By Electronic Mail

June 21, 2021

Ms. Jolie Harrison
Chief, Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
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RE: Modified Proposed Incidental Harassment Authorization for Marine Site Characterization Surveys Off the Coast of Massachusetts (Lease Area OCS-A 0521) as requested by Mayflower Wind Energy, LLC.

Dear Ms. Harrison,

On behalf of our nineteen organizations, and our millions of members, we respectfully submit our recommendations for the National Marine Fisheries Service's ("NMFS") proposal to issue a modified incidental harassment authorization ("Modified Proposed IHA") and authorize Mayflower Wind Energy, LLC ("Mayflower") to conduct site characterization surveys off of Massachusetts in the area of the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A 0521) ("Lease Area") and along potential submarine cable routes to landfall locations at Falmouth, Massachusetts, and near Narragansett Bay (collectively termed the "Project Area"). See 86 Fed. Reg. 27,393 (May 20, 2021).

The Biden-Harris Administration has set forth an ambitious and necessary goal for the nation to have net-zero global greenhouse gas emissions by mid-century or before. Our organizations are united in support of responsibly developed offshore wind energy as a critically needed climate change solution, and we have long advocated for policies and actions needed to bring it to scale in an environmentally protective manner. Responsible development of offshore wind energy avoids, minimizes, and mitigates impacts to ocean wildlife and habitat and traditional ocean uses, meaningfully engages stakeholders from the start, and uses best available science and data to ensure science-based and stakeholder-informed decision making.

The rapid transition to a clean energy economy is of paramount importance to wildlife and the environment that face unprecedented impacts from climate change. It is imperative, however, that all offshore wind energy development activities move forward with strong protections in place for coastal and marine habitats and wildlife. We can and must develop this resource thoughtfully and responsibly, using science-based measures to avoid, minimize, mitigate, and monitor impacts on valuable and vulnerable wildlife. This must include a specific focus on ensuring sufficient measures are in place to protect our most vulnerable threatened and endangered species and a robust plan for pre, during, and post construction monitoring that can enable effective adaptive management strategies. The duty to advance

offshore wind energy development in a manner protective of wildlife and the environment extends to site characterization surveys that occur prior to, and during, offshore wind energy construction.

The following comments are intended to support Mayflower in achieving its goal to advance offshore wind in a sustainable manner, while also expressing our concerns regarding NMFS' negligible impact analysis and the avoidance, minimization, mitigation, and monitoring requirements necessary to ensure adequate mitigation measures in the Project Area. Because it is our view that NMFS' analysis likely underestimates the impact of these activities on the reproductive success and survivorship of the North Atlantic right whale, we strongly recommend that the Final IHA require the following measures, many of which offer protections to other endangered and protected species and stocks.

- A seasonal restriction on site assessment and characterization activities in the Project Area with the potential to injure or harass the North Atlantic right whale (*i.e.*, source level >180 dB re 1 µPa (SPL) at 1 meter frequencies between 7 Hz and 35 kHz)[1] between 1 December 2021 and 30 April 2022;

- A prohibition on the commencement of geophysical surveys at night to maximize the probability that marine mammals are detected and confirmed clear of the exclusion zone;

- A requirement to monitor an exclusion zone for the North Atlantic right whale of 1,000 meters ("m") around each sound source conducting survey activities with noise levels that could result in injury or harassment to this species.

- A requirement that a combination of visual monitoring by Protected Species Observers ("PSOs") and passive acoustic monitoring is implemented at all times that survey work is underway;

- A requirement that four PSOs adhere to a two-on/two-off shift schedule to ensure no individual PSO is responsible for visually monitoring more than 180° of the exclusion zone at any one time;

- A requirement that the developer selects sub-bottom profiling systems, and operates those systems at power settings, that achieve the lowest practicable source level for the objective; and

- A requirement that all project vessels operating within the Project Area, regardless of size, observe a mandatory 10 knot speed restriction during the entire survey period.

As we have in the past, we object to NMFS' proposed process to consider extending any one-year IHA with a truncated 15-day comment period as contrary to the MMPA.

[1] The best available science on other low- to mid-frequency sources (*e.g.*, Nowacek et al. 2004, Kastelein et al. 2012, 2015) indicates that Level B takes will occur with near certainty at exposure levels well below the 160 dB threshold that NMFS applies to behavioral impacts.

I. The Marine Mammal Protection Act

Congress enacted the MMPA because "certain species and population stocks of marine mammals are, or may be, in danger of extinction or depletion as a result of man's activities."[2] The statute seeks to ensure that species and population stocks are not "permitted to diminish beyond the point at which they cease to be a significant functioning element of the ecosystem of which they are a part," and do not "diminish below their optimum sustainable population."[3] Congress intended for NMFS to act conservatively in the face of uncertainty when authorizing activities harmful to marine species.[4] This careful approach to management was deemed necessary because of the vulnerable status of many species and because it is difficult to measure the impacts of human activities on marine mammals in the wild.[5]

At the heart of the MMPA is its "take" prohibition, which establishes a moratorium on the capture, harassing, hunting, or killing of marine mammals, and generally prohibits any person or vessel subject to the jurisdiction of the United States from taking a marine mammal on the high seas or in waters or on land under the jurisdiction of the United States.[6] Harassment is any act that "has the potential to injure a marine mammal or marine mammal stock in the wild" or to "disturb a marine mammal . . . by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering."[7]

NMFS may grant exceptions to the take prohibition. As relevant here, the agency may authorize, for not more than a one-year period, the incidental, but not intentional, "taking by harassment of small numbers of marine mammals of a species or population stock" if the agency determines that such take would have only "a negligible impact on such species or stock."[8] The agency must prescribe permissible methods of taking to ensure that the activity has "the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance."[9] NMFS must also establish monitoring and reporting requirements.[10] No later than 45 days after receiving an application for an IHA, NMFS must publish a proposed authorization and open a 30-day comment period.[11]

II. The Status of Marine Mammals in the Northwestern Atlantic

In addition to rich wind resources, the waters in the Project Area support a diversity of marine life, including at least 14 species of marine mammals, including six large whale species, six small cetacean

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[2] 16 U.S.C. § 1361(1).

[3] *Id.* § 1361(2); see also *Conservation Council for Hawaii v. NMFS*, 97 F. Supp. 3d 1210, 1216 (D. Haw. 2015).

[4] H.R. Rep. No. 92-707 (Dec. 4, 1971), as reprinted in 1972 U.S.C.C.A.N. 4144, 4148.

[5] 16 U.S.C. § 1361(1), (3).

[6] *Id.* § 1362(13), 1371(a).

[7] *Id.* § 1362(18)(A).

[8] *Id.* § 1371(a)(5)(D)(i).

[9] *Id.* § 1371(a)(5)(D)(ii)(I).

[10] *Id.* § 1371(a)(5)(D)(iii).

