NOVA SCOTIA
Environment

Comment Index

Bear Lake Wind Power Project

Publication Date: December 13, 2023

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NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
Canada B3J 2P8

Date: October 31, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Environmental Health Consultant EH&FS

Subject: **Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia**

Scope of review:
This review focuses on the following mandate: Potential Health Impact

(Examples: hydrology and surface water quantity; surface water quality; air quality; species at risk recovery; wildlife species and habitat conservation; contaminated sites, etc.)

Details of technical review:

Potential Health effects highlighted by the EA documents relate specifically to electromagnetic fields, ice throw, and electrical fires. The potential impact of these items is already addressed through the EA documents. Specifically noting the mitigation measures under 10.1.2 regarding items to be implemented to address ice throw. No additional requirements identified.

Key considerations: (provide in non-technical language)

Based upon the identified potential health impacts and the mitigations that will be in place as a requirement of 10.1.2 of the EA, there are no further comments or recommendations required from the EH&FS Division.

NOVA SCOTIA
Municipal Affairs and Housing
Municipal Affairs

Floor 8 North, Maritime Centre
1505 Barrington Street
PO Box 216
Halifax, NS Canada B3J 2M4
novascotia.ca

DATE: November 10, 2023

TO: Allison Fitzpatrick, Environmental Assessment Officer

FROM: Christina Lovitt, Provincial Director of Planning

SUBJECT: **BEAR LAKE WIND PROJECT: WEST HANTS REGIONAL MUNICIPALITY (WHRM) WITH SMALLER PORTIONS IN THE MUNICIPALITY OF THE DISTRICT OF CHESTER (CHESTER) AND HALIFAX REGIONAL MUNICIPALITY (HRM)**

Scope of Review:
This review focuses on the following mandates: Statements of Provincial Interest and engagement with municipalities.

List of Documents Reviewed:
Registration Document

Details of Technical Review:
The current land use zoning in each municipality is appropriate to accommodate this development. The Proponent met with several councillors and planning staff from each Municipality.

Statements of Provincial Interest:

- Drinking Water: No anticipated impact. There is no municipal drinking water in the area.
- Agricultural Land: No anticipated impact. There is no land zoned for agricultural use in close proximity to the study area.
- Flood Risk: No anticipated impact. There are no Flood Risk Areas under the Canada-Nova Scotia Flood Damage Reduction Program in the area. Based on Nova Scotia Environment and Climate Change requirements, the turbines must be 30 metres from watercourses.
- Infrastructure: No anticipated impact. There are no Municipal services in this area.
- Housing: No anticipated impact. HRM and Chester have setbacks for large scale wind turbines to avoid conflicts with residential uses, and WHRM will likely include setbacks in the Development Agreement as adequate separation distances is a policy criteria.

Key Considerations *(provide in non-technical language):*
There is no outstanding information and/or conditions. All components considered under DMAH's areas of mandate have been adequately addressed.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
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Halifax, Nova Scotia
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Date: November 23, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Water Branch – Elizabeth Kennedy

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
This review focuses on the following mandate: Surface water quality and quantity, Ground water quality and quantity, and Wetlands

List of Documents Reviewed:
EARD Submission

Details of Technical Review:

Groundwater:

In general, the proponent's proposed mitigations should reduce the potential for impacts on groundwater quality and quantity as a result of the project.

The EARD identified groundwater wells within the study and assessment areas. The EARD also identifies that naturally occurring uranium may be present in the local geology. Well owners are encouraged to test their well every 2 years for chemistry, including uranium, to ensure it meets health canada guidelines. Blasting has been identified as potentially being required, and the proponent has proposed appropriate mitigation of the risks (e.g. pre-blast surveys to be completed). The proponent may consider testing well chemistry during the pre-blast surveys if not already included.

Wetlands:

The proponent has considered impacts to wetlands and avoided wetlands where practicable. The mitigations highlighted in the EARD should reduce the anticipated impacts to wetlands.

There are some uncertainties on where Wetlands of Special significance (WSS) are located within the Project Area and what those impacts are. The proponent states that CBCL identified WSS however, no information is provided on the locations of these wetlands. Furthermore, the proponent states Strum did not identify any WSS in the most recent surveys yet several Species at Risk (SAR) birds dependent on wetlands were observed. There is no information providing the locations of these species and therefore, it is difficult to determine if additional WSS are located within the Project Area.

Surface water:

The EARD identified watercourses within the study area and determined those that will or may require watercourse alteration approvals. Two watercourses in the provincial mapping that intersect the study area and the project road that may require upgrading were not included in the

list of identified watercourses. These unidentified watercourses are just north and east of WC1. It is possible that these watercourses were found to not be present during field studies, this could be clarified by the proponent. The risks of proceeding without clarification include a risk of altering a watercourse without a permit, the destruction of aquatic habitat, loss of connection with downstream portions of the watercourse, and altered hydrology on a small area of the site.

The EARD committed to maintaining the natural hydrology of the site. A surface water management plan may be helpful in this as the site crosses several watershed divides.

The EARD committed to appropriate measures to mitigate risks to the surface water quality and quantity in the 'aquatic environment' portion of section 11.2, as well as in sections 13.1 and 13.3. These measures included the development of a site-specific erosion and sediment control (ESC) plan, targeting disturbance to banks. More risks to aquatic systems could be mitigated/reduced by including all construction areas draining directly to watercourses in this ESC plan.

The EARD mentions road salting as part of winter maintenance. Streams and wetlands can be sensitive to chloride additions from road salt which can alter ecosystem structure. Risks to streams and wetlands could be mitigated with a salt management plan that would aim to minimize salt application while maintaining safe road surfaces.

Key Considerations:

Groundwater:
A condition within the EA Approval to require the replacement of any impacted water supply would mitigate unexpected impacts on groundwater users.

Wetlands:
Figures and a table demonstrating which wetlands are designated as a WSS and a list of all wetlands where SAR fauna were observed would be necessary to properly evaluate impacts to wetlands from the Project.

Surface Water:
Risks were appropriately identified in the EARD, most risks could be mitigated with the standard conditions. Two provincially mapped watercourses that would intersect with the project/construction area were not identified in the EARD, to prevent risks associated with unauthorized alterations, the status/locations of these watercourses could be clarified or verified with the proponent.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
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Date: November 20 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Neil Morehouse Manager Protected Areas and Ecosystems

Subject: Bear Lake Wind farm **Project,**

Scope of review:
This review focuses on the following mandate: Protected Areas and Ecosystems

List of Documents Reviewed: Wilderness Area Protection Act, Special Places Protection Act

Details of Technical Review: Nearest Protected areas is about 5 KM away. South Panuke Wilderness Area

Key Considerations: (provide in non-technical language)
No further comments

60 Research Drive
Suite A
Bible Hill, Nova Scotia
B6L 2R2

NOVA SCOTIA

Agriculture

Date: November 21, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Heather Hughes, Executive Director, Policy and Corporate Services, Nova Scotia Department of Agriculture

Subject: Bear Lake Wind Power Project
Municipalities of West Hants, Chester, and Halifax, Nova Scotia

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Thank you for the opportunity to review the documents for the above-noted project.

No agricultural impacts are anticipated given that:

- The project is located on class 7 land, which is unsuitable for agriculture.
- The closest registered farm is approximately 2.6 km away from the nearest proposed wind turbine.
- The closest agricultural land is approximately 1 km away from the nearest proposed wind turbine.

From:	Wade,Suzanne (ECCC)
To:	Fitzpatrick, Allison
Cc:	Wade, Suzanne (EC); Hingston,Michael (il, lui | he, him) (ECCC); Mailhiot,Joshua (ECCC)
Subject:	Bear Lake Wind Power Project, NS - EA Registration (23-NS-022)
Date:	November 21, 2023 1:22:44 PM
Attachments:	image001.png BatSAR_SurveyProtocol_Treed_Habitats_ONMNRF_2017.pdf CanadianNightjarSurveyProtocol_2022.pdf Wind_CWS Atlantic Guidance Update for Wind Energy and Migratory Birds - April 2022_EN.pdf

Hi Allison,

Environment and Climate Change Canada (ECCC) has reviewed the EA Registration document for the proposed Bear Lake Wind Power Project, submitted by Bear Lake Wind Farm Ltd. (Membertou First Nations and Everwind Fuels) to install 15 turbines with individual generating capacity of 5.2 to 7.0 MW (total height 206.5 m) and associated infrastructure, including a substation, laydown areas, transmission lines, 24 kms existing access roads (to be upgrades where required) and 15 kms of new access roads, located near the community of Upper Vaughn, New Ross and Windsor Folks, Nova Scotia, and we offer the following preliminary comments:

WILDLIFE COMMENTS

Attachments and References:

- Environment and Climate Change Canada's Canadian Wildlife Service (CWS) (Atlantic Region) "*Wind Energy & Birds Environmental Assessment Guidance Update*" (ECCC-CWS-ATL, 2022) (not available online – regionally specific advice);
- *Wind Turbines and Birds - A Guidance Document for Environmental Assessment*" (CWS(a), 2007) (http://publications.gc.ca/site/eng/9.698741/publication.html);
- *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds"* (CWS(b), 2007) (http://publications.gc.ca/site/eng/9.698742/publication.html);
- Canadian Nightjar Survey Protocol (2022)
- *Survey Protocol for Species at Risk Bats within Treed Habitats, Little Brown Myotis, Northern Myotis & Tri-Colored Bat* (Ontario Ministry of Natural Resources and Forestry, **2017**); Note: there is a 2022 update, but our expert recommends the Phased approach described in the 2017 guidance.

General

1. Given that the project is registered under Nova Scotia's *Environment Act*, EA Regulations, it remains the discretion of the province whether sufficient information has been provided to assess the Project under their jurisdiction and responsibility.

2. ECCC does not have any permits (or authorizations) or approvals in relation to the proposed project. Any advice that is provided by ECCC is intended to support the Nova

Scotia Department of Environment and Climate Change (NSECC)'s EA review process. The Proponent is responsible identifying measures which ensures their compliance with the *Migratory Birds Convention Act* (MBCA) and the *Species at Risk Act* (SARA).

3. ECCC-CWS notes that the results of a search of CWS data inventories and guidance were provided to Nova Scotia Power Inc. as the Proponent during the early planning (pre-EA) phase of this project (ECCC, January, 2022).

4. ECCC-CWS notes that the EA registration indicates that survey protocols where developed based on information and guidance provided in ECCC's "*Wind Turbines and Birds: A Guidance Document for Environmental Assessment*" (Environment Canada 2007a), "*Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds*" (Environment Canada 2007b) and Environment and Climate Change Canada's Canadian Wildlife Service (Atlantic Region) – Wind Energy and Birds Environmental Assessment Guidance Update (2018). Note: An ECCC 2022 update is now available and attached for consideration.

5. ECCC-CWS notes that the environmental assessment (EA) includes a primary round of avian survey results (2022), with a secondary round of surveys underway (2023) "*results pending to follow post-EA*". It is unclear if plans are to commence the project prior to reviewing the results of year 2 baseline.

   ECCC recommends that the EA clarify whether there will be an opportunity to review and provide comments on the results of year 2 baseline monitoring which will inform effects EA conclusions and recommendation for mitigation and future monitoring.

6. There are many examples hedging and ambiguous wording, such as, "*to the extent possible*" and "*to the extent feasible*" when describing mitigation measures.

   ECCC-CWS recommends removing ambiguous wording. The EA should clearly describe commitments to mitigation measures to avoid/minimize potential effects on migratory birds and species at risk (SAR), and where effects cannot be avoided/minimized, a proposed plan to mitigate residual impacts should be described (e.g., monitoring plan, scheduling, buffers, offsetting measures, etc.). Contingency plans identifying mitigation measures should be prepared to address all scenarios that may impact migratory birds and SAR during all of times of the year and all project phases.

7. If considering wildlife protection, mitigation, monitoring and adaptive management plans as part of potential approval conditions related to avifauna and/or migratory bird SAR, ECCC recommends clarifying what elements are expected to be included, and that the consultation process is clear for all parties.

   The preference for ECCC is that any documents and requests for advice from the proponent be submitted and coordinated through NSECC as part of their EA process via the ECCC-EA window.

8. The modernized *Migratory Birds Regulations* (MBRs) under the *Migratory Birds Convention Act* (MBCA) came into effect on July 30, 2022, allows for flexibility with respect to the removal of nests (Canada Gazette, Part 2, Volume 156, Number 12: Migratory Birds Regulations, 2022). Per the new provisions under the modernized MBRs, the nests of all migratory bird species are protected when they contain a live bird or a viable egg (i.e., during the nesting period), excluding the nests of 18 species listed in

Schedule 1 of the regulations whose nests are reused and remain protected year-round.

For more information on the amended nest protections, frequently asked questions on how these protections apply to migratory birds and your responsibilities for reporting abandoned nests, please visit Fact Sheet Nest Protection Under the Migratory Birds Regulations, 2022and Frequently Asked Question, Migratory Birds Regulations, 2022.

9. ECCC-CWS recommends that the provincial departments responsible for SAR be contacted for technical expertise on species under their jurisdiction and management responsibility (e.g., birds that are not protected by the MBCA such as raptors, bats, reptiles, amphibians, land-mammals, insects, plants and lichen).

Specific Comments

Avifauna – Breeding Bird Survey (Appendix N)

10. ECCC-CWS notes that the Proponent states in the EA Registration document that ECCC, 2007 guidance and protocols were referenced in conducting field surveys (2022); however, these do not appear to have been referenced in Appendix N Breeding Bird Survey.

11. ECCC-CWS notes that sixty-six point counts were each visited once in June 2022. ECCC-CWS 2007 guidance recommends that point count be repeated twice over the course of the breeding season to ensure that both early and late breeders are detected. ECCC-CWS recommends any future survey effort include a consideration of both early and late nesters.

12. Avian SAR included in the list of "*probable breeders*" observed during the Breeding Bird Point Count Survey (2022) include:

- Chimney Swift (CHSW) (2), listed as 'Threatened' on Schedule 1 of SARA;
- Canada Warbler (CAWA) (3), listed as 'Threatened' on Schedule 1 of SARA;
- Common Nighthawk (CONI) (9), listed as 'Special Concern' on Schedule 1 of SARA;
- Olive-sided Flycatcher (OSFC) (2), listed as 'Special Concern' on Schedule 1 of SARA;
- Eastern Wood-pewee (EAWP), listed as Special Concern on Schedule 1 of SARA.

13. CHSW and CONI may have a collision risk with turbines during the breeding period since these species are aerial insectivore known to occupy open habitat areas in search of flying insects.

CONI would likely be at a higher risk because they are crepuscular, and potentially nocturnal, flying at various heights in search of food. They also defend their territories by aerial displays (wing booms) that might make them more susceptible to collisions if they choose to nest close to turbines.

CHSW do not forage at night, however, they do return to their roost shortly after sunset which could result in collision if turbines are located in an area where there are many CHSW returning to a roost at dusk.

ECCC-CWS recommends that the proponent identify mitigation measures, such as post-construction monitoring, including nightjar surveys (dusk and dawn), mortality monitoring, and adaptive management measures to monitor prevent bird strikes during the breeding season. Nightjar surveys will help to determine if these species are being displaced by the project. While mortality surveys will assist in determining whether these species are colliding with turbines or turbine blades, or whether they are able to avoid them while foraging at night.

ECCC-CWS recommends referencing the Canadian Nightjar Survey Protocol (2022) (attached) when planning nightjar surveys.

14. ECCC-CWS notes that there were no observations of Eastern Whip-poor-will, listed as 'Threatened' on Schedule 1 of SARA, however nightjar survey timing may have missed the survey window for this species.

    While Common Nighthawk are crepuscular, Eastern Whip-poor-will are nocturnal and only begin to vocalize 30 minutes after sunset. ECCC-CWS recommends extending nightjar survey time 2hrs after sunset to also capture the EWPW window.

15. Page 195 of the EA Registration, Chimney Swift, it is stated: "*Chimney Swift were observed during breeding bird surveys on two occasions, with each individual calling. While habitat modelling shows few areas suitable for breeding and nesting, it is possible that they could be nesting near the Assessment Area in old-growth forests protected under the Nova Scotia Old-Growth Forest Policy, as these forests often provide some of the larger cavities that Chimney Swift require for nesting. Given that no evidence of breeding behavior was observed during breeding bird surveys, it is expected that Chimney Swift use of the Study Area is primarily for foraging (Drawing 7.23.B)*". Drawing 7.23 B identifies potential CHSW Habitat; however, it is unclear if this is where they were observed.

    The lack of confirmed breeding evidence should not be used to infer minimal impact or interaction with the proposed project activities. ECCC-CWS recommends that observations of SAR landbirds singing or displaying in suitable habitat during the breeding season should be taken as evidence of possible breeding; confirmed breeding evidence is often difficult to obtain (or at least takes extended observation not usually observed during a single point count).

    ECCC-CWS notes that due to the observations of CHSW in the study area, the proponent mapped "***areas of dead stands****… Areas within 300m of wetlands were also mapped because of 3 out of the 5 main insect orders consumed by CHSW are associated with wetlands*".

    ECCC-CWS appreciates efforts to map and avoid wetland habitat and CHSW habitat to minimize potential effects; however, natural structures used by Chimney Swift for nesting include **living** or dead trees with hollow trunks, cavities, excavated by Pileated Woodpeckers, and rock crevices (COSEWIC, 2018).

    If there is CHSW habitat (e.g., roosting, nesting, foraging) found in the study area, ECCC-CWS recommends habitat be avoided, and mitigation measure identified to conserve habitat for this species (e.g., buffers, monitoring).

    ECCC-CWS recommends that mitigation measures include protecting large diameter nesting/roosting trees (>50 cm diameter at breast height (dbh) with a minimum 100 m buffer.

    The Recovery Strategy for the Chimney Swift (*Chaetura pelagica*) in Canada [Proposed] (2022-03-17) is available: Chimney Swift (Chaetura pelagica) (canada.ca).

16. ECCC-CWS notes that a Pileated Woodpecker (PIWO) was observed during Breeding

Bird Point Count surveys (2022) and is likely breeding in the area. PIWO is listed on Schedule 1 of the amended MBRs (2022) and continue to have year-round nest protection, unless they have been shown to be abandoned.

ECCC-CWS recommends that the Proponent reference the study area's PIWO nesting habitat using the ECCC's "Pileated Woodpecker Cavity identification Guide" available at: Pileated Woodpecker Cavity identification Guide.

PIWO typically use large (typically > 40 cm dbh, solid trees, with heart rot for nesting. Factors that determine suitable nest trees include:

- Prevalence of tree diseases, insects, and physical conditions (rot, breaks, cracks) that can weaken trees and make them more suitable for cavity excavation;
- The tree's size; nesting Cavities have been found in trees as small as 25 cm dbh (diameter at breast height), but are more often found in trees > 40cm dbh;
- Nesting Cavity entrance holes are about 10cm in diameter and found 8-15m above the ground.

For more information on the amended nest protections, frequently asked questions on how these protections apply to migratory birds, including Pileated Woodpecker, and your responsibilities for reporting abandoned nests, please visit Fact Sheet Nest Protection Under the Migratory Birds Regulations, 2022 and Frequently Asked Question, Migratory Birds Regulations, 2022.

17. American Woodcock was identified as commonly recorded species during spring avian acoustic surveys. This is a shy forest dwelling shorebird often found in regenerating forests, moist shrublands, and abandoned farmlands, where it seeks out a combination of dense thickets and small patches of bare ground for courtship and nesting. In the Maritimes this species is widely distributed, occurring in every region, but with larger gaps in the Valley Lowlands of NB, Cape Breton Highlands, and Western NS. Ground survey data indicate that the woodcock has declined throughout its range.

Dusk courtship flight in the spring may place them at higher collision risk with transmission lines and wind turbines from wind energy projects, often located in previously cleared forest areas.

ECCC-CWS recommends monitoring American Woodcock activity in cutover areas while conducting future nightjar and/or owl surveys as they also sing and display at dusk.

Nocturnal Migration Radar and Avian Acoustic Survey (Appendix P)

18. ECCC-CWS notes that one year of nocturnal radar and acoustic monitoring was conducted in the spring and fall, 2022. It is unclear if a second year is being planned or was undertaken in 2023.

ECCC-CWS recommendations for Category 4 projects are further described in CWS-ATL Wind Energy and Birds Environmental Assessment Guidance Update (2022) which recommends a minimum of two years consecutive baseline radar and acoustic data be collected in order to understand variance in flight height (i.e., bird movements) in relation to weather and environmental conditions.

19. ECCC-CWS notes that year one radar work is showing what is expected (i.e., a higher density and higher flying birds in autumn, and the spring has lower densities and lower flying birds moving through the area). While the numbers are low, and below the mean, ECCC-CWS notes that there are birds flying within the expected/projected height of the turbines – especially in the spring of the year.

    ECCC-CWS recommends clarifying environmental conditions in which spring birds were moving at those height (i.e., wind, fog, cloud cover, precipitation, etc.), and what species or family of birds based on radar echo pattern or size and/or cross-referencing with acoustic survey data. This information would be helpful in determining if there is any predictability to lower elevation flights, and may inform future mitigation.

    ECCC-CWS notes that radar targets/km/hr values in fall (607 t/km/hr) are about 6 times higher than in spring (93 t/km/hr), however, in the analysis of acoustic recording units reverses this ratio for vocalizations identified to species (16,585 in fall; and 74,892 in spring). It is suspected that this discrepancy is due to a number of factors: the BirdNET software used to try to identify fall nocturnal migrants to species may be limited for night flight calls (NFCs) which are very brief; birds moving through in fall are at moving at higher altitudes and not readily recorded; the higher density of birds in autumn may overwhelm BirdNET, and not be able to properly separate the signals/calls and identify high concentrations of sounds; birds moving through in the spring are in ‘breeding mode’ and may be more prone to use song, alarm, or breeding chip notes while migrating, whereas post-breeding birds will likely be just using NFCs.

    While BirdNet is supported by ECCC-CWS as a thorough approach to analyze existing data, we do not know it includes NFCs in their algorithms. ECCC-CWS recommends clarifying this point.

    The Proponent addresses some of these issues on page 28 of Appendix P, but does not propose alternative analytical approaches. ECCC-CWS recommends that the Proponent consider running other packages such as BirdVoxDetect, or OpenSoundScape – especially in fall – using existing data to address some of the software limitations that they address with BirdNET.

20. ECCC-CWS is not concerned with daily movements of shorebirds at this site, however, recent modelling of Motus data migration passage at night suggests that this site could be in a shorebird migration corridor.

    Acoustic surveys did not identify a large number of shorebirds; however, ECCC-CWS recommends clarifying whether BirdNet software used in the analysis is able to identify migrating shorebird night flight calls from acoustic recording units.

21. ECCC-CWS notes that the mitigation measures to minimize potential impacts on

migratory birds from the Project operations are not currently described, and, post-construction monitoring, environmental protection and adaptive management plan (s) are not included for review.

ECCC-CWS is of the view that the volume of birds found within the rotor swept area (RSA) during radar and acoustic studies warrants the need for a plan to mitigate potential impacts during optimal migration conditions.

Based on the level of concern (Category 4)(ECCC(a), 2007, 2018 and 2022), ECCC recommends that the proponent follow the precautionary principle and identify mitigation measures as part of the EA commitments which will avoid impacts on migratory birds and bats *before* they occur (e.g. blade feathering, remote temporary shut downs based on weather conditions, peak migration periods and times), as well as, undertake post-construction monitoring and adaptive management plan(s) to monitor residual effects (ECCC, 2022).

Wetlands

22. ECCC-CWS notes that 4.55 ha of delineated wetland habitat may be *directly* altered by the project from the construction of new road, substation and turbine pads. ECCC-CWS recommends clarifying potential indirect effects to wetlands, and identifying proposed mitigation measures to avoid/minimize impacts to wetland functions.

ECCC-CWS advocates for the conservation of wetlands in areas where wetland losses have already reached critical levels (e.g., NB, NS, PEI, southern Ontario, Prairies) and regionally important wetlands, as well as, wetlands used by avian SAR and SoCC as part of their lifecycle (e.g., Canada Warbler, Chimney Swift, Olive-sided Flycatcher Common Nighthawk, Greater Yellowlegs, Spotted sandpiper, etc.).

Bat Species at Risk

23. ECCC-CWS recommends that the Proponent consult with the province of Nova Scotia's Department of Natural Resources and Renewables – SAR Program for technical expertise on bats under their jurisdiction and management responsibility. ECCC-CWS is able to provide comments regarding the federal recovery strategy, including threats to the species. Our comments on bat SAR are also based on available ECCC expertise, but we recognize that the technical expertise and authority lies with the province.

ECCC-CWS notes that two years of SAR surveys are being undertaken, and that 2023 results are pending and will be discussed with NSDNRR.

24. Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) are small, insectivorous bats species at risk (SAR) that are listed as Endangered on Schedule 1 of the *Species at Risk Act* (SARA). The Recovery Strategy for the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), and the Tricolored Bat (*Perimyotis subflavus*) in Canada (2018) should be consulted: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/little-brown-myotis-2018.html .

It should be noted that Hoary Bat, Eastern Red Bat, and Silver-haired bat have been assessed as “Endangered” (COSEWEIC - 2023-05). ECCC-CWS recommends considering these species as though they are SARA listed SAR, in the event that they become listed during the lifetime of the Project.

ECCC-CWS notes that the EA concludes that the effects on bats SAR were determined to be "*moderate in magnitude, within the Local Assessment Area, medium duration, continuous, reversible and not significant*.”

ECCC is of the view that any additive mortality of the SARA listed bat species in White-nose Syndrome (WNS) affected areas, including mortality at wind turbines, has the potential to be biologically-important. The mortality of even a small number of remaining individuals, particularly breeding adults, or disturbance to maternity roosts, has the potential to negatively impact the survival of local populations, their recovery, and potentially, the development of resistance to the fungus that causes WNS.

ECCC-CWS reiterates that site selection is the most important component of a successful mitigation strategy for wind power development with turbines located as far from important bat features (hibernacula, maternity roosts) as possible.

ECCC-CWS recommends establishing a 100m <u>minimum</u> buffer around large diameter tree (s) (>25 cm dbh) with suitable <u>maternity</u> roost habitat characteristics until occupancy can be confirmed (see Appendix 1 for Excerpt from the Draft Bat SAR Residence Description).

25. ECCC-CWS recommends including EA commitments to mitigation measures for minimizing potential impacts to bat SAR during the Project’s Operational Phase before impacts occur, such as reducing cut-in speeds or altering the pitch/feathering the blades during high-risk collision periods (e.g., during migration or swarming) or when wind velocity is low.

<u>Herpetofauna</u>

26. ECCC-CWS recommends that the Proponent consult with the province of Nova Scotia’s Department of Natural Resources and Renewables – Species at Risk (SAR) Program for technical expertise on SAR Turtle surveys, monitoring and mitigation measures to avoid and minimize direct and indirect effects on turtle SAR under their jurisdiction and management responsibility. ECCC-CWS is able to provide comments regarding the federal recovery strategy, including threats to the species. Our comments on turtle SAR are also based on available ECCC expertise, but we recognize that the technical expertise and authority lies with the province.

ECCC-CWS notes that four watercourses and associated riparian habitats within the Study Area were characterized as potentially suitable for summer forage and winter hibernation habitat for Wood Turtle, and a specimen of an Eastern painted turtle was found near a disturbed, gravel area between two wetlands with suitable summering and overwintering habitat.

September is the pre-overwintering period when SAR Turtles are in the forest; hatchlings emerge from nests early September to early October. ECCC-CWS recommends considering additional mitigation, such as, conducting vegetation clearing no earlier than mid-October to avoid risk of destruction of individuals, and mitigation measures for turtles found travelling to nesting and overwintering habitats during construction activities.

ECCC-CWS also recommends installing signage alerting drivers to reduce travel speeds in locations where there were incidental observations of turtle SAR along roads or gravel areas.

Lichen SAR

27. ECCC-CWS recommends that the Proponent consult with the province of Nova Scotia's Department of Natural Resources and Renewables – Species at Risk (SAR) Program for technical expertise on lichen surveys, monitoring and mitigation measures to avoid and minimize direct and indirect effects on lichens under their jurisdiction and management responsibility. ECCC-CWS is able to provide comments regarding the federal recovery strategy, including threats to the species. Our comments on lichen SAR are also based on available ECCC expertise, but we recognize that the technical expertise and authority lies with the province.

28. ECCC-CWS notes that we have records of occurrences of Wrinkled Shingle Lichen surrounding the Project's Study Area.

    Table 2 Rare and Sensitive Lichens (Appendix K Lichen Assessment) should be updated. The Wrinkled Shingle Lichen (*Pannaria lurida*) is a species listed as "Threatened" on Schedule 1 of SARA (2019-23-25) and the NS *Endangered Species Act*. This leafy brownish grey wrinkled lichen grows in wet areas and colonizes almost exclusively on the trunks of mature deciduous trees, most often red maple, that are at least 50 years old with rough bark. Only known from 56 occurrences in the Atlantic provinces, 90% of the occurrences are present in NS. It is estimated that the species has declined by 30% over the past 30 years. Threats include forest harvesting leading to removal of host trees, and the impact of climate change, leading to reduction in the amount of suitable moist climate.

    ECCC-CWS recommends identifying measures to avoid/minimize impacts on mature forest habitat where this lichen SAR may occur.

Additional Comments

29. The proponent should retain raw data (e.g., information on individual tracks) until appropriate data standards have been developed. Proponents are encouraged to share

and store data with:

0. The Atlantic Canada Conservation Data Center (http://accdc.com/en/contribute.html); and,
1. The Wind Energy Bird and Bat Monitoring Database (NatureCounts - Wind Energy Bird & Bat Monitoring Database) (Birds Canada 2022).

General "Standard" ECCC Advice and Recommendations:

Migratory Birds Convention Act

The federal *Migratory Birds Convention Act (MBCA) and its* regulations protect migratory birds and their eggs and prohibit the disturbance, damage, destruction or removal of migratory bird nests that contain a live bird or a viable egg. Migratory birds are protected at all times; all migratory bird nests are protected when they contain a live bird or viable egg; and the nests of 18 species listed in Schedule 1 of the MBR 2022 are protected year-round. These general prohibitions apply to all lands and waters in Canada, regardless of ownership. For more information, please visit: Avoiding harm to migratory birds - Canada.ca.

For migratory birds that are listed as Endangered, Threatened or Extirpated on Schedule 1 of the *Species at Risk Act* S.32 (protection of individuals) and S.33 (protection of residences) apply to all land tenure types in Canada. For some migratory bird species listed under the *Species at Risk Act* (SARA), the residence prohibition will protect nests that are not active but are re-used in subsequent years (please note that the residence of a migratory bird may not necessarily be limited to their nest).

It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations, and the SARA.

Vegetation Clearing

Clearing vegetation may cause disturbance to migratory birds, and may inadvertently cause the destruction of their nests and eggs. Most migratory bird species construct nests in trees (sometimes in tree cavities) and shrubs, but several species nest at ground level (e.g., Common Nighthawk, Killdeer, sandpipers), in hay fields, pastures or in burrows. Some bird species may nest on cliffs or in stockpiles of overburden material from mines or the banks of quarries. Some migratory birds (including certain waterfowl species) may nest in head ponds created by beaver dams. Some migratory birds (e.g., Barn Swallow, Cliff Swallow, Eastern Phoebe) may build their nests on structures such as bridges, ledges or gutters.

In developing mitigation measures, it is incumbent on the proponent to identify the best approach, based on the circumstances, to complying with the MBCA. The following should be considered during project planning:

- Avoid scheduling high disturbance activities, such as vegetation clearing, during the regional nesting period for migratory birds. Information regarding regional nesting periods can be found at: https://www.canada.ca/en/environment-climate-

change/services/avoiding-harm-migratory-birds/general-nesting-periods.html. Some species protected under the MBCA may nest *outside* these timeframes. For expected breeding date for Newfoundland by species: breeding dates_edited.xlsx (birdatlas.ca)

- The risk of impacting active nests or birds caring for pre-fledged chicks discovered during project activities *outside* of the regional nesting period can be minimized by measures such as the establishment of vegetated buffer zones around nests and minimization of activities in the immediate area until nesting is complete and chicks have naturally migrated from the area.

- In developing and implementing a wildlife management plan, preventative measures to minimize the risk of impacts on migratory birds should be considered (see "Avoiding harm to migratory birds: guidelines to reduce the risk to migratory birds" at https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/reduce-risk-migratory-birds.html).

Nest Searches

ECCC generally does not recommend nest searches or sweeps in vegetation prior to clearing during the breeding season. Nests in complex habitat are difficult to locate, and adult birds avoid approaching their nests in a manner that would attract predators to their eggs or young. In many circumstances, harm to migratory birds is still likely to occur even when active nest searches are conducted prior to development activities, except when the nests searched are known to be easy to locate without disturbance (e.g., previously cleared area, simple habitats, low vegetation).
Nest surveys may be carried out successfully by experienced observers using scientific methodology in the event that activities would take place in simple habitats (often in human-made settings) with only a few likely nesting areas or a small community of migratory birds. Examples of simple habitats include:

- An urban park consisting mostly of lawns with a few isolated trees;
- A vacant lot with few possible nest sites;
- A previously cleared area where there is a lag between clearing and construction activities and where ground nesters may have been attracted to nest in cleared areas or in stockpiles of soil; or,
- A structure such as a bridge, a beacon, a tower or a building (often chosen as a nesting spot by robins, swallows, phoebes, Common Nighthawk, gulls and others).

Nest searches can also be considered when looking for:

- Conspicuous nest structures (such as nests of Great Blue Herons, Bank Swallows, Chimney Swifts);
- Cavity nesters in snags (such as woodpeckers, goldeneyes, nuthatches); or,
- Colonial-breeding species that can be located from a distance (such as a colony of terns or gulls).

Should any nests or unfledged chicks be discovered, protection with an appropriate-sized buffer is expected. Note: Nests should not be marked using flagging tape or other similar material as this increases the risk of nest predation. ECCC CWS can be contacted for further advice on bird monitoring and/or mitigation if a nest is found.

Noise Disturbance

Anthropogenic noise produced by construction and human activity can have multiple impacts on birds, including causing stress responses, avoidance of certain important habitats, changes in foraging behavior and reproductive success, and interference with songs, calls, and communication. Activities that introduce loud and/or random noise into habitats with previously no to little levels of anthropogenic noise are particularly disruptive.

ECCC recommends the following best management practices:

- The proponent should develop mitigations for programs that introduce very loud and random noise disturbance (e.g., blasting) during the migratory bird breeding season for their region.
- The proponent should, where possible, prioritize construction works in areas away from natural vegetation while working during the migratory bird breeding season. Conducting loud construction works adjacent to natural vegetation should completed outside the migratory bird breeding season.
- The proponent should keep all construction equipment and vehicles in good working order and loud machinery should be muffled if possible.

Lighting Attraction and Migratory Birds

Attraction to lights at night, or in poor visibility conditions during the day, may result in collision with lit structures, or with other migratory birds. Disoriented migratory birds are prone to circling light sources and may deplete their energy reserve and either die of exhaustion or be forced to land where they are at risk of depredation.

To reduce the risk of disturbance or harm to migratory birds related to human-induced light, ECCC recommends implementation of the following beneficial management practices:

- Use the minimum amount of pilot, warning and obstruction lighting needed on tall structures. Warning lights should flash and completely turn off between flashes.
- Use the fewest number of site-illuminating lights possible in the project area. Only use strobe lights at night, at the lowest intensity and the smallest number of flashes per minute allowable by Transport Canada.
- Reduce lighting levels during severe weather events that may force migratory birds to land to prevent birds from landing in areas that would cause injury, harm, or death.
- Avoid or restrict the time of operation of exterior decorative lights such as spotlights and floodlights whose function is to highlight features of buildings or to illuminate an entire building. These lights, especially on humid, foggy or rainy nights, can draw birds from far away. Turn off these lights during the migratory season when the risk to birds is highest and during periods when birds are dispersing from their nests or colonies.
- Shield safety lighting so that the illumination shines down. Only install safety lighting where it is needed, without compromising safety.
- Shield street and parking lot lighting so that little escapes into the sky, and it falls where it is required. Consider using LED lighting fixtures as they are generally less prone to light trespass.
- The proponent should make all reasonable attempts to limit construction activities to the day and avoid illuminating the habitat adjacent to the worksite.

Transmission lines

Transmission lines have the potential to harm, injure, or kill migratory birds through increasing risks of collision and electrocution. The proposed placement of above-ground transmission lines should consider areas used as flight paths by migratory birds during migration, near shorebird staging and foraging involving overland daily movements, or while travelling from nesting to foraging areas, and/or along streams used by waterfowl.

ECCC recommends the following beneficial management practices to avoid potential harm to migratory birds associated with transmission lines:

- Avoid building transmission or distribution lines over, adjacent, or near areas where birds are known to congregate or move, including:
  - Important breeding, staging, moulting areas;
  - Breeding colonies; and
  - Between breeding and foraging areas.
- Design "avian-safe" configurations to reduce the risk of electrocutions, including:
  - Providing sufficient separation between energized phase conductors and between phases and grounded hardware;
  - Insulating exposed surfaces in high-risk areas;
  - Installing perch-management (e.g., perch guard) devices on poles; and
  - Removing or minimizing vegetation around poles and lines.
- Install measures on lines that reduce the risk of collisions:
  - Provide minimal vertical separation between lines;
  - Use self-supporting structures to reduce the number of guy wires; and
  - Use line-marking devices to increase the visibility of the lines.

