessary to conduct the review.

NARW SAR—The Atlantic SRG commends NOAA for the continued improvement in the clarity and rigor of the NARW SAR. Given the critical nature of the population's status and the attendant management issues, this SAR receives the maximum level of attention and is especially

important. The inclusion of the model-derived estimates of total mortality and their partitioning have increased the complexity of the data, and the SAR authors have done well in presenting the information. The modified presentation in Figure 4 comparing per capita birth and death rates by year is especially helpful as a very clear picture of the basic problem.

Support for funding and recommendations for follow-up work on Rice's whale—The ASRG members were impressed by the results of the scientific research and monitoring program for Rice's whales undertaken under the NOAA RESTORE Science Program. Work to date clearly demonstrates the value of a comprehensive ecological approach to species research, including the identification of essential habitat features, as well as improving our understanding of behaviors that may increase the species' vulnerability to certain human activities (e.g., vessel strikes).

We note that this project began in 2017 and funding ended in May 2021. While the project has revealed many important insights into the biology and ecology of the species, and will directly inform species management efforts, significant gaps in knowledge remain. We, therefore, **recommend** NOAA continue its work on this project and fund (at the least) an additional five years of research and monitoring for this species. This is particularly important as offshore wind energy development begins to advance in the northern Gulf of Mexico.

Future research priorities should include, but by no means be limited to, further characterizing habitat use in the western and central Gulf, and assessing species occurrence (and habitat use, if relevant) in the southern Gulf. The ASRG found the yet-unfunded plans that NOAA staff presented for acoustic monitoring in these areas to be a very promising means to start to address these questions. The forthcoming habitat suitability model will also provide a helpful tool in prioritizing additional areas for aerial or vessel-based surveys in both U.S. and Mexico waters. Increased transboundary collaboration with Mexico—that has been understandably on pause due to the pandemic—should be a top priority.

NOAA request for information describing where NARWs are in the water column—The Atlantic SRG recognizes that further implementation of the Decision Support Tool (DST) to assess the risk of gillnets to NARWs and other whales requires quantitative information on the diving behavior of the whales, i.e., the probability of an animal occupying different depths in the water column. One of our members (Dr. Kenney) has participated in a project conducted by CSA Ocean Sciences, Inc. and funded by BOEM to develop a ship-strike risk-assessment model for large whales along the U.S. East Coast. The model incorporates data from an extensive review of the literature on diving depths and behavioral characteristics, augmented by expert advice, to predict the risk probabilities for seven whale species (North Atlantic right, humpback, fin, sei, minke, blue, and sperm whales) by region and month. Given their focus on ship strikes, their particular model concentrates on the probability of a whale being in the upper part of the water column (e.g. above the top rope of a sink gillnet), however their assembled dataset includes the entire depth range. We contacted Burton Shank (Research Fishery Biologist, NEFSC Population Dynamics Branch) during the first break in the recent meeting after his presentation on the DST to pass on the contact information for the project manager at CSA Ocean Sciences.

Program Evaluation Tool (PET)—The ASRG was impressed by the progress NOAA's Right Whale Implementation Team has made in developing the Program Evaluation Tool (PET) tool.

We have several suggestions about next steps in the evolution of the tool. First, as we **recommended** in 2021, we believe the practice of linking the DST's output to the PET would make a powerful tool for Management Strategy Evaluations of the efficacy of Atlantic Large Whale Take Reduction Team (ALWTRT) mitigation measures. Secondly, we **recommend** that NOAA consider a prey-availability scenario showing further declines in important right whale prey in the Northwest Atlantic Ocean. Research into declining or changing zooplankton abundance conducted by Kevin Friedland, Nick Record, Jeff Runge, Andy Pershing, and others should be reviewed in this regard. Finally, the ASRG endorses independent review of the model, but believes that the ASRG does not, as currently constituted, possess the technical expertise to review such an important model. We **recommend** that the ASRG host a review but bring in "invited experts" (as provided for under the ASRG Terms of Reference) to form the Panel and that these individual scientists be contracted through NOAA's Center for Independent Experts. The Panel would then be chaired by a member of the ASRG.

Bottlenose dolphin population estimates and observer coverage—The ASRG urges NOAA to ensure that scientists from the Southeast Fisheries Science Center and its external partners have the resources to estimate bycatch and abundance for stocks of estuarine bottlenose dolphins. Well-tested and widely accepted photographic capture-recapture methods for generating abundance estimates are available and cost-effective, but the resources needed to conduct surveys and subsequent analyses have not been provided for many years.

We will provide a separate letter on the topic to the Assistant Administrator in due course.