[11] *Id.* § 1371(a)(5)(D)(iii).

species, and two pinnipeds.[12] Of the six large whale species, four (North Atlantic right whale, fin whale, sei whale, and sperm whale) are listed as endangered under the Endangered Species Act ("ESA"), and North Atlantic right whales, fin whales, and sei whales are considered to be depleted under the MMPA. The four ESA-listed whale species and stocks found within the Project Area and the Gulf of Maine stock of humpback whales are also listed as strategic stocks under the MMPA.[13] Moreover, the Gulf of Maine stock of humpback whales, the Canadian East Coast stock of minke whales, and the North Atlantic right whale are currently experiencing Unusual Mortality Events ("UMEs") as designated by NMFS.[14] Of the small cetaceans, harbor porpoises require special attention during offshore wind energy development because of their extreme sensitivity to noise.[15]

A. North Atlantic right whales

The survival of the North Atlantic right whale rests on a knife-edge. The best population estimate for the beginning of 2019 is just 368 individuals[16] and 14 animals have since been reported to have died.[17] Moreover, the best population estimate for the beginning of 2018 has been revised down from 412 individuals[18] to 383 individuals.[19] The new 2019 and revised 2018 estimate a significant decrease in survival during the last three years as a result of the ongoing UME. Additionally, scientists from the New England Aquarium now believe that "low birth rates coupled with whale deaths means there could be no females left in the next 10 to 20 years."[20] The decline of the species over the past decade is also deeply disturbing. Based on the best population estimate for the species, approximately 113 animals have been killed since the population size peaked in 2011.[21] Further, documented serious injuries and deaths only

[12] 86 Fed. Reg. at 27,397, Table 3.

[13] *Id*.

[14] NMFS, "2016-2021 Humpback whale Unusual Mortality Event along the Atlantic Coast." Available at: https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2021-humpback-whale-unusual-mortality-event-along-atlantic-coast; NMFS, "2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast." Available at: https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-minke-whale-unusual-mortality-event-along-atlantic-coast; NMFS, "2017-2021 North Atlantic right whale Unusual Mortality Event." Available at: https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2021-minke-whale-unusual-mortality-event-along-atlantic-coast.

[15] Lucke, K., Siebert, U., Lepper, P.A., and Blanchet, M.A., "Temporary shift in masked hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to seismic airgun stimuli." *Journal of the Acoustical Society of America,* vol. 125, pp 4060-4070 (2019).

[16] Pace, R.M., "Revisions and further evaluations of the right whale abundance model: Improvements for hypothesis testing." NOAA Technical Memorandum NMFS-NE-269. April 2021. Available at: https://apps-nefsc.fisheries.noaa.gov/rcb/publications/tm269.pdf?utm_medium=email&utm_source=govdelivery.

[17] NMFS, "2017-2021 North Atlantic right whale Unusual Mortality Event," *supra.*

[18] Pettis, H.M., Pace III, R. M., and Hamilton, P.K., "North Atlantic Right Whale Consortium 2019 Annual Report Card," Report to the North Atlantic Right Whale Consortium (2019). Available at: https://www.narwc.org/uploads/1/1/6/6/116623219/2019reportfinal.pdf.

[19] Pettis, H.M., Pace III, R. M., and Hamilton, P.K., "North Atlantic Right Whale Consortium 2020 Annual Report Card." Report to the North Atlantic Right Whale Consortium (2020). Available at: https://www.narwc.org/uploads/1/1/6/6/116623219/2020narwcreport_cardfinal.pdf.

[20] Davie, E., "New population estimate suggests only 356 North Atlantic right whales left," CBC News (Oct. 29, 2020). Available at: https://www.cbc.ca/news/canada/nova-scotia/356-north-atlantic-right-whales-left-2020-population-1.5779931.

[21] Pettis, H.M., *et al*., "North Atlantic Right Whale Consortium 2020 Annual Report Card," *supra*.; Pace, R.M., "Revisions and further evaluations of the right whale abundance model: Improvements for hypothesis testing," *supra*.

represent a small fraction of whales that are injured or killed by human activities.[22] A recently published scientific study concludes only 29 percent (2 standard error = 2.8 percent) of North Atlantic right whale carcasses were detected from 2010 to 2017.[23] Further, females are more negatively affected than males by the lethal and sublethal effects of human activity, now surviving to only 30-40 years of age with an extended inter-calf interval of approximately ten years.[24] Calf survival is also severely diminished. Three calves born during the last two calving seasons are already either confirmed or likely dead due to vessel strikes.[25] One of the calves' mothers has been declared seriously injured due to the strike that killed her calf, one mother has not been resighted, and the third has been seriously injured from entanglement in fishing gear.[26] A fourth calf was found to have died of natural causes.[27] In 2019, North Atlantic right whales were listed as a NOAA "Species in the Spotlight" indicating that they are one of nine marine species to be at greatest risk of extinction in the United States.[28] In July 2020, the International Union for Conservation of Nature ("IUCN") reclassified the North Atlantic right whale from "endangered" to "critically endangered" on the IUCN Red List of Threatened Species, one step away from "extinction."[29]

As NMFS acknowledges in the Modified Proposed IHA, the Project Area coincides directly with year-round "core" North Atlantic right whale foraging habitat.[30] Protection of North Atlantic right whales during foraging, and the protection of their foraging habitat, must be one of NMFS' highest priorities. Foraging areas with suitable prey density are limited relative to the overall distribution of North Atlantic right whales, and a decreasing amount of habitat is available for resting, pregnant and lactating females.[31] This means that unrestricted and undisturbed access to suitable areas, when they exist, is extremely

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[22] Sharp, S.M., McLellan, W.A., Rotstein, D.S., Costidis, A.M., Barco, S.G., Durham, K., Pitchford, T.D., Jackson, K.A., Daoust, P-Y., Wimmer, T., Couture, E.L., Bourque, L., Frasier, T., Frasier, B., Fauquier, D., Rowles, T., Hamilton, P.K., Pettis, H., and Moore, M.J., "Gross and histopathologic diagnoses from North Atlantic right whale *Eubalaena glacialis*, mortalities between 2003 and 2018," *Diseases of Aquatic Organisms*, vol. 135, pp. 1-31 (2019).; Pace III, R. M., Williams, R., Kraus, S. D., Knowlton, A. R. and Pettis, H. M.," Cryptic mortality of North Atlantic right whales," *Conservation Science and Practice*, art. e346 (2021).

[23] Pace III, R. M., *et al*., *id*.

[24] Corkeron, P., Hamilton, P., Bannister, J., Best, P., Charlton, C., Groch, K.R., Findlay, K., Rowntree, V., Vermeulen, E., and Pace, R.M., "The recovery of North Atlantic right whales, *Eubalaena glacialis*, has been constrained by human-caused mortality," *Royal Society Open Science*, vol 5, art. 180892 (2018).

[25] NMFS, "2017-2021 North Atlantic right whale Unusual Mortality Event," *supra*.

[26] *Id*.

[27] *Id*.

[28] NMFS, "North Atlantic right whale – In the Spotlight." Available at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/species-spotlight-action-plan-accomplishments.

[29] Cooke, J.G., "Eubalaena glacialis," *The IUCN Red List of Threatened Species*, e.T41712A162001243 (2020). Available at: https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T41712A162001243.en.

[30] 86 Fed. Reg. at 27,408.