ECCC-CWS recommends that the Proponent refer to Avian Power Line Interaction Committee (www.aplic.org) for an understanding of avian risks from power lines and guidance. Possible mitigation could also include the use of "flappers" on power lines to reduce strike: https://www.sciencedaily.com/releases/2020/06/200624151533.htm

The Proponent should consider installing underground transmission lines in high-risk areas for bird collisions.

Stockpiles

Certain species of migratory birds (e.g., Bank Swallows) may nest in unattended/vegetated soil/material stockpiles and banks in pits and quarries during the most critical period of the breeding season (April 15th through August 15th). To discourage this, measures should be considered to cover or to deter birds from these large piles of unattended soil during the breeding season. If migratory birds take up occupancy of these piles, any industrial activities (including hydroseeding) will cause disturbance to these migratory birds and inadvertently cause the destruction of nests and eggs. Alternate measures will then need to be taken to reduce potential erosion, and to ensure that nests are protected until chicks have fledged and left the area. For a species such as Bank Swallow, the period when the nests (i.e. the burrow – 'residence') would be considered active would include not only the time when birds

are incubating eggs or taking care of flightless chicks, but also a period of time after chicks have learned to fly, because Bank Swallows return to their colony to roost (see Description of Residence for Bank Swallow (*Riparia riparia*) in Canada: Description of Residence for Bank Swallow (Riparia riparia) in Canada - Document search - Species at risk registry) .

The Government of Canada (GoC) guidance document "*Bank Swallow (Riparia riparia) in Sandspit and Quarries*" (GoC 2020) offers advice in preparing mitigation measures in the management of stockpiles during construction activities: https://species-registry.canada.ca/index-en.html#/documents/1602

Fuel Leaks

The proponent must ensure that all precautions are taken by the contractors to prevent fuel leaks from equipment, and that a contingency plan in case of oil spills is prepared. Furthermore, the proponent should ensure that contractors are aware that under the MBR, "*no person shall deposit or permit to be deposited oil, oil wastes or any substance harmful to migratory birds in any waters or any area frequented by migratory birds*." Biodegradable alternatives to petroleum-based chainsaw bar oil and hydraulic for heavy machinery are commonly available from major manufacturers. Such biodegradable fluids should be considered for use in place of petroleum products whenever possible, as a standard for best practices. Fueling and servicing of equipment should not take place within 30 meters of environmentally sensitive areas, including shorelines and wetlands.

ECCC recommend incorporating a Wildlife Emergency Response Plan into emergency response contingency plans for scenarios that may impact avifauna directly (injury or mortality e.g., polluting incident) or indirectly (collisions causing mortality, stranding due to light attraction).

For consideration in emergency response and contingency planning related to accidents and malfunctions, ECCC has prepared *Guidelines for Effective Wildlife Response Plans* (ECCC 2022) available online at: https://www.canada.ca/en/services/environment/wildlife-plants-species/national-wildlife-emergency-framework.html.

The proponent is responsible for ensuring that all precautions are taken by the contractors to prevent fuel leaks from equipment, and that a contingency plan is prepared in the case of spills. Furthermore, the proponent should ensure that contractors are aware of section 5.1 MBCA prohibitions.

Events involving a polluting substance should be reported to the 24-hour environmental emergencies reporting system: **1-800-565-1633**.

Bird mortality incidents of 10 or more birds in a single event, or an individual species at risk, should be reported via ECCC Main Office **(506) 364-5044** or via email to: SCFATLEvaluationImpact-CWSATLImpactAssessment@ec.gc.ca.

Revegetation

A variety of species of plants native to the general project area should be used in revegetation efforts. Should seed mixes for herbaceous native species for the area not be available, it should be ensured that plants used in revegetation efforts are not known to be invasive.

ECCC recommends that mitigation measures identify revegetation efforts which includes enhancing native plant diversity. The Proponent should consult the Pollinator Partnerships Canada planting guide for Nova Scotia for information on native species for this region.

Invasive Species

Measures to diminish the risk of introducing invasive species should be developed and implemented during all project phases. These measures could include:

- Cleaning and inspecting construction equipment prior to transport from elsewhere to ensure that no vegetative matter is attached to the machinery (e.g., use of pressure water hose to clean vehicles prior to transport).
- Regularly inspecting equipment prior to, during and immediately following construction in areas found to support Purple Loosestrife to ensure that vegetative matter is not transported from one construction area to another.

Species at Risk

For federal impact assessments, the *Species at Risk Act* ss. 79(1) states that, "*Every person who is required by or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted, and every authority who makes a determination under paragraph 82(a) or (b) of the Impact Assessment Act in relation to a project must, without delay notify the competent minister or ministers in writing of the project if is likely to affect a listed wildlife species or its critical habitat*", and, SARA ss.79(2) "*The person must identify the adverse effects of the project on the listed wildlife species and its critical habitat and, if the project is carried out, must ensure that measures are taken to avoid or lessen those effects and to monitor them"*.

Measures should be:

- be consistent with best available information including any Recovery Strategy, Action Plan or Management Plan in a final or proposed version; and,
- respect the terms and conditions of the SARA regarding protection of individuals, residences, and critical habitat of Extirpated, Endangered, or Threatened species.

As part of an EA, ECCC recommends that the proponent present mitigation measures consistent with best available information including any Recovery Strategy, Action Plan or Management Plan (final or proposed version).

For species which are not listed under SARA, but are listed under provincial legislation only or that have been assessed and designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), it is best practice to consider these species in the EA as though they were listed under SARA.

Where adverse effects cannot be avoided or mitigated, ECCC recommends that the Proponent develop and implement a plan to address the residual adverse effects of the Project, and considering the principles that are described in *the Operational Framework for Use of Conservation Allowances* (ECCC, 2012).

Appendix 1

Excerpt from the Draft ECCC Residence Description (January 2022)

Little Brown Myotis and Northern Myotis

Any place used as a maternity roost by Little Brown Myotis and Northern Myotis is considered a residence. A maternity roost site may be a natural site, such as a cavity in a tree, a rock crevice, a cave or the underside of loose bark, or an anthropogenic site such as the underside of a bridge, an attic in a building or other structures (Fenton and Barclay 1980; Coleman and Barclay 2011). Little Brown Myotis is one of the few bat species that uses buildings and other anthropogenic structures to roost. Females are thought to select a quality maternity roost at the expense of travelling longer distances to forage possibly indicative of a limited number of suitable maternity roosting sites in foraging areas (Broders et al. 2006, Randall et al. 2014).

Maternity roosts in trees are often associated with natural holes, holes made by cavity excavators (*e.g.,* woodpeckers) or holes resulting from broken limbs or under loose bark. Typically, maternity roost sites are located in tall, large-diameter trees (DBH >30 cm), within forests (Kalcounis-Ruepell et al. 2005; Olson 2011; Olson and Barclay 2013) and older forest stands are preferred over younger forest stands (Barclay and Brigham 1996; Crampton and Barclay 1996; Jung et al. 1999). A larger tree size will usually house a larger number of bats (Olson 2011). Broders and Forbes (2004) found a preference for deciduous trees (Sugar Maple, Yellow Birch, and American Beech) and attributed this preference to deciduous trees' susceptibility to limb breakage and decay (creating available habitat for roosting), long-lived characteristics (permitting repeated use by bats), and their upland habitats with increased solar radiation (reducing energy costs to maintain the bat's body temperature).

Maternity roosts located in buildings tend to be located in warm but uninhabited areas of the building or in abandoned ones. Attics in older buildings are commonly used.

Tri-colored Bat

Little is known about maternity roosts of Tri-colored Bat. However, the species is known to roost in clumps of dead tree foliage and lichens and broken branches in coniferous and deciduous tree species (Veilleux et al. 2003, Perry and Thill 2007, Poissant et al. 2010). Tri-colored Bats also use barns and other anthropogenic structures for maternity roosts, and they may also use tree cavities, broken branches on trees, caves and rock crevices (Fujita and Kunz 1984). In Nova Scotia, a local population of Tri-colored Bat roosted solely in clumps of *Usnea* lichen and mostly within spruce trees (Poissant et al. 2010).

WATER QUALITY

Pollution prevention and control provisions of the *Fisheries Act* are administered and

enforced by ECCC. Subsection 36(3) of the *Fisheries Act* prohibits “anyone from depositing or permitting the deposit of a deleterious substance of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter such water”.

It is the responsibility of the proponent to ensure that activities are managed so as to prevent the release of substances deleterious to fish. In general, compliance is determined at the last point of control of the substance before it enters waters frequented by fish, or, in any place under any conditions where a substance may enter such waters. Additional information on what constitutes a deposit under the *Fisheries Act* can be found here: https://www.canada.ca/en/environment-climate-change/services/managing-pollution/effluent-regulations-fisheries-act/frequently-asked-questions.html

ACCIDENTS AND MALFUNCTIONS

Hazardous materials (e.g. fuels, lubricants, hydraulic oil) and wastes (e.g. waste oil) should be managed so as to minimize the risk of chronic and/or accidental releases. For example, the proponent should encourage contractors and staff to undertake refueling and maintenance activities on level terrain, at a suitable distance from environmentally sensitive areas including watercourses, and on a prepared impermeable surface with a collection system.

The proponent is encouraged to prepare contingency plans that reflect a consideration of potential accidents and malfunctions and that take into account site-specific conditions and sensitivities. The Canadian Standards Association publication, *Emergency Preparedness and Response,* CAN/CSA-Z731-03, reaffirmed 2014), is a useful reference.

All spills or leaks, such as those from machinery or storage tanks, should be promptly contained and cleaned up (sorbents and booms should be available for quick containment and recovery), and reported to the 24-hour environmental emergencies reporting system (Maritime Provinces 1-800-565-1633)

If you have any questions, please direct any further correspondence to ECCC’s environmental assessment window for coordination at: FCR_Tracker@ec.gc.ca.

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Survey Protocol for Species at Risk Bats within Treed Habitats

Little Brown Myotis, Northern Myotis & Tri-Colored Bat

April 2017

Ontario Ministry of Natural Resources and Forestry

Guelph District

Ontario

Introduction

This document describes Guelph District's recommended protocol for confirming presence/absence of Little Brown Myotis, Northern Myotis and Tri-colored Bat, where it is determined that suitable habitat for the establishment of maternity roosts is present.

This document replaces any previous versions of the survey protocol, and may be updated periodically as new information becomes available.

Note that those undertaking projects that may impact anthropogenic structures and isolated trees considered suitable habitat for bats should refer to Guelph District's *Survey Methodology for the Use of Buildings and Isolated Trees by Species at Risk (SAR) Bats*.

Little Brown Myotis (*Myotis lucifugus)*, Northern Myotis (*Myotis septentrionalis*) and Tri-colored Bat (*Perimyotis subflavus*) are listed as provincially endangered and receive species and general habitat protection under the *Endangered Species Act, 2007* (ESA).

Where the habitat of an endangered or threatened species is not prescribed by regulation, the ESA defines habitat as an area on which a species depends on, directly or indirectly, to carry out its life processes. Such processes include reproduction, rearing, hibernation, migration or feeding, as well as places being used by members of the species.

Throughout eastern North America, a disease known as white-nose syndrome (WNS), which is caused by the fungus *Pseudogmnoascus destructans*, is the primary cause of the decline of Little Brown Myotis, Northern Myotis and Tri-colored Bat populations. Where population numbers have significantly decreased due to WNS, the relative magnitude of other threats (e.g., habitat destruction) may increase. This is because the mortality or displacement of a small number of the remaining individuals can have a major impact on the survival of local populations and their recovery.

Many bat species are known to have high fidelity to their hibernacula and maternity roost sites. It is not uncommon for bats to return to the same roost tree or group of trees in successive years. Some bats switch roost trees periodically within the same treed area over the summer, likely to avoid predators or parasites or in search of a warmer or cooler roost.

Of the SAR bats species noted in this protocol, Little Brown Myotis is the most frequently encountered species in treed communities due to higher population numbers relative to other SAR bat species. Little Brown Myotis establishes maternity roosts within tree cavities and under loose or exfoliating bark, especially in wooded areas located near water. Foraging habitat includes over water and in open areas between water and forest. Favoured prey consists of aquatic insects (e.g., mayflies, midges, mosquitos and caddisflies). In agricultural environments, Little Brown Myotis tend to follow linear wooded features, such as hedgerows, for commuting and foraging.

Northern Myotis is less frequently encountered relative to Little Brown Myotis but selects similar maternity roost space. Northern Myotis roosts within tree crevices, hollows and under the bark of live and dead trees, particularly when trees are located within a forest gap. Northern Myotis switch roost trees more frequently compared to other SAR bat species (i.e., every 1-5 days) and are relatively

slow flyers. Northern Myotis is adapted to hunting in cluttered environments, such as within the forest along edges, where it gleans and hawks its prey (primarily moths).

Tri-coloured Bat establishes maternity roosts within live and dead foliage within or below the canopy. Oak is the preferred roost tree species, likely because oaks retain their leaves longer than other trees. Maples are also thought to be important for roosting, although maples are selected far less often compared to oaks. Some studies have shown that Tri-colored Bat prefers dead leaves over live leaves, especially if the dead leaves are situated on a live tree i.e., along a broken branch. Other documented roost sites include dogwood leaves, within accumulations of pine needles, in squirrel nests and in tree cavities. Within a forest, the location of maternity roost trees varies from dense woods to more open areas, although roosts are rarely found in deep woods. Although Tri-colored Bat switches roosts over the summer, this species has very high site fidelity to particular leaf clusters within a season. Foraging occurs along forested riparian corridors, over water (e.g., ponds and rivers) and within gaps in forest canopies. This species is an insect generalist, feeding on species such as leafhoppers, ground beetles, flies, moths and flying ants. The Tri-colored Bat is less frequently encountered compared to Little Brown Myotis and Northern Myotis. Unlike other SAR bats, Tri-colored Bat rarely roosts in buildings, and therefore relies heavily on treed areas for rearing its young.

Note: Confirmation of individual maternity roost trees is extremely challenging. Exit surveys are not always reliable, since SAR bats are known to periodically switch roost trees within a treed area over the summer. In addition, techniques used to confirm maternity roost trees, such as mist netting, are quite invasive and therefore not recommended.

The survey protocol that follows focuses on confirming presence/absence of Little Brown Myotis, Northern Myotis and Tri-colored Bat within treed habitats considered suitable for the establishment of maternity roosts, which is sufficient information to apply species and habitat protection under the ESA.

If an Ecological Land Classification (ELC) ecosite is determined to be suitable for the establishment of maternity roosts, trees with suitable attributes are present, and SAR bats are detected during the maternity roost season (June), it can be concluded with a high degree of certainty that the ELC ecosite represents the habitat most in use during the breeding season for roosting, feeding, rearing of young and resting.

Phase I: Bat Habitat Suitability Assessment

Little Brown Myotis, Northern Myotis and Tri-colored Bat establish maternity roosts in treed areas consisting of deciduous, coniferous or mixed tree species. For bats that roost under bark or within cracks, hollows or crevices, tree species is important only as it relates to its structural attributes. For example, trees that retain bark for longer periods or are more susceptible to fungal infections/attract cavity excavators are more likely to provide appropriate roosting space.

Following the completion of ELC mapping of a study area, any coniferous, deciduous or mixed wooded ecosite, including treed swamps, that includes trees at least 10cm diameter-at-breast height

(dbh) should be considered suitable maternity roost habitat. For cultural treed areas, such as plantations, consultation with the Ministry of Natural Resource and Forestry (MNRF) is recommended to determine if these habitats may be suitable for the species.

If suitable habitat is to be impacted by a proposed activity, project proponents should proceed to Phase II. It is recommended that the proponent contact the MNRF to discuss the need for additional work with respect to SAR bats.

Phase II: Identification of Suitable Maternity Roost Trees

As previously described, Tri-colored Bat primarily roosts in tree foliage (mainly oak), while Little Brown Myotis and Northern Myotis select loose bark, cracks and cavities. Because of these differences, two separate field data sheets should be completed by the proponent to identify and map suitable roost trees for Tri-colored Bat (Appendix A) and Little Brown Myotis/Northern Myotis (Appendix B). The data collected in Phase II will help inform the positioning of acoustic monitoring stations in Phase III.

The timing of field visits is important in order for an observer to be able to clearly identify tree attributes that are suitable for the establishment of maternity roosts:

- **Tri-colored Bat**: field visits should take place during the leaf-on season the same year that acoustic monitoring is to be conducted so that foliage characteristic (i.e., dead/dying leaves along a dead branch) can be observed.

- **Little Brown Myotis/Northern Myotis**: field visits should occur during the leaf-off period so that the view of tree attributes (hollows, cracks etc.) is not obscured by foliage.

Note that for large ecosites (e.g., >10 ha) where a thorough walk-through may not be possible or practical, the proponent should discuss the study design for Phase II with the MNRF prior to undertaking field work.

i) Tri-colored Bat

Leaf roosts are shaped like umbrellas with a “roof” and a hollow core where bats rest. Studies have shown that oak leaves are the preferred roost site. Maple leaves are also selected, although less commonly. It is thought that Tri-colored Bat may prefer roost trees in open woodlands, as opposed to deep woods.

Within each ecosite identified as suitable maternity roost habitat in Phase I, the following trees should be documented on the field data sheet (Appendix A)

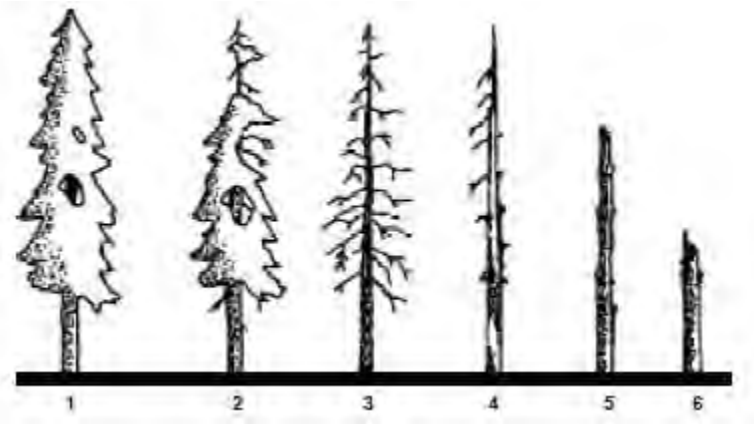
- any oak tree ≥10cm dbh
- any maple tree ≥10cm dbh IF the tree includes dead/dying leaf clusters
- any maple tree ≥25cm dbh

ii) Little Brown Myotis and Northern Myotis

Within each ecosite identified as suitable maternity roost habitat in Phase I, all “snags” should be identified and relevant information recorded on the field data sheet provided in Appendix B.

For purposes of this exercise, a "snag" is any standing live or dead tree ≥10cm dbh with cracks, crevices, hollows, cavities, and/or loose or naturally exfoliating bark.

During the field visit, the Decay Class should be noted for each snag (see Figure 1). Snags in an early stage of decay (which also includes healthy, live trees) may be preferred by Little Brown Myotis and Northern Myotis if suitable attributes for roost space are present. However, since SAR bats will also roost in snags outside of Class 1-3, any snag >10cm dbh with suitable roost features should be documented. For trees with cavities, the entrance can be high or low ("chimney-like") on the tree.



1. Healthy, live tree
2. Declining live tree, part of canopy lost
3. Very recently dead, no canopy, bark intact, branches intact
4. Recently dead, bark peeling, only large branches intact
5. Older dead tree, 90 percent of bark lost, few branch stubs, broken top
6. Very old dead tree, advanced decay, no branches, parts of the stem have rotted away

Figure 1: Snag classification (Decay Class 1-3 is considered an early decay stage)[1]

In addition, proponents should be aware that some tree species, such as shagbark hickory, silver maple and yellow birch, have naturally exfoliating bark that may be suitable for establishing maternity roosts. Trees ≥10cm dbh exhibiting these characteristics should be considered "snags" as per the definition above and included on the field data sheet provided in Appendix B.

Note: For efficiency (especially for larger ecosites e.g., >10 ha), a proponent may choose to undertake snag density surveys while conducting the work required in Phase II. For a detailed methodology, refer to Phase IV of this protocol.

[1] Watt, Robert and Caceres, M. 1999. Managing snags in the Boreal Forests of Northeastern Ontario. OMNR, Northeast Science & Technology. TN-016. 20p.

Phase III: Acoustic Surveys

Within each ELC ecosite determined to be suitable maternity roost habitat in Phase I, acoustic surveys are recommended to confirm presence/absence of Little Brown Myotis, Northern Myotis and Tri-colored Bat. As described below, acoustic detectors should be placed in the best possible locations in order to maximize the probability of detecting all three SAR bats species. The data collected in Phase II should be used to select optimal locations for monitoring. The trees to be targeted for acoustic monitoring will typically be a subset of the trees documented in Phase II.

Density and Optimal Location of Acoustic Monitoring Stations:

Multiple stations may be required to cover an ecosite adequately (see example in Figure 2). Based on the microphone range of most broadband acoustic detectors (20-30m), **4 stations/hectare** is needed for full coverage of an ELC ecosite.

Strategic placement of acoustic detectors is critical for the successful isolation of high-quality bat calls. Recommended positioning is to locate acoustic detectors **within 10m of the best potential maternity roost trees**. To increase the probability of detecting all three SAR bat species, detectors should be divided proportionally to target suitable roost trees (if present) for Tri-colored Bat and Little Brown Myotis/Northern Myotis.

Prior to undertaking acoustic surveys, it is recommended that the proponent discuss the proposed location of acoustic monitoring stations with the MNRF.

(i) Tri-colored Bat

Although Tri-colored Bat will roost within both live and dead foliage, it appears that reproductive females may prefer clusters of dead leaves, especially if they are situated on a live tree. Using the information collected on the field data sheet (Appendix A), the best suitable maternity roost trees for Tri-colored Bat should be selected according to the following criteria (in order of importance):

If oaks are present:

- Live oak with dead/dying leaf clusters
- Dead oak with retained dead leaf clusters
- Live oak (no dead leaf clusters) with the largest dbh (>25cm)
- Oak within a forest gap

If oaks are absent:

- Live maple with dead/dying leaf clusters
- Dead maple with retained dead leaf clusters
- Live maple (no dead leaf clusters) with the largest dbh (>25cm)
- Maple within a forest gap

Note that if a cluster of tree species with attributes preferred by Tri-colored Bat is present, this may be a good area to target acoustic monitoring.

(ii) Little Brown Myotis and Northern Myotis

Bats that roost under tree bark or within crevices or cavities frequently select the tallest and largest diameter snags, which often extend above the forest canopy. This is because larger snags better retain solar heat, which benefits the pups. Tall trees within a forest gap or along an edge may also have a less obstructed flight approach for bats.

Using the information collected on the field data sheet completed in Phase II, the best suitable maternity roost trees for Little Brown Myotis/Northern Myotis should be selected using the following criteria (in order of importance):

- Tallest snag
- Snag exhibits cavities/crevices often originating as cracks, scars, knot holes or woodpecker cavities
- Snag has the largest dbh (>25 cm)
- Snag is within the highest density of snags (e.g., cluster of snags)
- Snag has a large amount of loose, peeling bark (naturally occurring or due to decay)
- Cavity or crevice is high on the tree (>10 m) or is “chimney like” with a low entrance
- Tree is a species known to be rot resistant (e.g., black cherry, black locust)
- Tree species provides good cavity habitat (e.g., white pine, maple, aspen, ash, oak)
- Snag is located within an area where the canopy is more open
- Snag exhibits early stages of decay (Decay Class 1-3)

Note: The sole purpose of the above-listed criteria is to determine the best placement of acoustic monitors in order to maximize the probability of detecting Little Brown Myotis and Northern Myotis. The listed criteria are NOT intended for any type of snag “ranking”. Snags that do not include any of the above characteristics may still be used as a maternity roost site. For example, the absence of snags >25 cm dbh by no means indicates that there is no potential maternity roost habitat present on a site.

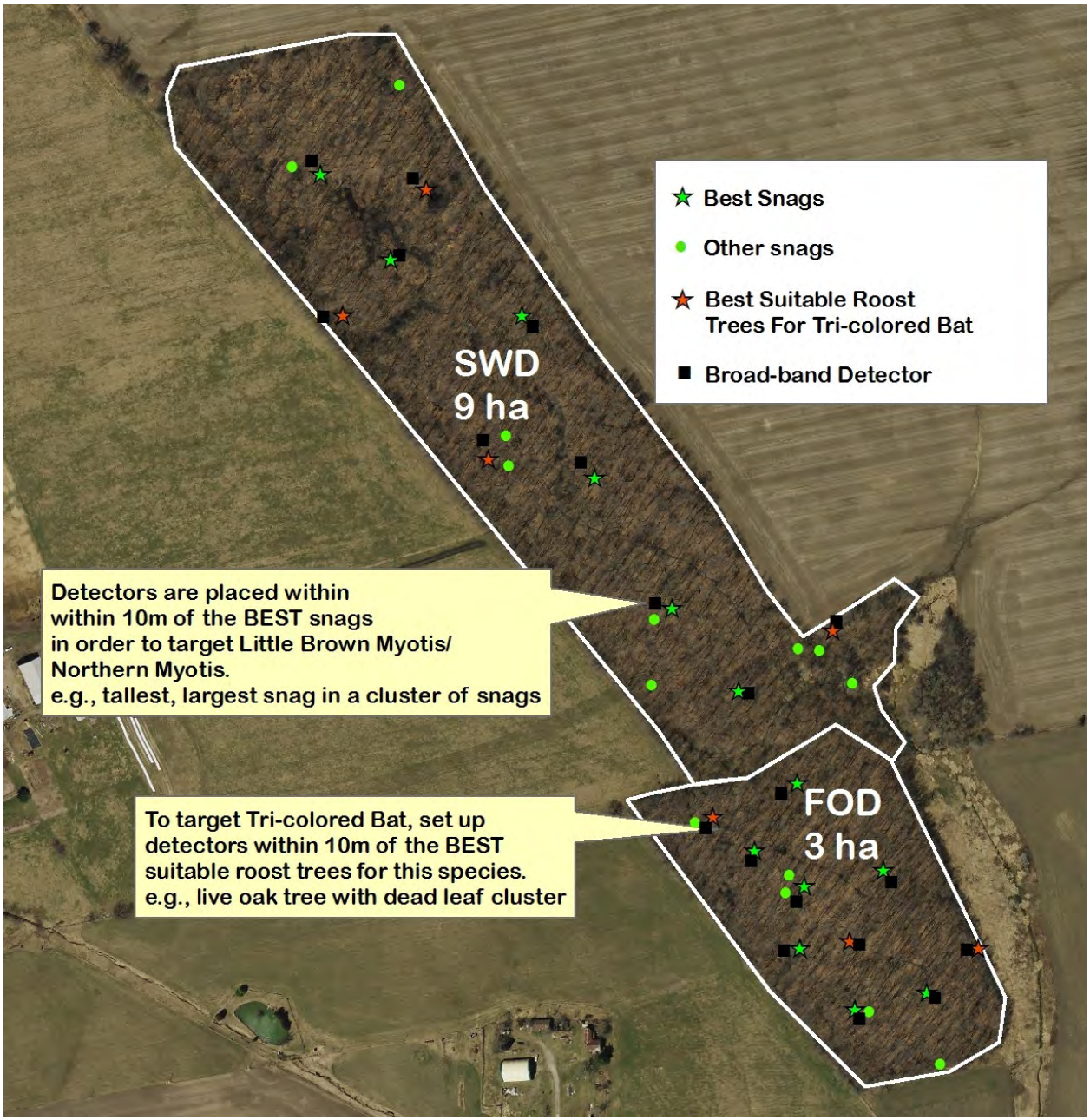


Figure 2: Hypothetical example illustrating the location and density of acoustic detectors i.e., 4/ha to a maximum of 10 per ELC ecosite.

Timing and Weather Conditions:

Acoustic surveys should take place on **evenings between June 1st and June 30th, commencing after dusk and continuing for 5 hours**.

Surveys should occur on warm/mild nights (i.e., ambient temperature >10°C) with low wind and no precipitation. At least 10 visits on nights that align with the above conditions where no SAR bat activity is detected are required to confirm absence.

Note that project proponents may cease survey work at any point once documentation of all three SAR bats species presence occurs.

Recommended Equipment Guidelines for Best Results:

- Broadband detectors (full spectrum) should be used. These may be automated systems in conjunction with computer software analysis packages or manual devices with condenser microphones.
- Acoustic monitoring systems should allow the observer to determine the signal to noise ratio of the recorded signal (e.g., from oscillograms or time-amplitude displays). These provide information about signal strength and increase quality and accuracy of the data being analysed.
- Microphones should be positioned to maximize bat detection i.e., situated away from nearby obstacles to allow for maximum range of detection and angled slightly away from prevailing wind to minimize wind noise.
- The same brand and/or model acoustic recording system should be used throughout the survey (if multiple devices are required), as the type of system may influence detection range/efficiency. If different systems are used, this variation should be quantified.
- Information on the equipment used should be recorded, including information on all adjustable settings (e.g., gain level), the position of the microphones, and dates and times for each station where recording was conducted.

Analysis:

Analytical software should be used to interpret bat calls and process results. Data should be analysed to the species level (as opposed to the genus level) in order to confirm presence/absence of SAR bats. Note that MNRF may request a copy of the raw acoustic data file when reviewing the results of the work completed in Phase III.

Additional Notes:

Project proponents should be aware that information about the number of bat passes detected in an area does not allow for an estimate of the number of bats present because there is not a 1:1 relationship between the number of passes and the number of bats responsible for those passes. It is not possible to distinguish between several bat passes made by a single bat flying repeatedly through the study area vs. several bats each making a single pass. Therefore, bat passes cannot provide a direct estimate of population densities.

Next Steps:

If Little Brown Myotis and/or Northern Myotis are detected, project proponents should proceed to Phase IV (Snag Density Survey). If only Tri-colored Bat is detected, snag density is not relevant and the proponent can proceed directly to Phase V (Complete an Information Gathering Form).

Phase IV: Snag Density Survey

Snag density information may be useful when the MNRF is considering the potential impact of a proposed activity on Little Brown Myotis and/or Northern Myotis. Snag density for each suitable ELC ecosite should be noted on the field data sheet provided in Appendix B. Surveys should take place during the leaf-off period so that the view of tree cavities, cracks and loose bark etc., is not obscured by foliage.

Snag density is a qualitative assessment of a treed ecosite, not a method of determining presence/absence of maternity roost habitat. There is no minimum threshold in terms of the number of snags/ha for an ELC ecosite to be considered suitable maternity roost habitat. However, an ELC with 10 or more snags/ha may be considered to be high quality potential maternity roost habitat. This information may be relevant when considering overall benefit in cases where a s.17(2)c permit under the ESA is required.

For smaller ecosites (e.g., <10 ha), snag density (# of snags/ha) can be calculated by dividing the number of snags mapped in Phase II by the total area of the ecosite.

Example:

ELC ecosite	Size (ha)	# of snags	Snag Density
WOD-M4	3.1	14	4.5 snags/ha
FOD-M2	0.8	9	11.25 snags/ha

For larger ecosites (e.g., >10 ha), sample plots can be used to estimate snag density within the suitable ELC ecosite, as follows:

- Select random plots across the represented ELC ecosite
- Survey fixed area 12.6m radius plots (equates to 0.05 ha)
- Survey a minimum of 10 plots for sites up to 10 ha, and add another plot for each additional ha up to a maximum of 35 plots
- Measure the number of suitable snags in each plot
- Use the formula πr^2 to calculate the number of snags/ha (where r=12.6m)
- Map the location of each snag density plot and record the UTM location using a GPS
- Calculate snag density for the ELC ecosite (snags/ha)

Example: **ELC Ecosite FOD-M2 (12 ha)**

# of sample plots	Total # of snags in sample plots	# of sample plots x r	Area of plots (πr^2)	Snag Density
12	48	12 x 12.6m = 151.2m	$3.14(151.2m)^{2} =$ $71784.9m^2$ = 7.18 ha	48 snags in 7.18 ha = 6.7 snags/ha

Phase V: Complete an Information Gathering Form

If SAR bats are detected during Phase III, the proponent should complete an Information Gathering Form (IGF) and submit it to the MNRF, Guelph District Office (esa.guelph@ontario.ca) for review. The IGF is available by searching the form repository on the government of Ontario website: http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf.

The MNRF will determine whether an activity is likely to kill, harm or harass a listed species and/or damage or destroy its habitat. The MNRF requires all of the necessary details and results from this survey protocol to be included on the IGF in order to make this determination.

For more information on overall benefit permits, including submission guidelines, process and timelines, please visit: https://www.ontario.ca/page/species-risk-overall-benefit-permits.

Appendix A – Suitable Maternity Roost Trees for Tri-colored Bat

Include all oak trees ≥10cm dbh (if present). If oaks are absent, include maples ≥10cm dbh IF dead/dying leaf clusters are present; and maples >25cm dbh if no dead/dying leaf clusters are present.

Project Name: Survey Date(s):

Site Name: Observer(s):

ELC Ecosite:

Tree#	Tree Species ID	Tree Status (live/dead)	Dbh (cm)	Tree Structural & Locational Attributes (check all that apply)	Easting	Northing	Notes
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			
				☐ dead/dying leaf cluster ☐ cavity ☐ open area/forest gap ☐ forest edge ☐ interior ☐ preferred tree species within 10m?			

Appendix B – Suitable Maternity Roost Trees for Little Brown Myotis/Northern Myotis

Include all <u>live and dead</u> standing trees ≥10cm dbh with loose or naturally exfoliating bark, cavities, hollows or cracks.

Project Name: Survey Date(s):

Site Name: Observers(s):

ELC Ecosite: Snag Density (snags/ha):

Tree #	Tree Species ID	dbh (cm)	Height Class[2]	Snag attributes (check all that apply)	Easting	Northing	Notes
				☐ cavity[3] ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?[4]			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			
				☐ cavity ☐ loose bark ☐ crack ☐ knot hole ☐ other snag within 10m? ☐ Decay Class 1-3?			

[2] **<u>Height Class</u>**: 1 = Dominant (above canopy); 2 = Co-dominant (canopy height); 3 = Intermediate (just below canopy); 4 = suppressed (well below canopy)

[3] The approx. height of the cavity should be noted. Note that cavities with an entrance near the ground may also be used by bats if they are "chimney-like".

[4] **<u>Decay Class</u>**: 1 = Healthy, live tree; 2 = Declining live tree, part of canopy lost; 3 = Very recently dead, bark intact, branches intact

Canadian Nightjar Survey: Protocol 2022

This protocol is the product of a series of working group meetings held from November 2015 to April 2016, and is adapted from the *Nightjar Survey Network* protocol from the Center for Conservation Biology (USA).

Contributions were made by the following individuals: Allison Manthorne (Birds Canada), Andrea Sidler (University of Regina; WildResearch), Audrey Heagy (Birds Canada), Elly Knight (WildResearch; University of Alberta), Gabriel Foley (University of Regina; WildResearch), Gilles Falardeau (Canadian Wildlife Service), Jean-Sébastien Guénette (Regroupement QuébecOiseaux), Jon McCracken (Birds Canada), Julie McKnight (Canadian Wildlife Service), Kathy St. Laurent (Canadian Wildlife Service), Kevin Hannah (Canadian Wildlife Service), Marie-France Julien (Regroupement QuébecOiseaux), Mark Brigham (University of Regina), Pam Sinclair (Canadian Wildlife Service), and Rhiannon Pankratz (Canadian Wildlife Service; WildResearch).

This protocol was prepared by Elly Knight, and the French translation was produced by Kevin Quirion Poirier and Audrey Lauzon.

Photo credits: Anne C. Brigham (Common Nighthawk); Alan Burger (Common Poorwill); Nicholas Bertrand (Eastern Whip-poor-will).

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TABLE OF CONTENTS

1. INTRODUCTION

Thank you for contributing to nightjar monitoring in Canada! Prior to surveying, please read this protocol in its entirety and familiarize yourself with the identification of nightjar species that may be found in your area. A one-page summary of the protocol can be found in Appendix A and used as quick reference in the field.

Conducting a Nightjar Survey is easy – anyone with good hearing and a vehicle can participate!

- Each route is a series of 12 road-side stops
- Each route needs to be surveyed once per year between June 15 and July 15
- Each survey starts 30 minutes before sunset
- At each stop, you will listen quietly for nightjars for six minutes and record information about your survey

2. OBJECTIVES

The data you are helping to collect will be used to expand our understanding of Common Nighthawks, Common Poorwills, and Eastern Whip-poor-wills across the country. Due to their nocturnal habits, nightjars are understudied, but there is concern about their declining populations. Common Nighthawks and Eastern Whip-poor-wills are listed as Threatened under the federal *Species at Risk Act*. Common Poorwills were assessed as Data Deficient by the Committee on the Status of Endangered Species in Canada (COSEWIC) in 1993. Information on nightjar distribution, abundance, habitat associations, and population trends is critical for conservation and management efforts.

The Canadian Nightjar Survey has been designed with four objectives in mind, to increase our understanding of nightjar species:

1. **Habitat associations and critical habitat mapping**: roadside citizen science data will cover a large geographic expanse and can be integrated with more locally-collected, non-roadside data to characterize nightjar habitat.
2. **Long-term population monitoring:** data collected will be compared to Breeding Bird Survey data after several years of data collection to determine whether the protocol increases the precision of population trend estimates.
3. **Distribution and abundance mapping**: data collected will help refine our understanding of the distribution and abundance of nightjars across Canada.
4. **Environmental assessment**: survey data could be used to inform environmental assessments by providing a baseline against which we can evaluate the potential impacts of development to nightjar species and their habitat.

