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WIND–

Studies have shown that arguably the most significant and direct impact wind turbines have on wildlife is the death of birds and bats.

The U.S. Fish and Wildlife Service (FWS) has a list of “Top Threats to Birds” in the United States, and included on that list is on-shore wind turbines. The list shows that as of 2017 an average of 234,000 birds were being killed by turbines annually.

That list is pictured in a graphic on the right, showing where wind turbines rank among the nation’s other top threats to birds.

FWS further elaborates that most birds killed at turbine sites are migratory song-birds. Other susceptible bird species include those that forage for prey near turbines, such as red-tailed hawks and golden eagles, while species such as the common raven appear to largely avoid turbine collisions.

However, fatal collisions aren’t the only threat wind turbines may pose to birds.

There is also evidence that some ground nesting birds, such as prairie-chickens and sage grouse, may avoid certain locations once wind turbines are built, as it’s believed they avoid structures from which a predator could be perched.

“Turbine strings or arrays may also affect the habitat, causing the birds to search for less disturbed habitat,” states the FWS. “This can disrupt their breeding and nesting behaviors, resulting in fewer chicks surviving to adulthood.”

Migratory bats, meanwhile, also seem to be susceptible to collisions.

According to the U.S. Geological Survey (USGS), it’s not known exactly why bats are often found deceased at the base of wind towers, but hundreds of thousands die each year in North America alone.

“It’s possible that wind turbines interfere with seasonal migration and mating patterns in some species of bats. More than three-quarters of the bat fatalities at wind turbines are from species known as ‘tree bats,’ which tend to migrate long distances and roost in trees,” states the USGS.

“These bats migrate and mate primarily during late summer and early autumn, which is also when the vast majority of bat fatalities at wind turbines occur. It’s also possible that bats mistake slow or stopped turbine blades for trees.”

However, the direct threats to birds varies from region to region, and therefore State Wildlife Action Plans (SWAP) are developed by state agencies in accordance with FWS directives. These

plans are more tailored to the specific habitats that exist within a state.

North Dakota’s SWAP, written in 2015, is in the process of undergoing its 10-year update. A more recently published wind energy policy guidance document from the N.D. Game and Fish Department (NDGF), further clarifies the state’s concerns.

“North Dakota supports millions of migrating waterfowl, shorebirds, and other water birds, including the federally endangered whooping crane, and collisions during migration are of great concern in the state,” states the NDGF document published in 2021.

Developer mitigation efforts

With so many environmental concerns to consider, wind energy project developers are required to work with both the U.S. Fish and Wildlife Service and the N.D. Game and Fish Department throughout development.

When it comes time for Flickertail Wind to apply for a permit from the N.D. Public Service Commission, the recommendations of both agencies will be a deciding factor in whether the project gets approved.

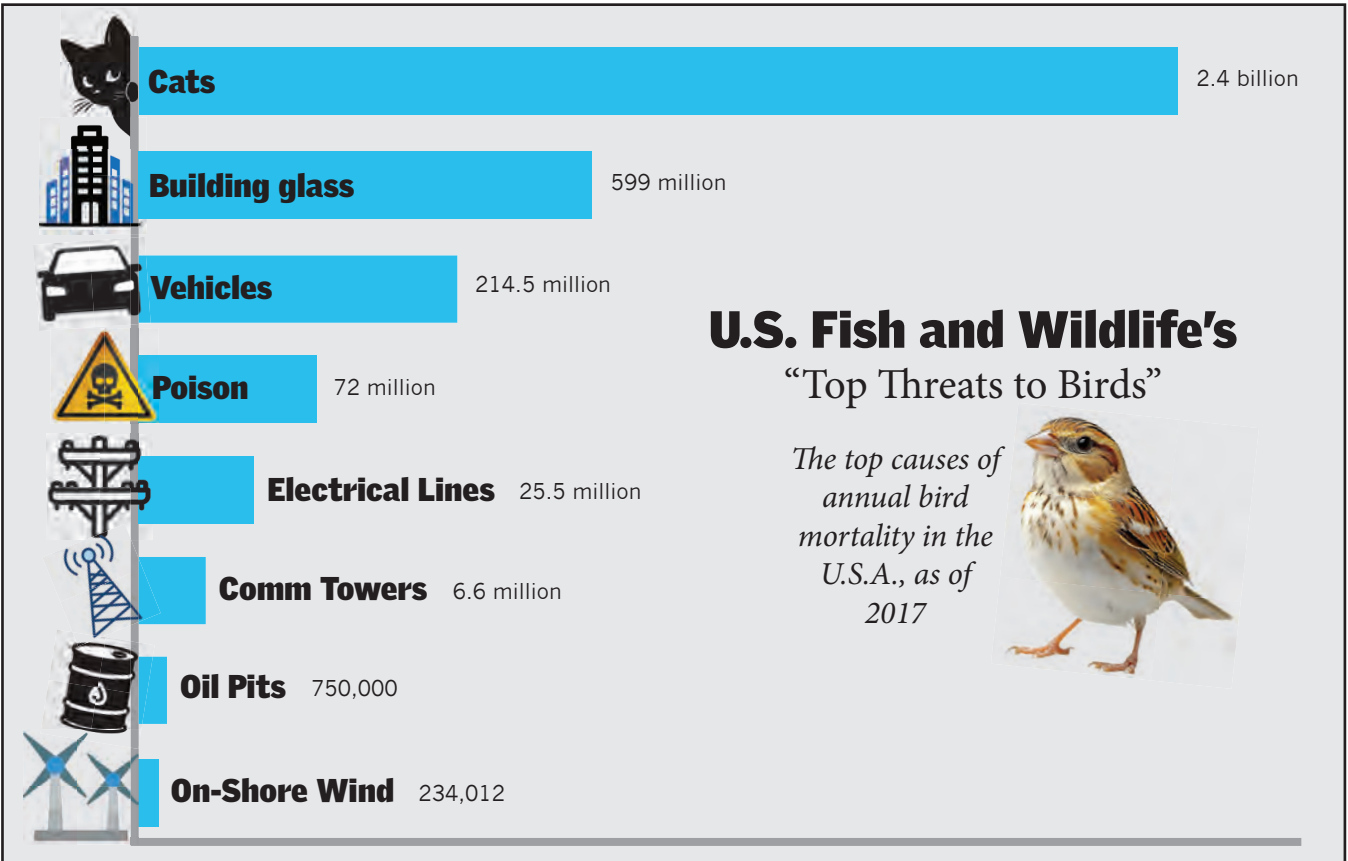
The process of evaluating environmental impacts begins early in the development phase, when companies are analyzing various key factors that determine whether a particular area is viable.

