


Scientists, offshore wind developer look to minimize marine life impacts

Published July 15, 2018 7:35PM | Updated July 16, 2018 9:19PM

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Despite lacking ears, oysters respond to noise.

"We don't think of underwater noise as an issue ... but most marine life — if not all marine life — listens to the world around it in one way or another," said Aaron Rice, a researcher at **Cornell University's Lab of Ornithology** (<http://www.birds.cornell.edu/>).

As part of the lab's bioacoustics program, Rice's research dives into the sounds animals make, helping scientists pinpoint habitats and behavior patterns. He also examines how human-made sounds impact sea critters, whether oysters slamming their shells shut at the hum of a cargo ship or whales within earshot of a pile driver for an offshore wind turbine foundation.

Rice said he's been encouraged by what he's learned about **offshore wind** (<https://www.theday.com/local-news/20180624/from-turbines-to-homes-wind-power-is-coming-to-connecticut>), even with an immense amount of "steel in the water" planned off the shores of the East Coast within the next five to 10 years.

Deepwater Wind (<http://dwwind.com/project/revolution-wind/>), which built and operates the **Block Island Wind Farm** (<https://www.theday.com/local/20170501/wind-farm-now-powering-block-island>), plans a 75-turbine wind farm south of Martha's Vineyard that will deliver electricity to Rhode Island and **Connecticut** (<https://www.theday.com/local-news/20180613/connecticut-taps-deepwater-wind-for-offshore-project>) by 2023. The company is proposing to help New London State Pier become a **hub** (<https://www.theday.com/local-news/20180604/regions-leaders-pitch-new-london-to-offshore-wind-suppliers>) for offshore wind deployment.

While noise pollution associated with pile driving into the seabed is "not an insignificant noise footprint," Rice said it was "a fairly short noise event," especially compared to geophysical exploration for oil and gas, in which "seismic activity will go on for months and months on end."

Rice added that Deepwater Wind could consider other foundation and turbine types that could lessen the impact of pile driving or eliminate the need to pile drive at all. Trenching a cable from turbines to the shore, and ships required for maintenance and construction also will produce noise that could impact sea life, Rice said.

"A quiet ocean is a good thing," Rice said. "Elevated noise has demonstrated effects to all animals, including people. But wind is not the most severe by any stretch of the imagination."

He described the overall impact of offshore wind on marine life as "a drop in the bucket ... compared to global shipping on which the world depends."

Stephen Boutwell, a spokesman for the federal Bureau of Ocean Energy Management, said BOEM "is unaware of any harm to marine life as a result of operating a wind facility."

BOEM leases swathes of federal waters to offshore wind developers and researches potential impacts on marine life. The agency has reshaped wind lease areas based on concerns from the commercial fishing industry and conservationists, Boutwell said.

Deepwater Wind says **surveys (<https://www.theday.com/local-news/20180704/siting-technology-key-to-protect-birds-from-offshore-wind-risks>)** of the site area and sea floor likely will begin this summer. Construction should begin by 2021 after lengthy state and federal permitting processes. The costs of the project have not yet been revealed, and Deepwater Wind and utilities still need to hammer out contracts.

Scientists: no evidence linking turbines to whale strandings

Last June, after a **humpback (https://www.wpri.com/news/local-news/east-bay/whale-carcass-washes-ashore-in-jamestown_20180314125440482/1044238862)** whale carcass was found stranded ashore in Jamestown, R.I., University of Rhode Island researchers called into question some widespread reports that tried to pin the Block Island Wind Farm as the culprit, arguing "it is highly unlikely the whale's death had anything at all to do with a turbine."

Bob Kenney, a URI marine research scientist, and Jim Miller, a URI professor of ocean engineering and oceanography, said the five turbines off Block Island produce about 100 underwater decibels at a range of about 50 meters, "very low and only detectable when ships are not nearby and when the wind is not too strong."

Additionally, the pair noted that noisy pile driving and construction occurred a few years before the whale was stranded in Jamestown, and that "whales themselves are louder than turbines."

The researchers said social calls of humpbacks have measured between 123 and 183 underwater decibels at 1 meter, while scientists have measured fin whale vocalizations near the Block Island Wind Farm at more than 140 underwater decibels at a range of 500 meters.