3. NIGHTJAR BIOLOGY & IDENTIFICATION

Nightjars are a family of cryptic birds that forage for flying insects at night. These beautiful birds have long, pointed wings and are well camouflaged against the leaves and branches they roost upon during the day. Many of these species are highly migratory, some spending their winters as far south as Argentina. During the summer, nightjars breed across Canada, generally laying two eggs directly on the ground with no nest.

Due to their nocturnal behaviour and cryptic appearance, nightjars are rarely seen, so it is most important to learn how to identify nightjars by ear!

3.1. Common Nighthawk (*Chordeiles minor*)

3.1.1. Biology

The Common Nighthawk is found almost everywhere in Canada, except Newfoundland and the far north. This species is one of the last migrants to arrive, showing up across the country in late May and early June. It is generally found in open habitat such as grasslands, clearcuts, sandy areas, peatlands, rocky bluffs, open forests, and even urban areas. The nighthawk uses large areas – males are thought to defend territories for mating and nesting, but forage and roost outside those territories, sometimes up to several kilometres away. The Common Nighthawk is listed as Threatened due to steep population declines based on existing Breeding Bird Survey data.

3.1.2. Identification

The Common Nighthawk is the nightjar the most likely to be seen during surveys because it is more crepuscular than the others, meaning that it is most active at dawn and dusk. This species becomes active approximately 30 minutes before sunset, and remain active until 60 or 90 minutes after sunset. Nighthawks forage for insect prey during sustained-flight, much like swallows and swifts. Their bright white wing bars are a tell-tale way to identify it in flight.

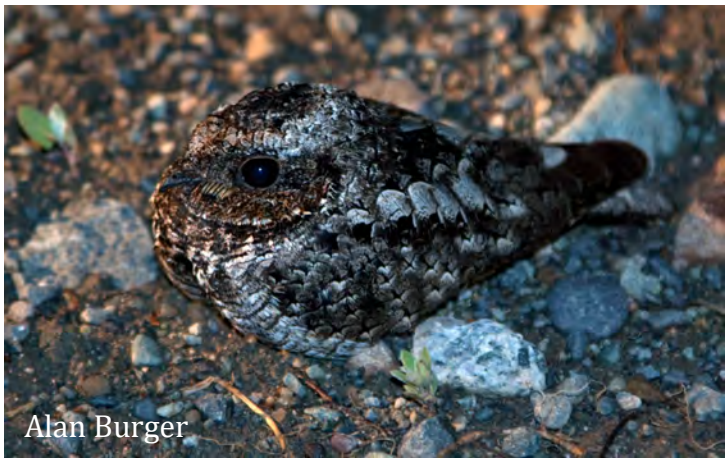
The Common Nighthawk can be identified by two different sounds. The first is a vocal "peent" or "beerb" call that is frequently made while in flight. The second is a mechanical wing-boom, made by air rushing through the down-curved wing tips of the male at the bottom of a steep vertical dive. Wing-booms are thought to be for territorial defense and mate attraction, much like the songs of male songbirds.

3.2. Common Poorwill (*Phalaenoptilus nuttallii*)

3.2.1. Biology

The Common Poorwill is found in the southern-most areas of central British Columbia, eastern Alberta, and western Saskatchewan. This species arrives in Canada in late April to early May to breed in semi-arid open habitats such as rocky bunchgrass hillsides and open forests. Common Poorwill population trends in Canada are unknown. The species was assessed as Data Deficient by the Committee on the Status of Endangered Species in Canada (COSEWIC) in 1993 due to insufficient information. The Common Poorwill is physiologically noteworthy in that it is one of the only bird species that can enter torpor (i.e., hibernation) for weeks at a time to conserve energy!

3.2.2. Identification

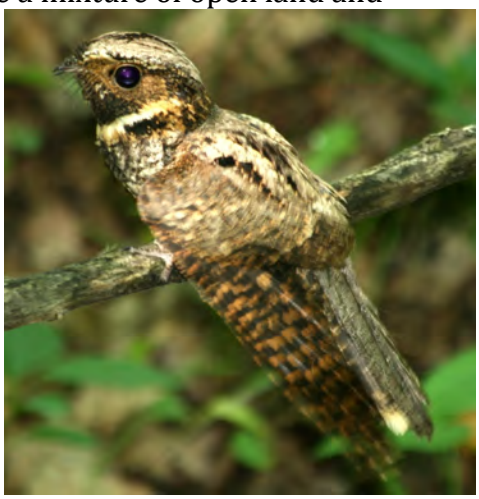

Alan Burger

The Common Poorwill is rarely seen because it is truly nocturnal and remain on the ground or perched, taking flight only to sally up and catch insects from the air. True to its name, the Common Poorwill is most readily detected by its "poor-will" call. This species begins calling about 30 minutes after sunset, and is most vocal during clear nights when the moon is at least half full.

3.3. Eastern Whip-poor-will (*Antrostomus vociferus*)

3.3.1. Biology

The Eastern Whip-poor-will is found from east-central Saskatchewan to Nova Scotia, with the majority of the population likely occurring in Ontario and Québec. This species arrives in Canada in early to mid-May, and occupies areas that are a mixture of open land and woods. It forages in open areas and uses wooded areas for perching and nesting. The Eastern Whip-poor-wills is listed as Threatened also due to steep population declines.



3.3.2. Identification

The Eastern Whip-poor-will is also rarely seen, but the species is distinguished by a white ring around the base of the neck and white spots on the outer tail feathers. It is most vocal during clear nights in June when the moon is at least half full, and it can repeat its characteristic

"whip-poor-will" call up to 100 times without stopping! It begins calling about 30 minutes after sunset, and calls for about 90 minutes each night.

3.4. Other Species of Interest

Other nocturnal and crepuscular species of conservation interest that it is useful to document, and that you might want to learn include:

- Owls
- Yellow Rail
- American Woodcock
- Chimney Swift

3.5. Identification Resources

To practice your nightjar and nocturnal bird species identification, we recommend the following resources:

3.5.1. Online – Before You Survey

- Dendroica: an interactive website designed to help learn bird identification. Listen to recordings and look at photos of potential species.
- Xeno-canto: an online database of recordings of birds from volunteers across the world.
    - Common Nighthawk (make sure to listen to some recordings with wing-booms)
    - Common Poorwill
    - Eastern Whip-poor-will
- The Cornell Lab of Ornithology's Macaulay Library is the world's largest collection of wildlife sounds and videos.

3.5.2. Apps – While You Survey

- iBird (nightjars are in the Pro, Canada, Ultimate, and Plus editions)
- Audubon Birds of North America (free)
- The Sibley eGuide to Birds

4. SURVEY OVERVIEW

4.1. Route

The Canadian Nightjar Survey uses unlimited radius point counts along permanent road-side survey routes so that survey data can be compared between years. The route framework is made up of permanent routes from:

- Breeding Bird Survey (every second stop of the first 23 stops)
- Routes in target habitat for Common Poorwills or Eastern Whip-poor-wills

Please contact your Regional Coordinator if there are no nightjar survey routes available near your area. It may be possible to establish a route designed to target a specific habitat, and in certain cases Breeding Bird Survey staff may consider establishing an additional route.

4.2. Stops

Each route consists of **12 survey stops each spaced 1.6 km apart** (straight line distance). Some routes may have 10 or 11 stops if there is not enough space for 12. The starting point of your route will be named Stop 1. Subsequent stops are sequentially numbered (i.e., 2, 3, 4, etc.). **It is critical that surveys be conducted at these same stops each year** so that data can be compared between years. To ensure the same stop locations are surveyed each year, volunteers will be able to access a route map and the coordinates of their survey stops via the NatureCounts sign-up and data entry portal or the coordinator.

4.2.1. New Routes

Some routes may never have been surveyed before, in which case the location of the stops will need to be determined by you and the coordinator, and will require extra time. You will be able to obtain a map of your route including satellite imagery, and **you will be required to collect information on stop location** (see Section 5.4). Stop locations are chosen with the following in mind:

- Stops should ideally be 1.6 km apart, and no less. Use your car odometer to measure the distance on straight roads.
- If your survey route road has curves, try to place stops at least 1.6 km apart (straight-line distance). Using a GPS will help determine the distance.
- Your safety is of first priority during nightjar surveys, so please ensure that your stops include a safe place to pull over and park.
- Avoid stop locations with excessive noise (e.g., near running water, barking dogs, etc.)
- It is better to add distance between stops rather than placing stops less than 1.6 km apart. This is to avoid counting the same birds twice.
- Not all of your stopping points need to be on the same road. Turning onto different roads may be necessary to find a safe place to park.
- We recommend scouting your route during daylight to become familiar with the stops.

4.3. Survey

At each survey stop, count all nightjars seen or heard for a period of **SIX minutes**. Counting birds and recording data should be done from a stationary position outside of your vehicle. To avoid data omission errors, record birds as you hear them, rather than waiting for the end of the six-minute period. Most importantly, be consistent. Use the same technique at each stop including how you focus your listening between nearby and distant birds. To ensure data are comparable between surveys by different volunteers, please:

- **DO NOT** use whistles, audio calls, or any method that coaxes birds to call or come closer
- **DO NOT** use a flashlight to search for reflections of bird eyes

See Section 5.3 for further details on how to record your nightjar observations.

4.4. Date

Surveys must be conducted between **June 15 and July 15**. **Each route needs to be surveyed once per year.**

If there is the potential for Common Poorwill or Eastern Whip-poor-will in your area, survey in the two-week period centered on the full moon (June 15 to 21 and July 6 to 15, 2022).

Excessive wind and rain will diminish the quality of surveys. **Do not complete surveys when wind speeds are Beaufort level 3 or greater, or if there is any precipitation.** If you begin a survey route and conditions deteriorate for more than 3 survey stops, we advise you to abort the survey and attempt it on another night with better conditions.

4.5. Time

Surveys **begin 30 minutes before sunset**, the time when nightjars are most active. Due to this timing requirement, only one route may be surveyed per night. Sunset is considered the beginning of official civil twilight for your survey route area and can be looked up online at:

http://www.nrc-cnrc.gc.ca/eng/services/sunrise/advanced.html.

To cover both the 6-minute nightjar survey and driving to your next survey stop, each stop will require about ten minutes to complete. The entire route will require a total time of approximately two hours.

5. DATA COLLECTION

A datasheet for data entry is available in Appendix B. Fill in each section of the datasheet according to the instructions in this section.

5.1. Survey Info

Fill in the route name, date, start time, and end time of the survey. Describe the general location and condition of the route including road condition and any safety concerns. Record the temperature at the beginning and end of your survey. Provide your name, mailing address, phone number, and email address for our records.

5.2. Stop Conditions

For each stop surveyed, **record the time the survey began**. We also ask that you record data on the conditions at each stop because factors such as wind and moon visibility can affect your chances of detecting a nightjar.

5.2.1. **Wind**

Record the wind speed using the Beaufort scale below. Do not conduct surveys if the wind force is greater than code 3.

Code	Wind Speed	Description
0	< 1 km/h	Calm: smoke rises vertically.
1	1-5 km/h	Light air: smoke drifts, leaves and wind vanes are stationary.
2	6-11 km/h	Light breeze: wind felt on exposed skin, leaves rustle, wind vanes begin to move.
3	12-19 km/h	Gentle breeze: leaves and small twigs constantly moving.

5.2.2. Cloud Cover

Rate the approximate amount of cloud cover at the time of your survey using tenths of sky covered. The codes are 0=clear; 1=10% cloud cover; 2=20% cloud cover; 3=30% cloud cover; 4=40% cloud cover, etc. up to 10=100% cloud cover or completely overcast. Code 11 can be used to indicate fog.

5.2.3. Moon

Enter yes or no to indicate if the moon can be seen while surveying. This is particularly important to record in deep valleys where the moon is often obstructed by the surrounding hills or mountain ridges.

5.2.4. Noise

Record the level of background noise at each stop using the following codes:

Code	Noise	Description
0	None or slight	Relatively quiet, little interference (e.g., distant traffic, dog barking).
1	Moderate	Some interference when listening for nightjars (e.g., airplane, moderate traffic)
2	High	Substantial interference when listening for nightjars (e.g., fairly constant flow of traffic)
3	Excessive	Extreme interference when listening for nightjars (e.g., continuous traffic passing, construction noise, loud frog chorus).

5.2.5. Cars

Count the number of cars that pass on the road during your survey.

5.3. Nightjar Detections

5.3.1. Nightjars

Each line on the data sheet represents an individual bird's detection history (see example on next page). Use a new line for each new bird detected at a stop. Do not record any detection data if no nightjars (or owls) were heard at a given stop. If you cannot accurately count the number of individuals by sight or by concurrent calls, make a note in the "comments" column of your data sheet. Use the following nightjar codes:

- CONI = Common Nighthawk
- COPO = Common Poorwill

- EWPW = Eastern Whip-poor-will

5.3.2. Detection Type

The survey period is broken into **6 one-minute intervals** on the data sheet. **For each bird heard or seen during each one-minute interval, indicate the highest ranked type.**

1. **Wing-boom (W):** If the bird performed a territorial wing-boom in that one-minute interval (Common Nighthawks only).
2. **Call (C):** If you heard the bird call during that one-minute interval.
3. **Visual (V):** If you saw the bird, but did not hear it during that one-minute interval.
4. **Not detected (N)**: If you did not detect the bird during a given one-minute interval.

Please also note whether or not you think the individual is a repeat bird, that is, one that you already reported at the previous stop.

Sample data entry: The observer detected one Common Nighthawk calling during the first 3 minutes of the survey at Stop 1, and performing wing-booms in minute 3. The observer then detected a second Common Nighthawk calling at Stop 1 during the 3rd and 4th minute of the survey, so began a new row on the data sheet for this bird. Using best judgment, the observer decided these were two individual Common Nighthawks, and not the same bird that moved after initial detection. At Stop 2, the observer did not detect any birds during the survey period, so did not record anything on the data sheet. At Stop 3, the observer detected one Common Nighthawk several hundred metres to the northeast, calling and performing several wing-booms per minute for the entire 6 minutes. A Common Poorwill was also heard calling in minutes 2 to 5 less than 100 metres to the south. At Stop 4, the observer saw two Common Nighthawks fly over in minute 2, one of which made a "peent". None of the birds were thought to be individuals recorded at a previous stop.

Stop (1-12)	Species	Time Interval						Repeat bird (circle)	Distance (circle)	Direction
		1	2	3	4	5	6			
1	CONI	C	C	W	N	N	N	Y (N)	< 100 m > 100 m	
1	CONI	N	N	C	C	N	N	Y (N)	< 100 m > 100 m	
3	CONI	W	W	W	W	W	W	Y (N)	< 100 m (> 100 m)	NE
3	COPO	N	C	C	C	C	N	Y (N)	(< 100 m) > 100 m	S
4	CONI	N	C	N	N	N	N	Y (N)	< 100 m > 100 m	
4	CONI	N	V	N	N	N	N	Y (N)	< 100 m > 100 m	

5.3.3. Distance and Direction

Recording the location of particular observations may help us learn more about the specifics of nightjar habitat requirements. Please estimate the distance and direction to your first detection of:

- Common Poorwills
- Eastern Whip-poor-wills
- Common Nighthawks performing repeated wing-booming in the same location (3 or more wing-booms).

You do not need to estimate distance and direction for Common Nighthawks that are not performing repeated wing-booming.

Estimate distance as one of the following:

- near (< 100 m)
- far (> 100 m)

Estimate direction using cardinal or intercardinal directions (e.g., north, east, south, west, northeast, north-northeast, etc.). If you are unsure of the direction, you may describe the direction relative to your vehicle and the road:

5.4. Stop Locations

This section of the datasheet should **only be filled out if your route has never been surveyed before or if you wish to recommend a stop location amendment.**

Stop coordinates must be recorded and submitted so that surveys can be conducted at the same stops in subsequent years. Ideally, location coordinates should be submitted as latitude and longitude in **decimal degrees** to six digits (e.g., 49.884128 N, 119.496301 W). There are several ways to obtain the coordinates for your new stop locations:

1. Use a handheld GPS and take waypoints at each of your stops.
2. There are many excellent GPS apps available for smartphones. If you have an iPhone, Android, or BlackBerry, you can turn it into a handheld GPS. Here are a few app options:
   - MotionX-GPS for iPhone
   - Free GPS for iPhone (Free)
   - GPS Test for Android (Free)
   - GPS Maps Location Finder for BlackBerry (Free)

3. Locate coordinates after survey completion in Google Earth. If you choose this option, we recommend marking stops on a printed map as you survey and using your car's odometer to keep track of how far apart your stops are.

6. EQUIPMENT

6.1. Essential

- Vehicle
- Protocol
- Datasheets (blank)
- Flashlight (ideally headlamp type)
- Watch or other device with a timer (e.g., phone)
- Several pencils/pens

6.2. Recommended

- An assistant/driver
- Map of route and stops
- GPS and/or phone with GPS app
- Thermometer for recording temperature at the beginning and end of your survey
- Road map for getting to your route
- Compass (for determining cardinal or intercardinal direction to birds)
- Clipboard
- Spare batteries (for flashlight or GPS)
- Insect repellent and/or mosquito-repellent clothing
- Safety vest or other reflective clothing.

7. SAFETY

Your safety is most important, so please ensure that you are conscious of your safety when conducting a survey. Please take the follow points into consideration:

- Consider conducting surveys in a team of two.
- If surveying alone, make sure someone knows where your survey route is and what time you will return. Please make sure that you contact this person when you get back.
- Park your vehicle well off the road during survey stops.
- Stand off the road surface when conducting surveys.
- Leave parking lights on throughout the duration of a count.
- Wear a reflective vest or use a headlamp so that other drivers are aware of your presence.
- Conduct the survey near the road to avoid trespassing on private property.
- Check your clothing and skin for ticks when you get home to prevent the transmission of Lyme disease and other tick-borne illnesses.

8. DATA SUBMISSION

8.1. Data Entry via NatureCounts

If possible, please set aside sufficient time (20 minutes or so, depending on whether you are adding comments or not) to enter all your data for a given survey in one sitting. If you are unable to do this, you can save an incomplete form and come back to it later (see below for details), but you will need to complete the page that you are working on, as saving an incomplete page is not allowed.

Step 1: Log on

Log on to the survey's NatureCounts portal:.
https://www.birdscanada.org/naturecounts/nightjars/main.jsp.

Click on "Sign in" in the main menu, enter your Login name and Password, and click on the blue "Sign in" button at the bottom of the page.

Step 2: Check that your stations are in the database

This step is facultative if you know that your stations are set up correctly.

Once you are signed in, place you cursor over the "Explore" tab and open the "Available Routes" map. Click on the blue marker for your route and select "adoption preferences" to see your route. Make sure that all the stations you wish to enter data for are showing and in the correct place. If your stops are not correctly displayed, please contact your coordinator so that the full route can be set up in the system.

Step 3: Submit data

Once you have checked that your stations are all showing, place you cursor over the "Submit" tab in the main menu bar at the top of the page and then click on "Submit Data".

This will open a new window and you can select your survey site from the drop down list. Routes are listed alphabetically by name. Be careful that you select your route and not an adjacent one in the list. You can also select your route by using the map and zooming into your area and clicking on the route button. Once your route is selected, click the blue "Continue" button

A data entry form will open. The first page is the Form Header. Enter the survey date and the name of any assistants. You can add names to the list by clicking on "Add observers". Save any changes to this list and click on the "Return to data form" button. You can then tick the appropriate box or boxes to add any assistants to the data form. You do not need to include your name as you are associated with the form as the primary observer.

Then enter the start and end temperatures that you recorded during the survey. Please just enter numbers here and not text.

You can add any relevant general survey or route comments to the "Comments" box. There are additional comments boxes for each station.

Once the Form Header page is completed, click on the "Next Page" button at the top or bottom of the sheet. This will save the sheet you have just completed and open the sheet for your first survey stop (called station on these forms).

You will see that "Station 1" is indicated in the "Jump To" box at the top of the page. Next, you will need to select the number of the stop that you surveyed first for the "Station" box. The drop down or scroll through list associated with this box lists all the stops for the route. For the first station, you will normally select "Stop 1", but if you did your route in reverse order, it will be "Stop 12" (for standard routes).

In the "Time and Effort" box, enter the time that you started surveying the stop. Do this using the 24 hour clock (i.e., 8:30 p.m. should be entered as 20 in the hour box and 30 in the minute box). Please note that for subsequent stops, if you accidently enter a time that is earlier than the previous station, this will generate an error message. You can put a later time on the page that you are working on, then save it and go back to the previous station and correct the time. Once this is done, you can return to the page you were working on and indicate the appropriate time.

Under "Weather and Survey Conditions" enter the wind speed and its direction (if noted), and the cloud cover (this is in tenths of sky covered, so 1 is equal to 10% covered, etc.)

Under "Other Variables", enter whether the moon was visible or not, the number of vehicles that passed as you were surveying (enter 0 if no vehicles passed by), and the noise level you recorded.

Then go to the "List of Species" box. If you did not hear or see nightjars at the stop, tick the box that indicates that you completed the survey for the stop but no nightjars were present.

If you did record night jars, use one row in the box per individual. Enter the name of the species in the first box. Let's say it was a Common Nighthawk. Then for each of the one minute time periods, note for that individual what you recorded. You might start with "N-Not detected" for the first two minutes, then perhaps "W-Wing boom" in the third minute and then a "C-Call" in the fifth minute and "W-Wing boom" during minute 6. If there were more than three wing booms given in total, note the distance to the individual (i.e., less than or greater than 100 m) and the direction it was in.

If, at a given stop, you think that you are hearing a bird from a previous stop, please indicate this by ticking the "repeat bird" box. But please don't use this box to indicate that a bird called multiple times at the stop that you are entering data for. *If this option is not in place yet, please add this information to the comments box for the stop.*

You can note other species that you may have recorded (e.g., owls) in the comments box for the stop and you can also note stop-specific comments. Then click on "Next Page", this will save your data and open the data form for the second stop you surveyed. Please only click on "Next Page" (or "Previous Page") after completing a page.

Complete this process for the number stops that you surveyed. If for whatever reason you were unable to collect data from one of your stops, simply take this into account in your choice of stop number. For example, if you were unable to survey stop 4, but were able to survey stop five, on the Station 4 page you would select Stop 5 and continue on from there.

If you have a problem you can delete the sheet for a given stop and start again from the last completed stop. Once you have entered all the data for all the stops you visited, click on "Finish Form" at the bottom of the page. Your form will then be submitted. This opens a summary of the data you have entered. Please read through this to make sure there are no errors. If everything is correct, you can simply log out. If you do need to make a correction, click on "Modify" and then go to the page you want to correct using the "Jump To" box at the top of the page. Then make the correction and click on "Finish Form" again.

If you need to take a break during the data entry process, complete the page of the form you are working on and click on "Save" and log out. When you are ready to complete the form, log in again and instead of going to "Submit data", select "Explore" and "View data forms". Then click on the "Edit" button associated with the form you wish to complete and simply continue from where you left off. Occasionally, if you return quickly to a form, it may generate an access error message. If this is the case, wait a while, preferably overnight and try again.

Your form is available for you to modify until it has been validated by the coordinator and finalized. Up until that point, you can make further modifications. Once the form has been finalized, you will still be able to consult it, but you won't be able to modify it. If you notice a mistake in a finalized form, you will need to contact your coordinator and request a correction.

If you have any persistent problems during data entry, simply contact your coordinator.

8.2. Other Options for Data Submission

If you are unable to enter your data online, you can also submit your data using one of the following options:

- Scan/photograph your data sheets and email them to acoughlan@birdscanada.org
- Mail your data sheets to:

  Andrew P. Coughlan
  Director, Québec Region
  Birds Canada
  346, rue Fraser
  Québec (Québec) G1S 1R1

APPENDIX A: QUICK-REFERENCE PROTOCOL SUMMARY

Quick-Reference Protocol Summary

The Protocol Summary is intended as a quick reference when you are in the field. Please use the summary once you have read and are familiar with the full survey protocol.

Survey: Listen quietly for a period of six minutes.

Route: Each route consists of 10 to 12 survey stops spaced at least 1.6 km apart and numbered consecutively.

Date: Survey once between June 15 and July 15. For 2022, survey between June 15 and 21 or July 6 and 15, if you may have Common Poorwills or Eastern Whip-poor-wills in your area. Do not survey when wind speed is greater than Beaufort Scale 3, or rain is stronger than a light drizzle.

Time: Begin at 30 minutes before sunset (civil twilight for your area). It will take about 10 mins to survey one stop and travel to the next, for a total survey time of 2 hours.

Data collection – Stop Conditions: At each survey, record the time your survey began, wind strength, cloud cover, whether the moon is visible, the level of background noise, and the number of cars that pass.

Data collection – Nightjar Detections: Each line on the data sheet represents an individual bird's detection history.

- If you did not detect nightjars at a given stop, you do not need to fill out a row for that stop.
- The survey period is broken into six one-minute intervals on the data sheet.
- For each bird detected in each one-minute interval, record the code for the highest ranked detection type you observed:
    1. W (wing-boom, Common Nighthawks only)
    2. C (call)
    3. V (visual)
    4. N (not detected)
- Use Repeat box to record whether you think you are reporting a bird recorded at a previous stop or not.
- Record the distance (< 100 m or > 100 m) and direction to your first detection of
    - Common Poorwills
    - Eastern Whip-poor-wills
    - Repeat wing-booms of Common Nighthawk(i.e., ≥ 3 wing-booms at the same location)

Data collection – Stop Locations: Record stop coordinates as latitude and longitude in decimal degrees if your route has no pre-established stop locations or if you wish to suggest an amendment to your route.

Essential Equipment Checklist:

- Data sheets
- Survey protocol
- Route map
- Flashlight
- Stopwatch/timer
- Pens/pencils
- GPS or map of route to mark new stops on (new routes only)
- Location of stops (previously surveyed routes only)

APPENDIX B: CANADIAN NIGHTJAR SURVEY DATASHEET

1. SURVEY INFO: Fill this out before you start. Don't forget to fill in "End Temperature" at the end of your survey!

Observer Name:	**Co-Observer Name:**	
Address:	**Email:**	**Phone:**
Route Name:	**Date:**	

Comments: _____

2. STOP CONDITIONS: Record the conditions at each survey stop.

Start Temperature: _____

Stop	Start Time (24 hr)	Wind (circle)	Wind direction	Cloud (10ths of sky covered)	Moon (circle)	Noise (circle)	# Cars	Comments
1		0 1 2 3			Y N	0 1 2 3		
2		0 1 2 3			Y N	0 1 2 3		
3		0 1 2 3			Y N	0 1 2 3		
4		0 1 2 3			Y N	0 1 2 3		
5		0 1 2 3			Y N	0 1 2 3		
6		0 1 2 3			Y N	0 1 2 3		
7		0 1 2 3			Y N	0 1 2 3		
8		0 1 2 3			Y N	0 1 2 3		
9		0 1 2 3			Y N	0 1 2 3		
10		0 1 2 3			Y N	0 1 2 3		
11		0 1 2 3			Y N	0 1 2 3		
12		0 1 2 3			Y N	0 1 2 3		

End Temperature: _____

Code	Wind Description	Cloud Description	Noise Description
0	Calm: smoke rises vertically	0=No clouds	None or slight (e.g., distant traffic)
1	Light air: smoke drifts, leaves and wind vanes are stopped	1=10% cover	Moderate (e.g., airplane, moderate traffic)
2	Light breeze: wind felt on exposed skin, leaves rustle, wind vanes begin to move	2=20% cover	High (e.g., fairly constant traffic)
3	Gentle breeze: leaves and small twigs constantly moving, light flags extended	3=30% cover	Excessive (e.g., construction, frog chorus)
4	Do not survey	4=40% cover, etc.	N/A

3. NIGHTJAR OBSERVATIONS: At each stop, listen for 6 minutes and fill out one line for each individual heard. Record the code for the highest ranked detection type you observed in each one-minute time interval: 1. W (wing-boom), 2. C (call), 3. V (visual), 4. N (not detected). Indicate whether you think it is a repeat bird recorded at another stop or not. Only record distance and direction for COPO, EWPW, and repeat wing-booming CONI.

Stop (1-12)	Species	Time Interval						Repeat bird (circle)	Distance (circle)	Direction	Comments
		1	2	3	4	5	6				
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		

3. NIGHTJAR OBSERVATIONS: At each stop, listen for 6 minutes and fill out one line for each individual heard. Record the code for the highest ranked detection type you observed in each one-minute time interval: 1. W (wing-boom), 2. C (call), 3. V (visual), 4. N (not detected). Indicate whether you think it is a repeat bird recorded at another stop or not. Only record distance and direction for COPO, EWPW, and repeat wing-booming CONI.

Stop (1-12)	Species	Time Interval						Repeat bird (circle)	Distance (circle)	Direction	Comments
		1	2	3	4	5	6				
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		
								Y N	< 100 m > 100 m		

4. STOP LOCATIONS: This section of the datasheet should **only be filled out if your route has never been surveyed before or if you wish to recommend a stop location amendment.**

Stop	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Environment and Climate Change Canada's Canadian Wildlife Service (Atlantic Region) - Wind Energy & Birds Environmental Assessment Guidance Update

Background

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) is charged with the administration of the *Migratory Birds Convention Act* (MBCA) and *Species at Risk Act* (SARA), responsible for the management and conservation of migratory birds and protection of SARA listed species at risk and their habitats; ECCC-CWS Atlantic (ATL) provides expert advice for these species for wind energy impact assessments, upon request. ECCC-CWS published two guidance documents in 2007 for assessing the risk of wind energy developments on migratory birds:

- *Wind Turbines and Birds: A Guidance Document for Environmental Assessment*" (Environment Canada 2007a)
- *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds*" (Environment Canada 2007b)

Recent advancements in technology for wind energy production include taller turbines with increased energy generating capacity. As a result, in 2018, ECCC-CWS-ATL provided an advice update related to radar and acoustic monitoring recommended for monitoring particular factors of concern (e.g. migration corridors, passage rate and flight altitudes of nocturnal migrants in relation to the height of proposed turbines – larger scale) (s.8.2 CWS 2007a and CWS2007b protocols).

ECCC-CWS-ATL has prepared this guidance update to replace the 2018 advice; this guidance update provides minimum standards and best approaches for pre- and post-construction monitoring related to wind energy developments in Atlantic Canada. It is incumbent on the proponent to identify the best approach, based on the circumstances, to comply with the *Migratory Birds Convention Act* and *Species at Risk Act*.

Determining Site Sensitivity

ECCC-CWS-ATL recommends that wind energy sites proposing building turbines > 150m (thus placing turbine height places the rotor sweep within songbird nocturnal flight corridors (i.e., 150 – 600 m, Horton *et al.* 2016)) in total height be considered 'Very High' site sensitivity (i.e., Category 4, Environment Canada 2007a).

Minimum Standard

Pre-Construction Monitoring

There is little available data and associated studies on the latest larger scale turbine technologies and risk to migratory birds. Therefore, proponents should assess the potential risk of Category 4 level sites to understand and characterize nocturnal avian flight paths around proposed sites. ECCC-CWS-ATL recommends using radar and acoustic monitoring during the spring and fall migrations, in addition to standard avian surveys (Environment Canada 2007a).

Although much of the bird migration is above turbine heights and rotor sweep areas, there are accounts of both songbird migration, and localized migratory bird population seasonal movements, occurring within the turbine altitudinal zone (Richardson 1972, Horton et al. 2016). Therefore, monitoring should also characterize potential

localized lower-level movements of birds. For example, Bank Swallows move between coastal bank colonies and inland roost sites; shorebirds move overland from foraging to roosting sites during pre-migration recruitment flights; sea ducks are low altitude nocturnal migrants.

The use of acoustic autonomous recording units (ARUs) complements radar data and can support conclusions in the final analysis. ARUs have a maximum detection distance of approximately 200-250m above ground level, similar to the height of proposed wind turbines and can assist in evaluating species composition of nocturnal migrants, especially important in understanding the potential risk to species at risk.

Study Design

ECCC-CWS-ATL recommends, at minimum, monitoring early in the project-planning phase (pre-construction) to ensure that the proponent completes a minimum of 2 years (consecutive) of monitoring. The 2-year minimum standard supports analyses of bird flight height by capturing the variance in weather conditions present. In addition, ECCC-CWS-ATL recommends pre-construction monitoring to quantify the risk at a proposed site **before** approval. This also provides baseline information to assess post-construction impacts and mortality on migratory bird populations. Data should be collected under various types of weather conditions.

Spring migration recommended monitoring window is **March 15 - June 7**, and fall migration is **July 15 – November 30**. These extended monitoring windows allow the proponent to assess landbirds, waterfowl/sea duck and shorebird migration movements, especially important in coastal areas or along known migration routes (e.g., Bay of Fundy, Tantramar Marsh, Strait of Canso, and Cape Sable Region).

The breeding season window in Atlantic Canada varies from region to region (i.e. nesting zones) which have corresponding nesting calendars showing variation in nesting intensity by habitat type. Information regarding regional nesting periods can be found at ECCC's General Nesting Periods – Avoiding Harm To Migratory Birds. Each site should be visited at least twice during this time to establish which species are breeding in the area and to determine if there are any migratory bird species at risk and/or species that have aerial mating displays.

If provincial regulatory processes do not require pre-construction monitoring, the proponent should initiate monitoring as soon as possible (for a minimum 2-year period). Although not ideal, monitoring could start during the construction year to assess impacts on migratory bird populations and determine the need for additional mitigation and/or inform future guidance.

Data Analysis

Data analysis guidance is available in the 2007 national guidance (Environment Canada 2007a, Environment Canada 2007b). ECCC-CWS-ATL recommends consolidating site-specific avian baseline and habitat assessment with radar and acoustic monitoring data into one report. In addition, this report should include and detail an overall assessment of the risk to migratory birds.

The report should include, at minimum, the following:

- List of potential breeding birds (following breeding bird atlas protocols)
- Volume estimates of birds (i.e. targets) at a fine scale of altitudinal resolution on a nightly basis;
- Altitudinal information;
- Time period monitored (note: monitoring should take place at the same time every day);
- Weather data;
- Tidal and lunar cycles (note: shorebird movements increase during bright nights);
- Summary of overall bird activity, including how bird activity:
    - changed through the night and the season.
    - changed across the study area.

Post-Construction Monitoring

ECCC-CWS-ATL recommends that post-construction mortality surveys (Environment Canada 2007b) and radar and acoustic monitoring be consistent with baseline pre-construction methods. The proponent (for any approved project) should complete a minimum of 2 years (consecutive) of monitoring. ECCC-CWS-ATL may recommend additional monitoring based on reported findings.

The mortality survey data should be paired with radar and acoustic monitoring to provide context for the localized impacts on birds. Additionally, the proponent should compare the pre-construction and post-construction results to assess and quantify any changes in migratory bird species assemblage, density, and behaviours.

Permits are required to handle or collect any dead birds or bats found during post-construction monitoring activities (e.g. carcass searches or used as part of observer efficiency or scavenging trials) (ECCC, s.10.4 2007). Under the Migratory Bird Regulations, a scientific permit is required for the collection of a migratory bird (dead or alive), feathers, or part of a migratory bird, as defined in the MBCA (contact: Permi.Atl@ec.gc.ca). Proponents should also contact the appropriate provincial territorial wildlife department for information related to requirement to collect species under provincial jurisdiction (bats and bird species such as raptors not covered by the MBCA). Proponents should review and carefully note the conditions in permits, including annual reporting and mortality incident reporting. Proponents will need to ensure they remain in compliance with all permitting conditions and requirements.

Data and Report Submission

Please provide ECC-CWS-ATL with the monitoring reports. Reports must be provided to CWS by December 31 of the same calendar year in which monitoring took place. Submit reports ECCC's environmental assessment window for coordination at: FCR_Tracker@ec.gc.ca.

ECCC-CWS-ATL recommends that the proponent submit all wind energy monitoring (migratory birds and bats) data to the Wind Energy Bird & Bat Monitoring Database (Birds Canada 2022). The proponent should retain raw data (e.g., information on individual tracks) until appropriate data standards have been developed.

Best Approach

ECCC-CWS-ATL considers the best approach to be a regional BACI (Before-After/Control Impact) study design (i.e., paired-site design) or an impact-gradient design for smaller developments. The BACI design is designed to help isolate the potential effect of development from natural variability. Proposed turbine sites should be paired with similar reference sites to provide comparative assessments. This comparative site assessment should compare bird density, flight height variance/altitude levels, activity patterns, timing, consistency of movements, habitat variables between control (reference) and treatment (turbines) sites during the breeding period and during migration. Data should be collected under various types of weather conditions.

Reference sites should be located at minimum 500m from proposed turbine sites. These reference sites should be placed in habitats similar to the paired turbine site. ECCC-CWS-ATL recommends that this approach be factored into the pre-construction and post-construction monitoring designs. All study design recommendations presented above should be used for this approach (e.g., pre-construction monitoring should be completed before site approval, be done for two years, etc.). Additionally, all sampling considerations (e.g., migration timing windows, data collection, reporting) should be consistent with the minimum standard.

