The Birdist

Interviews from the World of Birds

Interviews

Birders

Peter Vickery, on ptarmigan records in Maine
Dr. Keith Arnold, founder of the Texas Bird Records Committee
Nancy Coverstone, Quick Question on Birds and Apples
Clare Kines, Nunavut birder/author/innkeeper
Mike Collins, Ivory-billed Woodpecker tracker
Bob Duchesne, Maine Birding Trail
Norm Saunders, online birding pioneer

Scientists

Anders Ödeen on birds' color vision
John Klicka on Timberline Sparrows
Jed Hayden, Marsh Bird Scientist
Kathy Brader, National Zoo
Brian Walton, Santa Cruz Predatory Bird Research Group

Activists

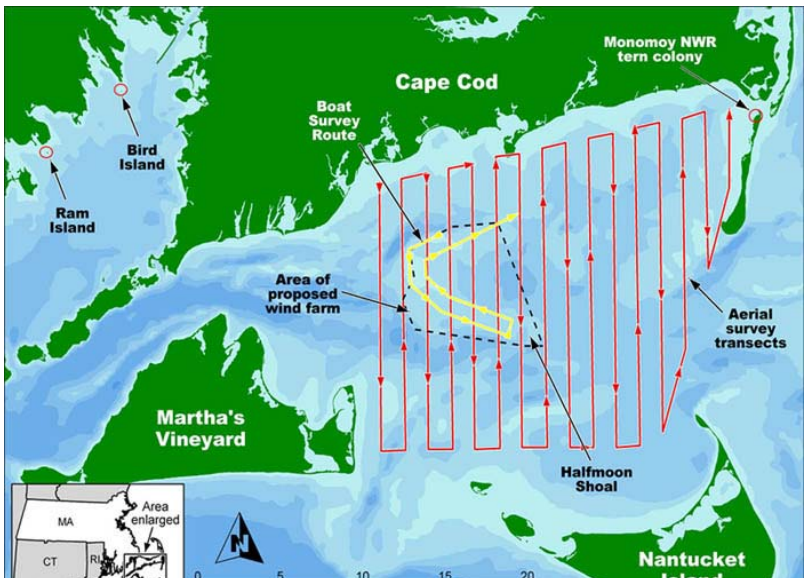
Brian Sullivan of eBird

Tuesday, September 30, 2008

Cape Wind Draft EIS Excerpts

The National Environmental Policy Act (NEPA), one of America's first comprehensive environmental laws, requires federal agencies initiating "major federal actions significantly affecting the human environment" to first prepare an Environmental Impact Statement (EIS). Although the statute does not require the agency to follow any recommendations or mitigation measures included in an EIS, the requirement has given strength to environmental causes by a) establishing a public record of a project's potential environmental impacts and b) providing a basis to slow or prevent a major federal action if the EIS is ignored or insufficient.

In response to a permit application from Cape Wind Associates, the Army Corps of Engineers has prepared a draft EIS for the proposed Cape Wind project off the coast of Massachusetts. It's hundreds of pages long, and includes information on the farm's potential impacts on everything from sediment to recreation to shellfish and, of course, birds.



Kathryn Burton of Save the Swans
Dr. Cleo Small of Save the Albatross

Writers/Artists
Jonathan Meiburg of Shearwater
Steven Valleau, Bird Carver
Nina Gormley of the Wendell Gilley Museum
John Beetham of A DC Birding Blog

