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To the Rhode Island Coastal Resources Management Council:

I am a marine ecologist and biological oceanographer with 45 years of experience in research on North Atlantic right whales and other baleen whales, smaller marine mammals, sea turtles, and other marine megafauna. I would like to state my support for the Sunrise Wind project, and for offshore wind (OSW) development in general. I also want to express my disgust at the level of misinformation that is being disseminated about the alleged impacts of OSW activities on endangered whales.

I retired as a Marine Research Scientist (research faculty) from the URI Graduate School of Oceanography (GSO) in June 2012. Since then I have remained employed as a post-retirement, part-time researcher on externally funded projects. I am also a self-employed consultant working on a number of projects—directly for federal and/or state agencies or indirectly via private environmental contracting firms. Over my career I have published over 75 articles in refereed scientific journals and chapters in books, in addition to well over 350 contract reports, conference abstracts, articles in conference proceedings, and popular articles. Included in that total is the 337-page technical report summarizing available information on all the marine mammals and sea turtles in our waters that was part of the Rhode Island Ocean Special Area Management Plan in 2010.

My first six years at GSO were as a graduate student in Professor Howard Winn's laboratory, employed mostly as a Graduate Research Assistant but with two short-term stints as a full-time Marine Research Associate. I earned my Ph.D. in Biological Oceanography in August 1984. Since that time I've worked as a research scientist on various grants and contracts. During multiple semesters when research funding was low, I taught as per-course faculty for a variety of classes in several departments.

Prior to coming to GSO, I earned a B.S. (with distinction) in Natural Resources from Cornell University, where I graduated 10th in a class of over 700. My undergraduate education began as a chemistry major at the University of Michigan, but I dropped out for financial reasons after three semesters. I then enlisted in the U.S. Navy, where I served four years on active duty as an

Aviation Anti-Submarine Warfare Operator, and was honorably discharged as a Petty Officer second-class. My duties involved passive-acoustic tracking of Soviet submarines from P-3C patrol planes, therefore I was trained in many aspects of underwater acoustics.

I have served on many state, regional, and national advisory panels and committees. I am still an active member of the Atlantic Large Whale Take Reduction Team and the Outfall Monitoring Science Advisory Panel to the Massachusetts Water Resources Authority. I was “retired” by term limits from the Atlantic Scientific Review Group (an independent advisory panel to the federal government created under the Marine Mammal Protection Act) just this March after serving since 1995. I was recommended for the ASRG by R.I. Governor Sundlun, the NOAA-NMFS Northeast Fisheries Science Center leadership, and the Bluewater Fishermen’s Association—evidence for my solid reputation for decision-making based on the best available science and the respect that I’ve earned from the various communities.

In 1986 I was one of nine scientists who created the North Atlantic Right Whale Consortium (NARWC). NARWC was formed by GSO, the Woods Hole Oceanographic Institution, the New England Aquarium, the Provincetown Center for Coastal Studies, and Marineland of Florida as a venue for sharing information and collaborating on research on right whales. NARWC has since grown to include dozens of academic, research, non-profit, fishing industry, and governmental collaborators from Florida to Atlantic Canada—all dedicated to the conservation of one endangered whale species. I have served as the NARWC database manager since the beginning; in fact my contract funding at GSO since I retired 12 years ago has almost exclusively been in support of data management. Consortium collaborations have resulted in significant publications on distribution, abundance, trends, ecology, reproduction, physiology, mortality, acoustics, and more—and for more species than just right whales; the database includes information on over 100 species of marine megafauna.

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As the CRMC undertakes your consistency review for Sunrise Wind, I expect that you will be inundated with statements from opponents claiming that OSW developments are impacting whales—particularly endangered North Atlantic right whales (NARWs) and humpback whales (removed from the endangered species list in 2016). Those opponents have been saturating social media with headlines like “Offshore Wind Industry Gets License to Kill Right, Sperm & Humpback Whales With Impunity” and “‘Take’ Authorizations Prove NOAA Is Lying About Whale Deaths.” In my expert opinion, there is absolutely no scientific evidence that OSW projects along the U.S. East Coast have any connection with the on-going whale mortalities.

The opponents will point to on-going Unusual Mortality Events (UMEs) involving NARWs, humpbacks, and minke whales. All three UMEs began in 2016 or 2017, before any substantial OSW development activity had begun in the U.S. Atlantic. In addition, mortality rates were not negligible prior to the beginnings of the declared UMEs. For example, the average number of East Coast humpback mortalities during the UME years of 2016–2022 was 25, but for the prior years that average was still about 11 dead whales per year. Whales die every year. For carcasses still in good enough condition to be necropsied and where the cause of death could be

determined, it has been human-related causes such as vessel collisions or fishing-gear entanglement in every case (except for the involvement of infectious disease in some minke whales). Not one mortality has been linked to OSW development activities.

OSW opponents frequently blame sounds from high-resolution geophysical (HRG) surveys for injuring and killing whales. HRG surveys involve analyzing the echoes from active sound sources to characterize the bottom sediments at proposed wind-farm sites. Often the opponents conflate the HRG acoustic sources with very much louder sources such as naval sonar or the seismic air-guns used in oil & gas exploration. In fact, most of the HRG sources are of such low intensity that they are classified as *de minimis* by federal regulators and do not need any authorization for use. Even the louder HRG sources are not capable of causing impacts more serious than “Level B harassment”—including temporary hearing effects (what happens the day after you go to a loud rock concert) or behavioral disturbance (what happens when your neighbor fires up the leaf blower on Sunday morning)—and then only at close ranges.