Bats

Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*) are small, insectivorous bats that are listed as Endangered (Species at Risk Act, Schedule 1). ECCC-CWS-ATL recommends that the proponents consider bats in their pre-construction and post-construction monitoring and their data and report submissions. However, the proponent should contact Provincial representatives for additional information on bats and wind energy developments, as they are the jurisdiction responsible for the conservation and protection of bat species.

References:

Bence, J. R., A. Stewart-Oaten, and S.C. Schroeter. 1996. Estimating the size of an effect from a Before-After-Control-Impact-Pairs design: the predictive approach applied to a power plant study. In R. J. Schmitt and C. W. Osenberg, editors. Ecological impact assessment: conceptual issues and application in coastal marine habitats. University of California Press, Berkeley, California, USA.

Birds Canada. 2022. Wind Energy Bird & Bat Monitoring Database. Accessed March 16, 2022, at https://www.bsc-eoc.org/naturecounts/wind/main.jsp.

Canadian Wildlife Service. 2018. Wind Turbines and Birds – Updated Guidance for Environmental Assessment and Monitoring Canadian Wildlife Service – Atlantic Region. 2pp.

Environment Canada. 2007a. Wind Turbines and Birds: A Guidance Document for Environmental Assessment. 46pp.

Environment Canada. 2007b. Recommended Protocols for Monitoring Impacts of Wind Turbines in Birds. 33pp.

Hanson, A., I. Goudie, A. Lang, C. Gjerdrum, R. Cotter, and G. Donaldson. 2009. A framework for the scientific assessment of potential project impacts on birds. Canadian Wildlife Service Technical Report Series No. 508. Atlantic Region. 61 pp.

Horton K.G., B.M. Van Doren, P.M. Stepanian, A. Farnsworth A., and J.F. Kelly. 2016. Where in the air? Aerial habitat use of nocturnally migrating birds. Biol. Lett. 12: 20160591. (http://dx.doi.org/10.1098/rsbl.2016.0591

Kunz, T.H., E.B. Arnett, B.M. Cooper, W.P. Erickson, R.P. Larkin, T.J. Mabee, M.L. Morrison, M.D. Strickland, and J.M. Szewczak. 2007. Assessing impacts of wind-energy development on nocturnally active birds and bats: a guidance document. Journal of Wildlife Management 71(8):2449-2486.

Lynn and Auberle. 2009. Guidelines for Assessing the Potential Impacts to Birds and Bats from Wind Energy Development in Northern Arizona and the Southern Colorado Plateau. Northern Arizona University.

Osenberg, C.W., R.J. Schmitt, and S.J. Holbrook. 1994. Detection of environmental impacts: natural variability, effect size, and power analysis. Ecological Applications 4(1): 16-30.

Richardson, W.J. 1972. Autumn migration and weather in Eastern Canada: A radar study. American Birds 26(1): 10-17

Guidance for Reviewers – Environmental Assessmer
Environmental Assessment Branch, Environment and Cl

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
Canada B3J 2P8

NOVA SCOTIA
Environment and Climate Change

Date: November 21, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Climate Change Division

Subject: Bear Lake Wind Power Project, Hants County

Scope of review:
This review focuses on the following mandate: Climate Change – Adaptation and Mitigation

Technical Comments:

Adaptation

- The EA registration document includes a description of the local climate (Pockwock Climate Station) based on climate data from 2012-2022 (Section 7.1.1). The 'Guide to Considering Climate Change in Project Development in Nova Scotia' recommends at least 30 years of climate data to adequately assess climate variability.
- The VEC sections of the EA registration document do not consider climate change impacts and projections for the site as per the provincial 'Guide to Preparing an EA Registration Document for Wind Power Projects'. For example, the document does not provide climate projections for average and extreme temperature or other climate variables relative to climate normals and indicate how projected climate changes may impact the various phases of the project.
- The EA registration document does not reference specific climate projections for the site but does reference some key climate change trends and natural hazards (temperature, sea level rise, flooding, severe weather, turbine icing, wildfire) (Sections 12.1 and 12.2), and where applicable indicates some of the potential mitigations or design adaptations that may be considered during the project design and implementation. For example, the document indicates the project layout will be concentrated in high elevation areas to minimize flood hazards with appropriate stormwater controls.
- The potential adverse effects of climate change on the undertaking and mitigative measures are not presented within a risk management framework, as recommended in the 'Guide to Considering Climate Change in Project Development in Nova Scotia'.

Mitigation

- The proponent has quantified potential greenhouse gas emissions from the construction and maintenance of the project using acceptable emissions factors and assumptions. These rightly include CO_2, CH_4, N_2O, and Halocarbons.
- The total potential emissions associated with the construction including production of the turbines is 31,495.52 tonnes CO_2e. Without counting the emissions associated to turbine manufacture offsite, these emissions can be considered to be low. Emissions associated to maintenance of the project also are correctly noted to be negligible.
- The 18 proposed mitigation measures for the reduction of potential emissions during the construction phase of the project are sufficient for the level of emissions expected.

Summary of Technical Considerations: (provide in non-technical language)

Adaptation

- We recommend that the proponent use at least 30 years of historical climate data to assess climate variability and characterize the local climate.
- We recommend the proponent use updated climate change projections for the site and indicate how these changes may affect the development, including how the detailed project design will account for the projected changes (e.g., how IDF curves based on climate projections will be used during the design of the project structures and erosion and sediment control measures).The latest climate projection data and IDF curve guidance are available at climatedata.ca.
- We recommend the proponent consider adopting a risk management framework (described in the 'Guide to Considering Climate Change in Project Development in Nova Scotia') to determine which impacts present the highest risks to the various phases of the project and to assist in the determination of priorities for implementing adaptation measures, where required.

Mitigation

No further requirements recommended.

Date: November 23, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Nova Scotia Office of L'nu Affairs – Consultation Division; **Reviewed by Beata Dera, Director of Consultation**

Subject: Bear Lake Wind Power Project**, Upper Vaughn, New Ross, and Windsor Forks Nova Scotia**

Scope of review:

The following review considers whether the information provided will assist the Province in assessing the potential of the proposed Project to adversely impact established and/or asserted Mi'kmaw Aboriginal and/or Treaty rights.

List of Documents Reviewed:

Environmental Assessment Registration Document.

Details of Technical Review:

Section 5.3 MEKS

OLA acknowledges that a Mi'kmaq Ecological Knowledge Study (MEKS) is currently underway by Membertou Geomatics Solutions for the proposed Project. Typically, for a project of this scope and scale, a MEKS would be included as part of the final EARD submission in order to determine what, if any, traditional and current use activities are practiced by the Mi'kmaq of Nova Scotia within the Project area and whether mitigation measures are required to support the continued use of the Project area by the Mi'kmaq of Nova Scotia. Given that the MEKS was not complete at the time that the EARD was registered, an effects analysis of the proposed Project on the Mi'kmaq of Nova Scotia was not undertaken.

5.4 Mi'kmaq Engagement

OLA is encouraged to see that early engagement with the Mi'kmaq of Nova Scotia was prioritized and led by Membertou First Nation. OLA acknowledges the Proponent's commitment to on-going, meaningful engagement with the Mi'kmaq of Nova Scotia by continuing to provide regular project updates and seek feedback throughout the Project.

This section states that emails were sent to all Mi'kmaq communities, containing a Project overview, location, website, open house presentation details, and maps. Meetings were also held with various Mi'kmaq communities and organizations. This section also states that the feedback from these meetings has informed the overall design, sizing, and development of the Project, however the details of this feedback and specifically how they influenced the Project is not included in the EARD.

7.3.3 Wetlands

This section states that there is a potential for 77 wetland alterations to facilitate Project developments, amounting to a total area of 4.55 ha.

Wetlands support a wide variety of plants, including those that the Mi'kmaq consider to be for sacred, ceremonial, and medicinal purposes.

7.4.3 Terrestrial Fauna

This section states that evidence of Mainland moose was reported in the Study Area by local trail users, and Mainland moose habitat modelling displays areas of high-quality habitat within the Study Area.

Moose are considered a species of significance to the Mi'kmaq of Nova Scotia.

Key Considerations:

Crown consultation with the Mi'kmaq of Nova Scotia is ongoing for this project. The Mi'kmaq of Nova Scotia may provide additional information that informs the regulator in assessing the proposed project's potential impacts to established and/or asserted Mi'kmaw Aboriginal and Treaty rights and appropriate accommodation and mitigation measures. At this time, OLA is able to provide the following considerations:

In addition to continuing engagement with the Proponent's equity partners, OLA encourages the Proponent to also continue to engage with Mi'kmaw communities that are located within close proximity to the Project Area, including Sipekne'katik First Nation, Annapolis Valley First Nation and the KMKNO. Ongoing engagement should include providing regular updates and seeking feedback throughout the duration of the Project.

A Mi'kmaq Communication Plan would be helpful to achieve the sharing of information by the Proponent and providing a mechanism for proponent-led engagement and input from the Mi'kmaq, specifically regarding wetland mitigation, compensation, and monitoring plans, Wildlife Monitoring Plans, and the Environmental Protection Plan.

As mentioned above, given that the MEKS was not complete at the time that the EARD was registered, an effects analysis of the proposed Project on the traditional use of land resources was not undertaken. Once the MEKS is complete, OLA encourages the Proponent to review the report and any recommendations to determine if mitigation measures are required to address the potential use of the Study Area by the Mi'kmaq of Nova Scotia.

Fisheries and Oceans Canada | Pêches et Océans Canada

Bedford Institute of Oceanography
1 Challenger Drive
P.O. Box 1006, Station P500
Dartmouth, Nova Scotia B2Y 4A2

Date: November 23, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Tiffany MacAulay, Linear Development, Regulatory Review Biologist, Fish and Fish Habitat Protection Program; Sign-off by Sarah MacLeod, A/Senior Biologist

Subject: Bear Lake Wind Power Project, Hants County, Nova Scotia (DFO File #23-EA-714)

Scope of review:
Fisheries and Oceans Canada (DFO) is responsible for administrating the fish and fish habitat protection provisions of the *Fisheries Act* (FA), the *Species at Risk Act* (SARA), and the *Aquatic Invasive Species Regulations*.

DFO's review focused on the impacts of the works outlined in the Bear Lake Wind Power Project Environmental Assessment Registration Document to potentially result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat, which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*;
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*; and
- The introduction of aquatic species into regions or bodies of water frequented by fish where they are not indigenous, which is prohibited under section 10 of the *Aquatic Invasive Species Regulations*.

Technical Comments:

Risk Assessment: Fish Habitat Assessments	
Identify Gap/Risk	Information on fish and fish habitat present in the vicinity of the Project that may be impacted by the works is incomplete or unclear. For example, baseline watercourse data were presented in Appendix E of the environmental assessment registration document (EARD); however, these assessments were conducted during a dry period and did not assess whether fish habitat is available during higher flow periods. The information provided also does not describe how the habitat may be utilized by fish species present in the watercourses, and fish sampling was not conducted to determine species present within the watercourses. Information on fish species potentially impacted by the proposed works is inconsistent, and does not include the identification and assessment of impacts to all fish species that utilize each watercourse. For example, Appendix E - Part 1, Section 3.7 reviews

	impacts to priority species. Appendix E - Part 1, Section 3.7 notes that Atlantic salmon (*Salmo salar*), American eel (*Anguilla rostrata*), and alewife (*Alosa pseudoharengus*) may be present within the Project area; however, in Section 7.3.2.5 of the EARD, only Atlantic salmon (Inner Bay of Fundy and Southern Upland populations) are identified as potentially occurring within the study area. Information on watercourses impacted by the works is inconsistent due to missing information. For example, in Section 7.3.1.5, Table 7.21 of the EARD, watercourses BL-WC201a-3333, BL-WC201a-3772, BL-WC201c-3446, and BL-WC202a-3383 are not listed; however, they are identified as fish bearing watercourses in Appendix E, Table 3.1. In addition, drawings 7.13 and 7.14 are missing from the shared documents (i.e., the document labelled '23-9128_BearLake_Drawing7.12_7.18C.pdf' contains drawings 7.3-7.10, not 7.12-7.18C).
Can it be addressed in another permit/approval or with a T&C?	The identified gap can be addressed during the NSECC watercourse and/or wetland alteration approval process(es) and DFO regulatory review process. Works, undertakings and activities (WUAs) associated with this project in or near water that may result in potential harmful impacts on fish or fish habitat will require DFO regulatory review to avoid, mitigate or offset those impacts.
Define/provide detail	For WUAs that may result in potential harmful impacts on fish or fish habitat, additional information will be required as part of the DFO regulatory review process, including detailed information on the proposed WUAs, a detailed description of the fish and fish habitat found at the location of the proposed WUAs, a detailed description on the likely effects of the proposed WUAs on fish and fish habitat, and a detailed description of the measures and standards that will be implemented to avoid and mitigate potential harmful impacts on fish and fish habitat.
Risk Assessment: Watercourse Crossing Designs	
Identify Gap/Risk	Specific information related to the proposed watercourse crossings is not provided beyond the forecasted alterations noted in Section 7.3.2.6, Table 7.29 of the EARD, which presents a summary of the watercourses and wetlands that may support fish and fish habitat and may be altered as a result of the Project. Specific information related to anticipated alterations or replacements of existing structures (i.e., potential culvert replacements at WC1, WC2, WC5, WC6a, WC6c, WC7, WC8b, WC9, WC12, WC13, WC14, WC15, WC16, WC18, WC19, WC20a, WC21, WC22, WC23, WC25, WC26, WC27a, WC27b, and WC29; potential bridge replacements at WC3 and WC11; new structure installations at WC6b, WC10b, and WC24)

	is not yet determined.
Can it be addressed in another permit/approval or with a T&C?	The identified gap can be addressed during the NSECC watercourse and/or wetland alteration approval process(es) and DFO regulatory review process. WUAs associated with this project in or near water that may result in potential harmful impacts on fish or fish habitat will require DFO regulatory review to avoid, mitigate or offset those impacts.
Define/provide detail	For WUAs that may result in potential harmful impacts on fish or fish habitat, additional information will be required as part of the DFO regulatory review process, including detailed information on the proposed WUAs, a detailed description of the fish and fish habitat found at the location of the proposed WUAs, a detailed description on the likely effects of the proposed WUAs on fish and fish habitat, and a detailed description of the measures and standards that will be implemented to avoid and mitigate potential harmful impacts on fish and fish habitat.
Risk Assessment: Wetland Assessment	
Identify Gap/Risk	Impacts to fish and fish habitat from wetland alterations are not clearly outlined, including both direct and indirect impacts. For example, in Section 7.3.3.6, Table 7.38, presents the delineated areas for each wetland within the assessment area, as well as anticipated alteration sizes, but does not indicate whether there are any potential impacts to fish and fish habitat. Direct impacts as a result of infilling are identified for seven wetlands in Section 7.3.2.6, Table 7.29, and specific delineated areas and anticipated alteration sizes are presented in Section 7.3.3.6, Table 7.38. However, further information on habitat availability for fish within these wetlands is required, in addition to potential indirect impacts to fish and fish habitat in these and other impacted wetlands within the assessment area.
Can it be addressed in another permit/approval or with a T&C?	The identified gap can be addressed during the NSECC watercourse and/or wetland alteration approval process(es) and DFO regulatory review process. WUAs associated with this project in or near water that may result in potential harmful impacts on fish or fish habitat will require DFO regulatory review to avoid, mitigate or offset those impacts.
Define/provide detail	For WUAs that may result in potential harmful impacts on fish or fish habitat, additional information will be required as part of the DFO regulatory review process, including detailed information on the proposed WUAs, a detailed description of the fish and fish habitat found at the location of the proposed WUAs, a detailed description on the likely effects of the proposed WUAs on fish and fish habitat,

	and a detailed description of the measures and standards that will be implemented to avoid and mitigate potential harmful impacts on fish and fish habitat.

Summary of Recommendations: (provide in non-technical language)

DFO recommends the proponent:

- Submit detailed information on the proposed watercourse crossing and wetland alteration designs, detailed descriptions of the fish and fish habitat found at the location of the proposed WUAs, detailed descriptions on the likely effects of the proposed WUAs on fish and fish habitat (including local and cumulative impacts, potential impacts on species at risk, and direct and indirect impacts on fish habitat), and detailed descriptions of the measures and standards that will be implemented to avoid and mitigate potential harmful impacts on fish and fish habitat.

- Consider open bottom structures, such as clear span bridges and open bottom arch culverts for fish bearing watercourse crossings rather than closed bottom structures, where possible; and

- Refer to DFO's website, https://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html, for further information on DFO's regulatory review process and for further measures to protect fish and fish habitat.

This information can be provided through the NSECC watercourse and/or wetland alteration approval process(es) and/or through submission of a DFO Request for Review application directly to DFO. DFO will then conduct a regulatory review of the proposed project under the *Fisheries Act*, *Species at Risk Act*, and Aquatic Invasive Species Regulations to determine if an authorization under the *Fisheries Act* and/or a *Species at Risk* permit is required.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
Canada B3J 2P8

Date: November 23, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Air Quality Unit; reviewed by Director, Air Quality and Resource Management

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
This review focuses on the following mandate: Air Quality

List of Documents Reviewed:
- Environmental Assessment Registration Document, Bear Lake Wind Power Project, Bear Lake Wind Ltd.
- Guide to Preparing an EA Registration Document for Wind Power Projects
- Air Quality Regulations

Details of Technical Review:
The proposed Bear Lake Wind Power Project spans three municipalities, including West Hants Regional Municipality, Halifax Regional Municipality, and the Municipality of the District of Chester, close to the communities of Upper Vaughn, New Ross, and Windsor Forks. It consists of up to fifteen wind turbines with a nominal nameplate capacity between 5.2 and 7 megawatts, and an anticipated hub height between 110 and 127.5m and a height from blade tip to the ground of up to 212m. The project also consists of access roads, an interconnecting transmission line, a substation, an operations and maintenance building, and a switching station connection to the Nova Scotia Power grid.

This project would generate electricity that could otherwise be generated through the combustion of fossil fuels. There could therefore be a benefit to air quality in Nova Scotia should this project proceed.

The assessment with respect to air quality impacts consists of a review of available climate and baseline air quality data, a qualitative assessment of potential sources of impact as a result of the project, and proposed mitigation.

The project may result in air quality impacts as a result of the construction phase. Fugitive dust is the most likely air contaminant that may impact local receptors. However, the registration document noted that ‘the closest non-participating potential receptor (Drawing 7.2) is located well beyond the extent to which fugitive dust emissions are expected to travel, and, as a result, no impacts are anticipated as fugitive dust emissions are considered short-term (construction), intermittent, and within the LAA.’ A comprehensive list of mitigation measures was proposed with the proponent committing to developing an

Air Quality and Dust Management Plan as part of the Environmental Protection Plan. Consequently, the impacts were considered to be low to negligible.

Key Considerations: (provide in non-technical language)

If the project is approved, the proponent should ensure that the Air Quality and Dust Management Plan is in place prior to commencement of the project. Such a plan should include a clear chain of responsibility for actions, including timely complaint resolution.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
Canada B3J 2P8

Date: November 23, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Air Quality Unit; reviewed by Director, Air Quality and Resource Management

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
This review focuses on the following mandate: Noise

List of Documents Reviewed:
- Environmental Assessment Registration Document, Bear Lake Wind Power Project, Bear Lake Wind Ltd.
- Appendix S, Bear Lake Wind Power Project
- Guide to Preparing an EA Registration Document for Wind Power Projects
- Guidelines for Environmental Noise Measurement and Assessment, 2023

Details of Technical Review:
The proposed Bear Lake Wind Power Project spans three municipalities, including West Hants Regional Municipality, Halifax Regional Municipality, and the Municipality of the District of Chester, close to the communities of Upper Vaughn, New Ross, and Windsor Forks. It consists of up to fifteen wind turbines with a nominal nameplate capacity between 5.2 and 7 megawatts, and an anticipated hub height between 110 and 127.5m and a height from blade tip to the ground of up to 212m. The project also consists of access roads, an interconnecting transmission line, a substation, an operations and maintenance building, and a switching station connection to the Nova Scotia Power grid.

The assessment with respect to noise impacts consists of a review of the regulatory context, an assessment of the potential noise impacts, an assessment of the effects, and proposed mitigation. Table 10.9 contains permissible sound levels that have now been replaced. It is noted that the proponent intends to incorporate the new permissible sound levels in the Environmental Protection Plan.

The project may result in noise impacts as a result of the construction and operation phases. A quantitative method of assessing construction has been used. It is based on the assumption that the sound attenuates by 6dBA per doubling of the distance. This is a worst case scenario as it does not account for absorption, for example, by vegetation. Three scenarios are presented, representing the minimum, median and maximum potential noise that could be generated by individual pieces of equipment. The assessment indicates that noise levels could be above the daytime permissible sound level for rural areas under the

median and maximum scenarios. Proposed mitigation methods are appropriate but may not be sufficient to prevent complaints.

Operational noise has been modelled using a surrogate baseline noise level of 35dBA. This is an appropriate surrogate. The noise modelling predicts that the noise impact at two receptors (AW and AX) would be 36.3dBA. These are the highest modelled noise impacts. Using a baseline of 35dBA, the cumulative impact at those two receptors would be 38.7dBA, rounded to 39dBA. This is very close to the limit prescribed by the *Guide to Preparing an EA Registration Document for Wind Power Projects*. If the baseline noise level is actually higher than 35dBA, the project could cause an exceedance of the 40dBA noise limit for wind farms.

Impacts from construction were considered to be high magnitude but short duration, whereas impacts from operation are considered to be low magnitude.

Key Considerations: (provide in non-technical language)
If approved, the project has the potential to impact receptors during the construction phase and the operation phase, with noise levels predicted to be above the daytime permissible sound level at 2km from the site during the construction phase, and the possibility that cumulative impacts during operation could exceed the noise limit for wind farms.

It is recommended that the proponent undertakes baseline noise monitoring to assess the prevailing noise levels prior to construction. If the baseline noise level exceeds 35dBA, it is possible noise levels could exceed the 40dBA noise limit at receptor locations once the windfarm is operational. Recording baseline noise levels prior to construction can be used as evidence by the proponent in the event that the Department requests monitoring as part of complaints investigations in the future.

It is also recommended that, if the project is approved, the proponent ensures that a noise management plan is in place prior to commencement of the project. Such a plan should include a clear chain of responsibility for actions, including timely complaint resolution.

NOVA SCOTIA
Public Works

J.W. Johnston Building
1672 Granville Street
6th Floor
Halifax, Nova Scotia
Canada B3J 2N2

Date: 21 November 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Department of Public Works, Environmental Services – Brent MacDonald, P.Eng., Manager.

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
This review focuses on the following mandate: Traffic Engineering and Road Safety

List of Documents Reviewed:
Bear Lake Wind Power Project EA Document and Appendices

Details of Technical Review:

1. The proponent has identified requirements for a Working Within Highway Right of Way Permit (WWHROW). This permit is available from the Local Area Manager and will be required as there are references to making changes to guardrail and signage which will need to be approved locally via the appropriate District Office.

2. The main entrance to the project area is accessed directly from Trunk 14, and from an access to Trunk 14 via Armstrong Lake Road East. Any changes to the accesses to accommodate trucks that are transporting turbine components must be approved via the WWHROW Permit.

3. For any of the above two items, any work areas that are created on Trunk 14 or other provincially owned roads (and/or associated intersections), must be in compliance with the appropriate section of the Nova Scotia Temporary Workplace Traffic Control Manual (NSTWTCM). The proponent has identified compliance of the NSTWTCM as a requirement in their report. Preparation of any Traffic Control Plans that would be required are the responsibility of the proponent and must be approved by the Local Traffic Authority. This information and contact can be made through the local Area Manager for necessary approvals.

4. The proponent has identified a requirement for a Special Moves Permit in their provincial permitting requirements. However; in Section 8.3 Transportation (Pg. 209), the proponent has indicated that the transportation route has not been finalized. The transportation route must be finalized so that a proper analysis of the route can occur (weight restrictions on overpasses, clearances on underpasses, turn movements on ramps and accesses, etc.). This, combined with the Turbine Specs identified In Section 3.2.1, are critical pieces of information that

are required for the Special Moves Permit. The proponent is encouraged to contact our Departmental Contact for Special Moves, Manuel Abreu, for additional information. Manuel can be reached at Manuel.Abreu@novascotia.ca.

5. Mitigation measures identified in Section 8.3 Transportation regarding safe work practices, road safety, and proposed regulation of traffic flow via non peak hours are comprehensive and appear to address those issues adequately.

6. Table 3.3 has Health Canada as a sole relevant stakeholder for setbacks and separation distances from Public Roads. NSDPW, as the owner of the Public Roads in question, should also be listed as a relevant stakeholder.

Key Considerations: (provide in non-technical language)

1. The proponent is to ensure that they have applied for the Working Within Highway Right of Way Permit when making changes to guardrail, signage and/or changes to access points.

2. Traffic control measures for this project must approved by the Local Traffic Authority.

3. The proponent must provide a finalized transportation route in addition to turbine specifications for the Special Moves Permit.

4. Table 3.3 should include the Department of Public Works as a relevant stakeholder in this project.

NOVA SCOTIA
Fisheries and Aquaculture

Armoyan Centre
1800 Argyle Street
Suite 603
Halifax NS B3J 3N8

Date: November 21, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Lesley O'Brien-Latham, Executive Director, Policy and Strategic Advisory Services

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
The scope of this review follows the Department of Fisheries and Aquaculture's legislated mandate to develop, promote and support fishing, aquaculture, seafood processing and sportfishing in Nova Scotia.

List of Documents Reviewed:

Final Bear Lake Wind Power Project – EARD
https://www.dfo-mpo.gc.ca/fisheries-peches/ifmp-gmp/maritimes/2019/inshore-lobster-eng.html

Details of Technical Review:

Sediment is projected to be generated during road construction or maintenance for this project. Active mitigation and monitoring steps have been provided and should result in low risk of negative effects of sedimentation on aquaculture sites and rockweed leases.

The proponent should be made aware of the aquaculture operations within the area and ensure mitigations are implemented appropriately, with reference to the following link to identify sites and operators within the project area: Site Mapping Tool - Government of Nova Scotia, Canada

The proponent should be made aware of the Fisheries and Coastal Resources Act, Provincial Aquaculture License and Lease Regulations, Provincial Aquaculture Management Regulations, and the Nova Scotia Rock Weed Harvesting Regulations. They should also be directed to the Department's Site Mapping Tool for more information on the location of sites and leases in the area of their proposed project.

Key Considerations: (provide in non-technical language)

- There are a total of 2 rockweed leases and 8 aquaculture sites within 25km of the proposed project. Of these, 6 are marine shellfish sites, 0 are marine finfish sites, and 2 are land-based aquaculture facilities.

- The Department does not anticipate risks to the commercial harvesting and marine activities within the Department’s mandate.
- The Department does not anticipate any risks to sportfishing, provided the proponents adhere to the provincial watercourse alteration standards.

NOVA SCOTIA
Natural Resources and Renewables

1701 Hollis St.
PO Box 698
Halifax, NS B3J 2T9

Date: November 23, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Department of Natural Resources and Renewables

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
This review focuses on the following mandate: Parks, authorities and approvals required from the Subsurface Energy Branch, Land Services Branch, geological hazards, mineral exploration, biodiversity, species at risk status and recovery, wildlife species and habitat management and conservation, including Old Growth forest, and forestry research.

List of Documents Reviewed:

Land Services Branch:

- Environmental Assessment Registration Document
- Appendices A-Q
- Drawings 2.1-10.3

Geoscience and Mines Branch:

- Bear Wind Project E.A. document
- NS Mineral Occurrence Database
- Google Earth
- Map ME 1994-001: Geological Map of the South Mountain Batholith, Western Nova Scotia [Parts of 11D and 21A] 1:250,000
- Geology of the South Mountain Batholith, Southwestern Nova Scotia. OFR-ME 2001-02
- NovaROC: Mineral Rights Online Registry System

Biodiversity Branch:

- Bear Lake Wind Power Project Environmental Assessment Registration Document. October 2023. 1976pp.

Details of Technical Review:

Land Services Branch:
The Proponent will require authorizations (such as a lease, licence, letter of authority, or easement) from NRR for any/all proposed activities on Crown lands including, but not limited to:

- Long term use/access of Crown lands for the placement of any infrastructure or use of

Crown lands for project purposes including placement/operation of wind turbines;
- Temporary or short-term requests to use existing Crown owned roads, install meteorological (MET) towers, or to conduct geotechnical investigation or preliminary studies;
- Long term use of Crown lands for installing and maintaining overhead/underground transmission wires or collector lines, including those that span submerged Crown lands; and
- Long term uses to construct and use new access roads, or to widen or otherwise modify existing Crown roads.

Also, requests to use existing third-party infrastructure, such as NSPI or Bell owned infrastructure, located on Crown lands must be directed to the owner of the utility infrastructure.

Geoscience and Mines Branch:

- The Area has potential for elevated naturally occurring uranium.
- There is one active mineral exploration license overlapping with the northernmost drill site.
- Notably, the EA registration document does not sufficiently address the natural occurring uranium risk and mitigation measures for the project.
- There is high number of private wells in close proximity to the project area that could potentially be impacted as a result of the solubility of uranium in ground water.

Forestry Branch:

We have reviewed this Environmental Assessment for any conflicts with planned or existing silvicultural research projects being conducted by the Forestry Division of NRR. There are no direct conflicts, however, there is an active research trial and 10 permanent sample plots (six of which are active) adjacent to this wind energy development. These plots are not in conflict with any planned roads or turbines but are within the study area. We have provided a shapefile of their location and request to be contacted if there are any perceived threats to this research trial that are not immediately apparent in the Environmental Assessment report.

Old-Growth Forests

Proponents must ensure no Old-growth forest are cut/developed/ removed on crown land. Proponents are responsible for assessing Potential Old Forests (database available from the department) using the departments published procedures (https://novascotia.ca/natr/forestry/programs/ecosystems/oldgrowth.asp) to determine if forests in planning area are old growth and therefore protected until the provincial policy. Development should be avoided where possible near (100m) known existing Old-Growth forests.

Biodiversity Branch:

The following items have been observed:

- The provincial Wildlife Act has regulatory protections for species which are not at risk, including migratory and non-migratory birds (e.g., raptors) and turtles; Dwellings (ESA) and residences (SARA) are also protected features of SAR habitat. The provincial Wildlife Act provides measures to protect both migratory and non-migratory bird species (e.g., raptors).

- Study Area (PIDs), Project Area (disturbance footprint), and Assessment Area (100m buffer around turbines, 50m for roads, 20m for connector lines) should be clearly defined and not used interchangeably. Using PIDs as the study area may not be biologically relevant for assessing impacts to VCs.

- The EARD frequently references avoidance of adverse effects by using the existing road network and previously cleared/altered areas. Data to assess this is missing.

- Federal critical habitat and provincial core habitat layers were not identified or reviewed as part of the desktop analysis for Valued Components
.
- Define “Directly support” in relation to whether wetlands directly support SAR. Mapped locations of observed SAR/SOCI in relation to wetlands have not been provided.

- Old growth information presented in Drawings 7.18A and 7.18B, are mislabeled in the EARD as 7.19A and 7.19B.

- Development should be avoided where possible near (100m) known existing old-growth forests.

- The location of lichen SAR/SOCC in relation to project infrastructure is required in the assessment and results (Appendix K).

- Data provided suggests overlap of the 100 m Blue Felt Lichen (*Pectenia plumbea*) buffer with the Assessment Area for two roads. If so, measures to minimize disturbance and monitor Blue Felt Lichen are required.

- The moose habitat suitability model is not clearly defined and should be consistent with the provincial recovery plan. Data or literature confirming the validity of the model are required.

- Details of plans to complete baseline mammal (page 151) and herpetofauna (page 152) surveys in 2023/2024 are required.

- Location of an incidentally observed Snapping Turtle (*Chelydra serpentina*) (Appendix N) is required to confirm that it was outside of the Study Area (page 152).

- The presence of turtles along a road in the assessment area where suspected turtle nest evidence was discovered during electrofishing surveys (page 154) (Drawing 7.11C) should be confirmed with additional surveys to determine appropriate mitigation.

- Gravel roads may create additional anthropogenic nesting habitat for turtles, potentially increasing the risk of turtle mortality and nest predation. Mitigations are required.

- Baseline surveys are not a mitigation measure against adverse effects of the project; rather, baseline surveys are required to *support* the development of monitoring programs and mitigations.

- Silver-haired and possibly Eastern Red Bat were recorded during spring/summer and fall 2022 survey periods (Appendix L). Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), and Silver-haired Bat (*Lasionycteris noctivagans*) were assessed as Endangered by COSEWIC in May 2023. Appropriate mitigations are required.

- Data or literature to support that wind turbine development in Nova Scotia causes minimal/negligible levels of bat mortality is required.

- “Significant mortality” of SAR not been defined; especially for listed SAR, consult the responsible regulatory agencies to determine what is ‘significant mortality’ for a given species. Bat surveys were insufficient in terms of timing, location, and spatial coverage of

monitors: only two of six bat detectors were located within the project area, with a narrow survey period that likely missed spring peak migration.

- MBBA squares 20MQ07 and 20MQ05 are misidentified as 20MR74 and 20MR75. Data should be presented for the appropriate MBBA squares.

- Breeding bird survey data for SAR/SOCI were not provided in a mapped format (Appendix N) so it is not possible to assess risk. Data were not provided for all of Canada Warbler (*Cardellina canadensis*), Chimney Swift (*Chaetura pelagica*), Eastern Wood-Pewee (*Contopus virens*), and Olive-sided Flycatcher (*Contopus cooperi*).

- Both spring and fall radar monitoring periods in 2022 were significantly less than recommended guidance from ECCC CWS Atl and NRR and may have missed key migratory times.

- Mitigation measures should not be based on mean spring and fall flight height (above rotor height), because a significant number of individuals fly within or below rotor sweep.

- ARU placement is insufficient temporally and spatially; ARUs did not cover the full disturbance footprint of the undertaking and don't provide adequate coverage of the range of potential habitat present.

- Sensory disturbance (noise, light, and dust) during turbine transportation and assembly, particularly during the breeding season, should be addressed.

- Modelled SAR habitat should be considered potential habitat. Explain how potential SAR bird habitat was used to inform avoidance or mitigations.

- A delay between vegetation clearing/ground disturbance and construction increases risk of a potential encounter with ground nesting SAR/SOCI, especially during the breeding season. Appropriate mitigations are required.

- The assessment area may be too narrow in the context of avian species (birds and bats). Additional research and justifications are needed to assess the scope and scale of the cumulative effects of land use on Valued Components.

Key Considerations: (provide in non-technical language)

Subsurface Energy:

Benefits of renewable energy projects

The Bear Lake Wind Farm is described as a project that "will provide renewable energy required for the production of certified green hydrogen and ammonia within Nova Scotia; leading and supporting the province in becoming a national and international leader in the clean renewable energy sector."

Nova Scotia is emerging as a region with ample opportunity for green hydrogen thanks to our world-class natural resources and export capability, clean economy leadership, responsive regulation, and alignment with the Government of Canada's vision for clean hydrogen. The green hydrogen sector can benefit Nova Scotians by delivering clean energy solutions, creating new clean economy jobs, strengthening rural communities, and driving economic growth.

Building on Nova Scotia's track record of leadership in sustainable prosperity, enabling the growth of the green hydrogen economy allows for a sector that:
• makes best use of the province's natural resources to produce green hydrogen and hydrogen derivatives for export and domestic use;
• supports sustainable prosperity and the achievement of Nova Scotia's climate change goals; and
• produces local benefits that increase Nova Scotians' social and economic well-being.

As well, in Nova Scotia's 2030 Clean Power Plan, a future role for alternative fuels like green hydrogen is noted as 'flex fuels' that can help meet peak or emergency demand in the electricity system. It is also understood that other industries within Nova Scotia have interest in direct use of green hydrogen to replace or supplement fossil fuel uses to reduce carbon emissions, particularly for hard-to-abate applications.

Fostering the green hydrogen supply chain will open up a new clean economy workforce. These workers will be responsible for constructing, operating, and maintaining the infrastructure necessary for producing, storing, and transmitting green hydrogen and its derivatives, as well as for generating clean electricity. They will manage the transportation of green hydrogen within the province and overseas. Workers will also be required to install and service equipment that uses green hydrogen and its derivatives. Many of these jobs will be located in rural areas of Nova Scotia. Beyond the jobs directly connected to green hydrogen, there will be indirect jobs created to support the sector in fields like business and financial services, technology and software support, education and training, and the service industry.

The project activity described herein is intended to provide renewable electricity destined as a source to power the production of hydrogen and a derivative, ammonia. For the products to be certified as 'green hydrogen' and 'green ammonia', it is required to demonstrate that a sufficient level of renewable electricity was available for their production. The Bear Lake Wind Farm is one such source of renewable energy.

Parks and Outreach Branch:
No concerns from a provincial park or designated protected beach program perspective.

Land Services Branch:
Land Services will need to review to provide updated comments if the project requirements change, including adding or removing Crown Lands.

Geoscience and Mines Branch:
- Supporting documentation sufficient to address the potential geological hazards of this project.
- A naturally occurring uranium identification and mitigation plan should be developed to address human health and safety (both for residents and people involved in the project construction) and potential impacts of elevated uranium in the environment.
- Any water bearing structures and bedrock intersections should be sealed, casings removed, and holes backfilled or sealed to surface. Drill cuttings should be contained in dug or natural sumps. Dug sump pits should be backfilled upon completion. Ensure drill contractor has appropriate emergency spill response plan and forest firefighting equipment on hand.
- It is recommended the company sample all water wells for uranium and arsenic to determine baseline concentrations prior to construction activities. Once construction activities commence, regular monitoring of household wells in the project area should be undertaken.

