

Comment Index

Benjamin Mills Wind Project

March 1, 2022

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Quinn, Candace M

From: McKenna, Chuck W
Sent: January 17, 2022 10:24 AM
To: Quinn, Candace M
Cc: Parker, Maylia Kempt
Subject: RE: Natural Forces Benjamins Mill Wind Project - EA Registration

Follow Up Flag: Follow up
Flag Status: Flagged

Candace,

Resource Management Unit will not be submitting comments in relation to this project.

Chuck McKenna



Department of Municipal Affairs and Housing

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

Date: February 10, 2022

To: NS Department of Environment and Climate Change

From: Department of Municipal Affairs and Housing

SUBJECT: NATURAL FORCES DEV'T PARTNERSHIP - BENJAMINS MILL WIND PROJECT

As requested, the Department of Municipal Affairs and Housing has reviewed the Environmental Assessment Registration Documents for the proposed Benjamins Mill Wind Project. From the perspective of our Departmental mandates, we have no comments to submit relative to this EA review.

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

Agriculture

Date: February 11th, 2022

To: Candace Quinn, Nova Scotia Environment and Climate Change

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

Subject: Benjamins Mill Wind Project – Environmental Assessment

Thank you for the opportunity to review the Benjamins Mill Wind Project documents.

The Department of Agriculture has the following comments about the proposal:

- There are two agricultural activities in the vicinity, with a horse pasture identified 2km from the site and a beef and dairy operation 3.2km from the site.
- Construction will not be carried out on any agricultural land.
- The proposed site is located on forested Class 7 soil and is not suitable for agriculture.



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Date: February 11, 2022

To: Candace Quinn, Environmental Assessment Officer, Nova Scotia Environment and Climate Change

From: Environmental Assessment Officer, Impact Assessment Agency of Canada

Subject: Natural Forces Benjamins Mill Wind Project

The federal environmental assessment process is set out in the [Impact Assessment Act](#) (IAA). The [Physical Activities Regulations](#) (the Regulations) under IAA set out a list of physical activities considered to be “designated projects.” For designated projects listed in the Regulations, the proponent must provide the Agency with an Initial Description of a Designated Project that includes information prescribed by applicable regulations ([Information and Management of Time Limits Regulations](#)).

Based on the information submitted to the Province of Nova Scotia on the proposed Benjamins Mill Wind Project, it does not appear to be described in the Regulations. Under such circumstances the proponent would not be required to submit an Initial Description of a Designated Project to the Agency. However, the proponent is advised to review the Regulations and contact the Agency if, in its view, the Regulations may apply to the proposed project.

The proponent is advised that under section 9(1) of the IAA, the Minister may, on request or on his or her own initiative, by order, designate a physical activity that is not prescribed by regulations made under paragraph 109(b) if, in his or her opinion, either the carrying out of that physical activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects, or public concerns related to those effects warrant the designation. Should the Agency receive a request for a project to be designated, the Agency would contact the proponent with further information.

The proposed project may be subject to sections 82-91 of IAA. Section 82 requires that, for any project occurring on federal lands, the federal authority responsible for administering those lands or for exercising any power to enable the project to proceed must make a determination regarding the significance of environmental effects of the project. The Agency is not involved in this process; it is the responsibility of the federal authority to make and document this determination.

The proponent is encouraged to contact the Agency at (902) 426-0564 if it has additional information that may be relevant to the Agency or if it has any questions or concerns related to the above matters.

Thank you,

Environmental Assessment Officer, Atlantic Regional Office
Impact Assessment Agency of Canada / Government of Canada

Date: February 14th, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Wetland & Water Resources Specialist, Water Resources Management Unit

Subject: Benjamins Mill Wind Project EA

Scope of Review:

The following review of the Benjamins Mill Wind Project (Benjamins Mill, NS) Environmental Assessment Registration Document (EARD) (Natural Forces Developments Limited Partnership, January 2022) is specific to the mandate of the ECC Wetlands Program within the Sustainability and Applied Sciences (SAS) Division. The review considers whether the environmental concerns associated with wetlands and the proposed mitigation measures to be applied have been adequately addressed within the Environmental Assessment. The recommendations provided below are meant to supplement the actions outlined in the EA submission documents.

Reviewed Documents:

Benjamin Mill Wind Project Environmental Assessment Registration, Natural Forces Developments LP., January 11th, 2022.

General Comments:

A preliminary assessment of wetlands for this project was provided with few details on the wetlands. There is not enough information provided in the EARD to predict whether adverse environmental effects on wetlands will occur. The Guide to Preparing an EA Registration Document for Wind Power Projects in Nova Scotia has a list of information that should be provided within the EA Registration Document. The following information was not provided:

- *Identify the location, size, boundary and class of any wetland*
 - Figures 9A-D of the EARD should include the approximate wetland boundaries outside of the LAA. The approximate wetland area was provided in the Preliminary Wetland Assessment Summary: Appendix G, however the approximate boundaries were not shown on the figures and the methodology for the approximate wetland areas was not provided.
 - Figures should identify wetlands by class.
 - It is unclear how many wetlands are in the LAA and how many will be directly impacted by the project. The EARD states, *the LAA has over 107 wetlands and 94 wetlands in the LAA are located adjacent the existing road*. Please clarify the exact number of wetlands delineated and which ones will be impacted by the Project. This should be presented in a table.
 - Wetland delineation forms should be included in an appendix.
- *Functional Assessment information*

- To predict whether adverse environmental effects on wetland function will occur, wetland functional assessments should be completed for all wetlands that could be impacted by the project. Furthermore, functional assessments (WESP-AC) can determine whether wetlands are Wetlands of Special Significance (WSS). There was no mention of WSS in the EARD.
- *Maps and photos clearly indicating the locations of the project in relation to the wetland and other natural features*
 - Most figures should include the delineated wetlands not just the NRR mapped wetlands.
 - Photographs were missing for several wetlands (WL95, 11, 102, 103, 110, 129, 145, 165 and 166). Dates were not provided on the photos.
 - Several wetlands (i.e., WL33) were identified in the Preliminary Wetland Assessment Summary: Appendix G, but not shown on the figures.
 - The wetland shape files do not have all the wetland ID's and class in the attribute table.
 - Other natural features (i.e., watercourses, fish habitat, SAR/SOCC) were not included in the wetland figures.
 - The figures should be provided at closer scales to see all wetlands delineations and connectivity. A table should be provided to explain which wetland boundaries were combined.
 - Figures should include potential wetland alterations.
- *Description of the wetland's ecological character*
 - These were not provided for each wetland.
- *Presence of fish in the wetland*
 - Fish habitat should be identified for every wetland contiguous with a watercourse. This should be provided in a table.
- *Nature of the proposed alteration*
 - It is unclear which wetlands will be altered by new roads, road upgrades and transmission line installation. The EARD states, *that there will be 14 km of new roads and 33 km of road upgraded*. Proposed wetland alterations should be provided including direct and indirect alteration and shown on figures.
 - What wetland avoidance measures will be taken along the access roads?
- *All identifiable impacts to the wetland (e.g., percent of wetland to be altered, species at risk present and/or species of conservation concern, terrestrial & aquatic flora, and fauna species to be affected)*
 - The percent of each wetland proposed to be altered (relative to the wetlands total area, including estimated areas outside of LAA) should be provided in a table.
 - The EARD only mentions that no vegetation SAR or SOCC were identified within the wetlands. All SAR/SOCC species within or near wetlands should be provided. For example, the EARD (pg. 92) states *"During the 2021 bird surveys, 2 Rusty Blackbirds were detected during the spring migration window in wetlands (i.e., on May 5, 2021)"*. In a table, please provide which wetlands had the Rusty Blackbird sightings and include detailed information on the habitat and habitat

usage.

- The NS *Wetland Conservation Policy* identifies WSS as wetlands known to support at-risk species as designated under the federal *Species At Risk Act* or the *Nova Scotia Endangered Species Act* (2011), among others (see policy). The EARD has no mention of WSS.
- *Opportunities for mitigation of impacts and/or compensation*
 - The EARD states:

“Wetland monitoring during the construction phase for wetlands within the PDA will be carried out as required by NSECC. Due to locations of wetlands in proximity to site infrastructure, as well as avoidance of impact to wetlands with infrastructure no further monitoring will be conducted during operations”.

The duration of monitoring is dependant on the Wetland Alteration Approval Terms and Conditions. Monitoring may be required during operations.
 - No mitigation or monitoring was mentioned for wetlands that will be altered by the project. This should be included.
 - Wetland Compensation was not mentioned in the EARD. If a wetland is altered compensation would be a requirement of the Wetland Alteration Approval Application.

Additional Comments:

In Appendix G, Section 3, it states that “a two parameter system was established at representative locations within the field identified wetlands based on the presence of hydrophytic vegetation and wetland hydrology”. Please clarify whether hydric soils were assessed in the field.

Conclusion:

The information provided in the EARD is insufficient in identifying the potential environmental impacts on wetlands. Information is lacking detail and does not correlate with other important features (i.e., project infrastructure, SAR/SOCC, watercourses, fish habitat). It is unclear if the project construction will be altering wetland. Additional information is required to understand the environmental effects of the project relative to wetlands within the LAA. Please provide the additional information requested in the sections above.

Environment and Climate Change

Date: February 10, 2022
To: Candace Quinn, Environmental Assessment Officer
From: Environmental Health Consultant, SAS Division
Subject: Natural Forces Benjamins Mill Wind Project

Scope of review:

The focus of this Environmental Assessment review from the NSECC Sustainability and Applied Science Division's - Environmental Health Consultant is potential impacts on human health. In general, the scope of this review includes the assessment of the potential for the proposed undertaking/project to adversely affect human health in all phases of the project. Any recommendations provided below are meant to supplement the actions that are outlined in the EA submission documents.

Documents reviewed:

The documents outlined below formed the basis for this EA review,
Environmental Assessment Registration Document -
Natural Forces Limited – Benjamins Mill Wind Project

There are no additional comments beyond those raised and addressed in the EA registration documents with regard to this project.

Date: February 1, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Consultation Advisor, Mi'kmaq Relations Unit

Subject: Benjamin Mills Wind Farm

The Nova Scotia Department of Natural Resources and Renewables has reviewed the Environmental Assessment Registration Document for the proposed Benjamin Mills Wind Farm project, submitted by Natural Resources, dated January 18, 2022. 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 Treaty rights.

3: Mi'kmaq of Nova Scotia

Section 3 indicates ongoing engagement efforts by Natural Forces with the Mi'kmaq of Nova Scotia. Activities included engagement efforts with all 13 Bands and with the KMKNO. Engagement with the KMKNO has been ongoing since March 2021. Natural Forces has initiated an MEKS by Membertou Geomatics, which the Proponent indicated has been delayed due to COVID restrictions. Natural Forces has been working with KMKNO and the Confederacy of Mainland Mi'kmaq to hire a Mi'kmaq technician to assist with identifying vegetation and species of significance to the Mi'kmaq that could be impacted by the project. The proponent has indicated this technical position has not been filled due to a lack of interest. It is recommended that the proponent continue these discussions and engagement with the Mi'kmaq to pursue both the MEKS and the Mi'kmaq technician position.

6.2.4 Aquatic Environment (Fish and Fish Habitat)

Section 6.2.4 states that the proposed project is situated within the Avon River secondary watershed which encompasses a drainage area that includes 3 main river branches and several watercourses. The area is suitable for Atlantic salmon. The proponent has identified watercourses that may be impacted will undergo additional detailed assessments to ensure potential impacts to the species are considered and appropriately mitigated.

Potential impacts to fish and fish habitat may potentially have an adverse impact to Aboriginal and Treaty rights. Additional information should be provided on the potential impact on fish and fish habitat in the project area. Additionally, water quality monitoring programs should be considered for any terms and conditions of the EA Approval, or subsequent Part V Approvals, if issued.

6.2.5 Species at Risk

The Species at Risk Study for the project indicated that there were no sightings of mainland moose in the area. However, the proponent should rely on the *Mainland Moose Recovery Plan* to determine potential impacts of activities to the recovery of the species. Although moose hunting is not permitted on the mainland, Moose are a culturally important species to the Mi'kmaq of Nova Scotia. As such, additional information should be provided to determine the potential of Moose presence in the project area and the potential for the project to impact Moose and Moose habitat.

Section 6.4: Culture and Heritage VECs

Section 6.4 indicates that the project is in close proximity to the Avon River (approximately 2km) and there is potential for Indigenous cultural heritage resources. The 2021 ARIA (appendix N) indicates that the potential is low for encountering archaeological resources. However, areas along the shoreline of waterbodies, such as the Avon River, have a higher potential. The ARIA showed 13 registered sites, which are Historic or Mi'kmaq in nature, within a one-kilometer radius of the project site. In addition, the ARIA indicates that the proposed Project area and vicinity were utilized by the Mi'kmaq historically. The proponent should continue to engage with the Mi'kmaq as it relates to archaeology for the area.

