Alberta Wilderness Association
"Defending Wild Alberta through Awareness and Action"

October 15, 2024

Alberta Utilities Commission
Eau Claire Tower
1400, 600 Third Avenue S.W.
Calgary, AB T2P 0G5

To the Alberta Utilities Commission:

Alberta Wilderness Association (AWA) is writing to express our concerns on the impacts of Fox Meadows Wind Project to habitat and wildlife. Founded in 1965, AWA strives to help Albertans understand the intrinsic values that wildlife and wilderness provide and encourage communities to participate in conservation initiatives that will ensure a legacy for future generations. With over 7,500 members and supporters in Alberta and beyond, AWA is dedicated to conserving Alberta's wilderness and advocating for conservation strategies that protect Canada's biodiversity.

The proposed project consists of a 165 MW capacity wind power plant, battery energy storage system and collector substation. It will necessitate the construction of additional transmission connections to the system. While we appreciate that the majority of the project is situated on cultivated lands, with a low proportion (9 percent) of native grassland habitat, we are concerned with the high risk it could pose to local wetlands, birds, and bats. Further, the cumulative environmental effects of this project with other developments in the area are not explored in the environmental assessment. These effects could be damaging for wildlife populations, particularly migrating birds and bats.

Wind turbines provide an alternative to fossil fuel energy generation with lower carbon emissions, and cause nearly 35 times less bird fatalities than fossil fuel power stations[1]. Yet, the extent of their environmental impact depends strongly on the location and operation of the wind power station. While AWA supports increasing renewable energy generation in Alberta, development must proceed in a fashion respecting and promoting wildlife and landscape protection and health values.

The project is in a region with high use by birds and bats, with over 20,000 birds and 3000 bats detected throughout the survey period, as noted in the Environmental Evaluation. Wind turbines are known to cause injury, stranding, and death of birds and bats both directly through collisions and indirectly (i.e. barotrauma for bats). In the United States, one study estimated wind energy to cause the deaths of 140,000 to 328,000 birds annually[2], while another provided a higher estimate of 888,000 bat and 573,000 bird fatalities per year, including 83,000 raptor fatalities[3]. Construction of wind turbines can also indirectly displace wildlife, increase fragmentation of landscapes and act as barriers to wildlife

[1] Sovacool, B. K. (2012). The avian and wildlife costs of fossil fuels and nuclear power. Journal of Integrative Environmental Sciences, 9(4), 255-278.
[2] Erickson, W. P., Wolfe, M. M., Bay, K. J., Johnson, D. H., & Gehring, J. L. (2014). A comprehensive analysis of small-passerine fatalities from collision with turbines at wind energy facilities. PloS one, 9(9), e107491.
[3] Smallwood, K. S. (2013). Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin, 37(1), 19-33.

movement. When placed in migratory flight paths, stopover areas may be lost and the flight path may be disrupted[4].

Among birds, raptors, including hawks, falcons, eagles and owls, are at particularly high risk from wind turbine collisions due to their flight patterns, preference for flying in strong winds[5], relatively low reproductive rates, and long generation times. As such, the loss of raptors can have a larger effect on the population. Several raptor species were observed in the region, including American kestrel and bald eagle. Both are considered "Sensitive" in Alberta under the *Wildlife Act*.

Migratory bats are also at high risk from wind turbines. Three migratory species – eastern red (*Lasiurus borealis*), hoary (*Lasiurus cinereus*), and silver-haired (*Lasionycteris noctivagans*) bats – were assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered due to "dramatic declines in recent years"[6], primarily as a result of increases in the amount and density of wind turbines on the landscape. Of these three species, two (hoary and silver-haired bats) made up over 30 percent of recorded bats during the survey period. Similar to raptors, bats are long-lived animals with a relatively low reproductive rate, and populations are generally slow to recover.

While the project is primarily on cultivated land, it is expected to affect several seasonal, temporary and ephemeral wetlands, and is located near hundreds more. Wetlands, even non-permanent wetlands, are complex and productive ecosystems; they are important foraging sites for birds and bats, and provide breeding sites and foraging for a range of other wildlife, including many reptiles and amphibians. They also provide many benefits, including water filtration, drought and flood mitigation, and carbon storage. Alberta has already lost an estimated two-thirds of wetlands in the White Area, and the *Alberta Wetland Policy*[7] "promotes avoidance and minimization, as the preferred courses of action." The loss of these wetlands will result in the loss of their associated benefits, as well as displacing wildlife.