[31] Van der Hoop, J., Nousek-McGregor, A.E., Nowacek, D.P., Parks, S.E., Tyack, P., and Madsen, P, "Foraging rates of ram-filtering North Atlantic right whales," *Functional Ecology*, vol. 33, pp. 1290-1306 (2019); Plourde, S., Lehoux, C., Johnson, C. L., Perrin, G., and Lesage, V. "North Atlantic right whale (*Eubalaena glacialis*) and its food: (I) a spatial climatology of Calanus biomass and potential foraging habitats in Canadian waters," *Journal of Plankton Research*, vol. 41, pp. 667-685 (2019); Lehoux, C., Plourde S., and Lesage, V., "Significance of dominant zooplankton species to the North Atlantic Right Whale potential foraging habitats in the Gulf of St. Lawrence: a bioenergetic approach," DFO Canadian Science Advisory Secretariat (CSAS) Research Document 2020/033 (2020). Gavrilchuk, K., Lesage, V., Fortune, S., Trites, A.W., and Plourde, S., "A mechanistic approach to predicting suitable foraging habitat for reproductively mature North Atlantic right whales in the Gulf of St. Lawrence," DFO Canadian Science Advisory Secretariat (CSAS) Research Document 2020/034 (2020).

important for the species to maintain its energy budget.[32] Scientific information on North Atlantic right whale functional ecology also shows that the species employs a "high-drag" foraging strategy that enables them to selectively target high-density prey patches, but is energetically expensive.[33] Thus, if access to prey is limited in any way, the ability of the whale to offset its energy expenditure during foraging is jeopardized. In fact, researchers have concluded: "[R]ight whales acquire their energy in a relatively short period of intense foraging; even moderate changes in their feeding behavior or their prey energy density are likely to negatively impact their yearly energy budgets and therefore reduce fitness substantially."[34] North Atlantic right whales are already experiencing significant food-stress: juveniles, adults, and lactating females have significantly poorer body condition relative to southern right whales and the poor condition of lactating females may cause a reduction in calf growth rates.[35] Indeed, North Atlantic right whale body lengths have been decreasing since 1981, a change associated with entanglements in fishing gear as well as other cumulative stressors.[36] NMFS must ensure undisturbed access to foraging habitat to adequately protect the species.

B. Other large whale species

Ongoing UMEs exist for other large whales.[37] Alarmingly, 107 minke whales have stranded between Maine and South Carolina from January 2017 to June 2021 (data through 16 June 2021).[38] Elevated numbers of humpback whales have also been found stranded along the Atlantic Coast since January 2016 and, in a little over five years, 150 humpback whale mortalities have been recorded (data through 16 June 2021), with strandings occurring in every state along the East Coast.[39] Partial or full necropsy examinations have been conducted on approximately half of the stranded animals and a significant portion showed evidence of pre-mortem vessel strikes. NMFS recently designated the Gulf of Maine humpback whale stock as a strategic stock under the MMPA, based on the total estimated human-caused average annual mortality and serious injury to this stock, including from vessel strikes.[40]

The declaration of these UMEs by NMFS in the past few years for three large whale species for which anthropogenic impacts are a significant cause of mortality, and the recent classification of humpback

[32] *Id*.

[33] Van der Hoop, J., *et al*., *id*.

[34] *Id*.

[35] Christiansen, F., Dawson, S.M., Durban, J.W., Fearnbach, H., Miller, C.A., Bejder, L., Uhart, M., Sironi, M., Corkeron, P., Rayment, W., Leunissen, E., Haria, E., Ward, R., Warick, H.A., Kerr, I., Lynn, M.S., Pettis, H.M., & Moore, M.J., "Population comparison of right whale body condition reveals poor state of the North Atlantic right whale," *Marine Ecology Progress Series*, vol. 640, pp. 1-16 (2020).

[36] Stewart, J.D., Durban, J.W., Knowlton, A.R., Lynn, M.S., Fearnback, H., Barbaro, J., Perryman, W.L., Miller, C.A., and Moore, M.J., "Decreasing body lengths in North Atlantic right whales," *Current Biology*, published online (3 June 2021). Available at: https://www.cell.com/current-biology/fulltext/S0960-9822(21)00614-X.

[37] NMFS, "2016-2021 Humpback whale Unusual Mortality Event along the Atlantic Coast," *supra*; NMFS, "2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast," *supra.*

[38] NMFS, "2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast," *id*.

[39] NMFS, "2016-2021 Humpback whale Unusual Mortality Event along the Atlantic Coast," *supra*.

[40] NMFS, "Draft U.S. Atlantic and Gulf of Mexico marine mammal stock assessments – 2020" (2020). Available at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports.

whales as a strategic stock by the agency, demonstrates an increasing risk to whales from human activities along the East Coast.

C. Other marine mammals

Harbor porpoises also require special attention during offshore wind energy development because of their extreme sensitivity to noise. Harbor porpoises are substantially more susceptible to temporary threshold shift (i.e., hearing loss) from low-frequency pulsed sound than are other cetacean species that have thus far been tested.[41] Both captive and wild animal studies show harbor porpoises abandoning habitat in response to various types of pulsed sounds at well below 120 dB (re 1 uPa (RMS))[42] and, in fact, evidence of the acoustic sensitivity of the harbor porpoise has led scientists to call for a revision to the NMFS acoustic exposure criteria for behavioral response.[43] Impacts to harbor porpoises must, therefore, also be minimized and mitigated to the full extent practicable during offshore wind siting and development in the waters off the coast of Massachusetts.

D. NMFS permitting standards

NMFS is obligated under both the ESA and the MMPA to protect the North Atlantic right whale from additional harmful impacts of human activities and required by the MMPA to consider the full range of potential impacts on all marine mammal species, including endangered fin and sei whales, the strategic stock of humpback whales, minke whales, and strategic stocks of small cetaceans, that are known to utilize the proposed survey area(s) and surrounding regions before issuing an IHA with appropriate avoidance, minimization, mitigation, and monitoring measures. NMFS must use the best available scientific information on marine mammal presence and density, as required by law.[44] Considering the elevated threat to federally protected species and stocks in the Atlantic, and that climate-driven changes in oceanographic conditions, and resulting shifts in prey distribution, are rapidly changing the spatial and temporal patterns of habitat use by North Atlantic right whales and other large whale species,[45] NMFS

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[41] Lucke, K., Siebert, U., Lepper, P.A., and Blanchet, M.A., "Temporary shift in masked hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to seismic airgun stimuli." *Journal of the Acoustical Society of America,* vol. 125 (2009): 4060-4070.

[42] *See, e.g.*, Bain, D.E., and Williams, R., "*Long-range effects of airgun noise on marine mammals: responses as a function of received sound level and distance"* Report by Sea Mammal Research Unity (SMRU), 2006.; Kastelein, R.A., Verboom, W.C., Jennings, N., de Haan, D., "Behavioral avoidance threshold level of a harbor porpoise (*Phocoena phocoena*) for a continuous 50 kHz pure tone." *Journal of the Acoustical Society of America*, vol. 123 (2008): 1858-1861.; Kastelein, R.A., Verboom, W.C., Muijsers, M., Jennings, N.V., van der Heul, S., "The influence of acoustic emissions for underwater data transmission on the behavior of harbour porpoises (*Phocoena phocoena*) in a floating pen." *Mar. Enviro. Res.* Vol. 59 (2005): 287-307; Olesiuk, P.F., Nichol, L.M., Sowden, M.J., and Ford, J.K.B., "Effect of the sound generated by an acoustic harassment device on the relative abundance and distribution of harbor porpoises (*Phocoena phocoena*) in Retreat Passage, British Columbia." *Marine Mammal Science,* vol. 18 (2002): 843-862.

[43] Tougaard, J., Wright, A. J., and Madsen, P.T., "Cetacean noise criteria revisited in the light of proposed exposure limits for harbor porpoises," *Marine Pollution Bulletin.* vol. 90 (2015): 196-208.

[44] 16 U.S.C. § 1362(19), § 1362(27).