- Any areas of high levels of uranium mineralization (i.e., above background values) should be reported to the GMB.
- Landowner permission is required for mineral license holders to access land and perform exploration. We look to encourage continued dialogue among the parties to ensure access for mineral exploration activities in this area.

Forestry Branch:
Please review the location of our research trial and permanent sample plots that are adjacent to this development.

Biodiversity Branch:
The department offers the following recommendations:

- Ensure consistent terminology and spatial definitions throughout the document (e.g., study area, assessment area); use complete and correct data (e.g., use correct MBBA squares; include federal critical habitat and provincial core habitat layers as part of the desktop analysis for Valued Components); and accurately label drawings (e.g., 7.18A and 7.18B, are mislabeled in the EARD as 7.19A and 7.19B).

- It is the responsibility of the proponent to ensure compliance with federal and provincial legislation and regulations regarding resident, migratory and at-risk bird species and their habitats.

- Obtain all necessary permits as required under legislation related to wildlife and species at risk. Should work commence prior to the development of a Wildlife Management Plan, contact NRR (biodiversity@novascotia.ca) to discuss permits. The absence of effective mitigations may lead to breaches in prohibitions as per s.13(1) of the Endangered Species Act.

- Provide digital way points and/or shapefiles for all flora and fauna survey locations and observations, including Species at Risk and Species of Conservation Concern to NRR (species listed and/or assessed as at risk under the Species at Risk Act, Endangered Species Act, COSEWIC, and all S1, S2 and S3 species). Data should adhere to the format prescribed in the NRR Template for Species Submissions for EAs and are to be provided within two (2) months of collection.

- Clarify details of the moose habitat suitability model, using data and literature to justify parameter choice and interpretation of results. Habitat suitability modeling should be provided to NRR at biodiversity@novascotia.ca.

- Prior to the development of a Wildlife Management Plan (WMP), complete baseline surveys to address information gaps that prevent a full risk assessment to SAR or SOCC. Methodology and timing must follow standard science-based protocols and must be of sufficient scale and detail to inform the development of mitigation measures.
    - Complete baseline surveys for mammals, herpetofauna, and flora and fauna that were not complete at the time of the EARD submission or are required due to layout changes. Provide methods and results of surveys to NRR.
    - Complete additional surveys in areas with suspected turtle occurrences to confirm presence.
    - Improve spatial and temporal coverage of baseline bat surveys, following recommended guidance from NRR.

- Provide at least two (2) consecutive years of radar and acoustic monitoring for bird and

bat species, with at least one year conducted prior to the construction phase of the project. Ensure surveys cover the full spring and fall migration periods and the full footprint and range of habitats.

- Develop a Wildlife Management Plan (WMP) based on standard, science-based practices, which shall include:
    - Communication protocol with regulatory agencies.
    - General wildlife concerns (e.g., human-wildlife conflict avoidance).
    - Education sessions and materials for project personnel on important biodiversity features they may encounter on-site (including Species at Risk, non-Species at Risk wildlife) and how to appropriately respond to those encounters.
    - Noise, dust, lighting, blasting, and herbicide use mitigations.
    - Measures to protect and mitigate against adverse effects to migratory birds during construction and operation. This may include avoidance of certain activities (such as vegetation clearing) during the regional nesting period for most birds, buffer zones around discovered nests, limiting activities during the breeding season around active nests, and other best management practices.
    - Seasonal adjustments to mitigation must be provided in the WMP to address variation in target densities for the spring migration period relative to the fall migration period to reduce/prevent mortality events.
    - The recommended avoidance window for breeding birds is April 5th-August 28th.
    - Mitigations to proactively protect bats and avifauna against mortality from turbine strikes and barotrauma. This may include implementing turbine deterrents, seasonal or detection-based shutdown systems for turbines, and prevention of turbine blade feathering.
    - Mitigation measures consistent with recovery documents (federal and/or provincial recovery and management plans, COSEWIC status reports) to avoid and/or protect Species at Risk/Species of Conservation Concern and associated habitats discovered through survey work or have the potential to be found on site.
    - Landscape connectivity assessment in relation to moose.
    - Details on monitoring and inspections to assess compliance with the WMP.
    - The components of the WMP that address expected impacts during each phase of the project must be finalized before that phase begins (this includes the construction phase).
    - An invasive species plan to prevent the spread of invasives both on and off site.

- NOTE: Consultation on the Wildlife Management Plan with relevant regulatory agencies is strongly recommended. Review of the WMP by NRR can reduce the risk of impacts to biodiversity and to breaching prohibitions related to statutes.

- Develop a bird and bat mortality monitoring program in consultation with NRR and ECCC and implement for a minimum of two (2) years post-construction. Report results of the monitoring program on an annual basis to the appropriate regulatory agencies. Additional surveys or mitigations may be required following review of the results.

- Use natural seed sources for native vegetation to revegetate cleared areas.

- Develop an adaptive management plan in consultation with NRR and ECCC to inform decision-making related to adverse effects of the project on migratory birds and all bat species.

- Update cumulative effects assessment and assessment of impacts of the project on landscape-level connectivity for wildlife and habitat (e.g., habitat fragmentation, loss of intact forested habitat, increased road density). Measures proposed to mitigate those

effects must be provided.

NOVA SCOTIA

Communities, Culture, Tourism and Heritage

1741 Brunswick Street
3rd Floor
P.O. Box 456
Halifax, NS
B3J 2R5

Date: December 6th, 2023

To: Allison Fitzpatrick, Nova Scotia Environment & Climate Change

From: Coordinator Special Places, Culture and Heritage Development

Subject: Bear Lake Wind Power Project - EA Registration

Staff of the Department of Communities, Culture, Tourism, and Heritage has reviewed the Bear Lake Wind Power Project - EA Registration documents and have provided the following comments:

Archaeology

Staff reviewed the sections of the EA document pertaining to archaeology. We currently have no comments as the report has not been submitted. Once the final report is reviewed, we will send along comments so you can advise the Deputy and Minister as requested.

Palaeontology

Staff reviewed the sections of the EA document pertaining to Palaeontology. This review focused on the **palaeontology resources** that are likely to be present in the project areas. The project area encompasses are range of bedrock geology, as stated in the project document. No significant palaeontology resources are anticipated in these mainly igneous rock units. Although rare, location of glacial aged vertebrate remains can occur in overlying surface (glacial) geology throughout the project area. If potential fossils are encountered in surficial geology, please contact the museum palaeontologist for further consultation.

From:	Ferris, Kevin (HC/SC) on behalf of IA-ATL / EI-ATL (HC/SC)
To:	Fitzpatrick, Allison
Cc:	Allain, Jérémie (HC/SC); Maclean, Lachlan (HC/SC)
Subject:	RE: Bear Lake Wind Power Project - EA Registration
Date:	October 18, 2023 12:48:47 PM
Attachments:	image001.png Human Health Considerations in EA.pdf

Hello Allison,

As per your email below regarding Bear Lake Wind Power Project ,please identify any project-related human health impacts to which you require advice and guidance from Health Canada.

HC's role in Impact/Environmental Assessment is founded in statutory obligations under the Canadian Impact Assessment Act, and its knowledge and expertise can be called upon by reviewing bodies (e.g., Impact Assessment Agency of Canada, review panels, Indigenous groups and/or other jurisdictions). In the absence of such a request from one of the above noted groups, HC is unable to carry out a comprehensive review of the project. **However, HC is able to accommodate specific requests for human health advice and guidance related to provincial environmental assessments within a reasonable timeframe.**

Health Canada currently possesses expertise in the following areas related to human health: air quality, recreational and drinking water quality, traditional foods (country foods), noise, and methodological expertise in conducting human health risk assessment.

To help with your review of human health impacts, I have attached a document of common human health considerations in project reviews and links to Health Canada's guidance documents.

Kind regards,

Kevin Ferris
Regulatory Operations and Enforcement Branch
Health Canada / Government of Canada
kevin.ferris@hc-sc.gc.ca

Direction générale des opérations réglementaires et de l'application de la loi
Santé Canada / Gouvernement du Canada
kevin.ferris@hc-sc.gc.ca

From: Fitzpatrick, Allison <Allison.Fitzpatrick@novascotia.ca>
Sent: Tuesday, October 17, 2023 5:15 PM

Health Canada Santé Canada

Human Health Considerations in Environmental Assessment

Health Canada (HC) provides the following generic considerations for evaluating human health impacts in environmental/impact assessment (EA/IA). Please note that this is not an exhaustive list of human health concerns that may result from projects, and that issues will vary based on project specifics. Please also note that HC does not approve or issue licenses, permits, or authorizations in relation to the IA. HC's role in Impact Assessment is founded in statutory obligations under the Canadian Impact Assessment Act, and its knowledge and expertise can be called upon by reviewing bodies (e.g., Impact Assessment Agency of Canada, review panels, Indigenous groups and/or other jurisdictions). In the absence of such a request from one of the above noted groups, HC is unable to carry out a comprehensive review of the project. However, HC is able to accommodate specific requests for human health advice and guidance related to provincial environmental assessments within a reasonable timeframe.

HC currently possesses expertise in the following areas related to human health: air quality, recreational and drinking water quality, traditional foods (country foods), noise, and methodological expertise in conducting human health risk assessment. Based on Health Canada's "*Guidance for Evaluating Human Health Impacts in Environmental Assessment*", please consider the following information on these topics to assist in your review.

	Consideration	**Reference Document**
Receptor Location(s)		
Please ensure the registration document clearly identifies the locations of all receptors that may be impacted by the proposed project, including any receptors located along the transportation route, if applicable.	• It is important to clearly describe the location and distance from the proposed site(s) to all potential human receptors (permanent, seasonal or temporary), taking into consideration the different types of land uses (e.g. residential, recreational, industrial, etc.), and identifying all vulnerable populations (e.g. in schools, hospitals, retirement or assisted living communities). Note that the types of residents and visitors in a particular area will depend on land use, and may include members of the general public and/or members of specific population subgroups (Indigenous peoples, campers, hunters, etc.)	Section 7.1.3 of *Health Canada. 2019. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.* *https://publications.gc.ca/site/eng/9.870475/publication.html*

	• If there is the potential that project-related activities could affect human receptors, impacts to human health should be considered.	
Atmospheric Environment		
Project impacts to the atmospheric environment include changes to air quality and noise, and can occur in both the construction, operation and decommissioning phases of the project. Project impacts to air quality are commonly caused by emissions from equipment or vehicles as well as by dust. Noise impacts are commonly caused by equipment as well as by activities such as blasting.	• If there are receptors that could be affected by project-related activities, impacts to the atmospheric environment should be considered. Changes to the atmospheric environment that may impact human health include: o impacts to air quality (dust or fumes including $PM_{2.5}$, NO_x, SO_x, PAHs) o increased noise from construction or operations	*Health Canada. 2016. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.* http://publications.gc.ca/pub?id=9.832514&sl=0 *Health Canada. 2016. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.* http://publications.gc.ca/pub?id=9.802343&sl=0
	• If there are receptors who could be impacted by project-related noise, it may be necessary to inform receptors prior to loud activities, such as blasting.	
	• If there is the potential for impacts to human receptors from noise and/or air quality changes from the project, the proponent should consider establishing mitigation measures. If complaints are received additional mitigation measures may be required.	
Recreational and Drinking Water Quality		
The proponent should consider whether any nearby waterbodies are used for recreational (i.e. swimming, boating, or fishing) or drinking water purposes, as well as whether there are any drinking water wells in the area potentially impacted by the project. Nearby drinking and/or recreational water quality may be impacted by accidents or malfunctions, such as a fuel spill; by dust and	• If there is the potential for impacts to drinking and/or recreational water quality from the project site, the proponent should consider establishing mitigation measures. If complaints are received additional mitigation measures may be required.	*Health Canada. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Water Quality. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.* http://publications.gc.ca/pub?id=9.832511&sl=0
	• The proponent should consider preparing a response plan in the event of an accident or malfunction with the potential to impact drinking and/or recreational water quality. Response plans should include a spill response kit, adequate spill response training, and a communication plan to notify all recreational and drinking water users in the impacted area as well as all relevant authorities.	

increased sediment runoff; and by other chemical discharges to the environment. Additionally, wells in the area potentially impacted by the project may be impacted by activities such as blasting.	• In some cases, for projects that are likely to have an impact on drinking and/or recreational water quality, the proponent should consider conducting water monitoring prior to the start of the project (to establish a baseline). Monitoring would continue throughout the construction, operation and decommissioning phases of the project (as applicable) to monitor for any changes in water quality or quantity.	
Country Foods		
If there are plants or animals present in the area potentially impacted by the project that are consumed by humans, there may be potential for impacts to country foods. The proponent should consider all country foods that are hunted, harvested or fished from the area potentially impacted by the project. Impacts to country foods may occur from the release of contaminants into soil or water (including from an accident or spill) or from deposition of air borne contaminants.	• If there is the potential for impacts to country foods from the proposed project, the proponent should consider establishing mitigation measures. If complaints are received additional mitigation measures may be required. • The proponent should consider preparing a response plan in the event of an accident or malfunction with the potential to impact country foods. Response plans should include a spill response kit, adequate spill response training, and a communication plan to notify all potential consumers of country foods in the impacted area as well as all relevant authorities.	*Health Canada. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Country Foods. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.* http://publications.gc.ca/pub?id=9.855584&sl=0

For more information on HC's guidelines for evaluating human health impacts in environmental assessments, please see:

Health Canada. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. http://publications.gc.ca/pub?id=9.832514&sl=0

Appendix B of this guidance document provides a checklist that may be beneficial in verifying that the main components of a noise environmental assessment are completed.

Health Canada. 2016. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. http://publications.gc.ca/pub?id=9.802343&sl=0

Appendix A of this guidance document provides a checklist that may be beneficial in verifying that the main components of an air quality environmental assessment are completed.

Health Canada. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Water Quality. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. http://publications.gc.ca/pub?id=9.832511&sl=0

Appendix A of this guidance document provides a checklist that may be beneficial in verifying that the main components of a water quality environmental assessment are completed.

Health Canada. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Country Foods. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. http://publications.gc.ca/pub?id=9.855584&sl=0

Appendix A of this guidance document provides a checklist that may be beneficial in verifying that the main components of a country foods environmental assessment are completed.

Health Canada. 2019. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Human Health Risk Assessment. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario. https://publications.gc.ca/site/eng/9.870475/publication.html

Appendix B of this guidance document provides a checklist that may be beneficial in verifying that the main components of a human health risk assessment are completed.

NOVA SCOTIA
Environment and Climate Change

Barrington Place
1903 Barrington Street
Suite 2085
Halifax, Nova Scotia
Canada B3J 2P8

Date: November 29, 2023

To: Allison Fitzpatrick, Environmental Assessment Officer

From: Jennifer Lonergan, District Manager, ECC Kentville Office
Michael McLean, Environmental Officer, ECC Kentville Office

Subject: Bear Lake Wind Power Project Hants, Lunenburg and Halifax Counties, Nova Scotia

Scope of review:
This review focuses on the following mandate: Watercourse and wetland alteration requirements

List of Documents Reviewed:
Bear Lake Wind Power Project – Environmental Assessment Registration Document

Details of Technical Review:

77 wetland alterations and 35 watercourse alterations requiring approval or notification are listed within the EA document.

Key Considerations: (provide in non-technical language)

The large number of watercourse and wetland alterations raises the question of whether more work could be done to avoid unnecessary alterations where possible through site planning.

The proposed 77 wetland and 35 watercourse alterations requiring approval or notification poses a significant review and processing workload for ECC ICE staff, particularly if all received within a short timeframe. This has the potential to make standard review timelines difficult to meet.

Kwilmu'kw Maw-klusuaqn Negotiation Office
Mi'kmaq Rights Initiative
Our Rights. Our Future.

75 Treaty Trail
Truro, NS B6L 1W3

Tel (902) 843 3880 **Fax** (902) 843 3882
Toll Free 1 888 803 3880
Email info@mikmaqrights.com
www.mikmaqrights.com

November 27th, 2023

Allison Fitzpatrick
Environmental Assessment Officer
Environmental Assessment Branch
Nova Scotia Environment and Climate Change
1903 Barrington St., Suite 2085
P.O. Box 442, Halifax, NS B3J 2P8
Email: allison.fitzpatrick@novascotia.ca

RE: Consultation with the Mi'kmaq of Nova Scotia on Bear Lake Wind Power Project, Hants County, Lunenburg County and Halifax County

Ms. Fitzpatrick,

I write in response to your letter dated October 23, 2023, requesting consultation under the *Terms of Reference for a Mi'kmaq-Nova Scotia-Canada Consultation Process* (ToR) as ratified on August 31, 2010, on the above noted project. We wish to proceed with consultation.

We also wish to acknowledge that Membertou, Paqtnekek and Potlotek First Nations are investors in the proposed project.

Kwilmu'kw Maw-Klusuaqn (KMK) wishes to highlight that all information relevant to this project is not available for review and comment at this time. The supplemented Archaeological Resource Impact Assessment (ARIA) completed by Boreas Heritage and the Mi'kmaq Ecological Knowledge Study (MEKS) completed by Membertou Geomatics are not currently available. Consultation will continue as these documents become available. It is expected that the Nova Scotia Environment and Climate Change (NS-ECC) provide all supporting documents for our review when projects trigger consultation. Without all documentation, it is difficult to assess how this project may impact the Mi'kmaq.

This project may impact several communities' rights as protected under section 35 of the Constitution Act, 1982. Section 35 affirms the Mi'kmaq of Nova Scotia have a Right to hunt and fish throughout Mi'kma'ki (Unceded land of the Mi'kmaq people). This project may impede that ability in the surrounding area (including but not limited to the ability to hunt, fish, and gather in the project area). As referenced in the Environmental Assessment Registration Document (EARD), Moose, Atlantic Salmon, American Eel, Brook Trout, Bear, and more are all found in the project area. It is expected that NS-ECC will ensure these species not be impacted by the proposed project.

The EARD revealed that Mainland Moose have been recorded within a 100km radius of the Project Study Area. Mainland moose populations have declined in recent years due to increased industry development, climate change, habitat, and habitat connectivity loss. It's been implied that moose will alter movement due to the sensory disturbance; and have documented that they may not inhabit an area within 3-4 km due to continued industry development. While we are encouraged to see habitat suitability modeling being conducted, and with just ~700 mainland moose in Nova Scotia, it will be difficult to support any activity that will degrade the habitat of this Endangered Species. Strict mitigative measures must be developed and implemented.

Section 3.3.1 of the EARD states that "Clearing of trees and grubbing areas for construction". We encourage the proponent to engage with the local Mi'kmaw communities to determine if any cleared plant life can be utilized.

With the large number of projects being submitted to regulators and approved in recent months, it is our expectation that NS-ECC is monitoring the cumulative impacts of all projects within Mi'kma'ki.

After reviewing "Mi'kmaq Engagement" on Section 5.4, a greater level of engagement is needed for Glooscap First Nation and Annapolis Valley First Nation. Glooscap First Nation and Reserve Lands administered by Annapolis Valley First Nation are in close proximity to this proposed project. Meetings with both Chief and Council, and open houses for both communities are recommended.

The KMK Archaeological Research Division (ARD) has reviewed the BEAR LAKE WIND PROJECT ARIA, A2022NS096, conducted by CRM Group in 2022 in Vaughan, Nova Scotia. This ARIA was "designed to identify, document, interpret and make management recommendations for potential cultural resources within the proposed impact area. The background screening and potential modelling focused on a broader area of interest, while archaeological reconnaissance focused on the proposed infrastructure layout" (CRM Group, A2022NS096: i). It did not involve sub-surface testing.

The results of this study (HRP A2022NS096) identified 12 Areas of Interest (AOIs) within the Broader Study Area. Of these 12 AOIs, a total of 10 cultural features were identified and used to "verify and refine the results of the archaeological potential modelling, which was used in the infrastructure design process" (CRM Group, A2022NS096: i). Features found within these areas include a modern campsite, hunting blinds, a historic camp and road (CRM Group, A2022NS096: 42-59). Although "no areas of high archaeological potential were impacted by the present infrastructure alignment" and "[n]o AOIs were impacted by the present infrastructure alignment", the features identified were found within the overall study area and do demonstrate contemporary use that aligns directly with traditional use (CRM Group, A2022NS096: i-ii). Recognizing that a supplementary study is currently underway by Boreas Heritage Consulting Inc. (Boreas Heritage), conclusive feedback cannot be offered until this document can be reviewed by our office.

The project does exhibit complex impacts within a landscape that has a significant record of Mi'kmaw presence and archaeological heritage. The proposed project includes up to fifteen (15)

wind turbines and includes electrical interconnection lines, substation, access roads, and temporary laydown areas. Although the project will use existing roads to minimize new road construction, it is projected that 15km of new road construction will be required.

The Assembly of Nova Scotia Mi'kmaw Chiefs expects a high level of archaeological diligence with evidence-based decisions grounded in an understanding of the subsurface environmental data. The Maw-lukutijik Saqmaq (Assembly of Nova Scotia Mi'kmaw Chiefs) expects subsurface data, adequate to eliminate concern for presence, protection, and management of Mi'kmaw archaeological and cultural heritage as part of assessment of potential in advance of any development. Disturbance is defined, for archaeological purposes, as the dislocation of soils and/or sediments, such as that by heavily treaded or tracked vehicles, as well as purposeful excavation by heavy equipment. Mi'kmaw archaeological sites have developed since time immemorial and may not be identified from the surface character of the current landscape, one cannot conclusively eliminate potential for Mi'kmaw archaeological heritage, without subsurface testing, regardless of current landscape conditions.

We do not support clearances without subsurface testing. We consistently recommend in areas that will undergo impact, that subsurface testing be undertaken to confirm the presence, or lack of presence, of archaeological heritage. This is especially important in landscapes which will undergo significant permanent mechanical alteration associated with wind energy projects. We wish to clarify that negative tests and negative evidence are considered relevant and important data, regardless of suspected disturbances or classifications of low potential to exhibit archaeological resources. There remains under consideration of elevated landscapes as potential Mi'kmaw archaeological sites, which hinders the ability and awareness of archaeologists to detect or model sites in such locals. The importance of these types of sites and areas are demonstrated in records wherein hunting for Porpoise and Cariboo relied on the strategic vista afforded hunter support from lookouts atop such places. We will provide additional feedback when we receive supplemental information from Boreas Heritage Consulting Inc. gathered in 2023 that is still under review by Nova Scotia Communities, Culture, Tourism and Heritage (CCTH).

KMK does not represent the communities of Millbrook, Sipekne'katik, or Membertou First Nations.

Please contact Senior Mi'kmaq Energy & Mines Advisor, at KMK for any questions.

Yours in Recognition of Mi'kmaw Rights and Title,

Director of Consultation
Kwilmu'kw Maw-Klusuaqn

c.c.:

, Kwilmu'kw Maw-klusuaqn
Gillian DesRoche, Nova Scotia Office of L'nu Affairs
Michael McLean, Nova Scotia Environment and Climate Change
Jennifer Lonergan, Nova Scotia Environment and Climate Change
Melanie Cameron, Nova Scotia Natural Resources and Renewables

From: @gmail.com
To: Environment Assessment Web Account
Subject: Proposed Project Comments
Date: October 24, 2023 10:06:51 AM

Project: bear-lake-wind-power Comments: There are a couple of uranium occurrences in the vicinity of the Project that have been identified as part of historical government mapping of the bedrock in the area. Have these been fully investigated? similar to the studies completed at the Ben Mills Wind Project to the west. These should be investigated by a P.Geo. geologist with experience in uranium exploration to see if there is potential have a uranium deposit within the confines of the Project area. Name: Email: @gmail.com Address: Municipality: Dartmouth email_message: Privacy-Statement: agree x: 56 y: 18

From: @ns.sympatico.ca
To: Environment Assessment Web Account
Subject: Proposed Project Comments
Date: October 25, 2023 7:47:48 AM

Project: bear-lake-wind-power Comments: The Bear Lake wind farm project is being located on land that shows signs of ongoing forestry, a past small rock quarry operation and, as being sufficiently remote from adjacent residents. Wind turbine farms do provide maintained access into remote areas which can greatly assist in woodland wild fire control management. Having lived for many years with wind tubines within the equivalent sighting range as provided within the Bear Lake documentation I can speak with certainty that no ill effect has come this way by their presence. Renewable energy is needed, the additional residential tax base created by the wind farm is substantial and does provide a direct cost benefit/relief to the regional propertry owner. Nova Scotia needs industrial growth to sustain the every growing wants/needs of its population. If the Bear Lake documentation adequately demontrates that current requirements are being meet then the project should go ahead. There will always be a fringe element that oppose. Name: Email: @ns.sympatico.ca Address: Hammonds Plains, Nova Scotia, B3Z 1K3 Municipality: Halifax email_message: Privacy-Statement: agree x: 54 y: 26

From: Protect Vaughans Community
To: Minister, Natural Resources and Renewables; Economic Development Minister;

Subject: Bear Lake Windfarm Concerns
Date: October 26, 2023 12:16:32 AM

Good evening elected officials,

I'm writing on behalf of numerous concerned residents and landowners of the Vaughan community in Hants County.
Recently, our little community was taken aback when we received a last minute notification of an open house at the Southwest Firehall for the Bear Lake Wind Farm Project.
Most of us were not notified at all of the first open house, while the second open house was announced with less than 24 hours notice via email. During both open houses, we received very little accurate information about the project and most of our questions were left unanswered.

In response, we organized a community gathering at the Little Red Schoolhouse on October 14th so the residents could converse, share dialog, concerns, and talk to residents who have been researching the proposed projects of EverWind. We had also invited EverWind to attend to give the organization another chance to regain the public's trust. And less than 24hrs prior to our community meeting we received a response stating they would be attending. Unfortunately, EverWind representatives were unable to answer the majority of the questions being asked, once again. But even more concerning was the fact that the CEO of EverWind spoke about the unprecedented amount of corruption he had found at the Provincial Government Level, as well as Nova Scotia Power Corp, and advised us that even though the Nova Scotia Government broadcasts themselves as being "open for business", they really arent when you factor in the lack of support for businesses like his. After expressing our concerns about the project, we were relieved when Trent Vinci offered to " pack up and move it away" should the community not want the project there. We made sure to involve our local council members by tagging them in a social media post, but unfortunately, none of them showed. However, Melisaa Sheehy-Richard, our MLA did attend expressing confusion, stating that she was only informed of the project the day before, when she had a meeting with Trent

Vichi. Despite this we had actually learned from the environmental assessment released on October 24th that our MLA Melissa Sheehy-Richard was informed via a virtual meeting on August 14th 2023. While some may view this as deceptive, we choose to believe it was simply an oversight on her part.

Environmental assessments play a crucial role in determining the potential impact of any proposed project on the surrounding community and natural environment.
And as most of us are aware, one of the first steps in conducting an accurate and detailed environmental assessment is to engage and inform the public, the community members and right holders who have vested interests in the property where the project is being proposed. Right holders, who are individuals with a non-commercial connection to the land, such as the 6 families who have been using the land for 7 generations for activities like hunting, fishing, camping, hiking, berry picking and providing food for their families while teaching respect and values to younger generations are especially important stakeholders in this process. Their deep connection to this ancestral land makes them valuable sources of knowledge and insight into its ecological and cultural significance, passed down through generations. This connection is made evident in the naming of roads after these families, such as " Aunt Mables" However, despite their long-standing connection to this land, they were not consulted or informed about the proposed wind farm project that would have a direct impact on their properties. The significance of this ancestral land goes beyond just their personal connection, as it is also home to many endangered species such as pine marten, mainland moose, lynx, blanding's turtles and old growth forest. The preservation of this land is not only important to these families who have a deep connection to it, but also for the protection of these endangered species and the overall health of the ecosystem.

With all this being said, we are confident that our elected officials share the same concerns and reservations as we do regarding this project. The fact that there are no signed contractual agreements aside from mere memorandums of understanding, raises red flags and calls for a full stop to this project. As a representative of numerous community members, I am voicing their request to halt this project as there have been too many incorrect and inaccurate assessments made. Additionally, there may be conflicting interests among our elected officials, making it even more imperative to carefully consider the potential consequences of moving forward with this project. We implore you not to allow our community to be used as a "guinea pig" for a company with no proven track record and no tangible benefits for our community. Let us not take unnecessary risks and prioritize the well-being and best interests of our community above all else.

Thank you all for your time and consideration. We look forward to a prompt response.

Sincerely,

From: Sara Poirier
To:

Subject: RE: Bear Lake Windfarm Concerns
Date: October 26, 2023 11:09:35 AM
Attachments: image543202.png

> Some people who received this message don't often get email from spoirier@westhants.ca. Learn why this is important

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Good morning,

West Hants Regional Municipality has yet to receive an application for the Bear Lake Wind Farm. If/when an application is received the application will follow the regular planning process including the opportunity for public comments and questions during the Public Information Meeting and Public Hearing. These meetings will be advertised in advance.

The Provincial government is reviewing the environmental assessment which includes the opportunity for the public to submit comments online, by mail, fax or email. More information can be found online https://novascotia.ca/nse/ea/bear-lake-wind-power/

All the best,
Sara

West Hants
something inspiring awaits

Sara Poirier, LPP MCIP (she/her)
Director of Planning and Development
West Hants Regional Municipality
PO Box 3000, 76 Morison Drive, Windsor, NS, B0N2T0

T 902-798-8391 Ext. 117
E spoirier@westhants.ca
W www.westhants.ca

From: Protect Vaughans Community <protectvaughans@gmail.com>

Sent: Thursday, October 26, 2023 12:16 AM
To:

Subject: Bear Lake Windfarm Concerns

Good evening elected officials,

I'm writing on behalf of numerous concerned residents and landowners of the Vaughan community in Hants County.
Recently, our little community was taken aback when we received a last minute notification of an open house at the Southwest Firehall for the Bear Lake Wind Farm Project.
Most of us were not notified at all of the first open house, while the second open house was announced with less than 24 hours notice via email. During both open houses, we received very little accurate information about the project and most of our questions were left unanswered.

In response, we organized a community gathering at the Little Red Schoolhouse on October 14th so the residents could converse, share dialog, concerns, and talk to residents who have been researching the proposed projects of EverWind. We had also invited EverWind to attend to give the organization another chance to regain the public's trust. And less than 24hrs prior to our community meeting we received a response stating they would be attending.
Unfortunately, EverWind representatives were unable to answer the majority of the questions being asked, once again. But even more concerning was the fact that the CEO of EverWind spoke about the unprecedented amount of corruption he had found at the Provincial Government Level, as well as Nova Scotia Power Corp, and advised us that even though the Nova Scotia Government broadcasts themselves as being "open for business", they really arent when you factor in the lack of support for businesses like his. After expressing our concerns about the project, we were relieved when Trent Vinci offered to " pack up and move it away" should the community not want the project there. We made sure to involve our local council members by tagging them in a social media post, but unfortunately, none of them showed. However, Melisaa Sheehy-Richard, our MLA did attend expressing confusion, stating that she was only informed of the project the day before, when she had a meeting with Trent Vichi. Despite this we had actually learned from the environmental assessment released on October 24th that our MLA Melissa Sheehy-Richard was informed via a virtual meeting on August 14th 2023. While some may view this as deceptive, we choose to believe it was simply an oversight on her part.

Environmental assessments play a crucial role in determining the potential impact of any proposed project on the surrounding community and natural environment.
And as most of us are aware, one of the first steps in conducting an accurate and detailed environmental assessment is to engage and inform the public, the community members and right holders who have vested interests in the property where the project is being proposed. Right holders, who are individuals with a non-commercial connection to the land, such as the 6 families who have been using the land for 7 generations for activities like hunting, fishing, camping, hiking, berry picking and providing food for their families while teaching respect and values to younger generations are especially important stakeholders in this process. ,
Their deep connection to this ancestral land makes them valuable sources of knowledge and insight into its ecological and cultural significance, passed down through generations. This connection is made evident in the naming of roads after these families, such as " Aunt Mables" However, despite their long-standing connection to this land, they were not consulted or informed about the proposed wind farm project that would have a direct impact on their properties. The significance of this ancestral land goes beyond just their personal connection, as it is also home to many endangered species such as pine marten, mainland moose, lynx, blanding's turtles and old growth forest. The preservation of this land is not only important to these families who have a deep connection to it, but also for the protection of these endangered species and the overall health of the ecosystem.

With all this being said, we are confident that our elected officials share the same concerns and reservations as we do regarding this project. The fact that there are no signed contractual agreements aside from mere memorandums of understanding, raises red flags and calls for a full stop to this project. As a representative of numerous community members, I am voicing their

request to halt this project as there have been too many incorrect and inaccurate assessments made. Additionally, there may be conflicting interests among our elected officials, making it even more imperative to carefully consider the potential consequences of moving forward with this project. We implore you not to allow our community to be used as a "guinea pig" for a company with no proven track record and no tangible benefits for our community. Let us not take unnecessary risks and prioritize the well-being and best interests of our community above all else.

Thank you all for your time and consideration. We look forward to a prompt response.

Sincerely,

From: _____@yahoo.ca
To: Environment Assessment Web Account
Subject: Proposed Project Comments
Date: October 26, 2023 11:23:26 AM

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Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

Project: bear-lake-wind-power Comments: I live in upper Vaughanâ?Tsâ?¦ the south Canoe windmills effect my metal health already. If the wind is blowing from the windmill towards my house, I can hear them and thereâ?¦ so when the wind is blowing from the from the opposite direction, I enjoy the piece and quiet. You build this I will have no piece. This is why I have lived here for 38 years. On top of that, I will have the flicker effect from one of more windmills. Way way to close. I enjoy the mornings and the sun. I will also lose between 20-60 of my home value. I will not be able to live here and yet I wonâ?Tt be able to sell. If city folk want this, put it in among the city buildings. I like the wildlife and the land. A lot more then the people wanting this Name: Email: @yahoo.ca Address: Municipality: Windsor email_message: Privacy-Statement: agree x: 44 y: 13

From:	Environment
To:	Environment Assessment Web Account
Subject:	Proposed Project Comments
Date:	October 27, 2023 3:19:25 PM

Project: bear-lake-wind-power Comments: As a resident of the community where several wind mill projects are on going near my home, whom was not notified of any such project by mail, email, a visit, a phone call to have any say. I am appalled that I pay taxes heavy taxes at that to live on this property and am told how to maintain my 40 acres of woodland but yet have no say on what happens at my back door. I do not agree with this project or the destruction of the woodland out in this beautiful community which harbours many species who are constantly being driven out of their homes. When does this end? When do we start saying no to people who have more money and greed than brains? They do not make land anymore and we should not be allowing a â?~projectâ?T to be happening here that is destroying the land as well as not any benefit to us what so ever. We currently have thousands of Nova Scotians and their families living in tents and the priority here is to supply power to another country? Name:
Email: Address: Municipality: Vaughan email_message: Privacy-Statement: agree x: 77 y: 31

From:
To: Environment Assessment Web Account
Subject: Proposed Project Comments
Date: October 29, 2023 4:08:22 PM

Project: bear-lake-wind-power Comments: Drawing # 10.2M - Shows a proposed view from the Armstrong lake bridge. It shows quantity 5 wind turbines very visible over the tree line. This is an area of outstanding beauty and the addition of these five wind turbines is detrimental to the view of the natural area. Can these five turbines be either reduced in height or removed / moved from the project? Name: Email: @novascotia.ca Address: Municipality: Windsor email_message: Privacy-Statement: agree x: 54 y: 19

From: Protect Vaughans Community
To: Environment Assessment Web Account
Subject: Protect Vaughan Public Comment on Bear Lake Wind Environmental Assessment
Date: November 20, 2023 8:40:21 AM

Protect Vaughan Public Comment on Bear Lake Wind Environmental Assessment

In this comment on Bear Lake Wind EA we will be referring often to South Canoe Wind farm and the EA conducted on the project by Strum Environmental, Strum Environmental has conducted the EA for Bear Lake Wind as well. In fact many or the same employees worked on both assessments. Please bear with us as we demonstrate the relevance. Our hope is that by the time we reach our conclusion we will have clearly demonstrated why the Bear Lake Wind project is of grave concern for our community.

This public comment is written for our group, many of whom old and young do not have access to email either by choice(one of the reasons people choose to live in Vaughan) or by lack of internet connection. We hope it will be weighted as such.

2.2 Purpose and Need

NS Power originally conceived this Project, it would have at least contributed to our goals of 80% renewable energy by 2030. The language used in this EA regarding purpose is deceptive at best. This Bear Lake project robs Nova Scotians of valuable renewable energy, as it will be used for hydrogen production for export. This use did not/does not exist in the grid today, so to create a new energy user then supply said user does NOT get us closer to 80% goal. In fact it robs Nova Scotians of valuable sites for wind farms. The very fact that Bear Lake is even being considered for a wind project supports the premise that suitable sights are not readily available . The close proximity to many significant areas such as Panuke Wilderness Area, Panuke Lake Nature reserve, and two provincial parks as well the project is situated between Upper Vaughan (route 14) and Falls Lake West rd in Chalet Hamlet, with hardly enough space to meet min distances for sound and shadow flicker (if it does meet requirement) Area is so tight that turbines had to be placed inside significant habitat (deer wintering area) . If this area is among the last remaining sites where wind turbines are suitable, we don’t think Nova Scotia

should even be considering exporting hydrogen .