PBR for small stocks—The ASRG had considerable discussion about the small PBR calculated for Rice's whales. We discussed whether it was appropriate to round such a small number up (i.e., the stock's calculated PBR of 0.068 was rounded based on Guidelines for Assessment Marine Mammal Stocks (GAMMS) to 0.1), and what the most appropriate time interval of human-caused mortalities to consider for application against this PBR should be (i.e., 5 years is the norm but would 10 years or more be more appropriate for small [ca. 100–200 animals] stocks?). Given that NOAA is presently considering a variety of updates to the GAMMS, we **recommend** the agency reconsider the guidelines for PBR calculation and application for small stocks. The issue should also be a consideration for North Pacific right whales, Central North Pacific blue whales, southern resident killer whales, beaked whales, and some dolphin stocks.

We suggest a special calculation of any PBR that is less than 0.2, given that this would equal a take of 1 animal in a 5-year period. At least two options are available beyond the rounding up option—either round to the second decimal place (a PBR = 0.068 would round to a PBR = 0.07) or always round down (PBR = 0). Either would have more conservation value than rounding up to the first decimal place.

With respect to the time-period for consideration of anthropogenic mortality, we suggest extension of the period for small populations of relatively slow-reproducing species (e.g., like Rice's whales). Ten years would be reasonable, given the long-term impacts of relatively small takes on such stocks/species. NOAA could also evaluate alternative time periods by modeling recovery of such populations facing small levels of take, or by simply extending the period

necessary to evaluate whether PBR is being exceeded on a rolling basis (i.e., a PBR of 0.07 for Rice's whale suggests that 1 take in the previous 14 years would exceed PBR).

There is precedent for this type of approach in some existing SARs. For example, in the 2020 North Pacific right whale SAR, NOAA states that "[t]he calculated PBR level for this stock is therefore 0.05 (26 x 0.02 x 0.1), which would be equivalent to one take every 20 years." We do not wish to pre-empt the outcome of a potential process to update the GAMMS in this regard, however we recommend that whatever the outcome, it be applied in a standard fashion to all relevant stocks across regions.

Scientific monitoring program and adaptive management strategy for offshore wind energy development—Offshore wind energy development represents a new industry in United States' waters. Presentations from NOAA staff at the ASRG meeting highlighted extensive planning, leasing, and development currently underway in the Atlantic, and we understand that a process to identify lease areas in the Gulf of Mexico is also underway. Potential impacts identified included direct effects on marine mammal species and stocks, including increased risk of vessel strike, secondary entanglement in floating wind infrastructure, and injury or disturbance from noise, as well as broader ecosystem-level effects, including potential changes to hydrography and prey abundance and distribution.

The ASRG emphasizes that these impacts may have significant implications for marine mammals. This is particularly true for the critically endangered NARW. Dense offshore wind development is planned in key foraging habitat off southern New England and throughout its Atlantic Coast migratory corridor and is encroaching on the species' southern calving grounds. The areas currently under consideration in the central and western Gulf of Mexico are likely to represent important habitat for Rice's whale.

Note too that the logistics of continuing to conduct scientific operations in close proximity to windfarms is daunting, and will require signficant changes to surveys. Currently available NOAA ships such as the FSV Henry Bigelow, the primary platform for NEFSC fishery and marine mammal surveys, cannot operate in developed wind farm projects. Similarly, NOAA survey aircraft, such as the twin otters, cannot be flown at the traditional survey altitudes in project areas (where the tops of the rotors are higher than survey alititudes). NOAA will need to use different ships and different survey methods to continue to fulfill its stewardship mission. As such, additional funding will be necessary simply to maintain the status quo of data collection in these areas.

The ASRG **recommends** that NOAA implement a robust scientific survey program to establish the pre-construction ecological baseline and subsequently monitor for impacts and effects on key species and the broader ecosystem during construction, the approximately 30-year lifespan of offshore wind project operations, and during and after decommissioning. NOAA should continue its proactive work with the Bureau of Ocean Energy Management and other relevant agencies to develop such programs and ensure the allocation of adequate resources to fund this long-term effort. In addition, NOAA, and cooperating agencies, should take advantage of the experiences from areas in Europe with decades of wind farm operations when considering mitigation of

operational impact. All data collected through the implementation of the recommended program should be made publicly available.

We further **recommend** a mechanism for adaptive management be implemented so that data and lessons gleaned from the monitoring program can be proactively used to improve the design and development of future offshore wind energy developments, to reduce risks to marine mammals and the broader marine ecosystem.

Finally, the ASRG appreciates the addition of Francine and thanks NOAA for her timely selection. Her skills as a geneticist and her representation of another voice for marine mammal conservation are valued by the ASRG. We would also call to the agency's attention that two other key members of the ASRG, Erin Summers and Jack Lawson, both are nearing the end of their terms on the ASRG. Should they choose not to return to the ASRG, it is very important that they be replaced with scientists representing similar organizations (i.e., US and Canadian agencies).

With best regards,

James Powell
Chair, Atlantic Scientific Review Group

CC:

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Marine Mammal Commission

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Greater Atlantic Region

Dr. Jon Hare, Director,
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