


Siting, technology key to protect birds from offshore wind risks

Published July 04, 2018 5:36PM | Updated July 05, 2018 6:08PM

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Bird enthusiasts and scientists share a mantra with real estate agents when it comes to wind turbines: "Location, location, location."

When advocates grew concerned about thousands of annual bird deaths at California's **Altamont Pass Wind Farm** (<https://www.mercurynews.com/2015/10/30/altamont-pass-controversial-wind-turbine-company-blamed-for-bird-deaths-shutting-down/>), conservationists and some wind industry leaders began collaborating "to effectively avoid, minimize and mitigate the impacts on birds," according to Garry George, the **Audubon Society's** (<https://www.audubon.org/magazine/spring-2018/how-new-technology-making-wind-farms-safer-birds>) renewable energy director.

"It's all about siting," George said. "Different species have different vulnerabilities in displacement and potential for collision, due to feeding or migratory behaviors."

He added that the **Bureau of Ocean Energy Management** (<https://www.boem.gov/Commercial-Wind-Lease-Rhode-Island-and-Massachusetts/>), which leases federal waters to offshore wind developers, "has done some fantastic research on bird species and vulnerability."

"For the folks who care about birds like I do, it's important to know there are measures being taken to protect birds from wind turbines," George said. "The wind industry isn't just like, 'Let's kill all those birds, who cares?'"

The U.S. Fish and Wildlife Service in 2009 adopted a set of siting and data collection guidelines for land-based wind power. George said the Audubon Society is pushing the federal government to establish similar guidelines for offshore wind, since more than a dozen major wind farms are in the works along the East Coast.

Developers and conservationists say they're balancing renewable energy development with wildlife protection by conducting months-long site surveys and tracking migration and flight patterns with radar and high-definition thermal cameras.

One of the turbine foundations at Deepwater Wind's **Block Island Wind Farm** (<https://www.theday.com/local/20170501/wind-farm-now-powering-block-island>) uses such technology to conduct research in partnership with the University of Rhode Island, the University of Massachusetts and the U.S. Fish and Wildlife Service.

"If a bird comes into the radar area, it talks to the camera and the camera turns and tracks the bird's movement through the area," said Aileen Kenney, Deepwater Wind's senior vice president of development. "It's really opened up the opportunity to understand avian and bat activities offshore."

Connecticut and Rhode Island recently picked **Deepwater Wind** (<https://www.theday.com/local-news/20180624/from-turbines-to-homes-wind-power-is-coming-to-connecticut>) to deliver electricity by 2023 from a 75-turbine wind farm in federal waters about a dozen miles south of Martha's Vineyard.

An upgraded State Pier in New London is proposed to be the site of construction of an offshore substation at the windfarm.

Kenney described concern about bird deaths as a "legitimate issue onshore" due to "poorly sited projects."

But "when you go offshore, there aren't raptors and eagles, you're dealing more with migratory species ... more likely to avoid the wind farm area," she said.

"We have never seen a federally listed species out there, endangered or threatened," she said.

Kenney added that "we haven't seen any evidence of any sort of collision." But she acknowledged it's more difficult to track bird deaths in open waters compared to land-based wind farms.

Kenney said surveys of the site area and sea floor would likely begin this summer. She noted Deepwater Wind has hired Ocean Surveys Inc. of Old Saybrook to conduct previous surveys.

European study: collision risk 'less than expected'

In April, a group of European regulators, non-governmental organizations, wind industry members and academia released results from a **study** (https://www.carbontrust.com/media/675793/orjip-bird-collision-avoidance-study_april-2018.pdf) that monitored seabird behavior over four years from four turbines at the **Thanet Wind Farm** (<https://powerplants.vattenfall.com/thanet>) off the southeastern coast of England.

Only six bird collisions with turbines were observed during the study.

In more than 600,000 videos analyzed since 2014, about 12,000 videos showed seabirds at the wind farm during daylight hours. Only 75 birds were seen at the wind farm at night.

"The analysis revealed that collision risk of seabirds was much less than currently expected," according to the study. "Seabirds ... change their flight path to avoid the turbines."

BOEM and the U.S. Fish and Wildlife Service say the likelihood of endangered **roseate terns** (https://www.allaboutbirds.org/guide/Roseate_Tern/id) flying in Deepwater Wind's new project area was "extremely low." The agencies say **piping plovers** (https://www.allaboutbirds.org/guide/Piping_Plover/id), which the government lists as threatened, are "documented to primarily forage close to the shore and therefore are not expected to occur in the project area," according to Deepwater Wind's proposal to Connecticut. Further study is required on the movement patterns of the **red knot** (https://www.allaboutbirds.org/guide/Red_Knot/lifehistory), a candidate for federal listing that could turn up in or near the new wind farm.

Fossil fuels considered greater threat

Some wind power proponents point to data collected by the U.S. Fish and Wildlife Service showing **cats** (<https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>) are the country's top bird-killers by a longshot. The agency estimates that on average, cats kill more than 1 billion birds annually. Buildings kill upwards of half a billion; vehicles around 200 million; and utility lines about 32 million.

Wind turbine collisions account for an average of about 300,000 annual bird deaths, the agency said.

But George said "those numbers will go up" based on the number of wind farms in development, and he lamented that "birds are used constantly to justify either side" of wind power debates.

Asked about the perception of turbines as bird-killers, Kenney said, "We have to consider the alternative. If you think about where we're at, we're shutting down coal-fired plants. We have to get more power; if it's not wind, what is it? It's very telling that groups like the Audubon Society are very supportive. They make us work hard to get that support."

George said the Audubon Society was "watching Deepwater Wind closely" as the developer prepares wind farms for Connecticut, Rhode Island, **Long Island** (<http://dwwind.com/documents/?projects=south-fork-wind-farm>) and **Maryland** (<http://dwwind.com/project/skipjack-wind-farm/>).

But he noted that climate models estimate fossil fuels are "the greatest threat to birds."

"Short-term air pollution and changes in climate suitability and climate warming have an ability to create a loss of habitat for birds," he said.

Michael Hutchins, the former director of the American Bird Conservancy's **Bird-Smart Wind Energy** (<https://abcbirds.org/program/wind-energy-and-birds/bird-smart-strategies/>) campaign, wrote last spring that "Properly sited wind turbines are relatively bird-friendly, especially when compared to fossil fuels. However, they are far from benign."

The American Bird Conservancy's wind energy campaign calls for siting turbines away from severe collision risk areas, greater independence and transparency in surveys and fatality research, and compensation from wind companies for the loss of federally protected birds.

The American Bird Conservancy and Audubon Society also urge wind developers to automatically shut down turbines whenever monitoring equipment detects birds.

Cornell University Lab of Ornithology (<http://www.birds.cornell.edu/Page.aspx?pid=1478>) researcher Aaron Rice, who studies how sounds like wind turbine construction and operation impact wildlife, said oil extraction and the burning of fossil fuels were "absolutely" more detrimental to the environment than renewable energy such as wind.

"I'd argue wind energy is a net benefit," he said, adding it was in developers' best interests to be mindful of environmental and wildlife impacts. "The profit margin on wind farms is so slim that the industry has been very concerned about the risks of projects and anything that might shut them down. The folks want to do the right thing, but they also want to be employed a year from now."

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