3.1 Geographic Location

Proponent states project is primarily on private lands, this statement is FALSE Everwind has now confirmed 7 of 15 turbines (45%) are on crown land PID # 45060068.

Maps included in this EA from CBCL drawn for NS Power show a layout that would make the above statement closer to accurate. In the original CBCL layout only 2 turbines are on PID#45060068 (And just barely at that). Under 7.4.1.2 page 129 second paragraph states " A SMALL PORTION OF THE ASSESSMENT AREA LIE WITHIN CROWN LAND , HOWEVER, MOST OF THE ASSESSMENT AREA IS ON PRIVATE LAND, AND WHILE NO LEGAL PROTECTION IS GRANTED TO HABITAT ON PRIVATE LAND, BEST PRACTISES DESCRIBED WITHIN WERE STILL CAREFULLY CONSIDERED".45% is darn close to ½ the project, NO consideration is given to habitat on the crown portion in fact turbine #1 is dead center of significant habitat (deer wintering area).This is very concerning as Strum Environmental identified this deer wintering area as significant habitat in 2012 when preparing EA for South Canoe lake wind farm, and now places a wind farm right on it. The stakes are too high to make errors of this magnitude. Turbine locations found in this report place turbines T9, T10, T11, T12, T2, T1, and T8 squarely on PID#45060068, Drawing 2.2 confirms this. If we look at figure 1-1 from Appendix H PART1 we see a project layout that would make 7.4.1.2 a correct statement.

This project is on the easterly ridge (A high ridge at that) of the Avon river valley . The south Canoe and Benjamin Mills wind farm(currently being built) are on the westerly ridge of the Avon river valley , Upper Vaughan is where the V of this Valley comes together forming a choke point , More Wind farms in this area require a very detailed study , This EA is dismissive of accumulative effects from South Canoe and Benjamin Mills, It is our opinion that lining the ridges on both sides of a valley is a recipe for disaster, especially one as important as the AVON RIVER valley.

On the subject of dismissiveness, local moose sightings are talked about in a tone as though they aren't to be believed, of the few VC's that are identified there are no reasons given to support their conclusion that there will be little to no effect on them. Again, very dismissive.

Note: If the Government of Nova Scotia is serious about goal to protect more crown land, we can't think of a better place to start than the Avon River Valley

4.2-4.3 Assessment scope & Approach / Identify valued components

More detail on each in respective sections, highlights are with habitat, Avifauna especially, shadow flicker and visual impacts as well.

Public also stands out as a concern as the Crown land use was not considered. Multiple 5, 6, and 7 generation families have used this particular piece of crown land unimpeded for activities like hunting, fishing, and hiking for 5, 6, and 7 generations. Provincial law regarding distance from structure (402 M) for hunting will effectively place PID # 45060068 off limits to hunters who have used this land uninterrupted until now.

4.4 Spatial Boundaries

We are told the following in this section :

Project area = physical footprint of project

Local assessment area LAA

Regional assessment area RAA

Study area = Extent of PIDs projection broad study area

Assessment area = Project area

For this project buffer = 100M radius around each turbine, 25m from centerline of road, and 20m for connector lines

Keeping these provided parameters in mind there is something wrong with table 3.2

We are in agreement with the 5588 ha

If Assessment area = Project area then why does table state:

Assessment area of 410 ha

Project area of 99 ha

Based on the criteria laid out in 4.4.1 of 100m radius around turbine and 25m to each side of centerline and 20m for connector lines the 99ha matches the newest layout in drawing 2.2,BUT the assessment area of 410ha matches the old layout from CBCL Figure 1-1 scaling

shows they used a 150m radius and 60m total width for roads and transmission. A MUCH better detailed assessment area for sure BUT it was the wrong location compared to the current layout.

A theory we have to explain this discrepancy:

We believe Everwind may have conceived the latest layout as a sacrificial lamb , when the public and or province of Nova Scotia says no to the project. Everwind offers up a compromised layout that was in fact the plan all along. If this turns out to be the case the use of such a deceitful tactic only serves to confirm the illegitimacy of this project

Side note: A pet peeve we have, turbines are over 200m tall, one would think the detailed assessment area should be a radius at least = to turbine height

Often this EA refers to previous forestry activities that infer the land was already damaged in some sense. We take exception to this especially on the 45% that is crown, this land had best practices forest management supervised by our own Department of Natural Resources. Are we now expected to believe it was mismanaged?

6.0 Engagement

6.2 States proponents directly engaged local landowners regarding the project, and expanded its engagement efforts to include additional landowners near the project area. Several of our members are a collection of one of the 7 generation families we spoke of (the very road this project is accessed from was named after the grandmother of 2 of our members AUNT MABELS ROAD) 5 PIDs in close proximity to this project are owned by members of this family.2 of these PIDs border the project area (PID #45060068) and would be 2 of the most affected properties in the area. They were not contacted

2 open houses were held, the second of which was less than 24 hours notice and was held from 2-7pm. Most people have a hard time to get home from work and attend before 7pm

Regarding information. Community confusion session would be a more accurate description. Many questions were met with “we will advise at a later date” or “a appropriate amount “ or “a appropriate time” Many of our members inquired about the location of the turbines, we asked if they were on crown land , how many and where. We were told 3 different answers from 3 different representatives. This became an issue that our group really wanted answers to. On Oct 14th 2023 our group held our own community lead wind farm discussion. Everwind

sent representatives himself. At this event Everwind argued profusely that none of the 15 turbines were on crown land. We now know from the EA the exact locations (if there not a Trojan horse) were emailed to NAV Can on Sept 15th 2023. With this in mind even back at the Sept 19th open house event Everwind knew the locations and most certainly at the community lead event of Oct 14th 2023.Why the secrecy? Why the confusion?

Community engagement involves more than a free hat and 20.00 fuel gift card (Ironic a "Green " Energy company giving free gas)

Community engagement can not, must not be considered complete until the community has had a reasonable amount of accurate information for a reasonable amount of time. It was not until EA was filled on Oct 24th 2023 that we could even find the location of turbines. By not supplying accurate information until EA was submitted Everwind has stacked the deck in their favor, robbed the community of opportunity to question the project, one question leads to another and another. When the first questions are met with a deflective answer the conversation can't move forward.

An interesting point to note : Protect Vaughan asked Everwind on Oct 24th 2023 if the project could be moved off of crown land. Their reply was No as 45% of project 7 turbines is on crown land. It was only after reviewing the EA carefully for a few days that we realized by dated layout maps that the project had only recently been moved to crown land. Ironic hey? This is NOT engagement with the community as advertised.

Note: At the Oct 14th Community lead discussion located at the Vaughn Community Hall (affectionately known as the little red school house) 3 Everwind representatives (CEO included) arrived late to the meeting, they announced the GPS and did them wrong. The Irony was not lost on the community that the experts who came to explain how little harm their project would do to our community could not find our community.

7.45-7.58 Avian Habitat Study

Desk top review conducted to gather info on avian habitat study .Migratory bird activity .

Bear lake EA does NOT identify any fall migratory route. Strums in 2012 for south canoe EA identified fall migration waterfowl flight path corridor (4.11 south canoe EA) to the east of canoe lake wind farm. This is concerning as Bear lake wind farm is EAST of Canoe Lake Wind farm. Also the Valley narrows in this area.

Another concerning item is priority species in the area identified based on observed sittings in 2012 by Strums (4.13E South canoe EA)

Most alarming is in 2012 Strums identified a Bird of prey Flight path Dead Centre (no pun intended) of the proposed Bear lake wind farm (4.12B South canoe EA) many of our members enjoy watching Eagles soar in this proposed wind farm area.

We are certainly not environmental specialists or biologists of any kind. With no training of any kind the glaring inconsistencies we have identified between Bear lake and South Canoe EA's warrant a closer comparison by trained professionals.

IE. If birds are no longer in the area where did they go and why? How was this historical data missed by Strums especially as THEY prepared it in 2012?

Also point to note: 7.23E bear lake EA shows prime habitat for Olive sided flycatcher, it is not very clear what if any effort was made to investigate this area.

Again Upper Vaughan is the area where Avon river valley comes to a point, it can't be stressed enough the importance of this area to the ecosystem.

10.3 Shadow Flicker

In 2012 Strum determined that although there was no legal requirement to do so the appropriate min set back for south canoe wind farm should be 1200m given the fact that Bear lake wind is proposing turbines 38% taller than would it not be prudent to increase this min set back by 38% to 1700m ?

Strums identified the area in question as a SOCIAL CONSTRAINT in a social constraints map back in 2012 when working on the south canoe EA (drawing 3.2) What changed their mind today? How could this area now be socially acceptable for a wind farm ?

14.0 Accumulative effects

This section we believe has had the least attention of all . EA mentions :

• South Canoe Wind Power Project (6 km west) – was commissioned in 2015 and consists of 34 Acciona AW-3000/116 wind turbines for a total capacity of 102 MW. These turbines have 92 m hub heights and 116 m rotor diameters.

• Martock Ridge Community Wind Project (8 km north) – was commissioned in 2015 and consists of three Vestas V100/2000 wind turbines for a total capacity of 6 MW. These turbines have 95 m hub heights and 100 m rotor diameters.

• Ellershouse Wind Project & Wind Farm Expansion Project (14 km northeast) – was commissioned in 2015 and 2017, consisting of 10 Enercon E-92 wind turbines for a total capacity of 23.15 MW. These turbines have 98 m hub heights and 92 m rotor diameters.

• Ellershouse 3 Wind Project (8 km northeast) – received EA Approval in 2023 and is scheduled to begin construction in 2024. This wind development will consist of 12 turbines, with up to 125 m hub heights and 163 rotor diameters, for a total capacity of 66 MW.

• Benjamins Mill Wind Project (8 km northwest) – received EA Approval in 2023 and is scheduled to begin construction in winter 2023 at the earliest. This development will consist of up to 28 wind turbines for a total capacity of 150 MW; the turbines will have hub heights of 100 m to 131 m and rotor diameters of 138 m to 170 m.

We do not see any efforts to investigate the claim that there will be no accumulative effects. Blanket statements are not/do not equal evidence . We see 0 evidence of any effort to study accumulative social effects in fact this may well be the communities breaking point . The community of Vaughan gladly accepted South Canoe wind farm and recently Benjamin mills wind farm. Within days of Benjamin mills approval the community learned of Bear Lake wind farm . If approved there is no view scape in the community where windmills aren’t visible. This is unfair to take advantage of a community's good will to “do their part” Vaughan has done our part and then some.

NOTE: All projects mentioned above are on either the western or eastern side of the Avon river valley , one more reason a comprehensive cumulative effects study must me complete

Regarding accumulative effects the state of the South Canoe wind farm factors very much into this assessment. Although not widely known to the public it is no secret to the residents of Vaughan the state of the South canoe wind farm .After only 8 years of operation this farm is underperforming to a level high enough that the information is redacted in fillings to the URAB. Performance issues aside, the most alarming concern is the unmitigated oil being dispersed into the environment. Multiple turbines have oil running down the outside of the tower. We question how this is allowed to continue unmitigated. In discussions at the second open house with 1 Strum and 1 RES employee the subject of the mess at South Canoe was brought up. These representatives acknowledged that the south canoe was a real mess. We wonder if these employees are not willing to call out environmental disasters on a previous project, how willing would they be too on a current project? Pictures of the oil leaking unmitigated at south canoe attached to this email

Conclusion :

Our Ultimate hope will be the Minister out right turn down this project and then study the area for a possible protected status (add on to Panuke Wilderness area would be great). Short of this, at minimum the minister must send this back to the proponent for a redo. Once the proponent has completed the EA with the following items addressed then another public comment period would be appropriate(90 days min for public comment would be min in our opinion)

-Significant habitats identified and addressed accordingly

-Figure out where the project is located and study correct locations

-Proper bird , bat , and moose surveys completed

-Actual community engagement has taken place

-Cumulative effects study with some real effort to look at the Avon River Valley as a whole

-VCs identified with more attention to Human habitat

-Scope of EA broadened to range used back in 2012 for South Canoe

Final thought :

The plant and animal effects are dismissed and minimized

, the human effects completely disregarded. In fact there is a chart in this EA that shows the only environmental harm from this project is not doing this project. This document was an Environmental Justification not an Environmental Assessment.

The community of Vaughan happily embraced South Canoe Wind farm and Benjamin Mills wind farm for the greater good of renewable energy. We never imagined our good will would lead to having another project in a very sensitive area 45% on the only crown land accessible in this area. A piece used by generations of Vaughan families unhindered. Finally if looking after the environment is not about safeguarding it for future generations then what are we doing here?

Thank you for your time and consideration.

Sincerely,

From:
To: Environment Assessment Web Account
Subject: Public Comments On Bear Lake Windfarm
Date: November 20, 2023 12:52:29 PM

Good Day,

Bear Lake Windfarm has been a hot topic of discussion in the communities of upper and lower Vaughan. As a resident and a member of environmental organizations, I have some concerns about the location and goals of this project. While our community has been more than welcoming towards large scale windfarms in the past, with one currently in operation and another under construction, the sudden proposal of the Bear Lake Windfarm caught us off guard. With very little notice given to the community, the first open house was rescheduled and the second open house was held with less than 24hrs notice. This has left many community members unable to attend the meetings and unable to voice their opinions. As a member of the Canadian Wildlife Federation and a part time Natural Resource Training Student, I am concerned about the potential impact this project and location will have on local wildlife, the preservation of Crown Land, and impacts it will have on the health and well-being of community members,. While I understand the importance of meeting green energy goals, I believe that proper communication and transparency with the community is crucial in making informed decisions. This has not happened to the best of this organizations abilities.

We acknowledge the importance of involving our first nations members, however very little effort has been put forth to the other community members who also have ancestral attachments to these lands. 5-7 generations, this land in our community has been cherished and utilized by its members for various activities. Hunting, fishing, camping and berry picking are just a few of the many recreational activities that have been passed down through many families. These lands hold a special place in the hearts of community members who have formed a deep connection with them over time and not only have these lands provided sustenance and leisure, but they have also served as a source of mental rejuvenation for many people outside the community. The tranquility and serenity of these lands have helped in clearing the minds and improving mental health and well being, the natural beauty and peacefulness of these lands offer a much needed escape from the busy and stressful lives so many people lead. These lands hold immense cultural significance and are truly treasured by all those who have had the opportunity to experience their beauty. Many community members whose lands this proposed project borders were not advised at all on the project, in-fact in the environmental assessment it shows the transmission lines going through one of the community members properties, in which they were never contacted by Everwind or its associates and only found out about it

by reading the Environmental Assessment . This goes to show the lack of responsibility and due-diligence that has taken place with this project including the environmental assessment. This is one of the many reasons I am requesting this environmental assessment to be withdrawn and re-done.

Amongst the obvious concerns from the lack of open dialogue with the community, the wildlife and forest play a significant role in the biodiversity and the ecology of this project. This particular piece of land borders the very fragile South Panuke Wilderness Reserve which has already experienced its own difficulties due to hurricanes and climate change. This particular Wilderness Area has been of great importance to many endangered species such as mainland moose, pine marten and wood turtles. It has also been documented in Dalhousie University's studies of its importance as it is the only corridor for interconnectivity between protected areas of southern Nova Scotia to northern Nova Scotia. According to the Environmental Assessment the proper procedures have not been followed as per the Federal Governments laws on identifying and documenting Mainland Moose, or the Federally protected Wood Turtle. This analysis has not been completed within the EA document and therefore should be rejected until further studies have been performed and documented accordingly. CBCL originally started this project and made specific notes that the wood turtle survey was not conducted properly or within the appropriate time of year.

Many bird species are known to migrate through this area, as well as bats. The full scale bat assessment has also not been completed making this another reason why this project should be put on hold. The documented area of assessment does not properly address the effect this could have on bird and bat populations or the effects it could have on these creatures. Wind turbines have the potential to be very detrimental to bats, not just individually but on a population level. Bat mortalities peak during fall migration as bats move to hibernacula or migrate south. With one active hibernacula documented within 25 km of the site and 16 within 100km (bats can travel hundreds of km's to caves), this is concerning. Especially the one remaining close to the site and the abandoned mines in the vicinity. Bats would be aggregating nearby, with a real potential to come into contact with the wind farm. In fact studies have shown bats are actually drawn to turbines. We've put some thought into this in the past and compiled what most researchers are saying to improve impacts on bats and here is a key point made by these researchers Strategic Turbine Placement: Avoid known hibernation sites and migratory routes when constructing wind farms to minimize the interaction between turbines and large clusters of bats.

I'm not convinced that their statement in the environment assessment for mitigation to minimize injury/mortality (P 174) by avoiding important habitat and placement in low bat density areas is adequate to ensure minimal impact on bats.

I'm not sure I agree with the statement: The Study Area is significantly disturbed from previous and active forestry, as well as recreational activities, leaving relatively few intact and undisturbed mature hardwood forests which are preferred habitats for bats.

Yes, mature hardwoods may be preferred (especially for little brown myotis), which happen to be the most frequent specie according to their acoustic surveys. But they'll leave that area to forage, typically in open areas over wetlands. They even mention this in their next paragraph. “Suitable habitat for the Little brown myotis increased after wind turbine installation, which is likely associated with the increase in open areas and forested edges as these areas are preferred foraging habitats for the species”

As a resident I find numerous concerns within the EA regarding wetlands. CBCL identified 84 wetlands and in another study 94 wetlands were identified which makes this even more incredibly difficult to decipher.
And according to the EA it stated that of the 94 wetlands that were identified 77 of them have to be altered. I find this incredibly concerning as these wetlands are located at the top of a high ridge behind community's that could suffer increased flooding risk due to these alternations. Amongst those concerns it also plays into question what type of effects this could have on our incredibly sensitive ecosystems and the creatures within them. If this many wetlands require destruction or alterations, then why is this land even being considered, it seems as if moving this project all together to a less sensitive area would be of best interests to wildlife and residents.
As a matter of fact they identify two windmills in which will be placed dead center in two wetlands. Originally CBCL made note of 4 wetlands of significant importance because of the species at risk noted within them, but when STRUMS became project lead in the EA they identified none of them to be wetlands of significant importance (WSS). How is this even possible? Why would there be such contradictions?
Our little community has been honored in housing the largest windfarm in Nova Scotia, but at what point do we slow down and allow one project to start prior to approving another? This particular area should not be considered for windfarm development it is too close to residents homes and to detrimental to the wildlife and ecosystems encompassing them.

Thank you for your time and consideration.

Sincerely,

Comments on Bear Lake Wind Power Project

@gmail.com.

I consent to posting these comments on the Nova Scotia EA website.

These comments pertain to severe flaws in the nocturnal avian acoustic survey in the Bear Lake Wind Power Project. The registration document describes the methodology and results of this survey in Section 7.4.5.8 of the main body of the registration document and in Appendix P.

By way of background, I have been conducting avian acoustic studies for fifteen years, first as a consultant to the wind industry and, more recently, for biodiversity projects funded by the Canadian Wildlife Service and the Wildlife Division of the Nova Scotia Department of Natural Resources and Renewables.

Collisions of nocturnally migrating birds are the most significant threat wind turbines pose to wildlife. Indeed, worldwide consensus is that wind energy developers should not construct their facilities along bird migration corridors. This scientific agreement is why radar and acoustic studies have become mandatory in wind energy development. Environmental assessments must conduct these two kinds of studies in tandem as they provide two different and necessary perspectives on the dynamics of bird migration at a proposed site.

For these reasons, the Minister should not approve the Bear Lake Wind Power Project due to severe flaws in the methodology and analysis of the nocturnal avian acoustic survey. These flaws are listed here:

1) Researchers should not deploy autonomous recording units (ARUs) on trees. The tree truck blocks audio signals coming from behind the tree. At the same time, the tree's foliage can also obstruct signals. When audio signals do get through the foliage, they will often be "clipped," causing the spectrogram to become blurred and unidentifiable by humans or artificial intelligence. Thus, researchers should deploy an ARU atop a pole or stake with an unobstructed 360-degree view of the sky above.
2) In a wind farm study, using an ARU with a microphone that can detect only 100 meters vertically is unacceptable. There are other ARUs available or that can be modified to detect bird vocalizations up to 300 meters and provide a more accurate analysis of the birds potentially passing through the blade sweep of the turbines.
3) The researchers in this study filtered out all bird vocalizations that were less than 50 milliseconds in duration. By doing so, they eliminated from their analysis 12 of the 22 (55%) most common warbler night flight calls (NFCs) which average

less than 50 milliseconds. Warblers compose a highly significant proportion of nocturnal migration in the spring and autumn.

4) Finally, and very importantly, the researchers used BirdNET-Analyzer (https://github.com/kahst/BirdNET-Analyzer) to detect and classify the bird vocalizations in their data set. This software is very poor in detecting and accurately classifying NFCs and other nocturnal bird calls. In my work, I use three different AI programs to analyze bird recordings on any night. These are BirdVoxDetect (https://github.com/BirdVox/birdvoxdetect), BirdNET-Analyzer, and Nighthawk (https://github.com/bmvandoren/Nighthawk). BirdNET-Analyzer produces very few detections compared to the other two. Nighthawk delivers the most detections of nocturnal calls and accurately classifies them into species, family, or call-type groups. BirdVoxDetect is best for early morning analyses but requires expert knowledge of NFCs, diurnal calls, and songs.

In summary, the avian acoustic survey in the Bear Lake Wind Power Project registration document leaves severe gaps in understanding the species diversity and preferred stopover habitats for migratory birds in the project area.

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Project
Date: November 20, 2023 4:44:57 PM

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Good evening,

I am writing this email to express my concerns with the bear lake wind project. After reviewing the EA and listening to all the contradicting information that was vaguely provided by Everwind. I do not approve of nor do I want this windfarm in my community. It's jeopardizes all of our species at risk, they take no consideration for the wetlands as they are planning on plowing right through most of them. And I feel as if the project is just too close to residents.

Sincerely,

From:
To: Environment Assessment Web Account
Subject: Public Comment on Bear Lake Wind Farm Environmental Assessment
Date: November 20, 2023 6:54:38 PM
Attachments: IMG_1907 (now PM).

Public Comment on Bear Lake Wind Environmental Assessment

2.2 Purpose and Need

The proponent is playing on the global climate crisis to justify this project . When you consider that this wind farm is for energy that will be used to produce hydrogen through electrolysis and shipped to Germany then it has no benefit to Nova Scotia . Why should we endanger even one bird , bear , moose , or lichen for this project . Especially when many experts say the ratio is 10 KW in 2 KW out only 20% efficient. The CEO of Everwinx [redacted]) attended a community lead event in Vaughan. He argued the efficiency was much higher, but after 10 min of talking in circles he confirmed it was 70% in and 50% out for a total of 35% efficient IE 10 kw in 3.5 KW out. Even if his numbers are the correct ones 35% is terrible. I can´t believe Nova Scotia is even considering this terrible waste of our pristine Avon River Valley

3.1 Geographic Location

Everwind or Bear lake Wind or Strum Environmental seams to be confused about the location of this project. They state only a small portion is on crown land and so limited assessment was done on crown. They told our community in a email that 7 of 15 turbines (45%) are on crown land. The locations of each turbine are listed in this EA. When ploted there are 7 on crown land. Also this EA seams to be a blend of 2 project locations (CBCL maps show a project that is only a small portion on crown PID)and conducted by 2 different assessment companies(CBCL and Strum Environmental). With the glaring errors in the most basic information, I think this EA should be returned to sender, with a note to try again take your time there is no rush. Our Community is worth the effort

4.4 Spatial Boundaries

I spend hours looking at the numbers presented here I cant get them to work out. Im sure there is a error. Again maybe because of the 2 separate projects that seam to have been blended together .

Were told Assessment area = Project area and

For this project buffer = 100M radius around each turbine, 25m from centerline of road, and 20m for connector lines

Using this info there is something wrong

I looked up the PIDs listed and agree with the 5588 ha

If Assessment area = Project area then why do they list :

Assessment area of 410 ha AND Project area of 99 ha

99ha seams to match the newest layout by strums BUT the assessment area of 410ha matches the old layout from CBCL Figure 1-1 shows they used a 150m radius and 60m total width for roads and transmission. Again this looks like a blended assessment and who could tell if any of it was completed in the proper location ?

In previous EAs I have reviewed for wind farms in comparison to this one I notice that the assessment area is blocked off around the wind farm , This EA assess either 100m or 150m radius around each turbine (Depending on which layout you look at) . I don't think this is reasonable. If you start using this type of logic I think you could justify almost any project in any location. One would think the assessment area should be at least the min distance that a turbine has to be from a roadway 1.5X there height (if I recall)

Many references are made to forestry activities on this land and I read it as they are tying to say it was wrecked anyway. On the private land that they will be using there WAS extensive forestry activities ,but most of this now has new growth in the 20-30 year old range and has had a first thinning. Regarding the Crown piece that's either near 0 % OR 45% of the project(depending on which layout you read), best management practices were conducted by our department of natural resources PERIOD.

I would like to think that this confusion in location is just a mixup. It does cross my mind that the plan B , that was only meant to be seen if Plan A got rejected by the Minister got mixed up in the haste to get EA submitted. If this is the case I believe it says something about what kind of company were dealing with. A preplanned compromise is not fair play.

6.0 Engagement

Community information sessions Would be best described as DISINFORMATION sessions. Again there seamed to be a problem identifying the project area right from the start. At the first open house session I personally asked the same series of questions to 3 representatives I received 3 different sets of answers. I was not alone in the feeling of being mislead. A community group took the lead. Protect Vaughan has gotten more answers for us since the community information sessions ended.

I think Everwind should figure out where there project is going redo a mock up of a corrected EA have people who actually know what there talking about, and put on a new series of community information sessions then resubmit there EA for approval. When I think back on who Everwind had at the community info sessions it does seam odd. People with titles like CEO and director of public relations and director of capital markets most likely cant answer questions about the effects on deer wintering area or where turbines are located. That list of employees seams better suited for a finance meeting or a corporate take over.

7.45-7.58 Avian Habitat Study

In this section I believe there is a error in regards to the avian radar survey . They talk about spring 2022 fall 2022 spring 2023 and fall 2023 . The only time any of 4 (myself included)locals saw the radar unit was fall 2023 and it was gone by early November at that. So if I'm wrong I would really like Everwind to provide the location where it was set up.

14.0 Accumulative effects

EA mentions :

• South Canoe Wind Power Project (6 km west) –

• Martock Ridge Community Wind Project

• Ellershouse Wind Project & Wind Farm Expansion Project

• Ellershouse 3 Wind Project (8 km northeast) –

• Benjamins Mill Wind Project (8 km northwest) –

All projects mentioned above are on either the western or eastern side of the Avon river valley. In this EA there is no mention of how many wind farms are too many. If you don't identify the point that is too much. How will you know when its reached?

In fact I don't see any evidence that this was studied at all in this EA. With the above wind farms covering both sides of the high ridges that line the Avon River valley I cant imagine that there wont be effects especially to migrating birds as this creates a funnel that reaches its narrowest point right where Bear lake wind is proposed.

South Canoe wind farm is very concerning to me as recently I took a drive through the farm, I was sick to my stomach when I saw the state of things. I have attached pictures of oil running down the turbines with no effort being made to catch it. ½ Empty Oil Drums scattered around. Some open to the environment, one with a funnel in the top water going in oil coming out. Reading through the EA for South Canoe we were promised these kinds of things wouldn't happen. So I want to know how it is possible for this to be allowed to continue? What reason would my community have to believe this green energy wind farm will be any greener than South Canoe?

In conclusion : I would like to see this project out right rejected for the following reasons :

Too many wind farms in this area now for the good of the plants and animals and humans

Too close to sensitive areas

Right in Deer wintering area

Takes away the use of the Crown Land for the generations of families who live in Vaughan

The environmental disaster at South Canoe Wind farm should be cleaned up before anything else is considered

The proponent did not do a serious assessment

If the Minister does not feel a out right turn down of this project is appropriate the very least should be to ask the proponent to:

Do a complete bird Study

Do a complete moose Study

Identify the project location correctly

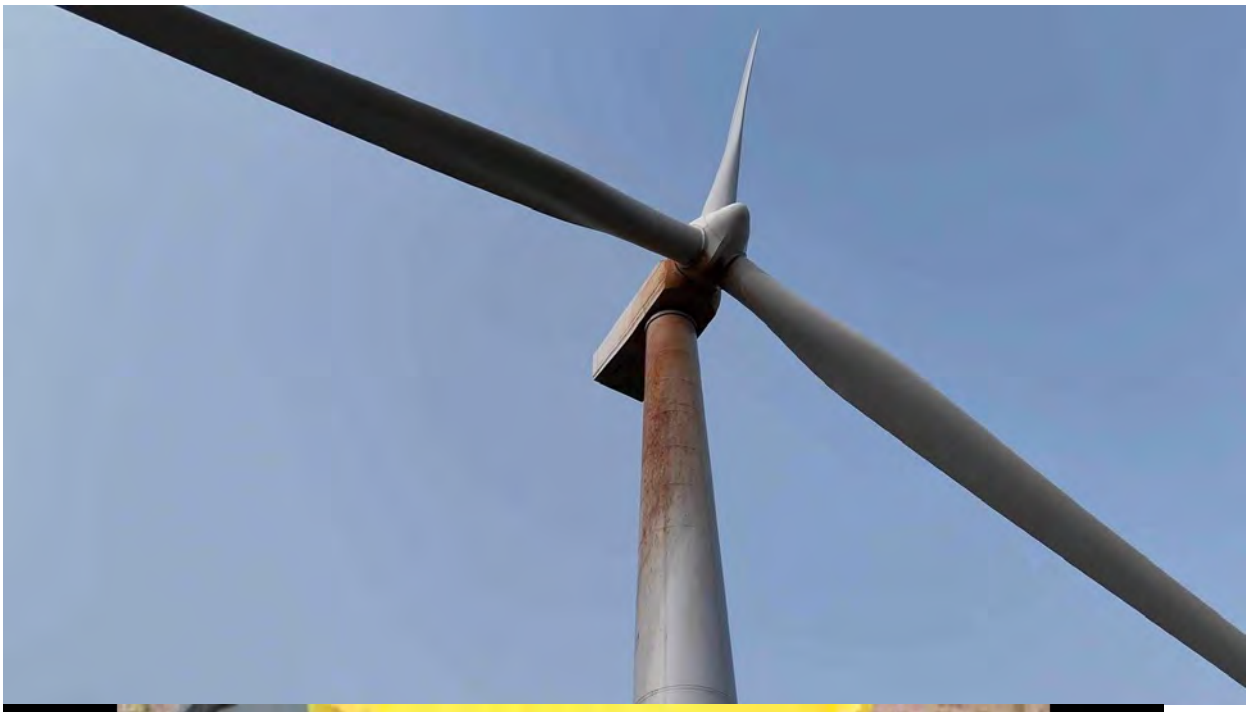
Public engagement with actual answers

Take a real look at accumulative effects

In fact the only harm that the applicant could identify was NOT doing this project

When I see reasoning like this it reminds me of the argument a child puts forth when they want a new toy.

Thank you for considering my comments and please address the oil leakage at South Canoe. The label on those drums says its very bad for aquatic life and this area is a tributary to the Avon River



From:
To: Environment Assessment Web Account
Subject: Proposed Project Comments
Date: November 20, 2023 7:45:35 PM

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Project: bear-lake-wind-power Comments: Section 3.1 Geographical Location states â?oA Study Area was established as a large assessment area based on land parcels i.e., PIDs that are included in the development area Table 3.1, Drawing 2.2.â? It also states â?oAn Assessment Area was subsequently established for detailed field investigations, which includes the physical footprint of the Project where the direct physical disturbance is expected to occur i.e., the Project Area, plus a buffer to allow design flexibility and assess for indirect effects beyond the direct effects within the Project Area.â? It should be noted that property that is directly affected by the upgraded road and construction of the new transmission line was not included in this table. During the first public information session the proponent/consultant was asked directly about activities that would be taking place in the northern parts of the assessment area and I was told that there were no activities occurring in that area and that all the turbines would be located in the southern area. It wasnâ?Tt until the EA report was reviewed that it was identified that there would be upgraded road work, new road construction, transmission line construction and switching station in this northern area with direct impacts on my property. It seems that this area of the project was neglected in the assessment and there is a need to completely revisit area of the project. Section 8.4.2 Existing Environment of the EA Report states â?oDeer hunting and other mammalian hunting and trapping may occur on the site, though no signs were observed during field surveys.â? There has been a significant amount of hunting, trapping and fishing activities in the area for many years. As a property owner with a hunting camp in the affected area I must question the effort put into the above noted statement. I have personally been spending part of the annual deer hunting season in a camp and on the lands of the affected area for 40 years. With the upgrading and new construction of the road in the area of my property there is a definite concern regarding the increased access and additional pressures on the wildlife populations. This area is also used for hiking, cross-country skiing, snowshoeing. With regard to the public consultation, it was frustrating that the email notification regarding the second Public Open House event was received the afternoon of September 18th for the session to be held on September 19Th. The proponent would have had the email addresses of people who expressed an interest in receiving further information on the project from the time of the session in August. Even though the proponent indicated that they had placed notices in the local papers it would appear that there is no reason this notification could not have been sent earlier to allow those interested to plan for the session unless there was a direct effort to limit the attendance by the public. I believe the economic benefits have also been overstated as are the benefits to Nova Scotians. I believe that the assessment report as presented has serious flaws and should be revisited or the project refused approval as designed. Name: Email: @atlenv.ca Address: Municipality: Falmouth email_message: Privacy-Statement: agree x: 45 y: 23

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Farm Environmental Assessment
Date: November 20, 2023 10:02:07 PM

Good evening,

I am writing this email to communicate my displeasure and concern for the Bear Lake Wind Farm proposed for Vaughan, Nova Scotia.

My husband and I attended the first community meet and greet with open minds and no set opinions on the proposed project. If done right and responsibly, we felt the project would not have a negative affect on our community and wildlife. We are very open to green energy and previously lived within two kilometres of a wind turbine. Our initial reason for attending was to confirm it would be at least 3 km from any residence and have the concrete safe work practices to prevent any harmful ecological events or fires.

Unfortunately, during the meet and greet our concerns rose considerably. No one could properly answer the majority of our questions. Including the required protocols involving a hydraulic leak or system failure, this includes the ETA of personnel to the scene and how the community would be notified if there was a ecological risk. I asked about the distance of the wind turbines to near by residence, but they could not answer this question. I asked about past experience and found that Bear Lake is a new company and had consultants there from a wind farm not far from the proposed site. They told me numerous times they would get back to me during the next meeting, that things were still being ironed out. Constantly referring that there were set protocols in place for the province but no one was able to recite the specifics. Just that there were simply protocols in place that they had to follow, like everyone else. Had no one done any homework? With all the consultants, engineer, and the CEO in attendance, how could they have no real knowledge? Is this simply a new company jumping on the green energy wave that federal grants pour into?

I missed the second meeting due to hearing about it three days after it took place. They gave residence 24 hours notice and did not reach out to community organizers like the first meet and greet. It was appalling to find out too late, especially when they stated several times that they would have the answers to my questions during this second meeting.

I have an extremely unsettled feeling about this project moving forward. I have lived within 2 km of a wind turbine in Cape Breton. The noise pollution is a real concern and the amount of birds that are killed were well documented by several avid ATV's in the area. Another negative was how it affected resale value on our home. The majority of people viewing our home had concerns about the wind turbine being so close, our realtor mentioned it as the top draw back to our seaside property. We couldn't argue with their concerns because the sound was noticeable, especially at night.

Due to the lack of experience, due-diligence, and foresight, I feel Bear Lake would pose a risk to the ecological integrity of our pristine lakes and forests. The wildlife and migrating birds in our area will be negatively affected by the large number of wind turbine projects in such a concentrated space. We have several lakes and streams, along with mature growth forests with established deer, coyote, black bear, fox, bobcat, and rabbit populations mirroring a healthy functioning ecosystem. With two large projects already approved for the area, adding an additional large project would be extremely harmful.

As a resident of Chalet Hamlet Cottage Country, I strongly oppose the Bear Lake Wind Turbine project and ask that it not be approved to move forward.

Thank you for your time,

From:
To: Environment Assessment Web Account
Subject: Re: Bear Lake Wind Farm
Date: November 21, 2023 10:02:33 AM

Hello

As a resident of Upper Vaughan, I do not believe that Everwind has engaged our community in consultation sufficiently to inform us of the potential impacts.

At the meeting that I attended on October 14, 2023, the Everwind CEO and his team either could not or would not answer very specific questions on the environmental impacts and the impacts on local residents.

The area proposed by Everwind, to develop the Bear Lake Wind Farm, is environmentally sensitive and is used by local residents for recreation.

Without proper consultation and the requisite approvals I do no believe the project should move forward.

Sincerely,

From:
To: Environment Assessment Web Account
Subject: FW: Bear Lake Wind Environmental Assessment
Date: November 21, 2023 11:32:34 AM

2.2 Purpose and Need

The proponent is playing on the global climate crisis to justify this project. However when I heard that any energy produced was not going to remain in Nova Scotia to help lower our power cost but instead be shipped to Germany, it makes me wonder why is it solely our responsibility in one area to have to look at windmills out of every window in the house? Why is our responsibility to have to give up our beautiful countryside because another country was not proactive?