Date: February 16, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Environmental Engineer - Groundwater, Water Resource Unit,
Sustainability and Applied Science Division

Cc: Water Resource Unit Manager

Subject: **Review of Natural Forces Benjamins Mill Wind Project for
Groundwater Effects**

Environmental Assessment (EA) reviews from the NSECC Sustainability and Applied Science Division Environmental Engineer – Groundwater Program focus primarily on groundwater resources. This includes the potential for the proposed undertaking/project to adversely affect groundwater resources, including general groundwater quality, quantity, municipal water supplies, local water supply wells and groundwater contributions to stream baseflow, groundwater recharge and wetlands. The review is conducted of materials provided by the proponent during the EA registration process. Any recommendations made are based on this review.

Natural Forces Developments Ltd propose to construct and operate a new wind power site. The Benjamin's Mill Wind Project is proposed to be located southwest of the Town of Windsor, near the communities of Smiths Corner and Falls Lake in Hants County. The project is to construct, install and operate up to 28 wind turbine generators to produce up to 150 MW of renewable energy.

The project includes overburden removal, widening and upgrading of existing roads, construction of new roads, blasting, and excavating for the purposes of installation of crane pads, wind turbine foundations, and substation construction.

Comments

- Baseline information regarding groundwater and wells was presented in the application, including, mapping of wells and descriptions of geologic conditions.
- Impacts on groundwater are not considered to be a significant risk with the proposed project.
- Blasting will be limited to a few meters below surface for the purposes of installing footing for the planned wind turbines.
- The proposed site is approximately 1.6km away from the nearest water supply well, located near Falls Lake.
- Two municipal water supplies are located within the Avon River Watershed, the

Falmouth Water Supply located within the French Mill Brook watershed approximately 10km away from the proposed site. Also, the Windsor water supply located within the Fall Brook watershed located across the Avon River approximately 7km away from the proposed site. Due to limitations with mapping provided exact distances to municipal/RPDWS is estimated.

- The closest registered public drinking water supply is 4+km away from the proposed site, across the Avon River.

Recommendations

The following recommendations are suggested for the **Natural Forces Benjamins Mill Wind Project**

1. Prior to any blasting, the Approval Holder should be required to conduct a pre-blast survey for water wells within 1km of the point of blast. The survey must be conducted in accordance with a "Procedure For Conducting a Pre-Blast Survey" provided by NSECC. Any water well impacts from the blasting must be corrected by the Approval Holder to the satisfaction of NSECC.
2. An Environmental Protection Plan (EPP) or Environmental Management Plan (EMP) should be required and include, to the satisfaction of NSECC, the following information relevant to protection of groundwater resources applicable during the construction, operation and maintenance of the Undertaking.
 - i. a contingency plan to address spill response and clean-up procedures relevant to site equipment including transformers, turbines and vehicles.
 - ii. effective erosion and sedimentation run-off monitoring, controls and mitigation, if necessary.
 - iii. mitigation of potential Acidic Rock Drainage (ARD) effects from construction
 - iv. mitigation/compensation for potential blasting effects (where used could also be separately described outside an EPP)

Date: 15-Feb-22

To: Candace Quinn
Environmental Assessment Officer

From: , Director, Mineral Management Division (MMD)
Director, Geological Survey Division (GSD)

Subject: **Natural Forces Benjamins Mill Wind Project - EA Registration**

The Geological Survey Division (Natural Resources and Renewables) has conducted a preliminary review of the Benjamins Mill Wind Project (BMWP) footprint area. We note that the geological characterization of the proposed site is deficient (i.e. Section 6.1.2.1 "Geology").

Notably, the footprint of the proposed development footprint includes significant portions of Mineral Closure **C000075C** (<https://novaroc.novascotia.ca/novaroc/>), which is related to the Millet Brook Uranium deposit and satellite occurrences. Numerous other potential uranium mineral occurrences exist within the BMWP development footprint, based on historical mineral exploration data and reporting (cf. AR_ME_80-008, AR_ME_81-038, AR_ME_81-026, AR_ME_2008-031). Several other uranium-bearing mineral occurrences have also been noted in the project area (e.g., AR_ME_2008-200 and White et al. (2013) *in* Report ME 2013-001).

A more comprehensive review and presentation of all historical geoscience data is needed for the development footprint and project area to identify areas of concern and or develop potential mitigation or avoidance procedures. At a minimum this should include the following elements:

1. Detailed geological map(s) of the development footprint and project area (on a LIDAR base), which identify the relevant structure and stratigraphy of the project area.
2. Uranium distribution map layer(s) based on geological, geophysical and geochemical data.
3. A technical summary that:
 - a. Clearly identifies and describes known occurrences of uranium mineralization (e.g., geological, geophysical and geochemical).
 - b. Clearly identifies and describes geological controls (e.g., glaciation, structure and stratigraphy) related to primary occurrences, and potential secondary distribution of uranium mineralization.
 - c. Clearly identifies and describes common benchmark standards for naturally occurring uranium mineralization and human health and safety considerations.
 - d. Clearly identifies and describes the local health and safety risk (i.e. frequency and severity) pertaining to a) known occurrences of uranium mineralization, b) potential occurrences of uranium mineralization and c) naturally occurring secondary geological pathways (e.g., structures and till dispersion).
4. Recommended as part of potential mitigation and or avoidance planning:

- a. An exposure assessment (general) related to geoscience site characterization.
- b. An exposure assessment for planned activities (e.g., infrastructure development and all primary or secondary ground disturbance activities)

Manager, Project Operations
Natural Resources and Renewables
1701 Hollis Street
P.O Box 698
Halifax, NS, B3J 2T9

Environment

Date: 2022-02-17
To: EA, Nova Scotia Environment
From: Engineer, Climate Change Unit
Subject: Benjamin Mills Windmill project

Greenhouse Gas Mitigation

The proponent indicates that the operation of the project will result in the reduction of Greenhouse gases by replacing other sources of energy. No projections or data have been provided for this. The proponent has also not supplied any estimate of GHG emissions expected during the construction phase of the project. It is expected that these quantities may be negligible but some mitigative measures should be proposed.

Date: 16 February, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Environmental Services, Nova Scotia Public Works

Subject: Benjamin Mills Wind Project

The Department of Public Works (DPW) staff have reviewed the Environmental Assessment for the Natural Forces Developments Limited Partnerships' Benjamin Mills Wind Project and prepared the following:

General comments:

1. Any work zones created on provincially owned roads will require compliance with the appropriate section of the Nova Scotia Temporary Workplace Traffic Control Manual (available online at [Temporary Workplace Traffic Control Manual | novascotia.ca](https://www.novascotia.ca/TemporaryWorkplaceTrafficControlManual)).
2. The proponent has indicated a possible requirement for speed limit signs, warning signs, detour signs in addition to traffic control. This will require approval of the District Traffic Authority to erect these signs, with an appropriate signage plan.
3. A reference was made to contacting local officials to determine if a Transportation Study is required. This information is critical so that a proper highway and structural analysis of the delivery route can be completed (clearance on underpasses, weight on overpasses, turning radii for large trucks, spring weight restrictions, etc.)
4. The proponent referred to additional truck volumes not being significant, however; no information is provided on the expected volumes or a delivery schedule. This additional information should be included.

Section 10: Other Approvals Required, Table 53, Page 150-151

1. The proponent has indicated required modification at the intersection of New Russell Road and Trunk 14. This would require a **Working Within Highway Right of Way Permit** (available from the local Area Manager). This permit must be included in the list of provincial permits required in Table 53).
2. The proponent lists the requirement to request a Special Moves Permit, please note

that although the approval is completed through the Department of Public Works, permits are submitted through Access Nova Scotia. The proponent is encouraged to reach out to the Department of Public Works contact for Special Moves Permits, Manuel Abreu at Manual.Abreu@novascotia.ca as soon as possible to determine and verify next steps.

Sincerely,

Environmental Services
Department of Public Works

Date: February 17th, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Air Quality Protection Advisor, Air Quality Unit

Subject: **Natural Forces Benjamins Mill Wind Project**

Further to your request, the Air Quality Unit provides the following comments regarding air quality and noise on the Environmental Registration Document for the Natural Forces Benjamins Mill Wind Project.

Air Quality

The report notes that impacts on air quality could potentially occur during the construction and decommissioning phase of the project. The mitigation measures identified in Table 27 are appropriate approaches to take to minimize emissions from the identified activities.

In the Environmental Management and Protection Plan (Appendix O), it is stated that:

Fugitive dust during dry weather conditions may be controlled by the application of water; and

Earth work activities will be paused, where possible, during periods of significant winds.

Further detail is required regarding what constitutes 'dry conditions' and 'significant winds' including how these will be monitored and responded to. No monitoring is proposed. However, the Department may require ambient air monitoring to determine air quality impacts.

Noise

The Sound Level Assessment (Appendix C) is a thorough investigation into the potential impacts of noise from the turbines on nearby residents. A summary of the results is presented in the Environmental Registration Document.

The assessment quantifies the potential noise impacts in comparison with the Guide to Preparing an EA Registration Document for Wind Power Projects in NS. This guide requires that the noise at the exterior of receptors does not exceed 40dB(A). The assessment determined that the worst-case noise level experienced at the exterior of a residence is 32.3dB(A).

Additionally, low frequency noise (infrasound) is stated to be sound at a frequency of 20Hz or lower. This was assessed as part of the Sound Level Assessment, and the worst

case was determined to be 80Hz or higher at all receptors.

Finally, the impact of construction machinery was assessed. A worst-case scenario of all machinery operating simultaneously was adopted, with attenuation of -7.5dB(A) per doubling of the distance from the source. This assessment indicated that sound levels would reach 41dB(A) at 975m from the construction site. The nearest residence is reported to be 1.6km from the construction site. Therefore, construction site noise was not predicted to impact residences.

The mitigations described in Table 30 are acceptable for the potential identified impacts. It is noted that flora will remain *in situ* for increased noise attenuation, and that the proponent intends to communicate construction schedules with residents. It is also noted that:

Site preparation, construction and decommissioning activities will be limited to daytime hours, when feasible.

Activities that generate noise should be limited to daytime hours. No monitoring is proposed. However, the Department may require noise monitoring to determine noise impacts.

General

The Complaint Resolution Plan (Appendix B) states that any complaints will be investigated within 20 days of their receipt by the Communications and Government Relations Manager. It is not clear if this is calendar days or working days. In either case, it should be noted that noise and air quality impacts are environmental stressors, and a delay of 20 days before a complaint is addressed may be too long for complainants.



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Bedford Institute of Oceanography
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P.O. Box 1006, Station P510
Dartmouth, Nova Scotia, B2Y 4A2

Date: February 16, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Donald Sam, Hydro and Flow Unit, Regulatory Review Biologist, Fish and Fish Habitat Protection Program

Subject: Benjamin Mills Wind Project, Hants Co., (DFO File#: 22 - EA - 012)

Dear Candace Quinn:

Fisheries and Oceans Canada (DFO), Fish and Fish Habitat Protection Program (FFHPP) received the Nova Scotia Environmental Assessment registration document submitted for the Benjamin Mill Wind Project, Hants Co., on January 11, 2022. The proposed project consists of constructing up to 28 wind turbines and one power substation on an undeveloped fragmented forested area in Hants County, near the communities of Smiths Corner and Falls Lake. In recent years, much of the immediate and surrounding area has been affected by commercial forestry activities, including road development.

The project area, estimated to cover approximately 130 hectares, includes about 32 hectares of wetlands - most of which are classified as swamps. Multiple streams and brooks flow through the site, including tributaries to North Canoe Lake, Falls Lake, Bennett Lake, Five Island Lake, Burnt Lake, Avon River, and Southwest Branch Avon River. Several parameters of the project have not been determined including the number and type of wind turbines, the road access routes, and the size and extent of the development footprint.

DFO-FFHPP is responsible for administering the fisheries protection provisions of the *Fisheries Act (FA)* and *Species at Risk Act (SARA)* for aquatic species at risk. The fisheries protection provisions of the *FA* includes: section 34.4 which prohibits the death of fish by means other than fishing; section 35 which prohibits the harmful alterations, disruption, or destruction (HADD) of fish habitat; and section 36.3 which prohibits the deposition of deleterious substances into water frequented by fish or in any place where it may enter such water. *SARA* prohibits: the killing, harming, harassment, possession, capturing, or taking of a species listed as extirpated, endangered, or threatened; the damage or destruction of a residence; or the destruction of any part of the critical habitat of such a listed species, unless authorized by the minister.

Below you will find the comments from DFO-FFHPP regarding the above mentioned project:

Wetland Assessment

- The functional assessments of all affected wetlands within the Project Development Area (PDA) must be completed and reported to fully evaluate project's anticipated effect(s) on fish and fish habitat.