[45] *See, e.g.*, Davis, G.E., Baumgartner, M.F., Bonnell, J.M., Bell, J., Berchick, C., Bort Thorton, J., Brault, S., Buchanan, G., Charif, R.A., Cholewiak, D., *et al.*, "Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014," *Scientific Reports,* vol. 7, p. 13460 (2017); Davis, G.E., Baumgartner, M.F., Corkeron, P.J., Bell, J., Berchok, C., Bonnell, J.M., Thornton, J.B., Brault, S., Buchanan, G.A., Cholewiak, D.M. and

must ensure that any potential stressors posed by the proposed surveys, and the cumulative impacts of surveys across multiple projects, are mitigated to effectuate the least practicable impact on affected species and stocks.[46]

III. Inconsistencies Between the Modified Proposed IHA and the Marine Mammal Protection Act

A. NMFS must incorporate additional data sources into calculations of marine mammal density and take

NMFS must base its IHA analysis on the best available scientific information to comply with statutory requirements of the MMPA.[47] In determining the proportion of marine mammal species and stocks taken by the proposed activities—a calculation that lies at the heart of the agency's "small numbers" analysis—NMFS predominantly relies on estimates of marine mammal densities derived from the habitat-based density model produced by the Duke University Marine Geospatial Ecology Laboratory (Roberts et al. 2016, 2017, 2018, 2020).[48] Density estimates for all species except North Atlantic right whales within the deep and shallow portions of the survey areas were derived from habitat-based density modeling results reported by Roberts *et al.* (2016, 2017, 2018).[49] The estimated monthly densities of North Atlantic right whales were based on updated model results from Roberts *et al.* (2020).[50] The updated 2020 model still excludes data obtained through additional sightings databases, passive acoustic monitoring, and satellite telemetry. As such, it remains our view that the density maps produced by these models do not fully reflect the abundance, distribution, and density of marine mammals for the U.S. East Coast and therefore should not be the only information source relied upon when estimating take. In particular, NMFS must require that all available data are used to ensure that any potential shifts in habitat usage by endangered and protected species and stocks are reflected in estimations of marine mammal density and take.

NMFS takes an initial step to address this need in the Modified Proposed IHA. For comparison purposes and to account for local variation not captured by the predicted densities provided by the Roberts models, PSO sightings data from Mayflower's 2020 HRG surveys were analyzed to assess the appropriateness of

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Clark, C.W., "Exploring movement patterns and changing distributions of baleen whales in the western North Atlantic using a decade of passive acoustic data," *Global change biology*, vol. 26, p.4812 (2020); Guilpin, M., Lesage, V., McQuinn, I., Brosset, P., Doniol-Valcroze, T., Jeanniard-du-Dot, T. and Winkler, G., "Repeated Vessel Interactions and Climate-or Fishery-Driven Changes in Prey Density Limit Energy Acquisition by Foraging Blue Whales," *Frontiers in Marine Science*, vol. 7, p.626 (2020); Record, N., Runge, J., Pendleton, D., Balch, W., Davies, K., Pershing, A., Johnson, C., Stamieszkin, K., Ji, R., Feng, Z. and Kraus, S., "Rapid Climate-Driven Circulation Changes Threaten Conservation of Endangered North Atlantic Right Whales," *Oceanography*, vol. 32, pp. 162-169 (2019); Santora, J.A., Mantua, N.J., Schroeder, I.D., Field, J.C., Hazen, E.L., Bograd, S.J., Sydeman, W.J., Wells, B.K., Calambokidis, J., Saez, L. and Lawson, D., "Habitat compression and ecosystem shifts as potential links between marine heatwave and record whale entanglements," *Nature Communications*, vol. 11, pp.1-12 (2020); Silber, G.K., Lettrich, M.D., Thomas, P.O., Baker, J.D., Baumgartner, M., Becker, E.A., Boveng, P., Dick, D.M., Fiechter, J., Forcada, J. and Forney, K.A., "Projecting marine mammal distribution in a changing climate," *Frontiers in Marine Science*, vol. 4, p.413 (2017).

[46] 16 U.S.C. § 1371(a)(5)(D)(ii)(I).

[47] 16 U.S.C. §§ 1362(19), §§ 1362(27).

[48] 86 Fed. Reg. at 27,401.

[49] *Id*.

[50] *Id*.

the density-based take calculations.[51] Density estimates derived from the Mayflower PSO survey data were compared with those derived from the Roberts models and the larger of the take estimates was used by the agency as the basis for the proposed number of takes.[52] Sightings-based methods led to a notable increase in estimated takes for humpback whales (33 takes as opposed to 3 derived from the Roberts models), minke whales (14 as opposed to 2), and short-beaked common dolphins (1,969 as opposed to 186).[53] While there are constraints with relying on PSO data (e.g., inconsistent availability and detectability of animals), we find this comparative analysis helpful and appreciate NMFS including the most conservative take estimate for authorization.

Additional data can be obtained from sightings databases (*e.g.*, WHALEMAP;[54] NEFSC Monthly DMA analysis[55]) and passive acoustic monitoring efforts (*e.g.*, Robots4Whales detections;[56] NEFSC Acoustic Indicators of Right Whale Occurrence[57]). Further, from October 2018 through August 2019 and March 2020 through July 2021, monthly standardized marine mammal aerial surveys were flown in the Massachusetts and Rhode Island and Massachusetts Wind Energy Areas by the New England Aquarium.[58] A study funded by the Bureau of Offshore Energy Management ("BOEM") using an autonomous vehicle for real-time monitoring of marine mammals from December 2019 through March 2020[59] and again from December 2020 through February 2021[60] on Cox Ledge acoustically detected right whales in all months of the study.[61] NMFS should take immediate steps to collate and integrate these and more recent data sets to more accurately reflect marine mammal presence for future IHAs and other work.

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[51] *Id*.

[52] 86 Fed. Reg. at 27,403.

[53] *Id.* at Table 8.

[54] *See*, https://whalemap.org/#map; Johnson, H., Morrison, D., and Taggart, C., "WhaleMap: a tool to collate and display whale survey results in near real-time." Journal of Open Source Software, 6(62), 3094 (2021).

[55] NOAA Fisheries, "Interactive DMA Analyses." Northeast Fisheries Science Center, updated September 2019. Available at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/.

[56] Woods Hole Oceanographic Institution, "Robots4Whales." Available at: http://dcs.whoi.edu/; *See, also,* WCS/WHOI, "Autonomous real-time marine mammal detections, New York Bight buoy." Available at: http://dcs.whoi.edu/nyb0218/nyb0218_buoy.shtml; WCS/WHOI, "Autonomous real-time marine mammal detections, New York Bight buoy NW." Available at: http://dcs.whoi.edu/nybnw0120/nybnw0120_buoy.shtml; WCS/WHOI, "Autonomous real-time marine mammal detections, New York Bight buoy SE." Available at: http://dcs.whoi.edu/nybse0120/nybse0120_buoy.shtml.

[57] Northeast Fisheries Science Center, "Acoustic Indicators of Right Whale Occurrence" (April 2019). Available at: https://apps-nefsc.fisheries.noaa.gov/psb/surveys/interactive-monthly-dma-analyses/.

[58] Campaign reports available at: https://www.masscec.com/marine-mammal-and-sea-turtle-surveys.

[59] Woods Hole Oceanographic Institution, "Autonomous Real Team Marine Mammal Detections: Cox Ledge, Winter 2019-2020," Available at: http://dcs.whoi.edu/cox1219/cox1219_we16.shtml.