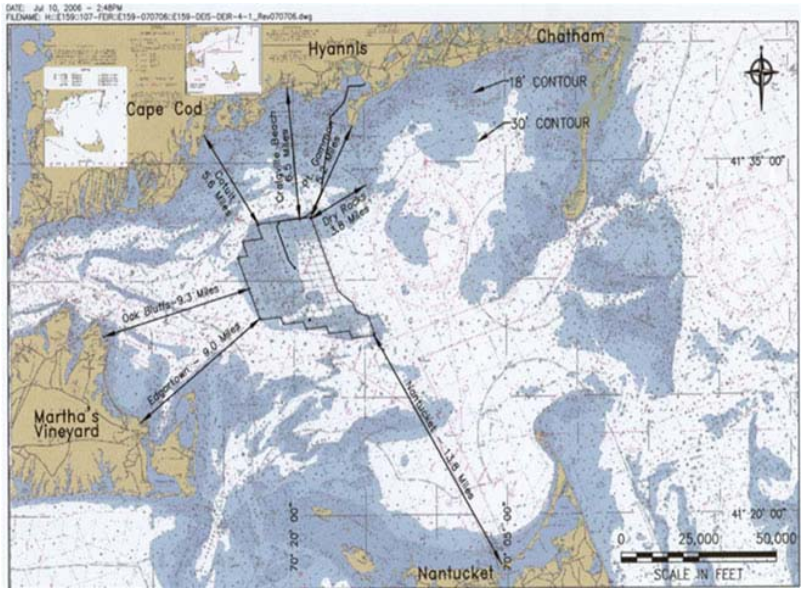
Other
Sharon Gray, of Ridge Bird Feeders
Steve Vose, Bird Hunter and Writer
Symposium: Is There and Obligation to Report Birds?
Jennifer Asencio, Avian Antiques Dealer
Pete Lund, American Crow-talker

Guys That Birds Are Named After
Thomas Lincoln
Sir John Franklin

Birds at Large
Xmas Birdfeeder
Mark Trail
Nike's Screaming 'Eagle'
Brian Regan
Molson Canadian
Windex
Jeep Liberty Commercial

Birds and Wind Power
Cape Wind Draft EIS Excerpts
Offshore Wind Map

Reading through the section on possible impacts to birdlife makes me feel very happy that someone is putting so much thought into this. As I have said on this blog before, the issue of birds and turbines is much more complicated than many non-birders initially think it to be. Potential threats vary from family to family or species to species, depending on each of their individual behaviors. This EIS does, I think, a great job of laying out what is different about each group of birds and how an offshore wind farm may affect them.



Not everyone is happy with the bird-related content in the EIS. Susan Nickerson of the Alliance to Protect Nantucket Sound, a group "discouraging the development" of Cape Wind, insists that the Minerals Management Service should suspend its review of the project based on the views of the US Fish & Wildlife Service's comment in opposition to the project [I can't find the USFWS comment on the DEIS, can someone help?]. Ms. Nickerson's piece, though impassioned, does not indicate much actual consideration of the DEIS proposals. This quote from her article:

> At California's Altamont Pass, thousands of birds are slaughtered by spinning wind turbine blades every year, despite efforts at adaptive management. If this technique does not work for land-based wind, how could it work for an offshore project like Cape Wind?

clearly misses the fundamental point (as laid out in detail in Section 5.7.2.2.1 of the DEIS) that the comparative risk to birds from the Cape Wind project and the existing Altamont Pass site are very different.

Issues
Bird and Other Types of Turbines
Birds and Offshore Wind Energy II
Birds and Wind Power

Contact

Want to get in touch? Have an interview idea? Hate me? Email me at thebirdist@gmail.com

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Birds in the North of

Environmental Impact Statements are made to be read. It is the public's duty to make sure that the agencies in charge of these projects are taking everything into account, and a lot can slip by if nothing's said. Below I'll reproduce the section called Risk By Bird Group, but there are additional materials at the pages of the Minerals Management Service and the Conservation Law Foundation. Section 5.7 discusses the project's potential effects on "Avian Resources," but birds are mentioned many other places. Below I've reproduced (poorly) a portion of Section 5.6, Risk By Bird Group:

Risk by Bird Group

The data collected for the Cape Wind project provide some presence/absence information—42 bird species were documented in the study area, and it can be assumed that all of these species occur on Horseshoe Shoal at some time and to varying extents. The following discussion serves to present the collision risk relative to the abundance and distribution data presented in Section 5.7.2 for the various bird groups and the risk factors discussed above.