Watercourse crossings/ Road development:

- Any required upgrading or new construction of water crossings (WCs) and access roads must be fully described before an effective review of the project's potential effects on fish habitat can be completed.
- The effects of prior recent developments (e.g. installation of the existing WCs and design of access roads) within the PDA may be currently limiting the productivity of fish/fish habitat. Development plans should identify any such existing limiters caused by anthropogenic development activities, and seek to support aquatic ecosystems to recover and function at their *inherent* natural capacity.

Species at Risk:

- American eel (*Anguilla rostrata*) is a species of conservation concern, presently listed as Threatened by COSEWIC, and may occur within the PDA.

Preliminary fish habitat surveys:

- A more in-depth evaluation of the watercourses is required to assess the status of fish and fish habitat in the watercourses within the PDA. In addition to the monitoring of water flow and water quality characteristics, in-stream sampling of fauna (i.e. electrofishing, trapping, invertebrate surveying) is required to evaluate the quality (and extent) of fish habitat within the PDA. (As presented, the scope of fish surveys completed on site appears highly restricted, being confined to visual inspections 100 metres on either side of existing WCs of the road network within the PDA).

Acoustic/Subsonic effects

- The behavior and health of fishes (and other wildlife) are affected by seismic vibrations and anthropogenic sounds*. The proponent should include some consideration of the effects of sounds and vibrations caused by the construction and regular operation of the proposed project to fishes within the PDA.

*Selected references:

[Integrating techniques: a review of the effects of anthropogenic noise on freshwater fish \(cdnsiencepub.com\)](https://cdnsiencepub.com)

Mickle, M. F., & Higgs, D. M. (2018). Integrating techniques: A review of the effects of anthropogenic noise on freshwater fish. *Canadian Journal of Fisheries and Aquatic Sciences*, 75, 1535–1541

<https://tos.org/oceanography/article/acoustic-impacts-of-offshore-wind-energy-on-fishery-resources-an-evolving-source-and-varied-effects-across-a-wind-farms-lifetime>

T.A. Mooney, Andersson, M. & Stanley, J. (2020) Acoustic impacts of offshore wind energy on fishery resources: an evolving source and varied effects across a wind farm's lifetime. *Oceanography*, 33(4):82 – 95.

<https://www.wind-energy-the-facts.org/impacts-on-benthos-and-fish.html>

Wind Energy: The facts – Impacts on benthos and fish (retrieved online, January 27, 2022).

<https://onlinelibrary.wiley.com/doi/epdf/10.1111/jfb.13948>

A. N. Popper & Hawkins, A. D. (2019). An overview of fish bioacoustics and the impacts of anthropogenic sounds on fishes. *J. Fish Biol.* 94:692 – 713.

- Should the EA be granted conditional approval, DFO will be requesting additional information be provided through the Nova Scotia of Environment Watercourse Alteration Approval process to determine if the project will result in the HADD to fish and fish habitat and require an authorization under the *FA*.
- Any indirect impacts associated with the wind turbine development project that may result in either the reduction or increase in surface water flow and/or adversely affect the habitat quality of aquatic wildlife could result in the requirement for a *FA* authorization from DFO.

Fisheries and Aquaculture

Date: February 17, 2022

To: Candace Quinn, Nova Scotia Environment and Climate Change

From: Executive Director, Policy and Corporate Services
Nova Scotia Department of Fisheries and Aquaculture

Subject: Benjamins Mill Wind Project – Environmental Assessment

Thank you for the opportunity to review the Benjamins Mill Wind Project documents.

The Department of Fisheries and Aquaculture has the following comments:

- This project is not likely to have major impacts on any commercial fisheries in the area and there are no active seafood processing operations within the immediate vicinity.
- In the Preliminary Watercourse Field Assessment, twelve of the 23 watercourse crossings were designated as permanent and most of the proposed crossings are on headwater streams. Water quality in terms of temperature and dissolved oxygen were suitable for salmonids in most of the permanent sites.
- The larger permanent streams in the construction area have potential as important spawning and rearing areas for brook trout and no direct assessments of fish populations have been completed.
- There are two land-based aquaculture facilities within a 25 km radius of the proposed project.

Date: February 17th, 2022

To: Candance Quinn, Nova Scotia Environment

From: Coordinator Special Places, Culture and Heritage Development

Subject: Natural Forces Benjamins Mill Wind Project

Staff of the Department of Communities, Culture, Tourism, and Heritage has reviewed the Benjamins Mill Wind Project EA documents and have provided the following comments:

Archaeology

Staff reviewed the sections of the EA document pertaining to archaeology. The Heritage Research Permit Report, A2021NS150, Benjamins Mill Wind Project was submitted to the Special Places Program on February 14, 2021. The archaeological work is considered incomplete until the regulator reviews and approves the report.

Botany

Staff reviewed the sections of the EA document pertaining to botany.

Section 7.1.1 – Atmospheric environment (also section 9.1, Methodology)

- The long-term positive impact of the project on carbon emissions is quite clear, but the short-term negative impacts, and mitigations for them, are not as well documented (or at least not as clearly presented) as they could be.
 - In particular, there is no comment on the expected reduction in carbon sequestration capacity that would accompany tree felling or land conversion from early successional forest, and whether it could be mitigated by planting in areas that are not converted to road or pad. Although such sequestration would be a small proportion of the overall project impact, with appropriate vegetation management and tree planting, the project can likely achieve a net carbon benefit in a shorter time.

Section 7.2.2 – Birds and bird habitat

- (Page 123) The claim that suitable nesting habitat for Common Nighthawks and Olive-sided flycatchers does not exist in the LAA is not supported by habitat descriptions. Although it may be lower quality habitat, common nighthawks are known to nest in clearcut areas adjacent to intact forests, and OSFL are known to use such edges extensively for foraging. There are many edges like this in the LAA. Use of this habitat during the breeding season is certainly supported by bird survey data from spring and summer for OSFL. Either the habitat descriptions or the interpretation should be adjusted, or this apparent discrepancy should be explained.

Section 7.2.5 – Species at Risk

- (130) A buffer of 100 m is being applied to lichens within the PDA, but at least one lichen SOCC (Frosted Glass Whiskers) appears to intersect the road footprint between T2 and T1. If this SOCC lichen cannot be avoided, a specimen and relevant forest data should be collected and submitted to the Nova Scotia Museum before the site is disturbed.

Palaeontology

Staff have reviewed the sections of the EA document pertaining to palaeontology. The surficial and bedrock geology are described appropriately, and due to the majority of the site underlain by granites and no significant surficial deposits there is no expectation of any significant palaeontology heritage resources present at the site.

Zoology

No CCH staff were available to review the sections relating to zoology.

Natural Resources and Renewables

MEMORANDUM

TO: Candace Quinn, NS Department of Environment and Climate Change

FROM: NS Department of Natural Resources and Renewables

DATE: February 17, 2022

RE: Natural Forces Benjamins Mill Wind Project

The Department of Natural Resources and Renewables (herein the Department or NRR) provides the following comments on the above project:

Crown Lands:

Any activity on Crown lands requires authority from the Department's Land Administration Division. The type of authority (e.g. lease, licence, letter of authority) would be determined, in part, on the proposed activity and level of ground disturbance.

The activities described in the EA document would most likely result in the need for a Crown lands lease, which (if issued) would authorize the turbines and access over Crown lands.

The Department anticipates that the proponent will need to seek the following authorities from the Land Administration Division:

2.2 Geographical Location

- The document says that that 4 WTGs (Wind Turbine Generators) will be located on Crown land, and access for the overall project will be over a network of existing privately maintained forestry roads.
- **A Crown Land Lease would be required** for those turbines and would include access and utilities over the Crown Land.
- **Letter of Authority/Permits would be required** for construction of new access roads and/or modification to existing roads on Crown lands

Project Layout – Figure 2

- This map shows up to 5 turbines on Crown land PID 45063443 (T1, T2, T3, T4, and T5). New site roads are also shown on the Crown PID. In section 2.2 above it states that 4 WTGs will be located on Crown. This discrepancy (4 vs 5 WTGs) could be due to the scale of the map.

- According to the legend, Crown land is outlined on this figure in gold. PID 45259694 is outlined in gold but Property Online shows it as a private PID.

2.3.1.1 – Access roads

- The widening or other modification to existing access roads and clearing and/or grubbing on any Crown parcel **requires authority from Land Administration**. This requirement also applies to access roads to transmission lines that are on Crown land.

2.3.6 – Interconnection to grid

- Interconnection to the grid will involve a transmission line, switching substation and a control building and protection system. **If any aspect of this interconnection, including overhead wires cross Crown land then authority will be required from the Department’s Land Administration Division (licence or easement).**

2.5 – Schedule

- Proposed pre-construction activities and clearing are expected to start in Q4 of 2022. **Letter of Authority from the Department’s Land Administration Division needs to be obtained before any work can commence on Crown land.**

Table 48 – Potential Interactions & Proposed Mitigation for Unplanned Events, Malfunctions, and Accidents

- A Crown Land Lease will contain a **requirement for insurance**, the type of coverage and coverage amounts would be determined prior to issuance of the lease.

Appendix C – Sound Assessment Map

- This map shows up to 5 turbines on Crown land PID 45063443 (T1a, T2b, T3a, T4a, and T5a). In section 2.2 above it states that 4 WTGs will be located on Crown. Figure 2 (noted above) also shows up to 5 turbines on Crown. This discrepancy (4 vs 5 WTGs) could be due to the scale of the map.

Wildlife, Wildlife Habitat and Species-at-Risk:

The Department requires more information on vegetation and wildlife survey methodology to determine if more surveys are required and to make informed recommendations based on the impact this project will have on wildlife and wildlife habitat. The Department also requires more information on the species that were observed in the surveys. This is particularly important in collecting information on Species at Risk. The Department biologist has agreed to meet with the proponent to discuss the following areas that require more information. The Department has identified the following gaps in information:

Flora and Fauna

1. Vegetation is often difficult to identify outside the flowering period, therefore surveys are required during various seasons. It is uncertain where the surveys were conducted and if the surveys covered the entire area. **The information provided to the Department is missing sufficient information on flora and fauna field studies in the spring and summer months including specific descriptions of species, location, areas covered. There is also no mention of a follow up lichen survey in November (Frosted Glass-whiskers).**

Survey methodology should also include the following:

- **Survey tracks to understand survey coverage for targeted and non-targeted surveys.**
 - **Photo plates, with references as to where the photos were taken (e.g., map with GPS points, direction, etc.)**
 - **Dates on wetland photos**
 - **A list of Invasive species in the Project Area including species, location and size of area impacted.**
2. Field studies for Wildlife were conducted in 2021. More surveys may be required based on information provided. **Survey methodologies should include:**
 - **Weather descriptions or information related to search effort.**
 - **Survey methodology information such as time of day and weather descriptions** as many surveys are time of day and weather sensitive.
 - **Habitats and observations details** (e.g., visual, auditory, tracts, etc.).
 - **Date, time of day or weather for all fauna surveys.**
 - **Survey tracks and map points of locations of observations, tracks, scat, etc.**
 - **A list of listed species previously observed, habitat present and any observations made.**

The Department recommends that the proponent provide information on results of reptile targeted surveys with a specific survey for turtles.

In addition, the Department identified the following gaps in information:

- Previous records of listed species from ACCDC are noted in Appendix L. In the report it was stated that moose were not observed but no mention of turtles or various bird species were reported. **Provide details of fauna species observed in various habitats and maps.**
- Nocturnal bird surveys and nighthawk surveys were performed but no mention of the species observed. **Provide details of species observed or heard.** Appendix H is mentioned but none of the data is in the actual report.
- Fig 10 - only shows 2 diurnal watch count locations, yet there is mention of 4 transects based routes where surveys were done. **Provide information related to the missing 2 transect survey routes.**
- It should be noted for Table 14 – species noted in spring and summer have a high likelihood of nesting in the area. At least 24 of the species in table 14 were observed to be in Project area during the breeding season and should be made more apparent in the report as they can impact decision making. **Provide more**

information about the potential nesting activities of species provided in Table 14.