[60] Woods Hole Oceanographic Institution, "Autonomous Real Team Marine Mammal Detections: Cox Ledge, Winter 2020-2021," Available at: http://dcs.whoi.edu/cox1120/cox1120_we16.shtml.

[61] The autonomous vehicle was redeployed in Spring 2021 and is currently on active mission. Available at: http://dcs.whoi.edu/cox0321/cox0321_we15.shtml.

IV. Recommendations for Improved Mitigation and Monitoring

In authorizing "take" by incidental harassment under the general authorization provision of the MMPA, NMFS must prescribe "methods" and "means of effecting the least practicable adverse impact" on marine mammals and set additional "requirements pertaining to the monitoring and reporting of such taking."[62]

Knowing the cumulative risks posed to the North Atlantic right whale and other endangered and protected species and stocks by increased site assessment and characterization activities, NMFS has an obligation to impose robust mitigation requirements to protect these species to the maximum extent practicable. NMFS acknowledges that marine mammals may be temporarily displaced from feeding areas during survey activities but states that this displacement is not expected to cause significant or long-term consequences for individual marine mammals or their populations, given the temporary nature of the activities.[63] However, the best available scientific information shows that the North Atlantic right whale cannot withstand any additional stressors and that *any* potential interruption of foraging behavior may lead to population-level effects and is of critical concern.[64]

The following site assessment and characterization mitigation measures would help ensure adequate protections for the North Atlantic right whale, and many offer protections to other endangered and protected species and stocks.

A. Seasonal and diel restrictions

Mayflower proposes to begin survey activities in June 2021 and conclude operations by December 2021. However, the Modified Proposed IHA would be effective for one year from the date of issuance.[65] Survey activities undertaken in the Lease Area and "deep-water" sections of the cable route would operate 24 hours per day.[66] Activation of survey equipment through ramp-up procedures may not occur when visual observation of the pre-clearance zone is not expected to be effective (i.e., during inclement conditions such as heavy rain or fog).[67]

It is most protective to avoid and reduce impacts in the first instance by separating harmful activities from the species potentially affected. NMFS should prohibit site assessment and characterization activities involving equipment with noise levels that could cause injury or harassment to North Atlantic right whales (based on the best available science, we consider source levels greater than 180 dB re 1 µPa (SPL) at 1-meter at frequencies between 7 Hz and 35 kHz to be potentially harmful to low-frequency cetaceans) during periods of highest risk to right whales. These periods are defined as times of highest relative density of animals during their migration, and times when mother-calf pairs, pregnant females, surface

[62] 16 U.S.C. § 1371(a)(5)(D)(vi).

[63] 86 Fed. Reg. at 27,407.

[64] *See, e.g.*, Van der Hoop, J., *et al*., *supra*; Christiansen, F., *et al.*, *supra*.

[65] 86 Fed. Reg. at 27,395.

[66] 86 Fed. Reg, at 27,396.

[67] 86 Fed. Reg. at 27,404.

active groups (indicative of breeding or social behavior), or aggregations of three or more whales (indicative of feeding or social behavior) are, or are expected to be, present, as supported by review of the best available scientific information at the time of the activity.

Based on the best available scientific information on North Atlantic right whale habitat use within and proximate to the Project Area, **NMFS should require a seasonal restriction on site assessment and characterization activities involving equipment with noise levels that could cause injury or harassment to North Atlantic right whales from 1 December 2021 through 30 April 2022**. We reiterate that North Atlantic right whales are expected to be present in the Project Area across the year and that strong mitigation measures should be required to protect the species year-round.

Further, while NMFS must minimize existing and potential stressors to the North Atlantic right whale to promote the survival and recovery of the species, the agency must also address potential impacts to other protected whale species, particularly in light of the UMEs declared for the strategic stock of humpback whales and minke whales, as well as the several other strategic stocks that populate the Atlantic seaboard. It is therefore imperative that NMFS fully account for the consequences of the proposed North Atlantic right whale seasonal restriction on other protected species. NMFS should also advance a robust and effective near real-time monitoring and mitigation system for North Atlantic right whales and other endangered and protected species that will be more responsive to the ongoing dynamic species distributional shifts resulting from climate change, as well as provide more flexibility to developers.

In addition to not activating geophysical survey equipment with the potential to injure or harass endangered and protected species and stocks (*i.e.*, sound sources operating below 180 kHz[68]) during inclement weather conditions,[69] **NMFS should require that work commence, with ramp up, only during daylight hours to maximize the probability that marine mammals are detected and confirmed clear of the exclusion zone before activities begin**. The activity can then continue into periods of darkness and low visibility. If the activity is halted or delayed because of documented or suspected North Atlantic right whale presence in the area, NMFS should require Mayflower to wait until daylight hours and good visibility conditions to recommence survey activities.

B. Exclusion zone size and monitoring requirements

The Modified Proposed IHA requires a 500-m exclusion zone for North Atlantic right whales for all acoustic sources and a 100-m exclusion zone for all other marine mammals (with certain exceptions) during the operation of impulsive acoustic sources (boomer, sparker).[70] During all HRG operations, the Modified Proposed IHA requires that a minimum of one PSO must be on duty during daylight operations on each survey vessel, conducting visual observations at all times on all active survey vessels during daylight hours (*i.e.*, from 30 minutes prior to sunrise through 30 minutes following sunset).[71] Two PSOs

[68] 86 Fed. Reg, at 27,396.

[69] 86 Fed. Reg. at 27,404.

[70] *Id.*

[71] 86 Fed. Reg. at 27,405.

are required to be on watch during nighttime operations.[72] The PSO(s) are expected to ensure 360° visual coverage around the vessel from the most appropriate observation posts and conduct visual observations using binoculars and/or night vision goggles, and the naked eye.[73] At night, thermal clip-ons and infrared technology would be used.[74] Passive acoustic monitoring is not required.

The 160 dB threshold for behavioral harassment is not supported by best available scientific information and grossly underestimates Level B take. **For the North Atlantic right whale, NMFS should establish an exclusion zone of 1,000 meters around each acoustic source with noise levels that could result in injury or harassment to this species**. **NMFS should also establish a minimum exclusion zone of 500 meters for all other large whale species occurring within the Project Area. In general, the exclusion zones should apply to all acoustic sources operating below 180 kHz that may have the potential to cause acoustic harassment of marine mammals**,[75] rather than this requirement being limited only to North Atlantic right whales.

The requirement of a single PSO during daylight hours and the reliance on visual monitoring methods is a wholly inadequate standard for monitoring exclusion zones during marine site characterization surveys. Contrary to NMFS' view, it is not possible for a single PSO to continually visually monitor 360° and NMFS' minimum requirement of a single PSO is under protective. On each survey vessel operating in areas where North Atlantic right whales and other endangered species and populations are expected to occur, **there must be a minimum of four PSOs following a two-on, two-off rotation, each responsible for scanning no more than 180° of the horizon**. Furthermore, the ability of PSOs to visually monitor the exclusion zone is impaired during darkness and periods of low visibility. We support the requirement for the use of infrared equipment to support visual monitoring by PSOs during periods of darkness[76] and recommend this technology is also used during daylight hours to help maximize probability of detection.[77]

Visual observations are not enough, however. Studies suggest that North Atlantic right whales exhibit behaviors that reduce their likelihood of detection by PSOs. These behavioral responses may be heightened when whales are in the proximity of the acoustic disturbance from geophysical surveys,

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[72] *Id*.

[73] *Id*.