Oceanic/Pelagic Seabirds. Gannets would primarily be at risk while feeding during migration as they pass through the area and to a lesser degree during the winter months when fewer individuals are present. When gannets spot prey from high altitudes, they typically plunge-dive into the water in pursuit of that prey and may be at higher risk while diving because of the fast and focused flight. Storm-petrels, shearwaters, and other pelagic seabirds might be at risk while foraging on Horseshoe Shoal during migration and in summer. Flight of these birds is primarily restricted to altitudes less than about 15-20 meters both while foraging and migrating. Pelagic seabirds such as Leach's Storm-Petrel are known to be attracted by bright lights (Montevecchi et al., 2001; Pfand, 1996), such as those on oil rigs, city parking lots, and stadiums (mercury vapor lamps). These types of lights would not be used for this Project, so impacts would be limited to possible collisions while foraging and migrating.

Gulls and Terns. Gulls are present in the Project area throughout the year. They forage in the area, especially when following fishing boats, and flight occurs at rotor height, so collision-related mortality is likely. Since gulls tend to habituate to most man-made structures, they are likely to habituate to the turbines, which could increase risk of collision.

Terns are present in the Project area from April through September and are likely to fly at rotor height during migration and courtship, and while foraging. Terns might attempt to perch on the turbine platforms, the ESP, and possibly the nacelles, and thus would be at increased risk of collision. However, the platforms and the ESP will be protected with deterrent devices. During courtship displays, the terns spiral steeply upward, sometimes to heights of 300 feet (100 meters) or more, so any displays conducted from platforms could result in collisions with rotors and possibly towers. Additionally, the platforms may provide fish shelters (structures under which to hide) which could attract fish and thus terns to the turbines. Turbine platforms would be equipped with bird deterrents, such as wires on top of the rails to deter perching, thereby reducing the likelihood of tern collision with turbine blades during courtship displays (see Section 5.7.3.4). For more details on collision risk to roseate terns, please see Section 5.7.3.4.

Seaducks. Seaducks are present in the Project area for about six-seven months during migration and winter, when they are the most abundant type in Nantucket Sound, and they make daily (sometimes nocturnal)

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movements to and from feeding areas within or near the Project area. Their distribution is strongly affected by storms. European studies have demonstrated collisions involving less than 1 dozen eiders at turbines built along jetties and about 63 diving ducks situated in saltwater lakes adjacent to the Wadden Sea (Winkelman, 1995). Wind turbine facilities in North America located in Minnesota (Buffalo Ridge), Iowa (Clear Lake), Wisconsin, and California (Solano County and Altamont) are situated in areas that experience high use by waterfowl, mostly geese and dabbling ducks during the migration seasons. At these sites, few individuals, primarily mallards are most often killed, of these types of species Minnesota (5), Iowa (0), Wisconsin (1), Solano County (1) and Altamont (7) have collided with turbines (Erickson et al, 2001). Though these waterfowl are dabbling ducks and geese, rather than seaducks, they are likely to have similar visual physiology and have similar ability to detect the presence of turbines. Like seaducks, they make foraging flights at night and often migrate at night (Bellrose, 1976). Interestingly, very few ducks of any species are known to collide with communication towers, including those more than 1,000 feet tall having nearly a mile of guy wires (Shire et al., 2000, Avery et al. 1980), so it seems that ducks are either not terribly susceptible to colliding with vertical structures or structures with FAA lighting or they are adept at avoiding these structures. However, seaducks are faster fliers and generally less maneuverable than dabbling ducks and other divers, so they may not be able to physically avoid turbines to the extent that dabblers can. Of the 377,432 seaducks observed during the aerial and boat surveys from March 2002 through February 2004, 54 (10 long-tailed ducks and 44 scoters) were observed flying at rotor height. Extrapolated to include 50% of the two-year study (since seaducks are in the project area 6 months of the year) 14,645 seaducks might be at rotor height. As evidence by the Winkleman 1995 study, diving ducks have collided with wind turbines. Thus, some amount of collision-related mortality of seaducks may occur. Because more than 35,000 eiders and a similar number of scoters are shot legally each year (Martin and Padding, 2002), fatalities in single digits per turbine per year, would not likely be biologically significant.