- Section 6.2.2- Birds and Bird Habitat is missing information on the species found the kind of habitat and location. **Provide a table of birds observed, related bird habitat, observation method, location/transect, etc.**
- **It is stated that fewer targets were present at lower altitudes (RSA); provide the species and numbers. Identify the “Warblers and Sparrows” species detected, and conduct pre-dawn surveys.** There is mention of dawn, but pre-dawn (before sunrise) often can yield more numbers.
- **The Department observed that research has been conducted on wind farms not far from the proposed Benjamins Mills Wind Project. This research contradicts the migratory information provided by the proponent in this EA. It would be helpful if an explanation was provided as to why this project has different results:**
 - See South Canoe Wind Farm documents (2015-2018): <https://johnfkearney.com/reports-birds-and-wind-energy/>
 - Monitoring performed for South Canoe Wind Farm had a monitoring station only 2.6km from the boundary of the proposed project. This monitoring was found to have the second highest rate of nocturnal passage at inland sites and are consistent with early radar studies related to autumn migration.
- *“Six acoustic survey stations were installed at within the Study Area of the proposed Project as a mechanism to capture the various terrain and habitat types within the Study Area.”*
 - **The Department is concerned that there is no mention of bat detection equipment being used at all in the main document.** From the statement above it appears the stations were installed to capture terrain and habitat types. This is stated in Appendix J as well but is followed by mentioning the use of the bat detectors.
 - **Details about any bat roosting locations in the Project Area.**
- **Recognize that a Deer Wintering Area (DWA) is adjacent to the Project Area and is within 10 km of the Project Area (Pg 93) and that the project may change where deer congregate.**
- **Provide details about the potential interaction of the turbines with birds and mitigation measures.**
 - Avian mortality studies should cover a larger search area around a wind turbines (more than 100m radius) as smaller birds may get tossed further than heavier birds. Trained search dogs should also be used as the detection rate of carcasses by humans is low and dogs can search thick vegetation and find smaller birds. Both factors can give a better understanding of impacts of the turbines on birds.
- **Provide vegetation and lichen survey tracks (e.g., GPS tracks).**

Species At Risk (SAR)

The Department requires the following information:

- **Mitigation measures for developments regarding Frosted glass-whiskers.** This species is not yet listed Provincially under the Nova Scotia - Endangered Species

Act but does have development requirements under the At-Risk Lichen Special Management Practices - See the following document

https://novascotia.ca/natr/wildlife/habitats/terrestrial/pdf/SMP_BFL_At-Risk-Lichens.pdf

- **Protection measures for SAR and SOCC.** See Nova Scotia Special Management Practices – At risk Lichens. It is not stated which species needs protection and buffer size, where they are located, etc.
 - Breakdown of results (pie charts) de-emphasizes the importance of the listed species present and need for protection of habitat present and mitigation measures need. **Provide details about protection of habitat and SAR associated with the project.**
- Figure 11 shows location observations of SAR and SOCC and Table 14 provides some details, but it is unknown what species relates to what points and what habitat. **Provide a list of species detected during nocturnal migration including SAR and SOCC, number estimations and approximate height. Based on the unit used, identification of calls should be able to be performed. A number of species have distinct nocturnal calls and should be identified.**
- **A breakdown of results of how many SAR, SOCC, invasive species, etc. and provide mitigation measures to protect specific vegetation, removal of invasives, etc.**

The Department has the following concerns:

- **Buffer areas are incorrect. Some species require a 200m buffer, some require 100m buffer.**
 - *“One SAR and four SoCC lichens were identified in the Terrestrial LAA. As a result of the field survey findings, the PDA was modified so that no clearing within 100m of the identified SAR lichen will occur, as recommended by NSDRR (NSDRR 2018)”.*
- **Lichens in Table 11 and Table 20 do not match up.** Wrinkled Shingle Lichen is missing from Table 11. **Data is not consistent; revisions are to be made to fully understand what is present in the Project Area.**
- **In the GIS data – the NS Points of Interest- two points are labelled as Hydrotheria peltigera (Eastern waterfan - Threatened) but no information is provided in the Report or Appendices.**
- **Information to support this statement has not been provided: “...which would indicate that there isn’t a greater risk of avian collision if turbine heights were increased to 200 m.”** There is little to no discussion provided about potential interaction with bats or mitigation measures.
 - Bat mortality studies should cover a larger search area around wind turbines (more than 100m radius) like birds; bats are small and may get tossed further. Trained search dogs should also be used as the detection rate of carcasses by humans is low and dogs can search thick vegetation and find bats. Both factors can give a better understanding of impacts of the turbines on bats.

In addition to providing the information requested above, the following mitigations would be needed:

- Mitigation measures are required for species even if they were not observed during surveys. **The proponent must provide mitigation measures for various species**

that have not been observed but have historical records in the Project Area. The proponent is also required to contact the NRR Biodiversity Program if SAR are observed.

- **If any SAR are observed during construction, work is to cease and the NRR Regional Biologist and SAR biologist are to be contacted.**
- **Construction within the site and roads are threats to moose in the Project Area. The proponent must have an educational plan for employees to report sightings or evidence of moose presence and submit it to the local NRR office.**

Wetlands

The Department recommends that the proponent provide a wetland survey methodology that includes:

- **A list of wetlands including wetland ID number, wetland type, species found (e.g., visual, auditory, signs, etc.), etc.** Wetlands are habitat for listed species but information for the project area has not been provided related to wetlands/watercourses and listed species.
- **GIS attribute information that includes species, and wetland ID.** Currently, information is lacking in the report. While some information may be found in the appendices and GIS files, none of the information correlates with each other. GIS files are also missing attribute information. In some cases, codes are used but have not been provided. Example: bird is heard singing, but species unknown and wetland ID, not enough information for review.
- **Identification of vernal pools or watercourses.**
- **Labels and pictures for all wetlands.**
- **Maps at closer scales to see all wetlands and delineations and provide an explanation as to why wetlands were paired with other wetlands in photos and identify wetland types and sizes in a table in relation to the wetland map.**

Invasive Species

The Department has the following concerns and requests the following information:

- No mitigation measures have been provided about cleaning of machinery during construction and decommissioning. **Provide control measures relate to invasive species in the Project Area and provide mitigation measures to limit spread.**
- **Provide a species of seed mix that will be used to restore the area after construction and decommissioning.** If the area is not seeded, non-natives and/or weed species will take over an area. Not all seed mixes provide native species.
- A restoration plan was mentioned in Section 2.8 – Decommissioning. **Provide the restoration document for further review**

Other comments

- **Provide more information about when the Adaptive Management Plan will be available and be reviewed for comment.**
- **Only one season is provided. Provide explanation of how only one season of surveys can assist in making informed decisions.**

Mitigations:

In addition to requiring the information requested, the following mitigations would be needed before this project could proceed:

- **Ensure that standard practices are established during the development, construction, and operation of the site to prevent wildlife interactions that may result in entanglement, entrapment or injury. As part of daily operations, staff must be trained to survey the site, identify issues and consult as appropriate for solutions when wildlife is found to be utilizing artificial or existing habitat conditions during the operation of the site.**
- **Employ standard operational practices to minimize external lighting during night-time operations to mitigate potential influence on the behaviour of migratory birds including but not limited to, the use of directional lighting projected downward, eliminate all unnecessary lighting and cover only the areas needing illumination.**
- **Ensure in compliance with federal and provincial legislation and regulations around resident, migratory, and at-risk bird species and their habitats; including but not limited to *Species at Risk Act*, *Migratory Bird Conventions Act*, *NS Endangered Species Act*, *NS Wildlife Act* and their regulations.**
- **Conduct cutting, grubbing and clearing of vegetation outside of the breeding season for most bird species (April 15 to August 15) unless written approval is granted from NS-ECC.**
- **Ensure that the flow of runoff from the site entering the watershed(s) is managed and monitored to ensure that the water quality is at acceptable standards.**
- **Establish a plan to revegetate areas that are no longer operational with native plant species to aid in the control of invasive species that may be in the process of becoming established.**

Quinn, Candace M

From: Gillis, Barry
Sent: February 17, 2022 11:09 AM
To: Quinn, Candace M
Cc: McLean, Michael J; Zhao, Lanying X
Subject: RE: Natural Forces Benjamins Mill Wind Project - EA Registration

Candace,

I have no comments to offer for this specific project, as I will have no involvement going forward.

Regards,

Barry

Date: February 17, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Regional Hydrogeologist, NSECC Inspection Compliance and Enforcement (ICE) Division

Subject: **Benjamins Mill Wind Project- Environmental Assessment Registration**

Nova Scotia Environment and Climate Change's (NSECC) Inspection, Compliance and Enforcement (ICE) Division Regional Hydrogeologist (West Region) has reviewed the following document with the focus on Effects of the Undertaking on the Environment.

- Benjamins Mill Wind Project - Environmental Assessment Registration Document and Associated Appendices, submitted by Natural Forces Developments Limited Partnership, dated January 11, 2022

Based on the review, the following comments are provided regarding the potential interactions between the proposed project and the environment for the proposed Benjamins Mill Wind Project.

The proposed project will involve rock chipping and blasting. Best management practices for blasting activities are required to prevent environmental contamination. Bedrock in the project development area belongs to South Mountain Batholith which may contain higher radioactivity levels of granite. Measuring the radiation level during excavation and assessing the risk for exposure to the radiation during construction and future operation need to be addressed.



Environmental Protection Branch
16th Floor Queen Square
45 Alderney Drive
Dartmouth, NS B2Y 2N6

February 17, 2022

Candace Quinn
Environmental Assessment Officer,
Nova Scotia Environment and Climate Change
1903 Barrington Street
Halifax, NS B3J 2P8

RE: Benjamins Mill Wind Project, Hants County, Nova Scotia 21-NS-007

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) has reviewed Natural Forces Developments Limited Partnership's EA Registration document for the proposed Benjamins Mill Wind Project, near Falls Lake, Hants County, Nova Scotia, and have the following advice and comments:

Migratory Birds

Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds (except for cormorants and pelicans), all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). The list of species protected by the MBCA can be found at <https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act.html>. Bird species not listed may be protected under other legislation.

Under Section 6 of the *Migratory Birds Regulations*, it is prohibited to disturb, destroy, or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under the authority of a permit. It is important to note that under the MBR, no permit can be issued for the harm of migratory birds caused by development projects or other economic activities.

Furthermore, section 5.1 of the MBCA describes prohibitions related to depositing substances harmful to migratory birds:

"5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

(2) No person or vessel shall deposit a substance to be deposited in any place if the substance, in combination with one or more substances, result in a substance – in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area – that is harmful to migratory birds."

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

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.

- The proponent should 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. 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 mitigation measures, it is incumbent on the proponent to identify the best approach, based on the circumstances, to complying with the MBCA.
- The proponent should develop and implement a management plan that includes appropriate preventative measures to minimize the risk of impacts on migratory birds (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>).

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 (e.g., during migration; travelling from nesting to foraging areas, along streams used by waterfowl). ECCC-CWS 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.

Species at Risk

The section 32 of the *Species at Risk Act* (SARA) “General prohibitions” apply to this project. In applying the general prohibitions, the proponent, staff and contractors, should be aware that no person shall:

- kill, harm, harass, capture or take an individual species at risk (SAR);
- possess, collect, buy, sell or trade an individual, or any part or derivative;
- damage or destroy the *residence* of one or more individuals.

General prohibitions only apply automatically:

- on all federal lands in a province,
- to aquatic species anywhere they occur,
- to migratory birds protected under the *Migratory Birds Convention Act* (MBCA) 1994 anywhere they occur.

Section 33 of SARA prohibits damaging or destroying the residence of a listed threatened, endangered, or extirpated species. For migratory bird SAR, this prohibition immediately applies on all lands or waters (federal, provincial, territorial and private) in which the species occurs.

In federal environmental assessment (EA), ss.79(2) of SARA requires that person(s) responsible for an EA to: 1) identify adverse effects on all listed species 2) if the project is carried out, ensure that measures are taken to avoid or lessen those effects; and, 3) monitor them. *While there is not a federal EA for this project, ECCC advocates a similar approach for the provincial EA.*

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 EA as though they were listed under SARA.

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

Wetlands

ECCC-CWS recommends that the project proponent follow the mitigation options outlined in the Federal Policy on Wetland Conservation (FPWC). The FPWC was introduced “*to promote the conservation of Canada’s wetlands to sustain their ecological and socio-economic functions, now and in the future*”. The policy recognizes the importance of wetlands to the environment, the economy and human health, and promotes a goal of No Net Loss of Wetland Function as a result of the Government of Canada exercising a duty, function, or power in areas of Canada where wetland loss has reached critical levels. In support of this goal, the FPWC identifies the importance of planning siting and designing a project in a manner that accommodates a consideration of mitigation options in a hierarchical sequence – avoidance, minimization, and as a last resort, conservation allowances (i.e. compensation). A copy of the FPWC can be found at: <http://publications.gc.ca/pub?id=9.686114&sl=0>.

General Beneficial Management Practices:

In order to promote wetland conservation, ECCC-CWS recommends the following general beneficial management practices:

- Developments on wetlands should be avoided.
- Where development does occur in the vicinity of wetlands, a minimum vegetation buffer zone of 30 meters should be maintained around existing wetland areas.
- Hydrological function of the wetland should be maintained.
- Runoff from development should be directed away from wetlands.
- The use of a 30 meter buffer from the high water mark of any water body (1:100 Flood Zone) in order to maintain movement corridors for migratory birds.

Considering Habitat Impacts and Cumulative Effects

Existing infrastructure found on or near the proposed site, agriculture, forestry operations, as well as, proposed new infrastructure (e.g. turbines, staging areas, substation, access roads, transmission lines, lighting, etc.) should be included as part of the assessment of cumulative effects. A consideration of post-construction monitoring results from the South Canoe Wind Energy project should be considered as part of the assessment of cumulative effects.