As stated in the FWS guiding documents for developers, “The Service stresses that communication and collaboration early in the planning phases of projects will have the most benefit to all parties to meet the shared goals of renewable energy production and conservation.”

According to public information obtained from the New Rockford Area Betterment Corporation (NRABC), development work for Flickertail Wind began in 2009, when wind resource monitoring devices, known as MET towers, were erected in Wells and Eddy counties.

W-E Wind, LLC, the local entity responsible for bringing a wind energy project to the area, involved the U.S. Fish and Wildlife Service in the planning process for wind energy development in Eddy County as early as 2011.

In its 2011 annual report to the New Rockford City Commission, which was delivered in early 2012, the NRABC noted that W-E Wind had completed a 24-month feasibility study regarding wind energy, and the researchers from EAPC Architects Engineers in Grand Forks concluded that conditions were favorable to move forward. The report stated



Source: "Threats to Birds," U.S. Fish and Wildlife Service. U.S. only, ordered by median estimate of bird mortality annually as of 2017. This graphic does not contain the full list, which is available online at <https://www.fws.gov/library/collections/threats-birds>. Graphic by Nathan Price.

that the study evaluated five areas, including “the impacts the project would have on the local economy and the environment.”

W-E Wind also commissioned KLJ Architects to conduct a complete Critical Issues Analysis in 2016, which highlighted and detailed the project’s potential environmental impacts and mitigation measures to consider.

Since PRC Wind became the developer partner for Flickertail Wind in 2018, the company has completed numerous studies in coordination with the U.S. Fish and Wildlife Service and N.D. Game and Fish Department.

For example, Lucas Buerkley of PRC Wind said one of their surveys had to do with sharp-tailed grouse, a bird that inhabits North Dakota and can be found in Eddy County.

Buerkley said the survey required an environmental survey group – in this case Westwood Professional Services – to spot and identify sharp-tailed grouse within the proposed Flickertail Wind project area.

Based on their findings, PRC Wind was notified of “avoidance areas” or “exclusion zones” around existing grouse habitat in Eddy Coun-

ty, within which placement of wind turbines should be avoided.

If placement of turbines in those areas cannot be avoided, NDGF would require a fee from PRC Wind. That money would then go toward a “mitigation fund” used for conservation – effectively re-investing that fee into ongoing conservation efforts.

In coordination with the NDGF and U.S. Fish and Wildlife Service, PRC Wind has completed numerous other surveys and studies, ranging from grassland and wetland assessments, to a “bat acoustic” survey and an “eagle use” survey.

This coordination is comparable to the process counties and townships undergo when completing road and bridge repair projects, which require local officials to hire engineering firms to evaluate the potentially negative impacts on the environment and area wildlife, and seek guidance on how to minimize those impacts. However, the studies are much more in depth for wind energy projects.

There are documents available through both the FWS and NDGF outlining best practices for developers to follow, and the focus on

protecting the environment does not end once construction is complete.

It is North Dakota’s siting policy to ensure that energy conversion facilities produce minimal adverse impacts on the environment and on the welfare of North Dakota citizens. The agency responsible for keeping an eye on such facilities is the N.D. Public Service Commission (PSC).

As stated in North Dakota Century Code, 42-22-02, “In accordance with this policy, sites and routes shall be chosen which minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.”

Much of the Flickertail Wind Farm’s proposed footprint area has been previously developed, with roads, farms and pastures.

This is notable because the NDGF guidance document published in 2021 states that implications for wildlife are far less significant when turbines are placed on existing cropland, as Flickertail Wind would be.

“Moreover, the placement of turbines in grassland-dominated landscapes is of higher concern because

the diversity of species killed is nearly three times that of turbines placed in cropland,” the NDGF document states.

Ultimately, if NDGF and the FWS are satisfied with PRC Wind’s mitigation efforts, they can make a positive recommendation to the N.D. Public Service Commission when it comes time for final approval.

Conversely, a negative recommendation could spell the end for the project – a significant motivator for any developer to follow the appropriate mitigation efforts.

Additional environmental impacts

In the next installment of this series, the Transcript will analyze the potential impacts on deer populations – and therefore local deer hunting.

Also featured will be the phenomenon of “ice throw,” another concern expressed by those who oppose wind projects. A later issue will cover the waste aspect, including decommissioning of turbines and what happens to all that remains when wind energy is no longer generated from the facility.

For readers interested, the studies and sources referenced in this article will be linked in the online edition at newrockfordtranscript.com.

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