Finally, the environmental impacts and mitigation measure as presented by the proponent have largely ignored cumulative effects with other developments, including wind turbines present to the south and west that may affect migration patterns. Considering the extensive industrial, agricultural, urban and other developments already present in Alberta, and the loss of wetlands especially in the settled area, project impacts should consider other developments in the region.

Given the expected effect on wetlands, along with the high density of birds and bats in the region, we would suggest this is not an appropriate area for wind turbines. Ideally, wind generators should be located on landscapes with minimal biodiversity value, and should not be sited near raptor nests, known bat hibernaculum, or migratory pathways. The efficiency of mitigation strategies is generally unclear,

---

[4] BirdLife International (n.d.). *Migratory Soaring Birds Project Solar Energy Guidance V.1 Developers and Consultants. 'Birds and Solar Energy within the Rift Valley/Red Sea Flyway'.* Retrieved Oct 16 from: https://migratorysoaringbirds.birdlife.org/sites/default/files/factsheet%20Solar%20Partner%20new%20logo%20PR.pdf

[5] Péron, G., Fleming, C. H., Duriez, O., Fluhr, J., Itty, C., Lambertucci, S., ... & Calabrese, J. M. (2017). The energy landscape predicts flight height and wind turbine collision hazard in three species of large soaring raptor. Journal of Applied Ecology, 54(6), 1895-1906.

[6] COSEWIC Press Release. (2023). Seeing conservation solutions for unseen species. Retrieved from: https://www.cosewic.ca/index.php/en-ca/news-and-events/press-release-may-2023.html.

[7] Government of Alberta. (2013). Alberta Wetland Policy. Available at: https://open.alberta.ca/dataset/5250f98b-2e1e-43e7-947f-62c14747e3b3/resource/43677a60-3503-4509-acfd-6918e8b8ec0a/download/6249018-2013-alberta-wetland-policy-2013-09.pdf

although curtailment of wind turbines during migration is one of the most effective methods known to reduce mortality. Average fatality for bats, which prefer low wind conditions for flight, were much lower at higher cut-in speeds of 5 m/s or 6 m/s[8], with minimal impact on electricity generation. As well, an integrated method using higher cut-in speed and bat acoustic data was found to reduce mortality by 1.5 times, although at a higher cost[9]. Wind turbine designs should aim to reduce disturbance of nearby landscapes, displacement of habitat, and collisions with wildlife. For instance, height is an important consideration in the effect on various species[10]. The use of radar to detect movement and cause wind turbine shutdown can also reduce collisions[11], and power lines, another cause of high bird mortality, can be improved through spatial aggregation and insulation to reduce electrocution of large birds[12]. These measures should be proactively considered and incorporated into planning, before high bird and bat mortality occurs.

Thank you for considering our comments.

Sincerely,

ALBERTA WILDERNESS ASSOCIATION

Ruiping Luo

Ruiping Luo
Conservation Specialist

---

[8] Arnett, E. B., Huso, M. M., Schirmacher, M. R., & Hayes, J. P. (2011). Altering turbine speed reduces bat mortality at wind-energy facilities. Frontiers in Ecology and the Environment, 9(4), 209-214.
[9] Rabie, P. A., Welch-Acosta, B., Nasman, K., Schumacher, S., Schueller, S., & Gruver, J. (2022). Efficacy and cost of acoustic-informed and wind speed-only turbine curtailment to reduce bat fatalities at a wind energy facility in Wisconsin. Plos one, 17(4), e0266500.
[10] Anderson, A. M., Jardine, C. B., Zimmerling, J. R., Baerwald, E. F., & Davy, C. M. (2022). Effects of turbine height and cut-in speed on bat and swallow fatalities at wind energy facilities. FACETS.
[11] Tomé, R., Canário, F., Leitão, A. H., Pires, N., & Repas, M. (2017). Radar assisted shutdown on demand ensures zero soaring bird mortality at a wind farm located in a migratory flyway. In Wind Energy and Wildlife Interactions: Presentations from the CWW2015 Conference (pp. 119-133). Springer International Publishing.
[12] Guil, F., Fernández-Olalla, M., Moreno-Opo, R., Mosqueda, I., Gómez, M. E., Aranda, A., ... & Margalida, A. (2011). Minimising mortality in endangered raptors due to power lines: the importance of spatial aggregation to optimize the application of mitigation measures. PloS one, 6(11), e28212.

455 12 ST NW, Calgary AB T2N 1Y9
Phone 403.283.2025 awa@abwild.ca www.AlbertaWilderness.ca