Migratory Birds – Specific Comments

Landbirds:

- As discussed with the proponent during baseline planning meeting on April 26, 2021, and in ECCC-CWS comments (June 18, 2021 attached) on the proponent’s draft Baseline Monitoring Protocols (Natural Forces, May 2021), ECCC-CWS recommends a minimum of two years consecutive data be collected in order to understand variance in flight height (i.e., bird movements) in relation to weather conditions (e.g. weather variables may have impacted how birds moved/migrated through the area in 2021). ECCC-CWS recommends that monitoring be conducted early and pre-construction to quantify risk and inform the EA; however, monitoring could be started during the construction year to determine the need for additional mitigation measures and inform adaptive management plans.
- There were several records of avian SAR and SoCC (as listed on Schedule 1 of SARA) and observations during 2021 field surveys. The following SAR are likely breeding and foraging in the suitable habitat available in the study area: Canada Warbler (Threatened); Chimney Swift (Threatened); Common Nighthawk (Threatened); Olive-sided Flycatcher (Threatened); Eastern Wood Pewee (Special Concern); Evening Grosbeak (Special Concern); and Rusty Blackbird (Special Concern). Note: EARD Part 7, s.7.2.2 (page 123), indicates that Evening Grosbeak and Eastern Wood-pewee suitable breeding habitat exists in the “*non-forested land in the PDA*”. It should be clarified that both species are forest-associated birds and nest in trees.
- EARD Part 5, Figure 11 illustrates point count and incidental observations of bird SAR and SoCC in relation to proposed turbines. However, EARD Part 7, s.7.2.2. Table 39 - *Potential Interactions and Proposed Mitigation for Birds and Bird Habitat*, states quote: “*Desktop and field studies conducted suggest a minimal loss of bird habitat due to clearing. The clearing footprint is minimized by using existing access roads and areas previously cleared from forestry activities*”. EARD Part 7 section 7.2.2, page 126, states quote “*The predicted mortality rate of birds due to collision and/or habitat loss cannot be accurately predicted prior to the Project, however, it is expected that the mortality rate of birds from collision or habitat loss during Project operation, if at all, will be low*”.

There are several observations of bird SAR in the study area; however, it is not clear whether the assessment of impacts on birds SAR included an assessment of measures to avoid and

minimized potential impacts on SAR habitats as recommended in SARA s.79(2). The proponent should further clarify how the results of bird monitoring informed the placement of proposed turbines and other infrastructure, some of which appear to overlap with observations of SAR and their habitats (EARD Part 5, Figure 11).

- EARD Part 1, Project Description – Clearing, Grubbing and Earth Works (page 13), states quote: “*Clearing, grubbing and earth works activities will be planned to occur outside of the breeding bird season **where possible**. If clearing is required during the breeding bird season, a qualified biologist will be onsite to conduct monitoring to identify possible breeding birds in the area and their active nests.*”

ECCC-CWS recommends scheduling vegetation clearing *outside* of the bird breeding season to avoid disturbing migratory birds and bird SAR. ECCC does not recommend nest searches or sweeps in vegetation prior to clearing during the breeding season. Nests in complex habitat (e.g. forested landscapes) 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).

- Table 39 (Part 7, s 7.2.2.) Potential Interactions and Proposed Mitigation for Birds and Bird Habitat, states quote: “*A **comprehensive Adaptive Management Plan** will be developed and implemented in consultation with CWS and NR&R*”. ECCC-CWS can be available to review draft adaptive management plan upon request.
- Table 39 (Part 7, s 7.2.2.) Potential Interactions and Proposed Mitigation for Birds and Bird Habitat, states quote: “*A **follow up avian mortality survey** will be planned and conducted in consultation with NR&R and CWS after the Project commissioning and appropriate actions will be taken in consultation with CWS and NR&R*”. ECCC-CWS can be available to review draft follow-up monitoring and/or post-construction monitoring plans upon request.

Bat SAR

- While there is no bat SAR critical habitat (CH) identified in the project study area, there are several known bat hibernaculum in the surrounding area of the proposed project. Hibernating bats are known to travel several hundreds of kilometres between overwintering and breeding locations.
- Acoustic monitoring (2021) found occurrences of resident (i.e. non-migratory) bat SAR, as well as, detections of migratory bat SoCC. Note: A status report for Hoary Bay and Silver-haired Bat is being prepared and will be undergoing an assessment by COSEWIC soon.
- Any additive mortality of SARA listed bats in an area affected by White-Nose Syndrome (WNS), including mortality at wind turbines, has the potential to be biologically-important. Even mortality of a small number of remaining individuals, particularly breeding females, has the ability to negatively impact the survival of local populations, their recovery, and potentially, the development of resistance to the fungus that causes WNS.
- ECCC-CWS recommends that provincial SAR biologists be consulted for technical expertise on monitoring protocols and recommended surveys (e.g., maternity roosts, hibernacula) relative to turbine placement (contact: @novascotia.ca) / @novascotia.ca).

Additional Comments

- SAR observations should be submitted to the Atlantic Canada Conservation Data Centre, directions on how to contribute data can be found at: <http://accdc.com/en/contribute.html>.
- Proponents are also requested to make available data to the Canadian Wind Energy Association (CanWEA) database at: <https://canwea.ca/>

I trust the above comments will be of assistance. Please feel free to contact me at @ec.gc.ca if you have any questions or concerns.

Yours truly,

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June 18, 2021

Development Officer
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RE: Benjamins Mill Wind Project

21-NS-007

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) has reviewed the baseline monitoring protocol prepared for the proposed Benjamins Mill 150MW (up to 25 turbines > 150m) wind farm near Windsor, Nova Scotia (NS), and have the following recommendations:

General

- The baseline protocol provides a general overview of the proposed baseline assessments, but does not include detailed methodology. It is important that transects and point counts are not arbitrarily placed, but rather determined via a robust scientific approach.
- ECCC-CWS recommends that NS Lands & Forestry be contacted for advice on monitoring species at risk (SAR) under their jurisdiction (e.g. non-migratory birds such as raptors, bats, reptiles, amphibians, plants and lichen).
- ECCC-CWS recommends considering the inventory of existing LiDAR available now for NS; the use of LiDAR in investigating the relationship between topography, forests, and possibly the depth to water-table would be extremely informative and useful to investigate impacts to the local bird community.

Radar and Acoustic Study

- ECCC-CWS recommends that monitoring for nocturnal migrants should occur from March 15 - June 7 and July 15 – November 31.
- The 2021 spring radar/acoustic monitoring is currently underway, and is planned to continue this fall from July 15 – October 31, 2021. If possible, ECCC-CWS recommends extending the fall radar/acoustic monitoring window into November to capture nocturnal seaduck migration. Note: Seaducks can migrate over land and at lower altitudes.

- ECCC-CWS classifies proposed wind energy sites using turbines greater than 150m in height as *Very High* sensitivity due to their placement in known 150 – 600 m nocturnal flight corridor of songbirds (Horton et al. 2016) (CWS (2007a), Table 1). ECCC CWS recommends a minimum 2 year *consecutive* baseline, including radar and acoustic, in order to compare one year to the next in terms of trends, consistency of movements under comparable conditions between years, and provide an understanding of flight height variance in relation to environmental conditions under various types of weather. According to the proposed protocol, radar and acoustic monitoring is planned for one year. It should be clarified whether it will be possible for a second year (2022) of radar and acoustic monitoring.

Note: It is recommended that baseline monitoring be conducted pre-construction to quantify and assess site risk, and inform mitigation options. If project registration is scheduled after only one year of baseline, ECCC recommends continuing the second consecutive year (2022) of baseline radar/acoustic monitoring in parallel with provincial environmental assessment and permitting processes in order to fill information gaps, inform the environmental assessment decision, post-construction monitoring conditions and adaptive management plan (if required).

Shorebird

- The fall field survey (September 1 - October 15, 2021) will not capture shorebird early migration movements which commence as early as July 15. While ECCC-CWS is not very concerned with daily “tidal” movements, there is potential interactions with departing migrants, which should be verified. Most sandpipers departing the region fly southeast over mainland NS and findings show departures are highly correlated with north and northwesterly winds of moderate speeds with high atmospheric pressure. ECCC-CWS recommends including surveys undertaken during evenings when N and NW winds are of moderate speed and when barometric pressure is high; observations can start 2 hours prior to sunset and finish when birds are no longer distinguishable.
- The proposed site is just south (10-20km) of Minas Basin, a major staging area for Semipalmated Sandpipers in the Bay of Fundy. A consideration of monitoring shorebird movements in conjunction with extreme high tides (spring tides¹ that coincide with perigee²) is recommended. When spring tides coincide with perigee, normally exposed roosts are flooded, forcing shorebirds to go elsewhere. Anecdotal information suggests that during periods of extreme high tides, sandpipers have been observed to fly inland to nearby Black River Lake to roost. There will be a close coincidence of spring tide and perigee in July and August 2021, but no direct overlap, therefore we suggest focussing surveys during the highest daytime tides in Minas Basin from mid-July to end of September; start observation 2 hours prior to high tide and stop at high tide.

Summer Field Surveys - Nightjar Surveys

¹ Spring tides (also known as king) happen twice per month during full moon and new moon.

² Perigee is when the moon is closest to the earth (less than 360,000km).

- Summer field surveys will include monitoring for Common Nighthawk (CONI). While rare in NS, Eastern Whip-poor-will (EWPW) is a provincially and federally listed 'Threatened' species at risk. ECCC recommends monitoring for EWPW, which are nocturnal and begin to vocalize 30 minutes after sunset which is later than CONI. *The Canadian Nightjar Survey Protocol* is recommended as a reference, available at: [National-Nightjar-Survey-Protocol-WildResearch-2019.pdf](#).

Bat Surveys

- ECCC-CWS defers advice related to the development of bat monitoring protocols to NS Lands & Forestry; however, the following additional advice may be considered when monitoring for bat species at risk:
 - In considering bat activity with the study area, ECCC-CWS recommends a monitoring plan equivalent in detail and effort to the bird monitoring plan (e.g., cover all seasons of activity from spring emergence to pre-hibernation/swarming – April to October – for two years pre-construction). A similar set of steps used in the assessment of birds should be considered for the assessment of bats: species list, baseline bat activity, baseline habitat assessment and use, seasonal and nightly movement/use patterns and geographic context (e.g., local migration and travel corridors);
 - Surveys should include monitoring for bat activity within the projected rotor swept area of the turbines;
 - ECCC-CWS suggest increasing the summer season sampling period to 6 weeks (June to mid-July).
 - Include an inventory of important/high value habitat and geographic features, including landforms that might influence movement/congregation, mature trees with cavities for roosting, buildings that might be housing Little Brown Myotis maternity colonies, old mines/caves that may be used as hibernacula, etc. If the site requires vegetation/forest clearing, the attached *Survey Protocol for Bats in Treed Habitats* (maternity roosts) (ON, 2017) should be considered.
 - In addition to the Olsen 2017, the North American Bat Monitoring Program ([NABat](#)) guidance should be referenced for methods/protocols related equipment calibration and set-up, sampling times, site selection, colony counts or emergence surveys (if required), etc., and the proponent is encouraged to submit collected data through the NABat Partner Portal.

Considering Habitat Impacts and Cumulative Effects

- Existing infrastructure found on or near the proposed site, agriculture, forestry operations, as well as, new infrastructure required (e.g. turbines, staging areas, substation, access roads, transmission lines, lighting, etc.) should be included as part of the assessment of cumulative effects. If available, a consideration of baseline, assessment of effects and post-construction monitoring results from the South Canoe site should be considered as part of the assessment of cumulative effects.

Avian Assessment Report

- ECCC-CWS recommends that the baseline avian and habitat assessments be consolidated with radar and acoustic data, and include an analysis and discussion of overall risks.

I trust the above comments will be of assistance. Please feel free to contact me at [@canada.ca](mailto:) if you have any questions or concerns.

Yours truly,

Environmental Assessment
Environmental Protection Operations Directorate – Atlantic



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

2021

GUIDELINES FOR WILDLIFE RESPONSE PLANS

Canada 

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EXECUTIVE SUMMARY

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) is responsible for the management and conservation of Wildlife under its jurisdiction. The *Guidelines for Wildlife Response Plans* outline the rationale, objectives, and process for developing, implementing and evaluating the efficacy of Wildlife response planning for Pollution and Non-Pollution Incidents. This document supports the standardization of the planning process according to ECCC-CWS's recommendations. The purpose of this document is to guide governments, Indigenous organizations, industry, Response Organizations, and other stakeholders in developing Wildlife Response Plans that consider all aspects of planning throughout the full life cycle of an incident with regards to Wildlife specific to ECCC-CWS's mandate.

