BAT CONSERVATION INTERNATIONAL

February 12, 2025

Public Input Coordinator
Ministry of the Environment
Conservation and Parks
Ontario, Canada

Thank you for the opportunity to comment on ERO 019-9411, proposed changes to Ontario Regulation 242/08 under the Endangered Species Act, 2007. The proposed amendments amend the wind facility conditional exemption of O. Reg 242/08 to minimize the impacts of facilities to endangered bat species (hoary bats, eastern red bats, and silver-haired bats) to include a common and site-specific curtailment approach.

BCI is a non-profit organization dedicated to the enduring protection of bats and their habitats since 1982. BCI is a global leader in finding solutions that support renewable wind energy development while reducing the impact to bat populations. BCI helped establish the Bats and Wind Energy Cooperative in 2003 as a collaboration to engage researchers, conservation stakeholders, and private industry to identify priorities and solutions to minimize impacts of wind energy development on bats. Over the past two decades, BCI has designed and executed ground-breaking scientific work to test operational minimization strategies, including smart curtailment as well as acoustic deterrent research. BCI's Bats and Wind energy research is part of our strategic efforts to conduct high-priority research that informs conservation actions and produces conservation evidence that leads to meaningful outcomes. Our approach focuses on developing technological solutions to reduce fatalities at wind energy facilities and identify what species are most at risk to prioritize conservation actions that will simultaneously support sustained growth of renewable energy development while protecting sensitive bat populations. Our body of current work includes research investigating the efficacy of technologies that reduce bat fatalities while minimizing impacts to energy production. This includes extensive research investigating acoustic triggered curtailment and predictive curtailment based on meteorological factors.

We support the Committee on the Status of Species at Risk in Ontario assessment that hoary bats, eastern red bats, and silver-haired bats are endangered and the Committee on Status of Endangered Wildlife in Canada assessment that the primary threat to these three species is direct fatality from collisions with turbines at wind energy facilities. This aligns with the threat assessment conducted across North America and published as "The state of the bats in North America"[1].

We support the use of curtailment to reduce bat fatalities at wind energy facilities. Curtailment is the only proven method to consistently reduce wind turbine fatalities of these species[2]. Ontario's outlined approach as an option between wind-speed only curtailment (to 7.0m/s) or a site-specific approach follows current best available science and practices.

Bat-curtailment practices are nuanced and rely on precise and clear language to achieve intended outcomes. Therefore, we suggest that guidance more clearly reference industry standard language on curtailment, cut-in speeds, and minimization techniques. This includes:

[1] The state of the bats in North America - Adams - 2024 - Annals of the New York Academy of Sciences - Wiley Online Library

[2] Conservation Evidence: Evidence Data

- Clarify that raising the cut-in speed includes feathering of blades below cut-in to prevent rotation of the blade.
    - This clarification is not made in the first mention of raising the cut-in speed and only marginally mentioned in one reference.
    - Please refer to page 51 in Whitby et. al. 2021 for standard definitions used since 2014[3].
- Remove references to 'smart curtailment'. This is not a clear term and often means different things to each reader. The standard in the industry and research communities is Acoustic-triggered curtailment (for curtailment that uses near real-time bat activity information from acoustics) and predictive curtailment (for algorithms that predict bat activity levels based on meteorological factors). These techniques can be combined, for example acoustic-triggered curtailment can be implemented only under specific conditions determined by a predictive algorithm.

Additionally, minimization measures can vary widely due to site-specific activity patterns and how the curtailment method is implemented. Whitby et. al 2021[3] notes some factors that influence outcomes, including where wind speed measurements are gathered (e.g., individual turbine, one turbine, or met tower) and the timespan used (e.g., 10 min average, 10 minute maximum, 20 min average, etc.). Differences in implementation are even more numerous and impactful as sophisticated curtailment techniques are used (e.g., acoustic-triggered or predictive). The following research demonstrates how implementation and outcomes vary greatly using customized site-specific curtailment techniques, even using the same system.

Acoustic Triggered Curtailment Efficacy Research:

- Bat Smart Curtailment: Efficacy and Operational Testing (Technical Report) | OSTI.GOV
- Curtailment Research Study for the Crescent Wind Project Hillsdale County, Michigan May 20 - Oct 15, 2021
- Evaluation of the Turbine Integrated Mortality Reduction (TIMRSM) Technology as a Smart Curtailment Approach (Final Summary Report) (Technical Report) | OSTI.GOV
- A smart curtailment approach for reducing bat fatalities and curtailment time at wind energy facilities - Hayes - 2019 - Ecological Applications - Wiley Online Library

Predictive Curtailment Efficacy Research:

- Developing and Evaluating a Smart Curtailment Strategy Integrated with a Wind Turbine Manufacturer Platform (Technical Report) | OSTI.GOV

In order to ensure that fatality reduction outcomes are met, we suggest that the Ontario guidelines:

- Include targets for fatality and/or acoustic exposure[4] reductions (e.g., 50% fatality reduction) for all methods, especially site-specific approaches.

Finally, we suggest that Ontario include a universal minimization strategy for all facilities that limits blade rotation when not generating electricity. This includes periods below manufactures

[3] tethys.pnnl.gov/sites/default/files/publications/Whitby-et-al-2021.pdf

[4] Acoustic Exposure to Turbine Operation Quantifies Risk to Bats at Commercial Wind Energy Facilities - Peterson - 2021 - Wildlife Society Bulletin - Wiley Online Library

cut-in speeds when electricity is not being generated. This minimization technique is often referred to by the ambiguous name of 'feathering', which originates from the method of implementation which is to rotate the blades (or feather) perpendicular to the wind so that blades rotate at less than 1 RPM. This method has been a wind industry best management practice since 2015[5], and is a measure recommended by the North American Society for Bat Research[6]. This technique has negligible impact to energy production and can be implemented for the entire bat active season (e.g., March–November).

If you have any questions about our comments, please do not hesitate to contact me at mwhitby@batcon.org.

Thank you,

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Bat Conservation International

[5] Wind energy industry announces new voluntary practices to reduce overall impacts on bats by 30 percent | ACP
[6] North American Society for Bat Research - Wind Energy