3.1 Geographic Location

Everwind or Bear Lake Wind or Strum Environmental has stated that only a small portion of crown land would be used, however it has since been confirmed that 7 out of 15 windmills will be located on crown land, as a nature lover, that concerns me greatly because with possible construction of the windmills and the preparation and destruction of the wood lands they will be driving out many animals out of there natural habitat, to the point that these animals will become extinct all for another country that could not manage there own resources, and that is just not fair nor our responsibility.

6.0 Engagement

The community engagement sessions that Everwind put on were extremely disorganized, walking in they had a table set up with little trinkets to give away, like a shiny plastic object was going to win the community over...please I don't think we are that shallow or easily fooled. As you continued in while they had colorful posters everywhere there was not a representative who could give one straight forward answer, it was generally met with "wow, that's a great question, we will get back to you." Strangely that didn't happen.
However as a community member I found out more information when the local community who actually has boots on the ground and who dug for information put on a community led engagement, this is where I feel that community members received much needed information and realized a lot more thought needs to go in to this project then what was being presented by Everwind.

Conclusion:

It is my hope that this project is kicked back to the drawing board and that our local and provincial government say's NO! The community of Vaughn's and surrounding areas have done our part for no value to us.

Thank you for considering my comments,

Sent from Mail for Windows

From:
To: Environment Assessment Web Account
Subject: Public Comment on Bear Lake Wind Farm
Date: November 21, 2023 3:44:34 PM

To whom it may concern,

I do not protest against renewable energy. I think when placed appropriately, and when it benefits the right people, renewable energy is the way of the future. In the case of Bear Lake, it is neither appropriate nor benefitting the right people. I haven't heard enough from EverWind to form an educated opinion, but what I've heard from the Vaughans community is enough. As I understand it, the windmills are being placed on land that was always usable for the public- recreational land. This wouldn't be such a loss if the energy produced was going to the good people of Vaughans but instead it is being sent to Germany. I wholeheartedly disagree with this project.

My qualification for opposing this project lies in my property ownership, lakefront property on Zwicker lake. While I am waiting for my site simulation, I have seen one from my neighbours property, and what I see is not barely visible windmills, it is large and overbearing pieces of equipment that destroy views and property values. I feel the windmills could be placed in a more appropriate location far away from Vaughans. In addition to being a property owner, I am also an animal lover. Windmills destroy habitats, and there is simply no way to negate this.

I sincerely hope this project is rejected, not reworded to further deceive the residents of Vaughans.

Thank you for considering my comments,

Ecology Action Centre
P. 902-429-2202
F. 902-405-3716
2705 Fern Lane
Halifax, NS | B3K 4L3

Bear Lake Wind Power Project
Environmental Assessment Registration Document (EARD) - Comments from Ecology Action Centre

November 2023

The Ecology Action Centre is an environmental charity based in Mi'kma'ki/Nova Scotia. We have a leadership role in working on critical environmental issues from biodiversity protection to climate change to environmental justice. Grounded in over five decades of deep environmental change work and fuelled by love and grief, EAC takes a 50-year perspective on what is needed to build towards a time of thriving and flourishing. We work to equip human and ecological communities for resilience and build a world where ecosystems and communities are restored not just sustained.

Ecology Action Centre staff have only been able to comment on some aspects of this EARD. This is in part due to the limitations of our expertise – we only hold knowledge in certain subject areas and have commented on those. However, this is also because the 30 day comment period is too short to comment completely on any EARD, including this one. Public comment periods for EARD should be 60 days, minimum. Additional time would have allowed us to hone our comments further and make additional, relevant comments.

Overall comments

Project engagement

Engaging in a negotiation and collaboration process with all stakeholders, including local communities, regulatory authorities, environmental conservation groups, and other interested parties, is crucial to achieving "social license" and a good quality project that incorporates local knowledge and values. Based on what is shared in the EARD, and information we have received about public and government engagement, this project is lacking in several critical steps that can help in this process:

- Identifying Stakeholders: Identify and connect with *all* relevant stakeholders, including local communities, environmental groups, regulatory authorities, and other key actors.

- Open Dialogue: Initiate open and transparent dialogue with these stakeholders to understand *and act upon* their concerns, needs, and expectations regarding the project.

- Clear Communication: Provide clear and accurate information about the project, including its benefits, potential impacts, and mitigation measures, to all stakeholders. Ensure that communication is two-way and respond to stakeholder concerns through project changes.

- Mitigation Measures: Fully commit to implementing the necessary mitigation measures to minimize negative project impacts on the environment and local communities by agreeing to specific mitigation measures in a legally binding way.

- Regulatory Compliance: Ensure the project complies with all applicable environmental regulations through the lifetime of the project. Be transparent with community about all environmental compliance work.

- Ongoing Monitoring and Reporting: Implement a monitoring and tracking system throughout the project's life to ensure that agreements and mitigation measures are followed. Continually share monitoring and reporting results with community.

- Conflict Resolution: Be prepared to address and resolve conflicts or disagreements constructively and fairly, using mediation processes if necessary.

Open collaboration and negotiation are essential for advancing projects like the Bear Lake Wind Farm. The focus on communication, transparency, and consideration of stakeholder concerns is crucial to building solid agreements that benefit all parties involved.

<u>Mitigation measures</u>

The proponent should fully commit to critical mitigation measures outlined in the document addressing environmental and safety concerns and minimize potential harm. These should be stated in the Terms and Conditions of the EA Approval, when the project is Approved with Conditions by the Minister. Their implementation must be monitored regularly by the government/communities.

Here are some of the most critical measures:

Atmospheric Environment:

- Enclose or cover soil storage and stockpile areas to prevent dust.
- Cease dust-generating construction activities during excessive wind.
- Use low-sulphur diesel fuel to reduce sulphur oxide emissions.
- Regularly maintain equipment to ensure proper operations and fuel efficiency.

- Remove malfunctioning equipment and equipment with improperly functioning emissions control systems from service.

Geophysical Environment:

- Safe blasting practices and notification of landowners.
- Protect and restore wetlands whenever possible.
- Erosion and sedimentation control measures.
- Protection of water courses and habitat upgrades.
- Noise and vibration control measures.

Aquatic Environment:

- Protection of aquatic habitats, wetlands, and watercourses.
- Avoidance of impacts to wetlands.
- Water management systems and runoff control.

Terrestrial Environment:

- Minimization of habitat loss and fragmentation, especially for species at risk.
- Restoration and revegetation of cleared areas.
- Avoidance of disturbance during sensitive periods for priority species.
- Measures to prevent injury or mortality of bats and other wildlife.
- Light, noise and vibration control measures.

Socio-Economic Environment:

- Traffic and transportation management to minimize impacts on the community.
- Collaboration with local recreation groups to ensure access to recreational sites.

Specific comments

2.2 Purpose & Need for the Undertaking

<u>Need for Incremental Renewable Energy</u>

This section is somewhat misleading as it indicates that the energy produced by the project will contribute to the province's renewable energy targets. The primary intent, however, for this project is to power a green hydrogen facility at Point Tupper. While a power purchase agreement (PPA) between Nova Scotia Power Inc (NSPI). and the proponent has not yet been announced, it is difficult to gauge how this project will contribute to greening the grid in Nova Scotia. This section should make clear that the primary function of this project is for private use despite being attached to Nova Scotia's

grid and thus its contributions to climate and emissions targets in the region are more limited than it suggests.

As this project will undoubtedly have impacts on the surrounding environment, including crown land, an agreed upon minimum GWh contribution, per annum, to Nova Scotia's grid would better position this project as a participant in provincial GHG reduction efforts. **We additionally encourage the Minister of Natural Resources and Renewables and/or the Nova Scotia Utility and Review Board to require a mandatory clause in the PPA between NSPI and the proponent that ensures at the very least that the needs of the provincial grid during periods of peak demand and emergencies outweigh hydrogen production, prior to official approval.**

Need for the Project

This section attempts to make the case that the Province will benefit by being a "leader" in the "clean renewable energy sector" by developing a green hydrogen industry. The proponent should provide specifics in this section, including how many jobs the project will create. There is also vague reference to economic and social benefits, without any specifics, such as connections to current economic or community development plans.

The project only alludes to potentially contributing to Nova Scotia's renewable energy needs, sometimes. The following statement is made:

"In addition to green hydrogen production, energy produced by the Project will be made available to NS Power at times of peak electricity demand to directly supply customers in the province."

There would need to be commitments in place to ensure that the project makes any contributions to the energy used by Nova Scotians.

Need for the Green Ammonia

This section of the EARD indicates that the ammonia produced and exported will primarily, at first, be used for ammonia-based fertilizers. This does not contribute to decarbonizing Nova Scotia's energy grid, and in fact could contribute to the over-nitrification of ecosystems through fertilizer runoff, which exacerbates climate change. See https://www.unep.org/news-and-stories/story/four-reasons-why-world-needs-limit-nitrogen-pollution

Fertilizers themselves contribute a substantial amount to global CO2 and N2O emissions, and run-off from fertilizers contributes to nitrogen pollution, leading to its own impacts (e.g., eutrophication and algal blooms threaten aquatic biodiversity. See https://www.pnas.org/doi/pdf/10.1073/pnas.2121998119

Nitrogen pollution as a result of ammonia-based fertilizers also pose a serious threat to local food systems as polluted topsoil cannot be easily, or quickly remedied. These impacts can compromise local/regional efforts towards food security and food sovereignty as they degrade the environment for future generations.

When the Bear Lake wind farm project is used to create hydrogen, which is converted to ammonia, and sold for nitrogen fertilizer, it actually risk exacerbating climate change and biodiversity loss.

3.1 Geographical Location

The Study Area is defined by property boundaries. The Project Area is the direct footprint of some of the project infrastructure. The Assessment Area was created by buffering certain parts of the project infrastructure (e.g., turbines, roads), by a certain amount (e.g., 100m, 25m). The extent of the Assessment Area seems arbitrary. Provide an Assessment Area based on *all* project infrastructure in which buffers are based on likely extent of potential impacts (e.g. 200m from turbine base because this is the area where bird strikes with turbine blades are most likely to occur). Also include temporary project components in the Assessment Area and in assessments.

The project is proposed on provincial Crown land and privately-owned land. The proponent should provide a map showing land ownership type and their project. None of the maps show which parcels are Crown land and which are private.

3.1.1 Siting Considerations

In general, it is good that the project design attempted to maximize the use of existing roads and cleared areas, and reduce the need to create new roads. It is also beneficial that the project has attempted to avoid areas important for conservation, including wetlands and watercourses. However, using, building, and upgrading roads still add to the decline of biodiversity in Nova Scotia. The project still commits to:

- 24km of existing roads to be use/upgraded
- 15km of new roads to be made
- In some cases, the need for 12m wide roads for cranes to move (but the roads could be smaller (6m wide) if “crane is mobilized via a float truck?”)
- Roads are actually 17m to 20m wide including ditching and grading

The impact to wildlife mortality, habitat loss, and landscape-level habitat connectivity is downplayed in the EARD, yet these very real impacts will occur. There are opportunities to reduces these impacts even further by committing to fewer roads, narrower roads, and use of smaller trucks and equipment.

Temporary infrastructure, like roads and laydowns areas, can also have short-term and long-term impacts, which are also made to seem quite minimal in the EARD. The project should minimize these impacts wherever possible, such as seems to be considered here:

"Temporary wind turbine laydown areas may be up to 250 m by 100 m, which includes clearing limits and any overburden. There is currently one temporary turbine laydown area under consideration."

Removal of Temporary Works and Site Restoration

Where temporary work sites and infrastructure, or ultimately the entire operation, are to be decommissioned and remediated, commit to better restoration of the site. Why is a "Hydroseeder" used? Help damaged sites along their restoration trajectory by using native plants, and by actively removing roads.

3.3.2 Operations & Maintenance

"A vegetation management plan will be initiated to ensure that access roads and turbine locations remain clear of vegetation. Timing of vegetation management will depend on site specific conditions and requirements by the Proponent and/or their operations and maintenance contractors."

The Proponent should commit to not using herbicides or pesticides as part of their vegetation management plan. Additionally, salt should not be used on the roads, as this also damages vegetation and other species (and can have long-term effects on nearby watercourses and wetlands).

3.3.4 Environmental Management & Protection

"An Environmental Protection Plan (EPP) will be developed following EA approval."

The EPP should be made available publicly once it is created, and should be shared with the CLC.

6.2 Public & Stakeholder Engagement

The EARD cites several groups with which the proponent has "engaged," however, what has really happened is outreach by the proponent. With regards to the Ecology Action Centre, Healthy Forest Coalition, Living Earth Council, Nova Scotia Nature Trust, and more, the proponent did not connect in any way with a person from these groups. Most outreach did not lead to actually engaging in a conversation. What the EARD frames as "engagement" should be reframed as outreach. Ultimately, the project has engaged with very few of the stakeholders.

6.2.2 Newsletter

A phone number for public contact should additionally be made available on the newsletter to accommodate varying ranges of digital literacy and promote relationship-building between the proponent and neighbouring communities throughout the lifetime of the project.

6.2.3 Public Open House Events

To increase participation and accessibility by all community members, we encourage the proponent to include childcare or child-engagement at public engagement sessions such as open-houses.

To further increase accessibility of these events, we would encourage the proponent to host a virtual attendance session(s) for future open houses, job fairs, and consultations and for continued public engagement on the Bear Lake project moving forward.

6.2.6 Review of Concern

In table 6.2, responses to community benefits are mentioned, including the community subsidy fund, community vibrancy fund, and bursary program. These benefits and information on distribution, eligibility, and timelines should be detailed in this EARD and on the 'Benefits' section of the proponent's website, as opposed to solely in the presentation document. Some detail on estimated contributions to each fund/bursary was included in a follow-up email on November 7th. These figures should also be made available on the website and should have ideally been included in all engagement material and EARD. Commitments to these benefits should additionally be included in the Terms and Conditions of the EA approval.

Table 6.3 in addition to more general comments in this section refer to the formation of a Community Liaison Committee (CLC). Greater detail on when the CLC will be formed, timeline for their involvement, and how representatives will be selected is needed. Similar to the federal Impact Assessment process, a plan for public participation and engagement opportunities for the rest of the project could be formed which may also highlight regular meetings and with the CLC and how information will be disseminated to the greater public.

6.2.7 Ongoing Engagement

We encourage the proponent to compile information from surveys and studies conducted for the EARD into a more accessible and comprehensive format for distribution to the community. The level of technical detail involved in the EARD, and sheer length of the

report make it highly inaccessible to a public audience. Results of valued component assessments should be synthesized and presented in a condensed format that includes plain language summaries and graphics.

Associated data and reports conducted through the EA process and over the course of the project's lifetime should be made available freely and indefinitely to promote data sovereignty, transparency, and understanding within the communities and rightsholders that steward the land and waterways in the study area. This request excludes results from the project's MEKS as sharing this knowledge is to be decided by the Nations and knowledge keepers it was compiled with, as per the principles of OCAP and CARE.

To ensure that this project benefits the surrounding community throughout and beyond its lifetime, we recommend that the requested data and summaries be a condition in the Terms and Conditions of this EA approval.

7.1.1 Climate Change

The calculations of the contributions to climate change from the project are incomplete. The EARD for the Bear Lake Wind Project does not account for the emissions of transporting the ammonia from the Point Tupper green hydrogen plant to Europe (or other locations), *and* the impacts from shipping were also not calculated in the EverWind Point Tupper Green Hydrogen/Ammonia Project Environmental Assessment (see section 13.3.4 from the Point Tupper Green Hydrogen/Ammonia Project EARD). Both EARD do not consider the option of using the green hydrogen and ammonia domestically to reduce negative impacts to climate change by removing the need for shipping.

7.1.1.8 Effects Assessment - Project-GHG Interactions

The conclusion that "Results are characterized as a positive effect within the LAA, medium duration, continuous, irreversible, and significant (positive)" are inaccurate because the negative impacts of shipping on climate change have not been included.

7.4.1.6 Effects Assessment - Project-Terrestrial Habitat Interactions

The conclusion that "Effects to terrestrial habitat associated with the Project have been assessed, including habitat loss and habitat creation. Based on this assessment and through the implementation of proposed mitigation strategies, effects to terrestrial habitat are expected occur within the LAA and be of low magnitude" are inaccurate for at least 2 reasons. Impacts to terrestrial habitat could be further reduced by the recommendations we made in this document, and potentially by further recommendations made by DNRR. Also, studies on terrestrial fauna, namely Wood Turtle and Mainland Moose, have not been completed yet, so the analysis of the impacts on their habitats is incomplete.

7.4.2 Terrestrial Flora

Lichen

There is a Blue Felt Lichen observation in the Assessment Area near Turbine north of Bear Lake (see Figure 4-4 in the CBCL report on vegetation and wetlands). CBCL therefore calls the wetland a WSS, but the rest of the document does not seem to reflect this finding. Have Figures 5-1 to 5-4 been removed? The text refers to these Figures to show the locations of lichen SOCI. The EARD states: "The Project was designed to avoid areas where plant and lichen SOCI were found, and to avoid any buffered area surrounding lichen occurrences." Was the design changed to avoid the Blue Felt Lichen identified in the 2022 field surveys by CBCL which fell inside the Assessment Area (and within 100m of a planned road)? If there is Blue Felt Lichen in a wetland that wetland should be accorded WSS status by NSECC and consequently cannot be altered.

"The ACCDC report includes points within the Study Area and a 5 km buffer around the Study Area. For the purposes of this report, only those points within the Study Area have been included." The proponent should have used the ACCDC records *within 5km of the Study Area (not just within the study area)* to guide surveys within the Study Area (i.e., species within 5km of the Study Area should be searched for within the Study Area).

7.4.3 Terrestrial Fauna

Mainland Moose

Field studies for mammals, including Mainland Moose, are not complete. The EARD notes that:

"The following field assessments will be carried out beginning in winter 2023/2024. Winter tracking and pellet surveys will be conducted to assess the presence and distribution of mammals across the Study Area, and trail cameras will also be placed across the Study Area to capture the presence of wildlife without any interference from human disturbance.

"There is, however, a stretch of Core Habitat adjacent/through the Study Area."

"Although some area considered to be high-quality Mainland moose habitat will require alteration or removal to construct the Project, the design has maximized the use of existing infrastructure and disturbed areas such that the overall area of habitat loss is small and the direct impacts to moose habitat are expected to be low."

These statements that attempt to minimize the project's impact on Mainland Moose because there is enough suitable habitat in the RAA and LAA are unsubstantiated. The proponent does not control lands outside the Study Area and therefore does not control

what happens to Mainland Moose habitat in the vicinity of the project. Habitat in the Study Area may be needed to support the recovery of Mainland Moose.

The proponent should avoid altering or disturbing all Core Habitat and all high-quality Mainland Moose habitat. This species in Endangered in Nova Scotia, and one of the specific threats to its recovery is roads, including roads from wind farm projects. Additionally, the Province has been delinquent in implementing measures to protect and recover the species, likely beleaguering it further. It is incumbent upon the proponent to design, construct, and maintain the project using the information available that indicates areas to avoid (i.e. Core Habitat and high-quality habitat).

The idea that wider road ROWs will create new foraging habitat for Mainland Moose at the side of the road is unsubstantiated and not a net positive. Of note: collisions with vehicles on roads is a threat to Mainland Moose.

The "only approximately 15 km of new roads needing to be constructed" will contribute to habitat fragmentation, a threat to Mainland Moose. The EARD attempts to minimizes this by pointing to the approach of making use of existing roads where possible, but this does not mean that 15 km of new roads would not have a substantial negative impact.

New roads also mean an increase in two other threats to Mainland Moose: easier access for White-tailed Deer, and for poachers. Both are documented threats to Mainland Moose, both threats increases in Mainland Moose habitat when new roads are created. The proponent should not minimize these threats, as is done on page 158 of the EARD.

The statement "Based on this assessment and through the implementation of proposed mitigation and monitoring activities, effects to terrestrial fauna are expected to be of low magnitude and within the RAA" is false. There are surveys that must still be completed on terrestrial fauna, including for 2 Species at Risk (Mainland Moose, Wood Turtle). The proponent has not provided evidence that the destruction of Mainland Moose Core Habitat is not of high magnitude with regards to its negative impacts.

Wood Turtle

Watercourse and wetland surveys were paired with surveys for turtles and turtle habitat; these surveys were completed by CBCL. These surveys were completed between August and December in 2022. This not a suitable time of year to search for Wood Turtles, a federally- and provincially-listed Species at Risk (Threatened) that is suspected in the Assessment Area. The report by CBCL recognizes that surveys did not follow "NS DNRR's 2018 Wood Turtle Survey Protocol)" with regards to the survey timing. **The proponent must survey the Assessment Area, including above and below watercourse crossings, for Wood Turtles, during the time of year most likely to detect the hard-to-find Wood Turtle (i.e. April and June, with water temperatures are above 6°C or air temperatures are above 9°C).** In fact, the CBCL report recognizes this deficiency: "To fully assess the likelihood for turtle presence within watercourses, targeted turtle surveys should be conducted in identified

areas of potentially suitable aquatic turtle habitat during the appropriate season. The preferred timing window for Visual Encounter Survey (VES) for Wood Turtles in Nova Scotia is late April to late May (McLean, 2018) when air temperatures are above 9°C, and the weather is generally sunny. For construction projects, NS DNRR recommends Wood Turtle VES in May, prior to leaf emergence, and another immediately prior to the commencement of site clearing and construction activities (Laverty, Pers comm, 2020)."

The proponent has committed to more surveys: "Because turtle habitat surveys were completed by CBCL outside of the appropriate season to detect Wood turtles, survey methods as recommended by NSNRR will be employed in Spring 2024 to further understand the presence of turtle SOCI within the Study Area. Habitat that will be targeted for surveys will include areas 200 m upstream and downstream within the watercourses determined to be potential Wood turtle habitat by CBCL." **The Minister should not approve this project until these and other pending surveys are completed, and the reports based on these surveys are reviewed and incorporated by NSDNRR staff.**

Bats

The statement "Based on low observed bat activity and existing disturbance (forestry, recreational, etc.) within the Study Area, impacts to bat SOCI populations at a regional scale or population level are not anticipated." Was the observed bat activity low? What is the local population level, and how are populations doing at a regional scale? Multiple species were confirmed in the Study Area during spring, summer, and fall. Wind turbines are known to be direct threats to these species. Are these species also experiencing the same and other threats at a regional scale, and to what degree? The assertion that the project does not create impacts to bats at a regional or population level is has no basis.

Regarding bats, the conclusion that "results are characterized as moderate magnitude, within the LAA, medium duration, continuous, reversible, and not significant" is not accurate.

Avifauna/ Birds

Bird surveys reports are not completed. **The Minister should not approve the project until all survey reports have been submitted, approved, and incorporated by NSDNRR staff.**

Mitigation Measures to reduce potential impacts to birds can be improved:

- Use navigational hazard lights that are on-demand instead of lights that are on all night, every night. Commit to this in the EPP and the Terms and Conditions of any EA Approval.

- Stop the use of the turbines during times of peak migration.

The conclusion that "Based on this assessment and through the implementation of proposed mitigation and monitoring activities, effects to avifauna are expected to be of low magnitude, within the LAA, of medium duration, intermittent, reversible, and not significant" is not substantiated. The bird strikes associated with the 35+ years of wind turbine use likely significant for the bird Species at Risk detected in the study area. Many bird species pass through the Study Area during migration, and several are likely breeding in the Study Area (despite the EARD downplaying this likelihood). The proponent should enact the additional mitigation measures listed above, and likely other measures too.

7.4.3.6 Effects Assessment - Project-Terrestrial Fauna Interactions

The conclusion that "While effects to mammals, herpetofauna, and insects differ, the effects considered to be of greatest concern include habitat loss, habitat fragmentation, and associated disruption of the life history of populations within these groups. Based on this assessment and through the implementation of proposed mitigation and monitoring activities, effects to terrestrial fauna are expected to be of low magnitude and within the RAA" is inaccurate. Again, studies on terrestrial fauna, namely Wood Turtle and Mainland Moose, have not been completed yet, so the analysis of the impacts on their habitats is incomplete. These studies could provide data that should be used to modify the project to reduce impact to these fauna.

Watercourses and wetlands

The proponent reviews two on-the-ground studies that have been done in the project area concerning wetlands. In one study 81 wetlands were identified, in the other 94 were identified. Because of this inconsistency it was difficult to follow all the proposed changes to wetlands areas.

The proponent notes that of the 94 identified wetlands/wetland fragments, there are 77 potential alterations. The majority of these alterations are due to road upgrades. However, the proponent also notes that "A GIS suitability analysis was conducted to design a Project Area that would optimize the placement of Project infrastructure to avoid and minimize loss of wetland area and function, to the greatest extent possible." It is disappointing that 77 potential alterations are still being proposed. The proponent should do better to avoid such a large number of wetland alterations. For example:

- Why not move the Operations area (big square on Project Area map) to the east to avoid more impacting the wetland it interacts wtih?
- Why not move Turbine 8 to the east so it is out of a wetland?
- Why not move Turbine 7 to the east so it is out of a wetland?

There are inconsistencies related to watercourse and wetland surveys:

1. The CBCL watercourse + fish + turtle surveys in 2022 doesn't seem to include SOCI. Were CBCL staff not tasked with looking for SOCI while in the field?

2. CBCL determined 4 wetlands to be WSS because of presence of SAR. In 2023, Strum surveyed 34 wetlands and found none to be WSS. Why the discrepancy?

3. Turtle evidence was observed by CBCL in 2022 between WL18A and WL18B (CBCL). This is within the Assessment Area (on a road). What will be done to avoid alteration of WL18A and WL18B, given it is a WSS?

4. The mitigation measure to reduce impacts to life history for several mammal and herpetofauna species should include Wood Turtle (none are listed on page 162-163 of the EARD).

Value Component – Light

"Lighting associated with the Project will be minimal, and the turbines will be un-lit at night (apart from a red navigation hazard light mounted on the turbine's nacelle). This red navigation hazard light can be light on-demand and thereby reduce light pollution, which affects birds and other species. See new Germany requirement for on-demand navigational lights on turbines.

The mitigation measure "restrict on-site lighting, especially at night, to limit disturbance" can be enhanced beyond what is said in the EARD. The proponent should commit in the EARD and Terms & Conditions (if the project is Approved) to on-demand navigational hazards lights, as opposed to lights that are constantly on a night.

Cumulative effects assessment

With regards to other wind farm projects in the vicinity of the proposed Bear Lake wind farm project:

"The South Canoe Wind Farm in Lunenburg County is located approximately 6 km to the west of the Assessment Area and consists of 34 turbines. The Martock Ridge Community Wind Project located in Hants County is also nearby, situated approximately 8 km north and consists of three turbines.

The Ellershouse Wind Project, located in Hants County, is situated approximately 14 km northeast and consists of 10 Enercon E-92 wind turbines. The Ellershouse 3 Wind Project, an expansion of the existing Ellershouse Wind Project, also received EA approval for installation of an additional 12 turbines on July 5, 2023.

"Another proposed project in the area includes the Benjamins Mill Wind Project being developed by Natural Forces, which received EA approval in January 2023. This project, if undertaken, would be located approximately 8 km northwest from the subject Project."

The cumulative effects section seems to assess at an arbitrary distance (i.e,. 5 km), but there are 5 other relevant undertakings close by (e.g, 6km to 14 km). The cumulative effects assessment should be redone to include these other undertakings that could impacts the same VCs in the same ways, therefore very relevant to assessing cumulative impacts. **The Minister should require that the proponent complete an actual cumulative effect assessment before determining if the project can go ahead.**

The statement that "other industrial activities identified (e.g., forestry) are not anticipated to interact with the Project in a way that results in adverse cumulative impacts on the surrounding biophysical, archeological/ cultural, or socioeconomic environment" is not accurate. Forestry activities threatened some of the same VC, and same species, as were identified as potentially impacted by the Bear Lake wind farm project in the EARD. There would be cumulative impacts as a result of habitat loss and fragmentation due to the proposed project in addition to the habitat loss and fragmentation caused by nearby forestry activities.

The whole cumulative effects assessment in the EARD is pretty baseless and poorly done.

8.1.3 Effects Assessment - *Project-Economy Interactions*

The proponent states that a job fair will be held prior to the construction of the project to engage local talent, as well as investing in a bursary for renewable energy education. Given the 1-4 years required to attain most training required for employment on a wind turbine project, bursaries and scholarships should be made available as soon as possible and well before construction of the project starts. Information regarding eligibility for these scholarships, how to apply, and how long they will be available should also be made available on the website as well as circulated through neighbouring communities, high schools, and post-secondary campuses. As mentioned above, commitments to these bursaries should be part of the community benefits included in the project's EA approval to ensure that the proponent is meaningfully investing in the just transition of Nova Scotia's labour force.

8.2.3 Effects Assessment - *Project-Land Use and Value Interactions*

"A recent study mentions that given the traditional energy industry's impacts on conservation in both direct and indirect ways, wind energy can be seen as a complementary land use to conservation and protected areas in a broad way, as wind energy is not a carbon emitter (Wind Europe, 2017). Given the context of Nova Scotia where the traditional energy source has primarily been coal, land use for wind energy can be seen as a positive step." (pg 206-207)

This is an insufficient assessment of land-use valuation for conservation as it does not take into account the incomplete assessments of two endangered species that are critical for conservation planning in Nova Scotia; the Mainland Moose and Wood Turtle. The site is also close to other protected areas and thus could be considered valuable land for ensuring connectivity between protected areas. The proponent should provide a more holistic and updated assessment of effects to the value of the study area for conservation or protected area land-use once a complete assessment of Mainland Moose and Wood Turtle impacts has been completed.

From:
To: Environment Assessment Web Account
Subject: EA at Vaughans Hants County for Ever Wind {Bear Lake Wind}
Date: November 21, 2023 6:25:48 PM

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Hello, my name

To whom ever it may concern,

I am writeing to voice my concerns with the E A on property in Vaughans for Ever Wind, 1-my family goes back 6 generations using this forest for hunt, way of survival. 2-NS Forestry Protected the lands by doing proper forestry practices, thining and sometimes final fells, keeping the road systems up dated,this and the private land around it was used for generations by locals and the surounding area people, 3- this wii not be the case going forward if Ever Wind gets their way. 4-The E A that was for Ever Wind was not all convincing that they took the wild life into concideration such as, moose,deer,bear,why they never even save the age old deer wintering ground. 5-Birds, now lets talk about them, when the wind farm just on the opposite side of the little valley was getting under way we were told most of the wild life and the Migratory Birds was on the other side of the valley,now we are fighting not to have a wind farm on that other side of the valley ,there is not much mention of them birds and bees in the latest E A. 6,we don't even know what the watts from this wind farm is for, some times it for electricty and sometimes for fertilizer each going to Germany seems to depend on what the story teller believes we want to hear , ether way we can not give away the beauty of our little Avon River Valley so large industry and harmful to the environment providing very few long term jobs can come in here and export our pristine wilderness

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Farm
Date: November 22, 2023 7:24:54 AM

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Sent from my iPhoneI am writing this email on behalf of my husband and I as we live less than a half kilometre from the proposed wind farm. We have concerns about the studies that have been done. The proposed area is a huge deer habitat and given that proposed wind farm will be fenced it will affect that that population. Bats are finally making a comeback and this area is part of the reason for that, none of which is mentioned in the EA.

I saw last year that streams and wetlands were marked but the markings stopped as soon as there were cottages or homes on the other side of the road(Armstrong Lake West Rd). There are a number of streams and rivers coming down the hill where the proposed wind farm is to be built. Our concern is if these water ways are changed how will it affect our land on the other side of the road . I have seen pictures of Tom the Canoe Lake wind farm and we are concerned about run off of affluent going into our pristine lake. None of these areas have been addressed.

The information handed out at the info session did not give us enough knowledge and we feel we have been lied to to by omission as we were led to believe this was for green energy for NS not to produced hydrogen for export. Who is benefiting from this wind farm surly not Nova Scotians. This is a joint project with Mi'kmaq people and my understanding is they are the keepers of the land. Not what I'm seeing.

This EA needs to be redone with more transparency and community involvement. Please reject this project!!

Vaughan, NS

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Farm Environmental Assessment
Date: November 22, 2023 4:19:57 PM

Good afternoon, my name is and I am writing to express my concerns with the Bear Lake Wind Farm Environmental Assessment.

I am not an expert in reading environmental assessments, however I have spent many weekends and lots of vacation time in the area surrounding Bear Lake, I have a deep appreciation for the environment. I have personally seen endangered mainland moose in this area, as well as fish in the Southwest Brook which the environmental assessment states they did not find any brook trout.

Because of this, I request that this project be rejected outright. It is an extremely environmentally sensitive area and it would not be appropriate to lose access for camping, hunting or hiking for the local residents and myself. Additionally, my reading of the environmental assessment indicated that the setback requirements were barely within spec for West Hants Regional Municipality setback bylaws. Many studies have not been completed, making it difficult to make an accurate assessment.

For these reasons, I strongly urge that this project be rejected in order to protect this special area.

Thank you for your time and consideration.

Sincerely,

From:
To: Environment Assessment Web Account
Subject: Bear Lake windfarm
Date: November 22, 2023 4:43:07 PM

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Good afternoon. My name is and I am writing in regards to the Bear Lake wind farm proposal. I am not from the area, but I have been camping with my family in this particular piece of crown land for many years and it is an environmentally sensitive area that is important to both my family and the residents of the area.

My concerns with this project are that the setbacks will barely be within bylaw specifications and that I feel as if the environmental assessment has not been thoroughly performed. Specifically, the moose survey and endangered species surveys do not seem to be adequately performed.

Therefore, I urge you to consider my email and cancel this project. It would be a great loss to the area and hinder environmental conservation efforts if it were to go ahead as planned.

Sincerely,

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Farm Environmental Assessment.
Date: November 22, 2023 4:43:40 PM

My name is and I am writing to express my concern with a particular project that is currently under consideration. I do not feel that the public has been adequately consulted nor do I believe that the environmental assessment has been properly performed. Therefore, I am requesting that this project be rejected due to the sensitivity of the region and how the setbacks from houses are barely within the bylaw rules.

As someone with knowledge of this area, I believe that more thorough research needs to be done before any decisions are made about this project. If you would like to discuss further. I look forward to hearing from you.

Sincerely,

From:
To: Environment Assessment Web Account
Subject: Bear lake
Date: November 22, 2023 4:54:33 PM

I am writing this email to address the proposed wind farm in my area i strongly believe that it will impact our lives our wildlife and our water supply with the clear cutting and blasting. Especially with our history in the area with our monument to a lost one in our community many years ago there has also been mainland moose spotted in this area where they are almost extinct. With the blasting there is also slot of uranium in our area that may destroy our great drinking water please take theese things in consideration before you destroy our home for another country's benefits

Thanks sincerely

From:
To: Environment Assessment Web Account
Subject: Bear lake wind farm project
Date: November 22, 2023 7:07:56 PM

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Hello, my name is . I am a property owner on the west side of Mockingee lake. I am all for natural ways of generating power such as wind farms. I have no problem with the south canoe and the Benjamin Mills ones. But the short and sweet of this bear lake one is, it's just plain too close for comfort! Too close to residences, protected wildlife areas, etc. etc.

Sent from my iPhone

From:
To: Environment Assessment Web Account
Subject: Bear Lake EA
Date: November 23, 2023 4:18:45 AM

To whom it may concern,
As residents and landowners in Upper Vaughan we would like to express our concerns and opposition to the Bear Lake Wind Farm proposal. The Environmental Assessment(EA) conducted by Strum appears to have been rushed and incomplete. There are also inconsistencies between the EA conducted by Strum for the South Canoe project and the Bear Lake proposal. Reading through both assessments one is left trying to determine the truth. Inconsistencies concerning migratory bird activity especially fall migratory routes and birds of prey flight paths require further investigation.

Another concern is the impact on groundwater and wells should blasting for the Bear lake project disrupt the geology of the land causing arsenic and uranium infiltration to people's wells and local river systems.

After receiving 3D images from Strum for the location of the proposed windmills we have grave concerns of the impact of shadow flicker across the front of our home. Research has proven that shadow flicker can potentially cause serious health concerns which include: migraines, sleep disturbances, stress and photosensitive epilepsy. Who will be accountable and responsible should any members of our family develop such related health concerns?

A further concern is the accumulative effect of our community being surrounded by windmills. Sound carries through the Upper Vaughan valley to the point where we can often hear conversations of neighbors while they are outside across Zwicker Lake. Should the Bear Lake project be approved our community will be encompassed by windmills. What research has been done to study the impact on humans and wildlife of infa-sound especially in sound enhancing valleys/communities? A good reason to pause should data not be available to adequately and honestly answer this question.

Finally, the Bear Lake Project has no real value to the Province's Clean Energy Plan nor the energy needs of Nova Scotians. We understand that energy from this project will be used to fuel Everwind's proposed hydrogen plant, which will be then converted to ammonia and cooled for export to Europe. We also understand that Everwind has yet to sign a contract for export. Is the Bear Lake project placing the cart ahead of the horse?

There are just too many questions unanswered for this project and EA to be approved as is. The pause button needs to be pushed and much more time and research required to fully understand and resolve issues and questions related to the Bear Lake project.

Thank you for your time and consideration of our questions and concerns.