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LIST OF ACRONYMS

CWA	<i>Canada Wildlife Act, 1985</i>
CWS	Canadian Wildlife Service
ECCC	Environment and Climate Change Canada
ECCC-CWS	Environment and Climate Change Canada's Canadian Wildlife Service
ICP	Incident Command Post
ICS	Incident Command System
IPIECA	International Petroleum Industry Environmental Conservation Association
MBCA	<i>Migratory Birds Convention Act, 1994</i>
MBR	<i>Migratory Birds Regulations</i>
MBSR	<i>Migratory Bird Sanctuary Regulations</i>
NWA	National Wildlife Area
RP	Responsible Party
SARA	<i>Species at Risk Act, 2002</i>
WRP	Wildlife Response Plan
WRO	Wildlife Response Organization

DEFINITIONS

Chain of Custody: A written record for a legal sample documenting the continuity by tracing the possession of the sample from the point of collection through introduction into evidence.

CWS Co-ordinator: A person who leads and implements regional Wildlife Emergency preparedness and response on behalf of ECCC-CWS and represents ECCC-CWS's policies and interests when liaising and integrating with other federal and provincial/territorial government departments, Indigenous governments and organizations, and stakeholders involved in the response during Wildlife Emergencies. CWS Co-ordinators may also fulfill some of the on-site roles of responder.

CWS Responder: Emergency response personnel that provide on-site support on behalf of ECCC-CWS, as directed by the CWS Co-ordinator, during Wildlife Emergencies.

Environmental Emergency: Any uncontrolled or unexpected incident involving the release (or the likelihood thereof) of a polluting substance into the environment that results or may result in an immediate or long-term harmful effect on the environment, or constitutes or may constitute a danger to human life or health. It may be caused by an industrial activity, natural emergency or by a wilful act.

Field Stabilization Site: Facility that provides initial triage, care and/or euthanasia as well as short-term holding (sometimes overnight) for Wildlife prior to transport to an Oiled Wildlife Rehabilitation Centre. It is not meant for washing oiled Wildlife and not designed for long-term care.

Incident Command: Responsible for overall management of the incident and consists of the Incident Commander, either single or unified command, and any assigned supporting staff.

Incident Commander: The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The Incident Commander has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

Lead Agency: The governmental authority that regulates or has legislative authority over the responsible parties' response and is responsible for overseeing the appropriateness of the response.

Migratory Bird: As defined in the [Migratory Birds Convention Act, 1994](#), a Migratory Bird referred to in the Convention, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird of species listed under Article 1 of the Convention (Government of Canada 2017).

National Environmental Emergencies Centre (NEEC): Environment and Climate Change Canada's 24/7 focal point for pollution-related emergencies, providing technical/scientific advice, assistance and coordination to the Lead Agency, as well as management of an incident when required.

National Wildlife Area: A protected area created under the *Canada Wildlife Act* that contains nationally significant habitats for plants and animals and that is managed for the purposes of wildlife conservation, research and interpretation.

Non-Pollution Incident: An uncontrolled or unexpected Wildlife injury or mortality event other than a Pollution Incident.

Oiled Wildlife Rehabilitation Centre: Facility used for the triage, stabilization, cleaning, pre-release conditioning and/or euthanasia of oiled Wildlife. The centre may be a permanent purpose-built facility, an existing Wildlife rehabilitation centre, a mobile facility, or a temporary facility established during an incident.

Pollution Incident: The release or deposit of a substance that is harmful to Wildlife into an area or waters that are frequented by Wildlife or into a place from which the harmful substance may enter an area or waters frequented by Wildlife.

Resource Agency: Any department or agency, other than the Lead Agency, that has jurisdiction or interest in the response, which provides support to the Lead Agency.

Response Organization: Any qualified person or organization that has been certified and designated by the Minister of Transport to carry out emergency response activities (as per the revised *Canada Shipping Act* (2001)). In Canada, there are four Response Organizations as follows: Atlantic Emergency Response Team, Eastern Canada Response Corporation Ltd., Western Canada Marine Response Corporation, and Point Tupper Marine Services Ltd.

Responsible Party: Any person or organization who might be responsible for the source or cause of an environmental emergency and/or a Wildlife Emergency.

SARA-listed Species: A species listed on the [List of Wildlife Species at Risk set out in Schedule 1](#) of the *Species at Risk Act* (SARA).

Species at Risk: As defined in the [Species at Risk Act \(S.C. 2002, c.29\)](#), means an Extirpated, Endangered or Threatened species, or a species of Special Concern.

Unified Command: An application of the Incident Command System, used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the Unified Command to establish a common set of objectives and strategies and a single Incident Action Plan.

Wildlife: In this document, "Wildlife" is used to refer to the terms Migratory Birds as defined under the *Migratory Birds Convention Act*, and listed Species at Risk as those terms are defined under the *Species at Risk Act* for species falling within the jurisdiction of the Minister of Environment and Climate Change (with the exception of individuals of SARA-listed Species that are located on lands administered by Parks Canada). This term also refers

to all wild species occurring in the National Wildlife Areas set out on Schedule I of the [Wildlife Area Regulations \(C.R.C., c. 1609\)](#).

Wildlife Emergency: A Pollution or Non-Pollution Incident that results or may result in an immediate and/or long-term harmful effect on the life or health of Wildlife and/or their habitat.

Wildlife Response Organization: Organizations that provide expertise, capabilities and trained personnel to undertake one or several aspects of response, including planning, implementation and reporting of activities related to Wildlife Emergencies. Wildlife Response Organizations (or representatives thereof) are authorized under applicable federal, provincial, and/or territorial legislation to capture, transport, clean, rehabilitate, euthanize, and release Wildlife.

Wildlife Response Plan: A document that outlines the initial and ongoing Wildlife-related strategies that are needed to support any Wildlife response objectives that may occur at the onset of a Pollution or Non-Pollution Incident.

1.0 INTRODUCTION

Environmental protection legislation in Canada at the federal, provincial or territorial level contains provisions to have approved contingency plans in the event of an environmental emergency for construction, operation or decommissioning activities that may impact the environment. Projects undergoing an environmental assessment may include additional conditions upon approval to develop and implement an environmental protection plan. All contingency plans/environmental protection plans for which a threat to Wildlife is identified may have specific sections dedicated to Wildlife response in order to be in compliance with applicable federal, provincial, or territorial legislation.

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) oversees and/or leads Wildlife Emergency response activities in association with Environment and Climate Change Canada (ECCC)'s responsibilities under the *Migratory Birds Convention Act, 1994* (MBCA) and its regulations (*Migratory Birds Regulations* (MBR) and *Migratory Bird Sanctuary Regulations* (MBSR)), the *Species at Risk Act, 2002* (SARA), the *Canada Wildlife Act, 1985* (CWA), and *Wildlife Area Regulations*. Through these pieces of legislation, ECCC-CWS is responsible for the management and conservation of all Migratory Birds and Species at Risk under its jurisdiction (hereafter "Wildlife") and how they are managed during a Pollution or Non-Pollution Incident. In the case of Migratory Birds, including SARA-listed Migratory Bird species, this document applies to wherever they are found in Canada. For other SARA-listed Species, this document applies to individuals that are located on federal lands in the provinces, on lands under the authority of the Minister of Environment and Climate Change in the territories, or in the exclusive economic zone or on the continental shelf of Canada (with the exception of individuals of SARA-listed Species under the jurisdiction of Parks Canada or Fisheries and Oceans Canada) (see also Section 2.2 for additional details). For greater clarity, this document does not apply to any wildlife species, including aquatic species (which include fish, marine mammals, marine turtles, and marine plants, as defined in Sections 2 and 47 of the [Fisheries Act](#)), located on any lands or in any waters administered by Parks Canada or under the jurisdiction of Fisheries and Oceans Canada. The CWA and *Wildlife Area Regulations* broaden the responsibility of ECCC-CWS to include habitats and all wild species within designated National Wildlife Areas (NWAs).

1.1. SCOPE

Wildlife Emergencies, in the context of this document, include Pollution or Non-Pollution Incidents that result or may result in an immediate and/or long-term harmful effect on the life or health of Wildlife and/or their habitat. Pollution Incidents with potential harm to Wildlife are prohibited under the MBCA and SARA. Non-Pollution Incidents are uncontrolled or unexpected Wildlife injury or mortality events other than a Pollution Incident, which may include things such as disease outbreaks, mass strandings, or other unexplained Wildlife deaths. The degree to which any Pollution or Non-Pollution Incident may be deemed a Wildlife Emergency is dependent on a number of factors such as the scope and severity of the incident (e.g. numbers of animals or area of habitat impacted), the likelihood of an incident expanding, potential for impacts to Species at Risk, and potential link

to human health, among other factors. The appropriate level of response expected to incidents should be reasonable and commensurate with the risks. ECCC-CWS is responsible for informing various aspects of response to Wildlife Emergencies, including the development and implementation of Wildlife response strategies and activities, as outlined in the *National Policy on Wildlife Emergency Response* (ECCC-CWS 2021).

During an incident, Responsible Parties (RPs) must demonstrate their ability to safely, efficiently, and effectively respond in a manner that incorporates measures designed to avoid or minimize harm to Wildlife, while managing the public's understanding of response decisions and activities. In the absence of an RP during an incident (e.g. mystery spill), or for planned operations with a potential to impact Wildlife (e.g., oil removal from wreckages), the Lead Agency is deemed responsible for implementing Wildlife response appropriate to that incident.

Wildlife Response Plans (WRPs) are documents that formalize the guidance and strategy for responding to incidents with potential to impact Wildlife. A WRP should include the following elements:

- The objectives of implementing a WRP with respect to managing or preventing harm to Wildlife and its habitat during a Pollution or Non-Pollution Incident
- A description of the incident management structure for Wildlife response and how it is integrated into an incident-specific response command system (e.g., an Incident Command Post (ICP))
- Background information on responsibilities of the RP as well as regulatory requirements, permits, and authorizations to engage in Wildlife response activities
- Information on Wildlife and its habitat known or potentially impacted by an incident
- A description of Wildlife response procedures to be implemented immediately following an incident (e.g., deterrence and dispersal, surveillance)
- A description of the operational structure and implementation of ongoing Wildlife response efforts throughout all phases of an incident
- Procedures for information management and communication, including to key stakeholders (e.g., local communities, hunters)
- Health and safety, security, and training requirements for personnel, equipment, and facilities required to support Wildlife response activities

The purpose of this document is to guide federal, provincial/territorial and Indigenous governments, Indigenous organizations, industry, Response Organizations, and other stakeholders in developing a WRP that considers all aspects of planning throughout the full lifecycle of an incident. This document outlines the attributes that are necessary for effective implementation of Wildlife Emergency response. Proponents should keep in mind that the guidance provided within this document is developed by ECCC-CWS for species' protection within their mandate. As such, proponents developing comprehensive WRPs should also consult with other federal and provincial/territorial agencies which are responsible for other wildlife (e.g., mammals, reptiles, amphibians, fish and some bird species not under the jurisdiction of the MBCA).

2.0 REGULATORY REQUIREMENTS

2.1 APPLICABLE LEGISLATION

ECCC-CWS is responsible for ensuring that all Wildlife response activities are coordinated, enacted, and carried out in compliance with applicable federal law. Federal legislation applicable to Wildlife response includes:

- **Migratory Birds Convention Act (MBCA):** Section 5 of the MBCA prohibits the deposit of harmful substances into waters or areas frequented by Migratory Birds, unless authorized under the *Canada Shipping Act*, or the substance is of a type and quantity, and the deposit is made under conditions, authorized under an Act of Parliament other than the [Canada Shipping Act, 2001](#) or authorized for scientific purposes by the Minister of Environment and Climate Change. Section 6 of the *Migratory Birds Regulations* (MBR) made under the MBCA prohibits the disturbance, destruction, taking of a nest, egg, nest shelter, eider duck shelter or duck box of a Migratory Bird, or anyone from having in his possession a live Migratory Bird, or a carcass, skin, nest or egg of a Migratory Bird. The MBR regulate the hunting of Migratory Birds and other circumstances under which the killing, capturing of and harming of Migratory Birds may be authorized. The *Migratory Bird Sanctuary Regulations* (MBSR) further regulate activities related to Migratory Birds and their habitats within designated Migratory Bird Sanctuaries. Permits may be issued to authorize the permit holder to undertake activities that are otherwise prohibited (Government of Canada 2017).
- **Species at Risk Act (SARA):** SARA permits are required for activities affecting a SARA-listed Species, any part of its critical habitat or the residences of its individuals. For the purpose of SARA, an “activity affecting” means any activity prohibited under the Act or its regulations. Section 73 of SARA authorizes the issuance of permits for activities affecting a SARA-listed Species, any part of its critical habitat or the residences of its individuals, and sets out conditions that must be met before a competent minister can issue a permit. SARA prohibitions apply to any species listed on Schedule 1 as Threatened, Endangered or Extirpated, but do not apply to species listed as Special Concern.
- **Canada Wildlife Act (CWA):** The CWA allows for the establishment of National Wildlife Areas (NWAs), which protect wildlife habitat in Canada. The *Wildlife Area Regulations* identify all NWAs and prohibit certain activities from occurring within NWAs, but Section 3.4 of the *Wildlife Area Regulations* provides exemptions for the prohibited activities within the NWAs in the event of an emergency response effort (e.g., ensuring public safety and national security). The Scott Islands marine NWA has its own regulations, *Scott Islands Protected Marine Area Regulations*, which also provide exemptions for the prohibited activities in the event of an emergency response effort.