[74] 86 Fed. Reg. at 27,406.

[75] 86 Fed. Reg. at 27,396.

[76] Lathlean, J. and Seuront, L., "Infra-red thermography in marine ecology: methods, previous applications and future challenges," *Marine Ecology Progress Series*, vol. 514, p. 263-277 (2014); Smith, H.R., Zitterbart, D.P., Norris, T.F., Flau, M., Ferguson, E.L., Jones, C.G., Boebel, O. and Moulton, V.D., "A field comparison of marine mammal detections via visual, acoustic, and infrared (IR) imaging methods offshore Atlantic Canada," *Marine Pollution Bulletin*, vol. *154*, p.111026 (2020); Zitterbart, D.P., Smith, H.R., Flau, M., Richter, S., Burkhardt, E., Beland, J., Bennett, L., Cammareri, A., Davis, A., Holst, M. and Lanfredi, C., "Scaling the Laws of Thermal Imaging–Based Whale Detection," *Journal of Atmospheric and Oceanic Technology*, vol. 37, pp.807-824 (2020). In addition, NMFS must consider the limitations of the infrared system proposed and ensure that the detection of marine mammals is possible at distances out to and beyond the exclusion zones, in the geographic region in question, and for all relevant endangered and protected species. These technologies have not been well tested for detection of North Atlantic right whales, and may be relatively ineffective for detecting minke whales, both species of concern in light of the current UMEs declared for the Atlantic coast. Further, NMFS should encourage developers to partner with scientists and collect data that increases our understanding of the effectiveness of infrared technologies, with a view towards greater reliance on these technologies to commence surveys during nighttime hours in the future.

[77] Smith, H.R., *et al.*, *id.*

meaning that animals may be less detectable by observers during the survey period relative to other times.[78] Other endangered and protected large whales pose similar monitoring challenges. There are also sighting condition limitations. For even the most conspicuous large whale species, estimates of relative detection probability for a Beaufort Sea State of 6 is less than half that for a Beaufort Sea State of 0.[79] Based on data collected by the National Buoy Data Center,[80] a monthly average Beaufort Sea State of at least 3 or 4 can be expected in lease areas situated along the East Coast, year-round. Given these data, observers alone are certain to underestimate the total number of large whales in the mitigation area based on sea state.

NMFS' failure to require using passive acoustic monitoring at any time during geophysical surveys is extremely concerning**. NMFS should require passive acoustic monitoring at all times to maximize the probability of detection for North Atlantic right whales and, ideally, other endangered and protected species and stocks**, including during periods of fog, precipitation, and high sea states, when PSOs and infrared technologies are less effective. It should be noted that passive acoustic monitoring without visual observers would also be insufficient as individuals may not continually vocalize. At minimum, NMFS should always require a combination of agency-approved PSOs to visually detect whales and passive acoustic monitoring to detect vocalizations in near-real time when noise levels that could result in injury or harassment to the species are being conducted.

The passive acoustic monitors for this and future wind development projects should be part of a migratory corridor-wide network of passive acoustic monitors organized by NOAA and BOEM in collaboration with state governments as well as private, academic, and non-profit partners.

C. Reduction of underwater noise

The Modified Proposed IHA sets no requirement to minimize the impacts of underwater noise through the use of best available technology and other methods to minimize sound levels from geophysical surveys.

According to NOAA's "Ocean Noise Strategy Roadmap:"

[78] Robertson, F.C., Koski, W.R., Thomas, T.A., Richardson, W.J., Würsig, B., and Trites, A.W., "Seismic operations have variable effects on dive-cycle behavior of bowhead whales," *Endangered Species Research*, vol. 21, p. 143-160 (2013).

[79] Barlow, J., "Inferring trackline detection probabilities, g(0), for cetaceans from apparent densities in different survey conditions," *Marine Mammal Science*, vol. 31, p. 923-943 (2015); Baumgartner, M.F., Cole, T.V.N., Clapham, P.J., and Mate, B.R., "North Atlantic right whale habitat in the lower Bay of Fundy and on the SW Scotian Shelf during 1999-2001," *Marine Ecology Progress Series*, vol. 264, p. 137-154 (2003). Sea state has been demonstrated to have a direct effect on the sighting probability of North Atlantic right whales in the Lower Bay of Fundy and in Roseway Basin of the Southwest Scotian Shelf (Baumgartner et al. 2003). In line with Barlow (2015), the probability of sighting a North Atlantic right whale in this area changed by a factor of 0.628 (95% CI: 0.428-0.921) for every unit increase in sea state. These studies indicate the effect of increasing Beaufort Sea State in reducing the probability of detection of large whales, including the North Atlantic right whale. From the findings of Baumgartner et al. (2003), a reduction in detection probability of North Atlantic right whales by up to 84.5 percent based on an average Beaufort Sea State of 4 would be expected, relative to ideal sighting conditions (*i.e.*, Beaufort sea state = 0). Notably, the detectability of North Atlantic right whales even under ideal sighting conditions is likely to be significantly less than 100 percent given availability and perception biases other than those involving sea state.

[80] NOAA-NWS, "National Data Buoy Center." Available at: http://www.ndbc.noaa.gov/.

> "[W]here noise is concerned, mitigation should be broadly designed to do one of two things: (1) reduce the temporal or spatial overlap of ensonified areas with marine taxa (or acoustic habitat) in particular times, places or circumstances, and/or (2) reduce the sound level at the source (which may include replacing the source with a different type of source capable of the same function)."[81]

In addition, simulation studies comparing the level of risk reduction associated with technologies that allow for reduced source levels and current exclusion zone mitigation practices indicate that there will be very few instances where mitigation using visual observers can achieve a greater risk reduction than would be achieved by a reduction in source level.[82] Thus, reducing sound emissions at the source is one of the most effective means of mitigating the impacts of noise on protected species.

NMFS should require Mayflower to select sub-bottom profiling systems, and operate those systems at power settings, that achieve the lowest practicable source level for the objective. In general, NMFS must require that all IHA applicants minimize the impacts of underwater noise to the fullest extent feasible, including through the use of best available technology and methods to minimize sound levels from geophysical surveys.

D. Vessel speed restrictions

According to the Modified Proposed IHA,[83] up to four HRG survey vessels may operate concurrently to undertake the survey activities proposed. One vessel would be operating primarily in the Lease Area and deep-water sections of the cable route (24 hour operations), with a second vessel operating primarily in the shallow water portion of the cable routes and sometimes into the deep water portion of the cable routes. Up to two shallow-draft vessels would work in very shallow waters (daylight only operations in water depths of <5 m). Up to four additional vessels may be used to conduct geotechnical sampling activities during the same period as the geophysical surveys. NMFS does not expect the geotechnical sampling to result in the harassment of marine mammals and thus did not discuss these vessels further in this analysis.[84] On effort surveying vessel speed will be approximately 3 knots.[85] No information is provided on off-effort vessel speeds in the Modified Proposed IHA.

Vessel strikes are a leading cause of large whale injury and mortality and have been implicated as one of the major causes of death underlying the UMEs for North Atlantic right whales, humpback whales, and

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[81] Gedamke, J., *et al*., "Ocean Noise Strategy Roadmap," NOAA Fisheries, (2016), at 23. Available at: https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf.

[82] Leaper, R., Calderan, S., and Cooke, J., "A simulation framework to evaluate the efficiency of using visual observers to reduce the risk of injury from loud sound sources," *Aquatic Mammals*, vol. 41, pp. 375-387 (2015).