Cormorants. Double-crested cormorants occur in the Project area, most during a seasonal window that includes about one-half of the year (mostly September-November, March-May). Small numbers of Great Cormorants are present from November through April. Double-crested Cormorants were observed frequently during the day resting areas on Fernando's Fetch, Bishop & Clerks' Lighthouse, and on the sandbars west of Monomoy, but only four individuals were observed within any of the three shoals studied (one in Monomoy-Handkerchief Shoal and three in Tuckernuck Shoal) during the aerial surveys. While cormorants are typically observed closer to shore (Ward and Sutton, 2001), the ESP and access platforms on the WTGs may attract cormorants, although perching would be discouraged through the use of bird deterrents. Great cormorants are present during a smaller seasonal window, mostly in winter. Both species frequently perch on large, man-made structures and are likely to be attracted to the turbines as potential perching sites which may increase potential for collision, especially if birds repeatedly look for perches but are deterred. It is likely that they will learn that they cannot perch on turbines after a few unsuccessful attempts or they may not approach turbines while operating, as is the case for many birds that fly in daylight. Cormorant migration over water typically occurs during daylight, and while they frequently occur at rotor height, it is anticipated that they would see and avoid the turbines and rotors. Two sites through which large numbers of cormorants migrate (Blythe Harbor and Buffalo Ridge) have reported one

Spain
BirdTLC
Bootstrap Analysis
Coyote Mercury
DC Audubon Blog
Great Auk - Or Greatest Auk?
Earth, Wind & Water
Fishcrow.com IBW Search
The Hawk Owl's Nest
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Sand Creek Almanac
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Birding Sites

eBird
Surfbirds US Rare Bird Gallery
RBA's by State
Cornell Bird Guide
Fatbirder
Maine Seabird Nesting Sites

Environmental Organizations

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Defenders of Wildlife
Environmental Defense
Environmental Working Group
Friends of the Earth
Greenpeace USA
Keystone Center
League of Conservation Voters
National Wildlife Federation
Natural Resources Defense Council
The Nature Conservancy
Pesticide Action Network

Cape Wind project is unknown. In light of the 47,000 Double-crested Cormorants annually killed via depredation permits, without significant impacts, even if hundreds collide with turbines the impact is unlikely to be biologically significant.

Other Divers (loons, grebes, alcids). The few studies of coastal migrating loons and grebes show that they usually do not fly above 100 feet (30.5 meters) above the waves, although over land they can fly at very high altitudes (Kerlinger and Moore, 1989). During the field studies they were occasionally observed flying between 100 and 200 ft asl. They occur within Nantucket Sound an estimated 9 months each year. Loons were relatively evenly distributed during the aerial surveys, suggesting that they would occur on Horseshoe Shoal, although the amount of time spent on the Shoal is unknown. Of the 8,817 loons observed during the aerial and boat surveys, six were observed at rotor height. Extrapolated to include 75% of the year that loons occur in Nantucket Sound, 2,440 loons could have occurred at rotor height. Because loons are diurnal migrants, risk of collision during migration may be lower than for night-migrating species, but overall risk is unknown. Alcids generally fly close to the sea surface, well below rotor height (personal observations Jeremy Hatch, Paul Kerlinger).

Shorebirds (Plovers, Sandpipers, and Allies). Studies from coastal European wind parks have demonstrated that shorebirds can be at risk of colliding with wind turbines during migration stopovers (Everaert et al., 2002).

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Draft EIS/EIR/DEI Section 5.0, Environmental Resources and Consequences for the Applicant's Proposed Alternative

Collisions did not seem to occur during active migration, but were instead associated with local flights between foraging and resting areas. There is likely to be little risk to the large numbers of night migrating shorebirds as their altitude usually is well above rotor height (in the neighborhood of 6,400 feet (2,000 meters) asl) (Richardson, 1978). Night migrating songbirds do not tend to collide in large numbers with even brightly lit structures such as lighthouses, spotlighted buildings, and heavily lighted communication towers with guy wires (see lists in Shire et al., 2000). The L-864 red flashing lights proposed for night-lighting of the WTGs have not been demonstrated to attract birds. Shorebirds making diurnal migration staging flights between Monomoy and Nantucket or among other islands and the Cape Cod shoreline may fly within the height range of rotors at times, and, while many are likely to see and avoid turbines, some unknown amount of mortality is likely to occur. For more details on collision risk to piping plovers, please see Section 5.7.3.4.