Further to these Wildlife specific pieces of legislation, other environmental protection legislation in Canada at the federal, provincial or territorial level contain additional provisions which require approved contingency plans in the event of an environmental emergency for construction, operation or decommissioning activities that may impact the environment. Projects undergoing an environmental assessment may require the development and implementation of an environmental protection plan, conditional upon approval.

Where contingency plans/environmental protection plans identify a threat to Wildlife, ECCC-CWS considers a WRP to fulfill some of these requirements if contingency and emergency response planning efforts adequately address the identified Wildlife issues.

ECCC-CWS recommends that strategic WRPs be developed prior to incidents for activities or areas where the potential for, or associated risk of a Wildlife Emergency is high (see Section 3.2 for more details). These strategic plans may be standalone plans or components (or annex) to overarching response plans (e.g., operators’

facilities response plans). Incident-specific WRPs are routinely developed as part of the ICP to standardize and document Wildlife response activities during an incident (Section 3.2). Both approaches are in keeping with international standards for Wildlife response planning (International Petroleum Industry Environmental Conservation Association (IPIECA) 2014).

2.2 PERMITS AND AUTHORIZATIONS

As part of Wildlife Emergency response, Wildlife Response Organizations (WROs) are often responsible for undertaking response activities involving direct interaction with Wildlife including the capture, collection, transport, and care/rehabilitation, release, and/or euthanasia of impacted Wildlife. Some WROs operating in Canada may retain annual permits that allow certain levels of immediate response, assuming permits are renewed and standards are maintained. Qualifications of these organizations to perform certain activities are assessed during the permit application process. Otherwise, a WRO will work with ECCC-CWS to obtain incident-specific permits for aspects of Wildlife Emergency response requiring authorizations. Other qualified individuals, working for or contracted by WROs, Response Organizations, the RP, or government agencies, may also apply for permits, as required. Permit and authorization requirements are summarized in Table 1.

ECCC-CWS recognizes deterrence and dispersal as a beneficial practice during Wildlife Emergencies. If proponents plan to use deterrence and dispersal tactics during a Wildlife Emergency, this should be described in a WRP (Section 4.5.5), and ECCC-CWS should be consulted to provide guidance on effective tactics for species, seasons, and habitats.

For most of the activities listed in Table 1, activities affecting SARA-listed Migratory Birds may be permitted through the issuance of SARA compliant MBCA-permit (Scientific Permit or Banding Permit). It is important to note that a SARA permit cannot be issued for an activity that would have a prohibited effect on a listed Migratory Bird for which a permit is not available under the MBCA and its regulations. For activities affecting SARA-listed Species, other than a Migratory Bird, permits may be issued under Section 73 of SARA. Specifically, ECCC-CWS SARA permits are required for SARA-listed Species that, a) are located on federal lands in the provinces, b) are located on lands administered by the Minister of Environment and Climate Change in the territories; c) are located in the exclusive economic zone or on the continental shelf of Canada; or d) are the subject of an order of the Governor in Council under SARA, including an order pertaining to the species' critical habitat or habitat that is necessary for the survival or recovery of the species (except for species under the jurisdiction of Parks Canada or Fisheries and Oceans Canada). Table 1 outlines examples of activities that require permits for SARA-listed Species. For additional clarification on the permitting provisions and how to apply for a SARA permit, please consult the *Species at Risk Public Registry Policies and Guidelines* (Government of Canada 2020). For emergency response activities occurring on Migratory Bird Sanctuaries, permits are required on a site-specific basis (Table 1). Some types of activities that require authorization on Migratory Bird Sanctuaries include carrying firearms and other weapons, and possession/handling of any animal, carcass, skin, nest, egg or part of

those things. These activities may be authorized by permits issued under the MBSR.

With respect to NWAs, a permit is not required to carry out emergency relief activities, as per Section 3.4 of the *Wildlife Area Regulations*. With respect to the Scott Islands marine NWA, a permit is not required to carry out emergency relief activities, as per Section 3 of the *Scott Islands Protected Marine Area Regulations*.

Table 1. Wildlife-related Permits and Authorization Requirements that may be issued by ECCC-CWS¹ during a Wildlife Emergency.

Wildlife	Permit Type	Examples of Activities that Require Permits or Authorization	Permit Holders
Migratory Birds (including SARA-listed Species)	Scientific (for collection)	<ul style="list-style-type: none"> • Possession • Transportation • Collection/capture • Treatment/rehabilitation/care • Euthanasia 	Individuals of WROs are generally permitted for most activities. Subcontractors or independent contractors may be permitted for specific activities through one or several permits.
	Scientific (for capture and banding)	<ul style="list-style-type: none"> • Capturing • Banding • Using auxiliary markers (e.g., color bands and GPS transmitters) • Collection of biological samples 	
	SARA Section 73/74 permit	<ul style="list-style-type: none"> • Destruction of protected critical habitat • Damage or destruction of any critical habitat that could result in harming individuals of a SARA-listed Migratory Bird • Damage or destruction of residences² of a SARA-listed Migratory Bird 	SARA permits are issued on site and situation-specific basis and must be discussed early in response activities, as appropriate.
Any SARA-listed Species other than Migratory Birds (on any federal land including NWA, and any land affected by an order or regulation made under SARA)	SARA Section 73 permit	<ul style="list-style-type: none"> • Collection, taking, possession • Transportation/relocation • capture/markings • Treatment/rehabilitation/care • Euthanasia • Harassing, including deterrence and dispersal • Exclusion barriers / trenches • Damage or destruction of critical habitat • Damage or destruction of residences² • Any activity specifically prohibited by a Section 80 emergency order, or by a regulation made under SARA 	SARA permits are issued on a site and situation-specific basis and must be discussed early in response activities, as appropriate.
Migratory Bird Sanctuaries	Scientific (Collection)	<ul style="list-style-type: none"> • Operations occurring on Migratory Bird Sanctuaries³ 	Migratory Bird Sanctuary ³ permits are issued on a site-specific basis and will be developed early in response activities.

Note:

¹ The permitting process and the types of activities requiring permits is subject to change periodically as regulations are updated. Individuals/organizations should seek up to date advice on permitting from ECCC-CWS permit officers.

² For the purpose of SARA, "residence" means a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating.

³ Permits issued under the MBSR.

3.0 ELEMENTS OF WILDLIFE RESPONSE PLANNING

3.1 WILDLIFE RESPONSE WITHIN THE INCIDENT COMMAND SYSTEM

Any activities with potential to result in a Wildlife Emergency may warrant immediate implementation of response actions. Guidance on Wildlife response concerns and actions may be provided through the Environmental Emergencies Science Table, which is chaired by ECCC's National Environmental Emergencies Centre (NEEC). Increasingly, within industries or the Government of Canada, emergency incidents are managed and structured using the Incident Command System (ICS) approach, including the establishment of an ICP for major incidents. It is therefore recommended to stakeholders to use ICS for emergency response. Wildlife experts, such as ECCC-CWS, may be situated in the Environmental Unit of the Planning Section within an ICP, a role which may be titled Wildlife Technical Specialist. The Environmental Unit would develop and refine response plans as well as incident-specific tactics. Depending on the scale of the incident and scope of potential or actual impacts to Wildlife, ECCC-CWS may assist in establishing a Wildlife Branch which is typically situated within the Operations Section of the ICP (IPIECA 2014; Figure 1). An Environmental Unit Liaison position may also be staffed in the Wildlife Branch (Figure 1) to facilitate the dissemination of planning and operational information between the Environmental Unit and the Wildlife Branch. WRPs may also be developed and used for Wildlife Emergencies that are not managed with an ICP or a Wildlife Branch.

The WRP should identify, schematically, the structure and function of the Wildlife Branch and its integration into the Operations Section of the ICP, as well as how it liaises with other ICP sections (e.g., Planning). The WRP should anticipate structuring and scaling the Wildlife Branch according to how the incident is expected to proceed.

It is essential to identify and implement Wildlife response activities within the first 24, 48, and 72 hours of an incident. These response activities are formalized within a WRP to structure and guide response activities. The RP is responsible for the development of WRPs, to address all of the procedures and strategies required to mount an effective Wildlife response. During an incident, ECCC-CWS will provide advice to support the Wildlife response consistent with the components outlined in Section 4. However, the RP typically leads the development of a WRP and may contract the WRO to develop it on their behalf to ensure the WRP is operationally feasible. While ECCC-CWS does not have the authority to assign, recognize, or approve specific WRPs, ECCC-CWS may provide advice to the Lead Agency, the RP, and WROs regarding the direction and content of a WRP, based on available science and expertise. A WRP does not necessarily equate with statutes and regulations; rather, developing a WRP identifies actions that support compliance with the MBCA, MBR, MBSR, SARA, and the CWA. A WRP receives formal approvals within an ICP through sign-off by the Incident Command and RP.

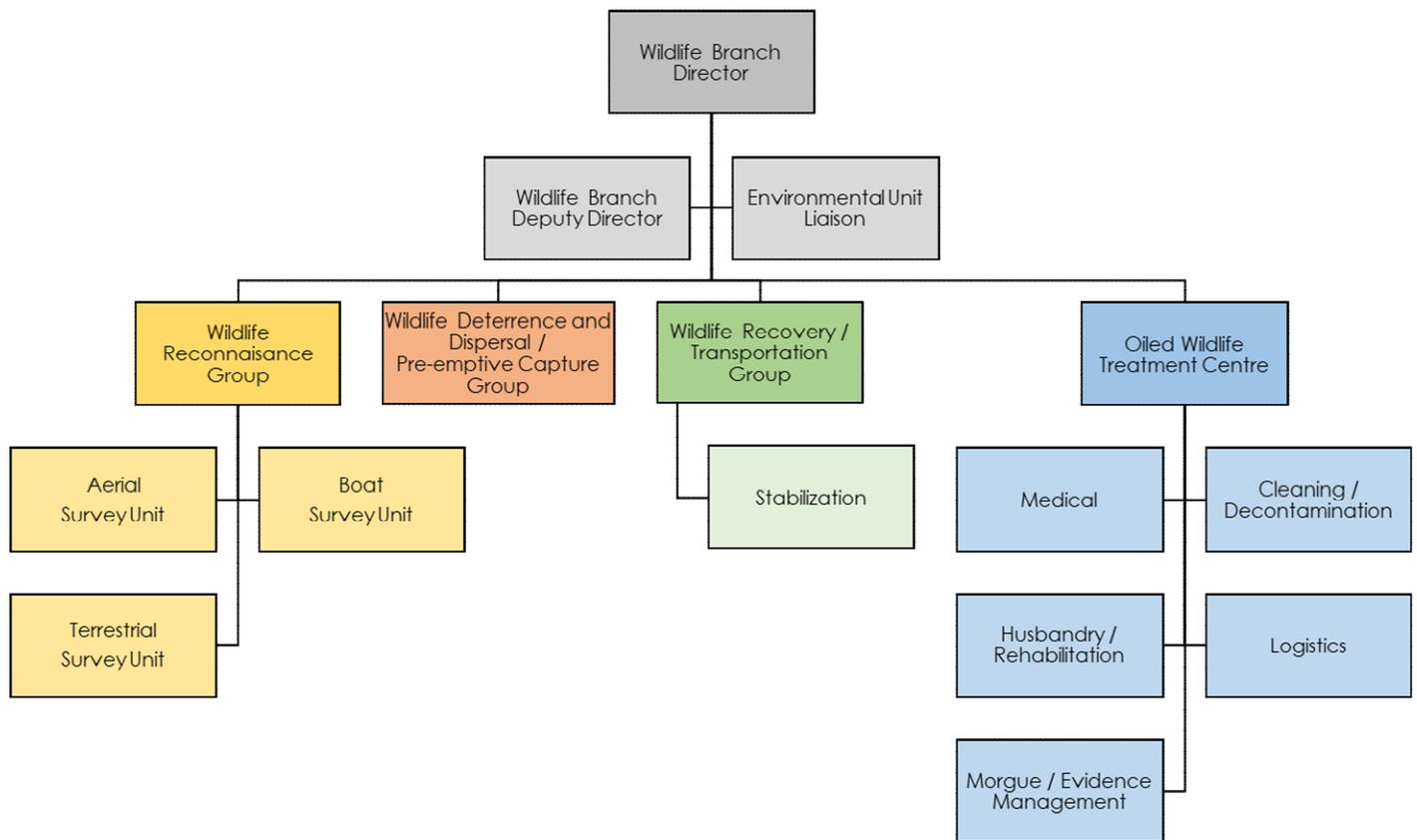


Figure 1. Example of a scalable Wildlife Branch within an ICS setting (adapted from IPIECA 2014).