[83] 86 Fed. Reg. at 27,396.

[84] *Id*.

[85] 86 Fed. Reg. at 27,401.

minke whales,[86] with North Atlantic right whales being particularly vulnerable.[87] Moreover, the number of recorded vessel collisions of large whales each year is likely a gross underestimate of the actual number of animals struck, as animals struck but not recovered, or not thoroughly examined, cannot be accounted for.[88] In fact, observed carcasses of North Atlantic right whales from all causes of death may have only accounted for 36 percent of all estimated death during 1990-2017, with detection rates dropping to 29 percent for the period of 2010-2017.[89] Detection rates may be similarly low for other large whale species, and even lower for species that receive relatively less surveillance effort.

Serious injury or mortality can occur from a vessel traveling above ten knots, irrespective of length[90] and vessels of any length travelling below this speed still pose a serious risk.[91] The NOAA Fisheries Large Whale Ship Strike Database reveals that blood was seen in the water in at least half of the cases where a vessel known to be less than 65 feet in length struck a whale, evidencing potential serious injury or mortality.[92] As small vessel collisions with whales are under-reported they may comprise a greater proportion of strikes than reflected in the NOAA database.[93] The recent report of the death of a month-old North Atlantic right whale calf after it was struck by a 54-foot sportfishing boat, and the serious injury of its mother by the same or second vessel, is a clear demonstration that smaller vessels pose an unacceptable risk.[94] Small vessels striking whales also pose a risk to human safety. Small vessels involved in whale strikes have suffered cracked hulls, damage to propellers and rudders, and blown engines.[95] Passengers have been knocked off their feet or thrown from the boat upon impact with a whale.[96] In

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[86] NMFS, "2017-2021 North Atlantic right whale Unusual Mortality Event," *supra*; NMFS, "2016-2021 Humpback whale Unusual Mortality Event along the Atlantic Coast," *supra*; NMFS, "2017-2021 Minke whale Unusual Mortality Event along the Atlantic Coast," *supra*.

[87] Nowacek, D.P., *et al*., "North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli." *Proceedings of the Royal Society B*, vol. 271 (2004); Cusano, D.A., *et al*., "Implementing conservation measures for the North Atlantic right whale: considering the behavioral ontogeny of mother-calf pairs," *supra*.

[88] Reeves, R.R., Read, A.J., Lowry, L., Katona, S.K., and Boness, D.J., "Report of the North Atlantic Right Whale Program Review." 13–17 March 2006, Woods Hole, Massachusetts, prepared for the Marine Mammals Commission, (2007); Parks, S.E., Warren, J.D., Stamieszkin, K., Mayo, C.A., and Wiley, D., "Dangerous dining: surface foraging of North Atlantic right whales increases risk of vessel collisions," *Biology Letters*, vol. 8, p. 57-60 (2011).

[89] Pace III, R. M., Williams, R., Kraus, S. D., Knowlton, A. R. and Pettis, H. M.," Cryptic mortality of North Atlantic right whales," *Conservation Science and Practice*, e346 (2021).

[90] NMFS, "Reducing vessel strikes to North Atlantic right whales." Available at: https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-vessel-strikes-north-atlantic-right-whales#:~:text=March%2026%2C%202021.,Vessel%20Speed%20Restrictions,endangered%20North%20Atlantic%20right%20whales. To reflect the risk posed by vessels of any length, the Commonwealth of Massachusetts established a mandatory vessel speed restriction for all vessels (including under 20 meters) in the Cape Cod Bay SMA.

[91] Kelley, D.E., Vlasic, J.P. and Brilliant, S.W., "Assessing the lethality of ship strikes on whales using simple biophysical models," *Marine Mammal Science*, vol. 37, pp. 251-267 (2020).

[92] Jensen, A.S. and Silber, G.K., "*Large Whale Ship Strike Database*," U.S. Department of Commerce, NOAA Technical Memorandum NMFS-OPR-25 (Jan. 2004) at 12–37.

[93] Hill, A.N., Karniski, C., Robbins, J., Pitchford, T., Todd, S., and Asmutis-Silvia, R., "Vessel collision injuries on live humpback whales, Megaptera novaeangliae, in the southern Gulf of Maine," *Marine Mammal Science*, vol. 33, pp. 558–573 (2017).

[94] NMFS, "2017-2021 North Atlantic right whale Unusual Mortality Event," *supra*; *see, also*, https://www.miamiherald.com/news/local/environment/article249313950.html.

[95] Jensen, A.S. and Silber, G.K., "*Large Whale Ship Strike Database*," *supra*.

[96] Bigfish123, Comment to *Collision at Sea*, The Hull Truth (May 1, 2009, 5:44 am). Available at: http://www.thehulltruth.com/boating-forum/222026-collision-sea.html.

carrying out its own analysis on the effectiveness of the right whale vessel speed rule, NMFS determined that "the number of documented and reported small vessel collisions with whales necessitates further action both as it relates to potential regulations and outreach to this sector of the mariner community."[97]

Vessel strikes are one of the main factors driving the North Atlantic right whale to extinction. Since 2017, just over half of the known or suspected causes of mortality for the species have been attributed to vessel strikes.[98] Mothers and calves are extremely vulnerable. Three North Atlantic right whale calves born during the last two calving seasons have been killed as a result of vessel strikes. On January 8, 2020, the newborn calf of right whale #2360 was seriously injured by a passing vessel off the coast of Georgia.[99] The prognosis for survival was determined to be poor, and neither the calf nor its mother have been seen since January 16.[100] A second calf born last season was found dead on June 25, 2020 off the coast of New Jersey.[101] The examination of the carcass indicated that this calf had been struck twice; a non-fatal strike occurred several weeks before the collision killing the whale.[102] Given the close association between mothers and calves, adverse impacts to the mothers from vessel strike events cannot be ruled out.[103] As previously discussed, a one-month old calf was found stranded in Florida in February 13, 2021 with fatal injuries. The calf's mother, "Infinity" #3230, was documented with serious injuries suggestive of a vessel strike on February 16, 2021. This species cannot sustain further anthropogenic mortalities of reproductive females or their calves.

North Atlantic right whales are particularly prone to vessel strike given their slow speeds, their occupation of waters near shipping lanes, and the extended time they spend at or near the water's surface.[104] Some types of anthropogenic noise have been shown to induce sub-surface positioning in North Atlantic right whales, increasing the risk of vessel strike at relatively moderate levels of exposure.[105] NMFS itself notes that noise can induce flight responses, behavioral disturbances, and habitat avoidance.[106] Because of the noise associated with geophysical surveys, site assessment and characterization activities could cause horizontal displacement[107] and push a North Atlantic right whale out of a speed restriction zone (SMA or DMA) into an area where vessels are traveling at greater speed,

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[97] NMFS, "North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment" (2020). Available at: https://media.fisheries.noaa.gov/2021-01/FINAL_NARW_Vessel_Speed_Rule_Report_Jun_2020.pdf?null.

[98] NMFS, "2017-2021 North Atlantic right whale Unusual Mortality Event," *supra.*

[99] NMFS, "North Atlantic Right Whale Calf Injured by Vessel Strike" (Jan. 13, 2020). Available at: https://www.fisheries.noaa.gov/feature-story/north-atlantic-right-whale-calf-injured-vessel-strike.

[100] *Id*.

[101] NMFS, "Dead North Atlantic Right Whale Sighted off New Jersey" (Jun. 29, 2020). Available at: https://www.fisheries.noaa.gov/feature-story/dead-north-atlantic-right-whale-sighted-new-jersey.