In an email Sunday, Kenney said nothing had changed his opinion since last year. Offshore wind projects "will all have mitigation plans ... which typically include seasonal restrictions" on construction to protect marine life, he said.

He added that the impact of turbine foundations in the water was not as great as some had feared, "and for some species, sea turtles, some fish, added structure is probably a benefit rather than a negative impact."

"Marine mammals are not following some narrowly defined movement routes along the shore, so it's not like building something in one lane of the highway," he said.

At the time of the humpback's stranding in Jamestown last year, Mendy Garron, the Regional Marine Mammal Stranding Coordinator, told the **Block Island Times (<https://www.blockislandtimes.com/article/humpback-whale-carcass-washes-ashore/50634>)** that, "We don't believe the Wind Farm would have any negative activity on the humpback whales."

Asked about the Jamestown humpback last week, NOAA spokeswoman Jennifer Goebel said, "The report on this whale was that it is a presumed ship strike case based on test results, which are apparently limited."

Professor Ian Boyd, who has researched acoustic disturbance to whales at the University of St. Andrews in Scotland, was misquoted by a United Kingdom news outlet seven years ago in what he described to The Day as a "spurious and untrue" article about whale deaths. Several websites since have directly or loosely referenced "research at St. Andrews University" linking turbines to whale deaths.

"I know of no evidence supporting a connect of wind farms to the deaths of whales," Boyd wrote to The Day on Friday. "Frankly, it's really unlikely. The greatest risks occur during construction but even then they are only likely to cause disturbance, be relatively short-lived and vary between species. Many species are pretty robust to disturbance. There are also well developed methods to mitigate these effects."

Deepwater Wind to schedule construction around whale migration season

Ensuring protection of the North Atlantic right whale is a top concern, according to scientists and Deepwater Wind.

Rice noted it was a "highly endangered species hunted nearly to extinction" that was rebuilding for a time but is "slow moving and vulnerable to ship strikes or getting tangled in fishing gear."

Aileen Kenney, Deepwater Wind's senior vice president of development, acknowledged that noise from construction equipment and shipping potentially could disturb whales and other species, making them go into deeper waters or change their movement patterns. Kenney has no relation to the URI scientist.

When building the Block Island Wind Farm, Deepwater Wind complied with BOEM requirements to stop construction if workers spotted certain sea life within specific distances. The company also established agreements with groups such as the Conservation Law Foundation, the National Wildlife Federation and the Natural Resources Defense Counsel to limit impact on right whales.

"We're saying we're not going to do any pile-driving, not any survey activities ... from the November time frame to April or May," Kenney said. "It is a big logistical challenge for us, but it's an important commitment that minimizes impact to the species."

Kenney and several scientists noted that no right whale calves had been born so far in 2018, and NOAA says only about 450 right whales remain in the Atlantic.

NOAA is investigating three separate waves of abnormal fatality totals among three species of whales between 2016 and 2018, including the **right** (<https://www.fisheries.noaa.gov/species/north-atlantic-right-whale>) whale, **minke** (<https://www.fisheries.noaa.gov/species/minke-whale>) whale and **humpback** (<https://www.fisheries.noaa.gov/species/humpback-whale>) whale.

Since June 2017, NOAA has investigated 19 dead stranded right whales, 12 of them in Canada and seven in the U.S. In the past two years, 33 minke whales have been found stranded along East Coast beaches, including a dozen in Massachusetts. Since 2016, 76 humpbacks have met the same fate, 20 of them in New England.

The causes of the overall increase in deaths — deemed by NOAA as **Unusual Mortality Events** (<https://www.fisheries.noaa.gov/national/marine-life-distress/active-and-closed-unusual-mortality-events>) for each species — remain undetermined. But many necropsies show evidence of vessel strikes or entanglements in fishing gear, and NOAA said more study is needed.

"Contributing factors to the whale mortalities are still being investigated as part of this ongoing event," NOAA spokeswoman Katherine Brogan said Friday.

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Achievement gaps, shortcomings in math persist in latest SAT scores (/local-news/20190805/achievement-gaps-shortcomings-in-math-persist-in-latest-sat-scores)

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