Regards,

Upper Vaughan Residents

PROTECT WENTWORTH VALLEY

Honourable Timothy Halman

Minister of Environment and Climate Change

PO Box 441 Halifax, Nova Scotia

B3J 2P8

RE: Letter of Opposition to Environmental Assessment Registration Document for the BEAR LAKE POWER PROJECT

This submission is in response to the Environmental Assessment Registration Document provided for the Bear Lake Wind Power Project. Protect Wentworth Valley (PWV), a group of volunteer community members who have significant concerns regarding this project and the proposed location and stand in firm opposition to granting conditional environmental assessment approval by the Minister of Environment and Climate Change. We desire that the special ecology and biodiversity of the area be protected, and where sustainable, support human enjoyment of it now and for generations to come. We believe that the size, location, extent, impacts, risk, cumulative effect with other proposed projects in the area, and cost of any project are critical considerations and that they should proceed only when the benefits of renewable energy are sustainable and developed with consideration to the many factors that contribute to the quality of life of a community and province.

The Minister should reject this Environmental Assessment because of the likelihood that it will cause adverse effects and environmental impacts that cannot be mitigated by the Proponent. The Bear Lake Wind Power Project Proponent relies on the premise of no evidence that harm is likely, but the Environmental Assessment must provide evidence that harm is unlikely. Based on our evaluation of the Environmental Assessment Registration Document in its entirety we wish to state our unequivocal opposition to the Project.

Following are a few of our key reasons to support why the Minister should reject the Bear Lake Wind Power Project Environmental Assessment:

The results of the assessment indicated that the Project, with the implementation of mitigation and monitoring measures, will not result in significant adverse residual effects. The Project will also have a positive residual effect associated with the reduction of greenhouse gas emissions (i.e., production of renewable energy) and economic prosperity within Nova Scotia.

The wind energy from the Project will be primarily used to power EverWind's Point Tupper Green Hydrogen/Ammonia Project.

- We question what the purpose of this project really is- and how beneficial it will be to Nova Scotia's mandate for Green Energy and getting off coal.
- What is the definition of significant adverse residual effects? And who makes that decision? Is it local people who live in the area?
- We question why they need mitigation and monitoring measures if there are no significant adverse residual effects? What are the mitigation and monitoring measures? Who decides what these are? Who oversees these? What are the guarantees that they will actually work? What are the consequences it they do not work?

Biodiversity and Connectivity -
The Project area is in a biodiverse area. The Minister should reject the Environmental Assessment because the Proponent has not proven that they can mitigate the harmful impacts of the Project to biodiversity, ecological connectivity, the Nova Scotia Mainland moose and their core habitat and corridor and neighboring parks and private land trust conservation properties.

Endangered Nova Scotia Mainland Moose –
Mainland moose are a SOCI listed as "Endangered" under the ESA with a subnational ranking of "S1" (highest priority) (ACCDC, 2023a). In 2021, NSNRR published a recovery plan for Moose in mainland Nova Scotia, thereby assigning the common name 'Mainland moose'. Threats to Mainland moose include habitat loss and fragmentation, particularly resulting from industrial activities; and loss of habitat connectivity due to the increased placement and density of roads (NSNRR, 2021f). The Study Area has previously been and continues to be subject to the abovementioned threats as a result of historical and current land-uses, including forestry activities and recreation. Renewable energy projects were described as a medium level threat, as the nature of wind projects usually requires the construction or expansion of road networks and loss of forested habitat.

The Minister of Environment and Climate Change must protect this habitat including Wetlands and adjacent forest habitat consistent with the Province's commitments per the Nova Scotia Mainland Moose Recovery Plan. The Proponent fails to identify how they will mitigate the risks that this Project places on the endangered Nova Scotia Mainland moose. co-author of the Nova Scotia Mainland Moose Recovery Plan, provided key guidelines/advice that she mentioned in conversations with the Proponent and that were omitted in the Project's Environmental Assessment: ● Minimize roads, fences, lighting and other linear infrastructure. ● Orient and clump them together in ways that do not sever or intersect intact forest or other natural habitat linkages through the site. ● Plan in a spatial way that retains wide (300 m minimum; 1000 m ideal) habitat linkages/corridors through the site in multiple directions, especially to connect with intact habitat beyond the site. ● Retain both hardwood and softwood and access to water in order to provide summer and winter security and thermal cover and forage. ● Include mechanisms to deter motorized human access beyond that necessary to service the site. ● Retain and enhance natural cover for moose and other SAR habitat delineated as core habitat in Recovery Plans. ● Retain and enhance natural cover for moose and other SAR habitat modeled as high habitat

suitability or high likelihood of presence as delineated in Recovery Plans. ● Avoid new road construction/expansion/enhancement in areas delineated as unroaded/low road density in Recovery Plans. ● Retain as much natural cover as possible to favour moose habitat over deer habitat to minimize incursion of deer and associated P. tenuis (brainworm fatal to moose and carried by deer).

Cumulative effects –
The province must take cumulative effects into account in reviewing Environmental Assessments. How do we know what the effect will be on both biodiversity, water quality, and human health?

Many experts acknowledge the cheapest and easiest way to combat climate change is to protect more land, such as the remarkable forests and wetlands located throughout this project area. All sequester large amounts of carbon. Everwind will need to clear huge amounts of carbon-sequestering forests, many of which are old growth or mature forests. May wetlands and old growth forests of this project area are known hotspots for the endangered NS Mainland Moose and many other species at risk.

Destroying our forests to save our forest makes no logical sense.

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Project EA Concern
Date: November 23, 2023 9:36:28 AM

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Good day, I'm writing you to oppose Everwinds planned installation of Wind Turbines on the Crown Block of land located in Upper Vaughans.

I have several concerns with regards to this project. First, Crown Land is public land. This land is been used regularly for generations of families for recreating, hunting, fishing, trapping, berry picking, mushroom picking, hiking, atving, mountain biking, camping, geocaching, birdwatching, ect. It should not be leased to a special interest private business that will limit and interfere with public activities.

I own a dwelling on private land that borders this Crown property. The proposed Wind turbine appears to be 900 meters away...this is too close.

Although Everwind doesn't plan to place a turbine in the provincially designated wildlife area (DWA), they do plan to place multiple turbines along the border of it. Due to the aggressive clearcutting on this crown block by Westfor, this DWA is essential for deer survival when we have severe snow events. Deer rely on their hearing to evade predation. The constant hum of these turbines will diminish their hearing abilities. They must remain undisturbed.

I also have a residence on zwicker lake. Our well is a spring feed well that relies on the water coming off this mountain range. Our area is known for high levels of arsenic and uranium. Drilling and blasting on this Crown block should not be permitted. The toxic oils they use in their turbines is also a serious concern. A quick look at the neighboring South Canoe Wind Farm shows the frequency these turbines break down and release this toxic oil into the ground and the environment.

These turbines are bird killers. The only birds getting attention in the EA are threatened speices. We have plenty of other species of birds that have healthy populations but do not need to put at risk of death. I find the bird EA data extremely poor. There are way more eagles, hawks and owls using this Crown block then listed. Same as the fish using the creeks.

Everwind has been building roads and placing bridges in wetlands before they have completed their EA or recieved a development permit from the Municipality. This alone creates a high level of mistrust with their ability to be a good steward of the environment with public lands.

My recommendation would be to move the turbines planned for Crown land construction back to the neighboring Wagner?? property where they plan to erect more windmills. This would also solve the noise and flicker shadow issues for the residence like myself below these towers.

Our community does not want to be closed in on 3 sides by 3 windfarms. South Canoe, Bengemin Mills and now Bear Lake. It's also concerning that this power production isn't even for NS residents. It's only needed to power a private company to make green hydrogen to export to Germany where they dont even have a contract yet. Our public lands should not be used for this level of private business that has no public return.

Please do not approve Everwinds EA assement for construction of Wind Turbins on the Crown Land in Upper Vaughans. Please protect our forest, wildlife and environment.

Regards

From:
To: Environment Assessment Web Account
Subject: Bear Lake Wind Farm environmental application
Date: November 23, 2023 4:40:54 PM

I am writing to offer my feedback for the Bear Lake Wind Farm. I have waited up until almost the last minute because there have been so many new developments with Everwind.

I'm my opinion, these are the questions that need to be asked and answered every time a wind farm company submits an environmental assessment application. I believe that these questions and fulsome answers are what really matter most to Nova Scotians.

1. How much guaranteed wind energy from this wind farm will be directly added to our NSP grid, enabling Nova Scotia to reach its climate change goals?
2. Will this wind farm reduce power bills for Nova Scotians and by how much?
3. What are the risks and burden to Nova Scotia and Nova Scotians?
4 Does this project impact marginalized areas and does it overburden a community?
5 Is the N.S. government offering any tax payer funded subsidies, tax credits or loans for this project?
6. Are the company's goals and values a good fit for Nova Scotia?

1. I don't believe Everwind's Bear Lake Wind Farm will help Nova Scotia reach its climate change goals. Everwind is generating wind power to make hydrogen and then turning the hydrogen into ammonia, which it will export overseas. This does not help Nova Scotia. The most I have heard is that they will offer to sell energy on cold winter days. Seriously—these are just crumbs—from a company that is applying for and receiving huge federal 'green initiative' tax incentives/credits. I believe it's for 30-40% of their 3 billion dollar project. That could be well over $1 billion dollars. Everwind just received a $125 million federal loan. Everwind does not have any government funding information on their website—they said you need to contact the federal government for specific amounts. I see that they wrote no "funding to date" on their environmental assessment, which is misleading because they are definitely applying for federal funding and have lobbyists actively working on funding and policy in Ottawa. Everwind needs to be more transparent. This is a red flag.

I believe there needs to be strong, iron clad legislation in effect for wind farm companies that use crown lands and receive funding (provincial or federal). Those companies must directly support Nova Scotia's grid in a significant way. The larger the wind farm and the more government funding used—should equal more direct energy for Nova Scotia, at a reasonable cost. I really don't understand how government officials can support EverWind—when EverWind is not helping Nova Scotia to meet its climate change goals in a significant way—despite the fact that they will be heavily subsidized. Right now the bar is set very low for EverWind. Only governments have the real power to raise that bar.

The bar is low because Everwind has unequivocal global, federal, provincial, municipal and Indigenous support plastered all over its website. And plenty of politicians at all levels showing up and praising EverWind at conferences and press conferences. Plus, politicians are forwarding EverWind's press releases/social media clips throughout social media, in support of EverWind. However, any negative public feedback on EverWind's social media is not tolerated and these negative comments get deleted. Now the public can't even make any comments on EverWind's social media, nor hear what other Nova Scotians think. It's like they either don't care what the public thinks or are afraid of public feedback. Everwind's plans significantly impact Nova Scotians: they are using an enormous amount of our limited crown lands, so they need to be transparent when it comes to community feedback. So, politicians get to spread EverWind's message via social media—but the public can't respond to those same social media posts? Can you see how this looks to the average Nova Scotian? Red flag. Everwind's Bear Lake environmental application even has words of support from the N.S. Minister of Natural Resources and Renewables. Do you see how that looks to the average Nova Scotian? Like the whole environmental process is a done deal, merely a box to check—a sham. Another Red flag.

Transparency is essential. Once a wind farm is approved it's hard for Nova Scotians to get any information about it—is it performing up to standards? The only thing worse than cutting down our limited crown land forests to install a wind farm is having a broken wind farm or an underperforming one. Take for example, our 8 year old largest wind farm (South Canoe)—it is producing less than expected due to mechanical issues and storms, and rate payers are still paying off the $94 million loan, but the public is not able to know how much it is under performing. I'm assuming it's pretty bad because the information is redacted. We need South Canoe and all the other wind farms in Nova Scotia that support our grid to succeed, to help us reach our climate change goals. Everwind will be exporting their commodity overseas so that won't even benefit us. If we were meeting and exceeding our climate change goals—for sure, export some ammonia overseas to help others. But, Nova Scotia is struggling to reach our climate change goals and deadlines. I wish there was an interactive map that shows all the wind farms that support our climate change goals: total turbines, energy produced, ones that are under repair, ones that are not yet built but approved. This would be a transparent way for the provincial government to show they are committed to climate change by showing Nova Scotians the progress that is being made—and the challenges we face.

2. I don't see our power rates being reduced with Everwind. That is what Nova Scotian's truly want and so desperately need. Can you imagine being the global leader of green hydrogen and having the largest wind farm in the western hemisphere and still having soaring power rates? I'm not sure if the world would be laughing at us or pitying us or both. Just because EverWind is selling power to NSP, it doesn't mean our rates will be reduced, even if EverWind sells the power super cheap to NSP. In the future, when we might be using green hydrogen, will this even be affordable? Just because it's produced here does not mean it will be cheaper for Nova Scotians. Both these energy sources need to be negotiated and legislated. If NSP refuses to reduce our rates, then legislate EverWind to pay rate payers. I don't trust what EverWind puts on pamphlets, when they say they will directly support residents —this needs to be iron clad because their messaging changes like the wind. It's a red flag if none of this is being considered. The provincial government is in a powerful position and has leverage. Use it to benefit Nova Scotians.

3. What an enormous BURDEN and SACRIFICE Nova Scotia has to make for these wind turbines. There is an impact on humans, wildlife, watercourses, land, birds, and fish, just to

name a few. Decimating our forests will not help us with climate change. There is an area down the road from where I live that has been recently clear cut. Now the main road near the clear cut areas floods when it rains and it makes driving extremely difficult. I wonder what the environmental footprint is to manufacture turbines and their batteries, ship them here to Nova Scotia, sacrifice forests in Nova Scotia to install them, and create hydrogen (needs lots of fresh water) to make ammonia, and ship ammonia overseas, and have companies in Germany change the ammonia back to hydrogen. Plus, burying the wind farms in landfills when they are done. Everwind is vague about the decommissioning process because it's 35 years away. It's just another thing for Nova Scotians to deal with. EverWind's plan defies logic which is an enormous red flag.

The jury is mixed regarding human health effects with wind farms—yet 'wind farm syndrome' is not even mentioned in this application. They don't mention it could even be a possibility. How can they guarantee there is absolutely "no human impact"? Or when they write that there is no impact for visual effects for humans—who decides that? Does the consultant or environmentalist who decided that actually live near any wind farm in Nova Scotia? Will the Department of Environment have someone on payroll living next to the wind farm at Bear Lake to confirm that there are no effects? I don't recall reading anything about the potential mental health effects from wind farms in this environmental application. This is another red flag. Having a wind farm nearby and knowing that they are sparingly and equally distributed across the province, helping to reduce our power bills and helping our grid to become greener— there are some benefits to that scenario that might outweigh the negatives. Compare that to having too many wind farms nearby, unequally distributed across the province, and ones that do not reduce our power costs nor make our grid greener in a significant way. That will not benefit Nova Scotians. Nova Scotians are dealing with a cost of living crisis, housing crisis, health care crisis, a serious lack of manpower for skilled trades, many are still struggling with even decent Internet and cell coverage. Having to deal with real life impacts from wind farms will only add to their burden.

Even when accumulative effects are described in the Bear Lake environmental assessment, they discuss environmental accumulative effects but not human accumulative effects. Of course, accumulative impacts are crucial for land, animals, water courses etc. But, humans are also impacted by accumulative effects and we matter too. By omitting accumulative impacts on humans, they are implying there is no difference between having 3, 30, or 300 wind farms in a community, which is extremely short sighted and misleading. Another red flag.

4. We have had wind farms here since 2005 and they have been increasing over the years. We have over 300 current operational wind farm turbines here in Nova Scotia and more are expected. Where can I find the Nova Scotia government policies, ensuring that wind farms (and other companies that use crown lands like landfills etc), are not overly represented in marginalized areas--I.e. near African Nova Scotian or Indigenous communities, lower income, older population? Are these policies online? I can't seem to find anything.

Nor can I find any information about provincial government's policies to protect communities from over saturation of wind farms on crown lands. What is the magic number? Is it whatever a community can tolerate? Is there a maximum number that the province thinks is too many/unsustainable/unbalanced"? I asked my local municipal councillor if they have any say over how many wind farms are permitted and he said "Everwind is a provincial driven project as they are in control of crown lands". Our Warden said " the municipality cannot overrule the province". Both are basically saying they are powerless and the province decides

everything. There are (municipal) policies about setbacks, size and distance in between turbines but NOTHING about any caps for the number of wind turbines using crown lands. Can wind farm companies actually use up all of the crown lands and leave a community with no crown lands? Crown lands are supposed to belong to all Nova Scotians and are supposed to be balanced between business and pleasure, according to DNRR's website. I find it discouraging that there is so little policy information made publicly available for Nova Scotians. This only leads me to assume that its a 'free for all'—companies can put in applications for as many wind farm turbines as they wish—that companies dictate policy, not the province. This is a red flag.

You absolutely cannot look at the Bear Lake Wind Farm without considering the whole picture because there are accumulative effects. Everwind is planning for 88 total turbines in an area which already has nearby wind farms. Is this too much for one area? Plus there is Guysborough County— , Director of Public Affairs for EverWind, emailed me in June stating there would be 300-440 wind turbines for Guysborough County squished into two areas. This would be the largest wind farm in the western hemisphere (2GW) by far. This would make those two areas literally 'sacrificial wind farm wastelands' and turn them into marginalized communities. It's a form of discrimination—when Nova Scotians living in certain areas are singled out and suddenly don't have the same rights (access to crown lands), and are being forced to deal with physical/mental health and environmental concerns due to living in a 'sacrificial wind farm wasteland'. No one is going to beg to move there or vacation there so they can't even sell their homes or cottages (not that there is even anywhere affordable to move to). Remember, there is a huge difference between having 3, 30 and 300 wind turbines in your back yard. EverWind's goals for Guysborough are simply unhinged and based on satisfying EverWind's egocentric need to build the largest wind farm in the western hemisphere. Huge red flag. This is why the province needs policies to protect Nova Scotia crown lands and Nova Scotians, and these policies need to be made public.

There are so many things that could go wrong for any company to install 20 wind farm turbines and hook up to the grid. There are a million things that could go wrong with EverWind's ambitious plans to put in 400(maybe 500?) wind farm turbines and install the largest solar farm in Atlantic Canada, make green hydrogen and ammonia and ship it overseas. First, wind farms and making green hydrogen is not cheap or easy to do. I read that it takes 10 units of financial subsidy to make 1 unit of commodity for green hydrogen right now but it might be a little cheaper in the future. There are also supply chain issues as everyone is waking up to the climate change deadlines. Everwind has unrealistic and strict deadlines and export standards it needs to follow in their own self-imposed green hydrogen race—but that's on them, not Nova Scotia. We didn't force them to sign MOU's with Germany. We didn't force them to plan for the largest wind farm in the western hemisphere. And, what happens when a newer, cheaper, and safer energy technology comes along in a year or two? Germany is also investing in offshore wind farms in the Baltic Sea and working with Finland to make green hydrogen, which is much closer than Canada. I am not exactly sure why Germany wants to import black ammonia (black due to shipping) to turn it back into hydrogen when they can probably make their own true green hydrogen on their doorstep. What happens if Everwind experiences massive delays and can't meet its quota and time frame deadlines for Germany? What happens if a federal election is called and the new government limits green initiative funding?

Everwind is a new company only started in 2022. Everwind has not actually even created anything although its website says "we're producing green hydrogen to decarbonize the

world" and "Everwind is harvesting natures renewable resources and converting them into green hydrogen". None of that is actually happening right now—it is all future based! Everwind is not a company that has been here for years with a solid reputation and a trusted name. Most new companies start slow, learn and grow, show ongoing community commitment, follow rules and regulations, learn to mitigate environmental concerns, and then expand. I don't know if slow and steady is even possible with Everwind. If they were approved for their 3 wind farms, would they build one wind farm and get it operational and learn to mitigate issues and proceed to the next? Or would they bulldoze the forests for 88 wind farm turbines right off the bat? What happens if their plans fall apart? You can't undo the land damage. Our provincial government has a duty of care to prevent unnecessary damage to crown lands. One suggestion would be to put in appropriate conditions to prevent Everwind from doing just that.

I have some concerns If Everwind needs to use our grid in the initial stages—first of all it's not 'green'. I have issues with Everwind and government officials using and promoting the word 'green' or stating that power generated from wind farms only 'briefly touches the grid'. If it uses our grid, it uses our grid, and our grid is not green. Period. Second of all, our grid is not always reliable and in rural areas it takes a while for repairs. I guess I am wondering if there will be enough room for customers on the grid with Everwind—as our population, heat pumps and electric cars increase. Normally customers need to have a back up power plan for storms—even light storms. Will we need to have a back up plan for every day now? Will Everwind's power needs be restored before customers when the power goes out? NSP will definitely need to upgrade their grid—are rate payers responsible for this? It's a red flag if none of this is settled before anything is approved because it affects customers who rely on the grid and don't want higher power rates. I know it doesn't make sense that we would be responsible for upgrades, but NSP is also recommending that Nova Scotia rate payers be responsible for Hurricane Fiona costs, which makes no sense. Is there anything written and legislated that Nova Scotia Power customers will not receive increases for anything related to Everwind grid upgrades?

5. I hope that the Nova Scotia government is not offering one dime of tax payer money for Everwind. Everwind is on the federal gravy train, so it would be doubly painful if Nova Scotians have to endure Everwind sucking up both our federal and provincial public tax dollars.

6. I don't believe EverWind's vision is a good match with Nova Scotia. Everwind's plans do not fit simply because of the size of Nova Scotia and simply because of the size of EverWind's plans. EverWind's grandiose plans for 400 plus (maybe up to 500?) wind turbines isn't realistic or manageable. We are the smallest province in size and have the least amount of crown lands (except for PEI). We cant make Nova Scotia any bigger. Would EverWind consider scaling back their plans? Sadly, I don't see that happening. Everwind is a company that is forever boasting about building Atlantic Canada's first green ammonia production, the largest solar farm in Atlantic Canada and the largest wind farm in the western hemisphere. Being the FIRST and the LARGEST is key here for Everwind. But, why do they need to be the largest of anything? I believe it's an egocentric need. I fear that if another company tries to build a bigger than 2GW wind farm elsewhere in the western hemisphere, Everwind will only increase their plans in Nova Scotia to keep the title. Should we just be forever thankful and indebted to Everwind for not building the largest wind farm in the world in Nova Scotia (that would be over 7000 wind turbines)? There appears to be no provincial policies saying they can't. Everwind has forced Nova Scotians into

Everwind's self-imposed green hydrogen race. Everwind expects Nova Scotians to tow the line—with the assistance of politicians, continuously promoting and protecting Everwind's messaging.

Everwind is constantly pivoting with each PR misfire. Nova Scotians do not believe that exporting ammonia overseas will benefit Nova Scotia. So now brochures in Colchester county make no mention of exporting ammonia. Everwind CEO approached Colchester County council when they were debating on whether to pause wind farms. The council just wanted to do some due diligence and study and update their wind farm policy. , CEO of Everwind, essentially whined about how hard it is to do businesses with government and the utilities in Nova Scotia, how he has to work weekends, how Nova Scotia is not like Quebec and Newfoundland, how we can be leaders instead off being left behind and he ranted on about our poor health care here. He doesn't seem to like our time lines—he wants a wind farm operational in 2 years when it takes other companies maybe 6 plus years? He said that that green energy is a global race and we need to move quicker. I believe he will need to push Nova Scotia and Nova Scotians to the absolute brink to be competitive. In a nut shell, he said Nova Scotia would be nothing without Everwind and came close to saying he was fed up: "the straw that breaks the camels back" was his quote, which implies to me that the thought about bailing on Nova Scotia has crossed his mind. He complained about already having spent $200 million here. My impression: it was a mixture of pressure tactics, some passive aggressive bullying, whining, a never ending sales pitch and an egofest. No worries—Colchester County approved that wind farms can continue without delay. The day after the federal government appeased Everwind and rewarded their poor behaviour with a $125 million loan and they received lots of praise from politicians. Multiple red flags. Can the bar be set any lower for EverWind?

I have to wonder why a company CEO would even say these things publicly. Or present misleading pamphlets. Residents were also told at an open house that the Bear Lake wind farm would be mainly on private lands but SURPRISE-- in the environmental assessment now 45% will be using crown lands--which means less access for people who have already given up so much access to crown lands. On the Bear Lake wind farm application, Everwind wrote they are exporting ammonia which is desperately needed, but the two companies in Germany actually plan to convert it back to hydrogen. When asked, EverWind denied this and said the journalist was told "200-300 times it was false!" It's really hard to believe that number! The two German companies confirmed on the record saying it is true— that the ammonia will be changed back to hydrogen. The Everwind CEO has a problem with numbers. He once told a reporter that Guysborough County has 2 million square km—this is 500 times bigger than its actual size. This makes it impossible to trust Everwind: their messaging, their plans for Nova Scotia and trust in their environmental assessment application, which was created in record speed. It's frustrating and there are so many red flags . The bar for Everwind is not just set low—it's on the ground.

Nova Scotia does not need to be a world export leader for green hydrogen. Nova Scotia needs to be a leader for Nova Scotia. Period. I don't recall anyone surveying Nova Scotians and asking us about being world leaders of green hydrogen. If Everwind's wind farm/green hydrogen experiment is such an amazing deal for a host area then why weren't other countries in a bidding war begging to be chosen? I wonder if other places around the world refused before Everwind came knocking here. We are not the only place with 'world class wind'. You can say that a million times but it still does not make it true. There are successful wind farms all over the world. I am curious why the United States, a global leader, has never put in a 2GW

wind farm (the biggest is just under 1GW). What do they know that we don't?

The truth is big companies have come to Nova Scotia and promised us so much. Some companies have harmed our lands, used taxpayer funded subsidies, then bailed and declared bankruptcy, leaving Nova Scotia to clean up and to pay for the clean up. Or maybe we just wait 6 months after Sustainability Marine Technology goes bankrupt for its turbine to wash ashore. Or wait for Northern Pulp to sue the province but not repay the $65 million loan they still owe our province-- coincidentally, that loan is actually for land that EverWind is now leasing and wants to put a wind farm on! You really can't make this stuff up.

Unfortunately, I cannot support the Bear Lake wind farm project because it will not help Nova Scotia reach its climate change goals in a significant way. Nova Scotia needs to focus on Nova Scotia. I simply don't trust Everwind—too much inconsistent messaging and red flags. I believe that their lofty goals of building the largest wind farm, largest solar farm and green hydrogen plant will destroy Nova Scotia as there are just too many red flags and risks. Besides, Nova Scotia is supposed to be Canada's ocean playground—not EverWind's get rich, wind farm wasteland.

Nova Scotia is the second smallest province that has the second least percentage of crown lands in the county, so let's not waste those lands by putting up wind farms that do not directly and significantly benefit Nova Scotia. There is a price to pay for using our land and resources so everything must be balanced because forests help mitigate floods and erosion. Let's put up wind farms sparingly and equally—it's not one county's responsibility to shoulder the burden of climate change for the entire province. Nova Scotia doesn't need to be pushed to the brink in EverWind's green hydrogen race to export ammonia. Nova Scotia will struggle just to be pushed to the brink to reach our own climate goals. Luckily, the federal government is funding some 'green initiatives' for the provinces but it's not an endless amount. Let's support companies whose main objective is being committed to helping Nova Scotia meet our climate goals in a significant and meaningful way.

Thank you

Maritime Aboriginal Peoples Council

The Maritime Regional Aboriginal Leaders
Intergovernmental Council of Aboriginal Peoples
Continuing to Reside on Traditional Ancestral Homelands

Forums

- Leaders Congress
- MAPC Commissions/Projects
- MAARS Secretariate
- IKANAWTIKET SARA
- MAPC Administration

MAPC Regional
Administrative Office
80 Walker Street, Suite 3
Truro, Nova Scotia
B2N 4A7

Tel: 902-895-2982
Fax: 902-895-3844
Toll Free: 1-855-858-7240
Email: frontdesk@mapcorg.ca

Governmental
APRO Councils

Native Council of
Nova Scotia
P.O. Box 1320
Truro, Nova Scotia
B2N 5N2

Tel: 902-895-1523
Fax: 902-895-0024
Email: chieflaugustine@ncns.ca

New Brunswick Aboriginal
Peoples Council
320 St. Mary's Street
Fredericton, New Brunswick
E3A 2S4

Tel: 506-458-8422
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Email: chief@nbapc.org

Native Council of
Prince Edward Island
6 F.J. McAuley Court
Charlottetown
Prince Edward Island
C1A 9M7

Tel: 902-892-5314
Fax: 902-368-7464
Email: chief@ncpei.com

November 23rd, 2023

Environmental Assessment Branch
P.O. Box 442
Halifax, Nova Scotia
B3J 2P8

RE: Bear Lake Wind Project

To Whom It May Concern,

On behalf of the Native Council of Nova Scotia (NCNS), the Maritime Aboriginal Aquatic Resources Secretariate (MAARS) is providing comments to the Environmental Assessment Branch of the Nova Scotia Department of Environment and Climate Change regarding the Environmental Assessment Registration Document (EARD) for the Bear Lake Wind Project being undertaken by Wind Strength, a Membertou and EverWind Fuels Company. Our comments primarily relate to the matters of invasive species vectors, and project related wetland interactions.

Introductory vectors for invasive alien species (IAS) are one concern given that IAS are predisposed to establish themselves in recently disturbed areas, due to the localized eradication of natural predators and the removal of resource competition from anthropogenic activity. Activities such as grubbing, that will take place during the expansion of this quarry, are one of such heavy stressors on the environment that will provide an opportunity for IAS to establish themselves. As the environment is stressed, there is an increased potential for IAS to be successfully introduced via vehicles, mobile facilities, on the boots of workers, and other vectors if no preventative measures are taken. MAARS requests that Wind Strength develop procedures to mitigate introductory vectors for IAS. This could include mandated practices to clean mobile facilities and vehicles prior to entry of the project site, to ensure they do not act as introductory vectors.

While we can appreciate that there have been significant efforts to maximize the use of existing disturbed areas, the assessments indicate a significant impact to the wetlands within the project footprint. These wetland habitats provide important ecosystem functions, as well as habitat for numerous aquatic, terrestrial, and plant species. As stated in the EARD (Section 7.3.3.6, Page 124), the analysis indicates the potential for 4.55 ha of wetland habitat to be directly impacted by this development, which includes 77 direct wetland interactions, and subsequently that, despite these impacts, the watershed's hydrology is not expected to be affected (Section 7.3.3.6, Page 128). We would request that Wind Strength and Strum Consulting provide further details on how this conclusion was reached given the amount of wetland habitat expected to be directly impacted by this development.

At this time, MAARS and NCNS do not have any further commentary to provide related to this proposed undertaking; however, we would like to be kept apprised to any developments or changes to the project.

We would like to take this opportunity to reiterate that it is important for all proponents of projects to understand that the Off-Reserve Aboriginal Community represented by the NCNS is included within the definition of the word "Indian" of Section 91(24) of the *Constitution Act*, 1982. The Supreme Court of Canada in a landmark decision in *Daniels v. Canada (Indian Affairs and Northern Development)*, 2016 SCC 12. declared that "the exclusive Legislative Authority of the Parliament of Canada extends to all Indian, and Lands reserved for the Indians" and that the "word Indians' in s.91(24) includes Métis and non-Status Indians"[1]. Since 2004, in multiple decisions passed by the Supreme Court of Canada: *Haida Nation*[2], *Taku River Tlingit First Nation*[3], *and Mikisew Cree First Nation*[4], has established that,

> Where accommodation is required in decision making that may adversely affect as yet unproven Aboriginal Rights and title claims, the Crown must balance Aboriginal concerns reasonably with the potential impact of the decision on the asserted right or title and with other societal interests.

Further, both the Government of Nova Scotia and the Government of Canada are aware that the "Made in Nova Scotia Process" and the *Mi'kmaq-Nova Scotia-Canada Consultation Terms of Reference* does not circumvent the Provincial Government's responsibility to hold consultations with other organizations in Nova Scotia that represent Indigenous Peoples of Nova Scotia. While the proponent may have to engage with the thirteen Mi'kmaq First Nations through the Assembly of Nova Scotia Mi'kmaq Chiefs, represented by the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO), the KMKNO does not represent the Off-Reserve Aboriginal Community who have elected to be represented by the NCNS since 1974.

We assert that the Off-Reserve Aboriginal Communities, as 91(24) Indians, are undeniably heirs to Treaty Rights and beneficiaries of Aboriginal Rights as substantiated by Canada's own Supreme Court jurisprudence. As such, there is absolutely an obligation to consult with the Off-Reserve

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[1] Daniels v. Canada (Indian Affairs and Northern Development), 2016 SCC 12, [2016] 1 S.C.R. 99
[2] Haida Nation v. British Columbia (Minister of Forests), (2004), 2 S.C.R. 511
[3] Taku River Tlingit First Nation v. British Columbia (Project Assessment Director), (2004), 3 S.C.R. 550
[4] Mikisew Cree First Nations v. Canada (Minister of Canadian Heritage), (2005), 3 S.C.R. 388

Community through their elected representative body of the NCNS. The Crown's duty to consult with all Indians extends beyond that only with Indian Act Bands, or as through the truncated Terms of Reference for a Mi'kmaq Nova Scotia Canada Consultation Process.

For contextual purposes, for over forty years, the three Native Council partners of the Maritime Aboriginal People's Council (MAPC) have continued to be the Aboriginal Peoples Representative Organizations representing and advocating for the Rights and issues of the Mi 'kmaq/Wolastoqiyik/Peskotomuhkati/Section 91 (24) Indians, both Status and non-Status, continuing to reside on their unceded Traditional Ancestral Homelands. In the early 1970s, the communities recognized the need for representation and advocacy for the Rights and Interests of the off-Reserve community of Aboriginal Peoples, "the forgotten Indian". Women and men self-organized themselves to be the "voice to the councils of government" for tens of thousands of community members left unrepresented by Indian Act-created Band Councils and Chiefs. Based on the Aboriginal Identity question, Statistics Canada (2016 Census - 25% sample) enumerate 21,915 off-Reserve Aboriginal Persons in New Brunswick, 42,145 in Nova Scotia, and 2,210 in Prince Edward Island.

Each Native Council in their respective province asserts Treaty Rights, Aboriginal Rights, with Interest in Other Rights confirmed in court decisions, recognized as existing Aboriginal and Treaty Rights of the Aboriginal Peoples of Canada in Part II of the Constitution Act of Canada, 1982. Each Native Council has established and maintains Natural Harvesting Regimes, and each have a co-management arrangement with DFO for Food, Social, and Ceremonial use of aquatic species, through the: Najiwsgetaq Nomehs (NBAPC), the Netukulimkewe'l Commission (NCNS), and the Kelewatl Commission (NCPEI).

The Native Council of Nova Scotia was organized in 1974 and represents the interests, needs, and rights of Off-Reserve Status and Non-Status Section 91(24) Indians/Mi'kmaq/Aboriginal Peoples continuing on our Traditional Ancestral Homelands throughout Nova Scotia as Heirs to Treaty Rights, Beneficiaries of Aboriginal Rights, with Interests to Other Rights, including Land Claim Rights.

The Native Council of Nova Scotia (NCNS) Community of Off-Reserve Status and Non-Status Indians/Mi'kmaq/Aboriginal Peoples supports projects, works, activities and undertakings which do not significantly alter, destroy, impact, or affect the sustainable natural life ecosystems or natural eco-scapes formed as hills, mountains, wetlands, meadows, woodlands, shores, beaches, coasts, brooks, streams, rivers, lakes, bays, inland waters, and the near-shore, mid-shore and off-shore waters, to list a few, with their multitude of in-situ biodiversity. Our NCNS Community has continued to access and use the natural life within those ecosystems and eco-scapes where the equitable sharing of benefits arising from projects and undertakings serve a beneficial purpose towards progress in general and demonstrate the sustainable use of the natural wealth of Mother Earth, with respect for the Constitutional Treaty Rights, Aboriginal Rights, and Other Rights of the Native Council of Nova Scotia Community continuing throughout our Traditional Ancestral Homeland in the part of the Mi'kma'ki now known as Nova Scotia.

We would appreciate an opportunity to engage on the Bear Lake Wind Project directly with the proponent, Wind Strength. We look forward to further dialogue as we continue to advocate for the

rights of Off-Reserve Status and Section 91(24) Indians/Mi'kmaq/Aboriginal Peoples of Nova Scotia. To continue to represent the interests and needs of the off-Reserve Aboriginal Community in Nova Scotia, we would like to request the opportunity to participate in early engagement in future Environmental Assessment Reviews.

Advancing Aboriginal Fisheries and Oceans Entities
Best Practices, Management, and Decision-making

Habitat Impact Advisor, MAARS

Executive Director, MAARS & MAPC Projects

CC: Chief & President, NCNS

From:
To: Environment Assessment Web Account
Subject: Opposition to the Bear Lake Wind Power Project
Date: November 23, 2023 10:22:48 PM

Dear Minister,

I am writing to express my opposition to the Bear Lake Wind Power Project. As you know, the proposed project site is located in an pristine mainland moose area, which is home to many endangered species such as the mainland moose, wood turtle, pine marten, and the endangered blue felt lichens.

Based on our evaluation of the Environmental Assessment Registration Document in its entirety, we wish to state our unequivocal opposition to the Project. The Proponent relies on the premise of no evidence that harm is likely, but the Environmental Assessment must provide evidence that harm is unlikely. Therefore, I believe that you should reject this Environmental Assessment due to the likelihood that it will cause adverse effects and environmental impacts that cannot be mitigated by the Proponent.

I thank you for your time and consideration in this matter. If you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,