The opponents will harp on the number of takes allowed—adding up the permitted takes in all of the Incidental Harassment Authorizations that have been issued or proposed for OSW projects. They always put the scare quotes around the word “take” to mislead everyone that federal regulators are issuing permits to the OSW developers to kill whales and other marine mammals. *Take* is the term used in both the Endangered Species Act and Marine Mammal Protection Act to define the full range of prohibited activities, both intentional and accidental, from killing to injuring to simple disturbance to feeding a fish to a dolphin or removing a souvenir from a dead seal on the beach. In fact, (1) **zero** lethal takes are being permitted, (2) some small proportion are for “Level A” harassment that might include non-serious injury such as permanent hearing damage, but only from pile-driving since the HRG sources are not loud enough to reach the Level A threshold, (3) the vast majority are for “Level B” harassment, or temporary behavioral disturbance, (4) the permitted takes are an upper limit, with permittees required to take mitigation actions to reduce their likelihood as much as possible, and (5) there are at least ten species of small cetaceans with populations between about 30,000 and over 500,000 in our Atlantic waters, so the number of individuals that might be disturbed can add up quickly. But to reiterate, “take” does not equal “kill” and no lethal takes have been authorized.

Sometimes the opponents will mix measurement units (decibels, or dB) in comparing sound intensities. A 12-meter whale will measure the same length in the water or on land, but a 150-dB sound in the ocean is not the same as a 150-dB sound in the air, since there are two different scales using different reference levels. The correction factor between the underwater and in-air scales is about 61 dB. A statement comparing the sound intensity capable of causing death in humans, 185–200 dB, to the upper end of sound intensity from pile-driving of 220 dB is totally misleading. Converted to the underwater scale, the underwater intensity necessary to kill a person would be 246–261 dB.

If not OSW, then what might the factor(s) responsible for three whale UMEs beginning around the same time? In the case of humpback whales, if we assume for now that there is no disease or bio-toxin involved, there are several factors that have been implicated:

- Vessel collisions have been determined as the cause of death in many cases, and shipping traffic in and out of the port of New York and New Jersey has increased by over 30% in the last 5 years.
- The humpback population has been growing, and their numbers in the mid-Atlantic have increased dramatically. Gotham Whale is a research organization from Staten Island that collects data from whale-watching boats working off New York Harbor. They recorded 260 humpback individuals in 2022, mostly juveniles, compared with only 5 a decade earlier. The preponderance of juvenile humpbacks in the mid-Atlantic has been recognized at least since the 1980s. Juveniles have no reason to migrate to the West Indies in winter with the adults for calving and mating (fasting for the entire trip)—they simply go to where they can find food during the colder months. And juveniles are more likely than adults to get hit by ships or entangled because of their inexperience. Scott Kraus, who directed the right whale research program at New England Aquarium for many years, often called it the “teenage driver syndrome.”
- The Atlantic menhaden is a schooling fish related to the herrings that is one of the preferred prey species of humpback whales and other marine mammals in the mid-Atlantic. Their abundance has increased substantially because of stricter fishery management. For example, large-scale purse-seine fishing for menhaden was banned in state waters by New York in 2019. More fish equals more whales, and a higher likelihood of whales encountering fishing gear and risking entanglement.
- Changes in the distributions of both the whales and their prey are likely related to climate change. There was an oceanographic regime shift beginning around 2010 that impacted all levels of the marine ecosystem.

In the case of NARWs, the mortality causes are well known. There has **never** been a right whale older than a calf where a necropsy has shown a death from “natural causes.” The causes are entanglements and vessel collisions. A 2-year-old right whale now has a 50% chance of being dead in only 20 years for a female and 35 years for a male, when it should be more like 50–70 years. After three decades of slow recovery, the population trend reversed around 2010 and started to decline, so that the last assessment of 340 whales in 2021 sets the population back to about what it had been in 2002, with no sign yet of any turnaround.

There is no mystery here. Population growth rate is the difference between birth and death rates—when more animals die each year than are born, the population will decline. NARWs are being killed at unsustainable levels by human activities, but their birth rates are also being impacted by humans—by the effects of anthropogenic climate change. Warming waters in our region have affected the zooplankton populations that NARWs depend on for their food. Declining prey resources have led to declines in the birth rate—2018 was the first year in our studies where not a single right whale calf was born.

The bottom line is that the three most significant impacts driving the decline of the North Atlantic right whale population, in ranked order beginning with the worst, are entanglement in fishing gear, collisions with vessels, and declines in reproduction caused by climate-driven

changes in food supplies. Any impacts of temporary behavioral disturbance from the sounds of HRG surveys or even from pile-driving are so far down on that ranking as to be negligible. We have the ability to deal with all three, and have been addressing the first two, although not with the speed or urgency that the situation requires. We know what will be necessary to deal with the third—switching our economy over from fossil fuels to renewable energy sources, including offshore wind. It may be true that one wind turbine or one wind farm will not have a substantial effect on its own, but we need to start somewhere. *A journey of 1000 miles begins with a single step.*

Respectfully,

Robert D. Kenney, Ph.D.