Raptors. Very few raptors are likely to be present at more than 3 miles (4.8 km) from shore and thus would rarely occur within the Project area (Kerlinger, 1989). They are most likely to occur in the project area for four months during migration (April to May, September to October). Individual birds migrating through the area would usually fly through the area only one time per season or per year. The general pattern for most migrating raptors is to fly directly between the nearest points of land and leap-frogging from island to island. In this case, the migration is most likely to occur between Monomoy and Nantucket and then on to Martha's Vineyard (Veit and Peterson, 1993). This route is well away from Horseshoe Shoal. The risk during other months is virtually nonexistent, because these species would rarely be present.

Ospreys and, to a far lesser extent, some falcons (peregrine and merlin), and bald eagles are known to forage over water, and thus may forage in the Project area. No ospreys were observed in the Project area during the aerial surveys, but seven ospreys were observed during the boat surveys in August 2002 and one osprey was observed outside the study area in Buzzards Bay/Vineyard Sound in April 2003. All were within 1 mile (1.6 km) of the shoreline (Table 5.7-5). To date, no osprey or merlin fatalities at wind plants have been reported; one peregrine fatality has been reported from the APWRA (Kerlinger and Hatch, 2001). The turbine platforms, the ESP, and possibly the nacelles provide potential perches for raptors, and, while perching deterrents would be used, birds searching for perches within the wind park would be at risk of collision. The project would result in an unknown, but likely low amount of raptor mortality given their low abundance in the project area.

Passerines and Other Landbirds (Night Migrating Songbirds). Night migrating songbirds, for the most part, are likely to fly at altitudes well above the turbine rotors and are not at great risk of collision (Kerlinger, 1995; Kerlinger and Moore, 1989; Able, 1970). Data from the radar studies that were conducted during the peak migration period showed that 127,697 out of 491,306 targets (26%) were flying within the rotor swept zone. Less than 10% (44,614) of the total were flying in the rotor swept zone at night, when risk of collision is likely to be greater.

Those birds that are caught out over the ocean at dawn often attempt to return to shore. These birds frequently fly at much lower altitudes (especially with head winds such as westerlies and northwesterlies in fall) and are likely to be within or below rotor height. In these situations, some may be at risk; with good visibility, however, these birds are likely to avoid the turbines. During poor visibility such as storms, fog, and foul weather, some birds could be at increased risk if they are attracted by the lights on the WTGs (Kerlinger and Kerns, 2003; Kerlinger, 2004). While night migrating songbirds are the most common species involved in collisions with wind turbines at most terrestrial wind power sites, the numbers killed have been small in relation to overall numbers and numbers that pass over wind plants. The highest fatality rates at onshore wind power facilities in the United States have been about 3 to 7 night migrating songbirds killed per turbine per year (Kearns and Kerlinger 2004, Nicholson 2003). Compared to other mortalities caused by collision with structures, Cape Wind song bird mortality is likely to be a minute fraction.

Labels: Army Corps of Engineers, birds, Cape Wind, Minerals Management Service, Offshore Wind, study

posted by NickL @ 10:55 PM

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I wonder if they're paying much attention to the new information out regarding wind turbines and bats:

http://www.sciencentral.com/video/2008/08/25/wind-turbines-causing-dark-nights-for-bats/

I just hope it isn't determined we should resort to those new 'auto-misters' for bug control! Ewwwww!
posted by Beverly : October 2, 2008 12:39:00 PM EDT

Thanks for the link, Beverly. Just what happens in the wake of turbines is still being looked at (check out this study from 2004 showing the effect of a hypothetical gigantic wind farm on weather patterns: http://www.agu.org/pubs/crossref/2004/2004JD004763.shtml).
One solution is to better design the turbines to reduce the turbidity and mixing of air after it hits the blades. Another solution? Put the turbines in the ocean, where bats don't generally fly.
posted by NickL : October 2, 2008 4:05:00 PM EDT

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