[102] *Id*.

[103] NMFS, "North Atlantic Right Whale Calf Stranded Dead in Florida" (Feb. 14, 2021), https://www.fisheries.noaa.gov/feature-story/north-atlantic-right-whale-calf-stranded-dead-florida.

[104] NMFS, "Recovery plan for the North Atlantic right whale (*Eubalaena glacialis*) Revision" prepared by the Office of Protected Resources, National Marine Fisheries Service" (August 2004).

[105] Nowacek, D.P., *et al*., "North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli," *supra*.

[106] *See, e.g.,* 85 Fed. Reg. at 37,860-37,862 (Jun. 24, 2020).

[107] *E.g*., Castellote, M., Clark, C.W., and Lammers, M.O., "Acoustic and behavioural changes by fin whales (Balaenoptera physalus) in response to shipping and airgun noise," *Biological Conservation,* vol. 147, pp. 115-122 (2012).

presenting an even greater danger of vessel collision. NMFS' analysis must also account for habitat displacement producing an indirect vessel strike.

NMFS should therefore act conservatively and implement mitigation measures to prevent any further vessel strikes for North Atlantic right whales or other species of large whale currently experiencing a UME (*i.e.*, humpback whales and minke whales), as well as species such as fin and sei whales. The broad distributional shifts observed for multiple species, as well as mixed species feeding aggregations observed in the regions where site assessment and characterization will be undertaken, pose an increased risk of vessel strike for large whales. This may potentially exacerbate current UMEs or increase the risk of additional species experiencing a UME in the future.

In the Modified Proposed IHA, NMFS implicitly authorizes survey vessels (and any additional project-related vessels such as crew transfer vessels) to travel at speeds greater than 10 knots, unless a right whale is observed within 500 meters or an SMA or DMA is in place.[108] This is wholly insufficient. *First*, any interaction between a vessel and whale poses a risk of serious injury or mortality. This is true irrespective of the number of other vessels operating in the same location. An addition of even a single vessel traveling at speeds over 10 knots pose an unacceptable risk. *Second*, the dire conservation status of the North Atlantic right whale means that even a single vessel strike will have population-level consequences. *Third*, NMFS' own analysis shows that mariner compliance with voluntary speed reduction measures (*i.e.*, DMAs) is extremely low (approximately 35 to 47 percent)[109] indicating mandatory speed reduction requirements are necessary to provide protection.

Vessel strikes pose an unacceptable risk. NMFS must require all offshore wind energy related project vessels operating within or transiting to/from survey areas (including geotechnical survey vessels), regardless of size, to observe a 10-knot speed restriction during the entire survey period.[110] An exception may be made in limited circumstances where the best available scientific information demonstrates that whales do not use the area at any time.

V. Extensions of Any One-Year Authorizations Through a Truncated 15-Day Comment Period Must be Prohibited

On March 7, 2019, NMFS began issuing notice of a new reauthorization process for a multitude of permits. Specifically, NMFS requests comment on the potential one-year renewal of authorizations on a case-by-case basis for identical or nearly identical activities, with only an additional 15 days for public comment, should various criteria be met. As we describe below, this appears to be a misinterpretation of the law by the previous Administration that could be easily remedied to comply with the process and provide adequate opportunity for public input.

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[108] *See, e.g., id.*

[109] NMFS, "North Atlantic Right Whale (*Eubalaena glacialis*) Vessel Speed Rule Assessment," *supra*.

[110] NMFS need not wait to finalize a new rulemaking on the North Atlantic right whale vessel speed rule to impose these restrictions as conditions of offshore wind permitting.

For several reasons, our organizations have repeatedly opposed this process as contrary to law. First, NMFS' proposal to provide one-year renewals does not comport with the plain language of the MMPA. Section 101(a)(D)(i) unambiguously states that incidental harassment authorizations are valid for periods of not more than one year.[111] Second, the statute is clear on its face that a 30-day comment period is required in all instances.[112] The legislative history of the 1972 Act demonstrates that Congress viewed a robust notice and comment process as central to the agency's implementation of the IHA process: "As approved by the Committee, the [MMPA] involves a number of basic concepts," one being that "the public is invited and encouraged to participate fully in the agency decision-making process."[113] When NMFS adheres to this process, "the public is assured of the right to be informed of actions taken or proposed."[114] Third, the legislative history removes any doubt that this 30-day comment period applies even in cases where a new application extends the IHA for another year without change.[115]

The agency lacks discretionary authority to interpret the statute otherwise, whether by regulation, by policy, or on a permit-by-permit basis as it purports to do here.[116] Moreover, NMFS has not supplied a sufficient explanation for why it might assert that the statutory language of Sec. 101(a)(5)(D)(iii) is ambiguous, such that the agency might appropriately exercise its congressionally-delegated gap-filling authority to set forth a permissible interpretation of the statute that comports with the statute's objectives.[117]

Should the agency wish to establish its new IHA renewal process as a reasonable interpretation of an ambiguous statutory provision, it should do so through notice-and-comment rulemaking or comparable process with the appropriate indicia of formality. In so doing, NMFS must also explain why applicants whose activities may result in the incidental harassment of marine mammals over more than one year should not be required to apply for authorization to do so through the incidental take regulation procedure established by Sec. 101(a)(5)(A)(i), which provides for authorizing incidental take during periods of "not more than five consecutive years each."[118] Where Congress established clear and distinct statutory processes for authorizing incidental take via harassment for one-year periods versus periods extending more than one year and up to five years, NMFS must justify how its proposed unlawful hybrid administrative extension process, with a curtailed comment period, is consistent with both statutorily-established processes.

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[111] 16 U.S.C. § 1371(a)(5)(D)(i).

[112] *Id.* § 1371(a)(5)(D)(iii).

[113] H.R. Rep. No. 92-707, at 4151 (1972), *reprinted in* 1972 U.S.C.C.A.N. 4144, 4151.

[114] *Id.* at 4146.

[115] H.R. Rep. No. 103-439, at 29 (1994).

[116] *See Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837, 842–43 (1984) ("If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.").

[117] *See Northpoint Tech. Ltd. v. FCC*, 412 F.3d 145, 151 (D.C. Cir. 2005) (a "'reasonable' explanation of how an agency's interpretation serves the statute's objectives is the stuff of which a 'permissible' construction is made").

[118] 16 U.S.C. § 1371(a)(5)(A)(i) (emphasis added). *See also id.* at § 1371(a)(5)(A)(i)(I) (negligible impact finding must evaluate total of such taking "during each five-year (*or less*) period concerned") (emphasis added).

NMFS' statement regarding Incidental Harassment Authorization Renewals on its website[119] fails to provide a clear and legally adequate justification for its purported new reauthorization process especially in light of the burden the foreshortened comment period places on interested members of the public to review and formulate comments, all within 15 calendar days. As NMFS apparently intends the new reauthorization process to become the rule rather than the exception, it is incumbent on the agency to set forth, via proposed regulation or policy document, its rationale for this new process and to allow public comment.

VI. Conclusion

Thank you for considering our comments. For the reasons stated above, our organizations urge NMFS to revise its analysis and require additional measures in the Final IHA to comply with its statutory obligations.

Sincerely,

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[119] *See, e.g., NOAA Fisheries*, "Incidental Take Authorizations under Marine Mammal Protection Act," last updated June 24, 2020, https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.

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