3.2 TYPES OF WILDLIFE RESPONSE PLANS

There are two main types of WRPs, strategic response plans and incident-specific response plans (described below). ECCC-CWS may support the development of various WRPs, including providing technical expertise, permit support, and incident-specific guidance. However, WRP approvals are the responsibility of the RP and the Incident Command (or Unified Command).

3.2.1 Strategic Response Plans

Strategic response plans are often created for specific activities, where there is a recognized risk of a Wildlife Emergency, or for designated areas or specific locations which may warrant special planning considerations (e.g. protected areas, geographic response areas). Strategic WRPs describe the likely activities to be enacted during a response, but may lack incident-specific actions or tactical plans which may only be developed once the parameters of the incident are known or tested. Thus strategic WRPs are refined and adapted throughout the incident based on incident-specific considerations (Hebert and Schlieps 2018).

Activity-specific Plans: Accidents or malfunctions that may occur at certain types of facilities or infrastructure (e.g., oil-handling facilities, offshore petroleum platforms, liquid natural gas marine terminals), projects (e.g., exploratory drilling), or routine activities (e.g., transport of oil by rail or vessel) have an associated increased risk

for Wildlife Emergencies. However, given the static nature of these sites, the characteristics of a Pollution or Non-Pollution Incident and the procedures for mounting a response can be anticipated to a certain degree. Industries or other stakeholders determine whether it is appropriate to develop strategic WRPs to structure a response that aligns with internal policies and procedures (e.g., industry best practices, contract with WROs), and incorporates site-specific considerations for implementing effective response actions (e.g., pre-determined Wildlife rehabilitation areas, standardized methods for Wildlife surveillance). As with other types of plans, activity-specific WRPs need to be adaptable and scalable, depending on the nature of the incident. Activity-specific WRPs should be reviewed and revised on a regular basis to accommodate changes to infrastructure, activities, and operational procedures, and to reflect current guidance on Wildlife response planning. In cases where activity-specific plans are identified for development, ECCC-CWS can review and provide recommendations on WRP components based on site-specific information.

An example of an activity-specific WRP is one that is developed as part of planned vessel salvage or oil recovery activities, where there is potential for impacts to Wildlife. In the case of a planned salvage, the initial draft of the WRP should be developed and approved in advance of initiating salvage activities. As with other incidents, the WRP will evolve over the course of the salvage to address specific response conditions.

Area-specific Plans: Wildlife Emergencies can also occur in land tenures or aquatic areas of significant biological importance, with specific management objectives, and/or where there is otherwise concerted interest in having a response plan in place (e.g., protected areas, geographic response areas). As with activity-specific plans, the procedures for mounting a response to a Pollution or Non-Pollution Incident may be anticipated and planned for to a certain degree. Managers of these areas may determine it is appropriate to develop strategic WRPs to structure a response that aligns with local or regional management objectives. Stakeholders' input that incorporates site-specific considerations for implementing effective response actions should be considered. Area-specific WRPs need to be adaptable and scalable, depending on the nature of the incident. Managers of these areas need to identify zones of higher sensitivity that are to be protected and those of lower sensitivity to allow an efficient response (access points for machinery, ICP, response personnel, etc.). WRPs should be reviewed and revised on a regular basis. In cases where area-specific plans are identified for development, ECCC-CWS can review and provide recommendations on WRP components based on site-specific information.

3.2.2 Incident-specific Response Plans

The most common type of WRP is typically one that is developed in the early phases of a Wildlife Emergency as part of the ICS and is specific to the incident (IPIECA 2014). Incident-specific WRP, sometimes referred to as Wildlife Management Plans, take into account the actual circumstances of a specific incident, particularly factors related to the scope of the incident (e.g., quantity, location and dispersion of pollution), environmental considerations (e.g., weather), and seasonal considerations (e.g., Wildlife abundance and distribution). A comprehensive strategic WRP may fulfil most of the information needs for an incident-specific plan, but might require further details on implementation given the available resources, weather, and time of year.

For incidents where an RP has been identified, the RP has the first responsibility for initiating effective countermeasures to a Wildlife Emergency and has financial responsibility for damage and cleanup costs incurred during an incident. Upon the establishment of an ICP, the RP and Incident Command will outline planned Wildlife response activities. ECCC-CWS will contribute to the development of an incident-specific WRP by participation in the Wildlife Branch (or Environmental Unit) of the ICP, or by reviewing plans and providing expert advice to individuals working within the ICP. Here, ECCC-CWS may provide guidance on the scope of a WRP and direct the RP, or its contracted response personnel, towards resources that support its development. In particular, ECCC-CWS will inform on any Wildlife response activities that require authorization (i.e., permits), or technical expertise. ECCC-CWS will review and make recommendations on a WRP and subsequent iterations, but the Incident Command ultimately approves the plan. For incidents where an RP has not been identified, ECCC-CWS may contribute to the development and implementation of a WRP.

3.2.3 Plan Development

It is important to recognize that Wildlife Emergency response and WRP development is an iterative process that will evolve as an incident unfolds. A WRP should be structured and implemented in a way that it is adaptable and scalable over the course of an incident, and may accommodate needs for post-incident monitoring.

The Wildlife Branch will determine the appropriate level of response based on specific needs of the incident. The need for greater or fewer resources, equipment, facilities, and response personnel will be based on incident-specific factors including:

- the present and future geographic extent of the incident
- the species, numbers of individuals, and types of habitats present in the geographic extent
- the known or potential risk for injury or mortality
- the timeframe for which incident response actions are implemented

Plans that are developed prior to an incident may also consider tiered response planning to appropriately manage various degrees or types of Wildlife Emergencies. *Wildlife Response Preparedness* (IPIECA 2014) describes tiered response planning in more detail.

3.3 HABITAT CONSIDERATIONS FOR RESPONSE PLANNING

The various habitats occupied by Wildlife require different considerations with regards to response planning. For emergency response involving pollutants such as oil, the key variable in a response plan is the presence of bodies of water that may act as a carrier for contaminants discharged into the environment, causing contaminants to spread over large areas where Wildlife may become affected. In Canada, habitats occupied by Wildlife requiring similar response approaches during an emergency response involving contaminants can be grouped into the following three main landscape categories: a) marine and open fresh water, b) aquatic, and c) terrestrial.

3.3.1 Marine and Open Fresh Water

Pollution Incidents that occur in the marine environment or large freshwater bodies of open water tend to affect Wildlife that spend a high proportion of their time on the water, such as alcids and waterfowl. The effect on Wildlife is influenced by the location of the incident, persistence and toxicity of the contaminants, and duration of the incident. In seasons and areas of high concentrations of vulnerable Wildlife, the number of impacted individuals may reach the thousands, even when a relatively low volume of contaminant is discharged. Affected Wildlife may eventually come ashore either alive or dead, requiring systematic search and collection effort on accessible shorelines. Contaminants discharged offshore may eventually travel inshore and reach the coastline, affecting other Wildlife communities associated with aquatic habitats (see Section 3.3.2). A Wildlife response in the marine and open fresh water landscape focuses on preventing Wildlife from utilizing the affected area, recovering affected individuals if they come to shore, and assessing the impact of the incident on Wildlife (Table 2).

3.3.2 Aquatic Habitats

For the purpose of this document, aquatic habitats consist of any land saturated with water long enough to take on the characteristic of an ecosystem and promote aquatic processes, such as salt marshes, wetlands, fens, lagoons, and bogs, but also include small ponds, creeks, rivers, tidal flats, marshes, and reed beds, or any combination of such categories. Unlike the other landscapes, aquatic habitats are vulnerable to activities that occur both on land and in the marine environment. During a response to a Pollution Incident, aquatic habitats are priority areas for protection as they can trap large quantities of contaminant, are difficult to clean, and can take years or decades to recover due to the retention of contaminants in these environments. Because of the large variety of aquatic habitats and biotypes that they accommodate, removing contaminants from the environment and operationalizing a Wildlife response may be complex. Rivers will carry and spread pollutants over potentially large distances, and shorelines may be inaccessible. Wildlife diversity may be high and include a mix of aquatic (waterfowl, shorebirds, inland waterbirds) and terrestrial (landbirds) Migratory Bird species and Species at Risk from a variety of groups, including mammals, birds, amphibians, reptiles, plants, and fish. Additional survey effort and resources may be required for reconnaissance and surveillance surveys as well as collecting affected individuals. Small lakes and ponds may be attractive for large concentrations of Migratory Birds during migration, molting, and staging periods and may require extended resources to exclude Wildlife from the area. In addition to deterrence activities, a Wildlife response in aquatic habitats may also focus on prioritizing protection and containment strategies to minimize the spread of contaminants to key habitats, denying Wildlife access to impacted habitats, pre-emptive capture to relocate unaffected individuals (e.g., Species at Risk), recovery of affected individuals, and assessing the effect of the incident on Wildlife (Table 2).

3.3.3 Terrestrial Habitats

Pollution discharged into a terrestrial landscape where a body of water is absent will be limited in spread and affect a small area in relation to the released volume. Pollution Incidents in a terrestrial landscape are usually limited to a point source (e.g., truck, rail, pipeline, oil storage facility), however, the species and types of incident interactions among terrestrial Wildlife may be diverse, as there is potential for impacts to birds,

mammals, reptiles, and amphibians. A Wildlife response strategy in a terrestrial landscape may focus on excluding Wildlife from the affected area, pre-emptive capture to relocate unaffected individuals (e.g., Species at Risk), recovering affected individuals, and assessing the impact of the incident on Wildlife.

Table 2. Key activities/strategies for Wildlife response based on major landscape types. This table is meant as a guide to highlight some potential key differences in approaches, but should not be considered as a checklist for all incidents. Refer to text for details.

Response Strategy/Activity	Landscape Categories		
	Marine/ Open fresh water	Aquatic	Terrestrial
Reconnaissance and surveillance surveys	X	X	X
Wildlife deterrence	X	X	X
Wildlife exclusion		X	X
Prioritize habitats for protection	X	X	X
Pre-emptive capture of Wildlife		X	X
Recovery of affected individuals	X	X	X
Assessing impacts to Wildlife	X	X	X

3.4 DETECTING SIGNS OF IMPACTED AVIAN SPECIES

In planning for Wildlife Emergency and preparation of a WRP, it can be important to consider target species and how detectable contaminated (or injured) Wildlife may be. The ability to detect contaminated Wildlife will help in planning several of the actions to be taken during a response, notably Initial Wildlife Impact Assessment (Section 4.5.2), reconnaissance and surveillance surveys (Sections 4.5.3 and 4.5.4), and Wildlife capture (Section 4.5.7). Detecting contaminated Wildlife is best done by experienced observers, such as WRO, but understanding of contaminated Wildlife detection can benefit all aspects of response planning and implementation. Here we provide guidance for detecting signs of oiling in avian species, though the principles outlined are generally applicable to birds affected by other contaminants.

Under normal conditions, typical bird behaviour will vary by the species, the habitats they occupy, as well as time of year and weather conditions. Generally, birds that spend a great deal of time on the surface of the water are typically seen resting on the water (e.g., loons, grebes, scoters, alcids, and cormorants). Piscivorous species (e.g., loons, grebes, alcids), will normally dive and surface repeatedly over time. Some species, like gulls, will move between resting on the water to being flight bound to using land to feed or rest. Species that are common in shore environments, like shorebirds, dabbling ducks, and cormorants are typically quite obvious on rocks or beaches, and would be expected to be quite mobile/active.

Birds that have come into contact with oil may have obvious oiling indications, including coating, discoloured feathers, or feathers having a wet or ragged appearance (i.e., disruption of feather structure). Heavily oiled birds or individuals oiled below the waterline may also appear as though they are sitting low on the water

(when compared with normal species posture), struggling to maintain buoyancy. Oiled birds have increased potential to lose buoyancy and thermoregulatory properties of their feathers. Accordingly, it is common to see oiled birds focused intently on preening themselves in order to maintain buoyancy and reduce heat loss; this may be most apparent while birds are on the water. Diving or dabbling species may appear to be foraging less than expected (although this should be assessed by experienced observers). Birds may also exhibit changes in flushing behaviour, being less inclined to fly when disturbed. Birds might also congregate near or on shore, or strand and rest on structures (e.g., vessels, buildings, platforms); this includes species that would not normally be expected to use these habitats or those that have contacted oil in the intertidal environment. In nearshore or shoreline environments, birds may also use shallow waters to reduce risk of drowning or take advantage of coastal vegetation to camouflage or reduce risk of predation while they try to preen or recover. Observations of behavioral changes in birds are sometimes the key indicators of oil impacts.

Detecting birds contaminated with oil is particularly difficult for aquatic birds with dark plumage that remain on the water and far from shore. Under these circumstances, it may be appropriate to determine a probable rate of contamination using appropriate indicator species. Ideally, indicator species are common throughout the incident area, share similar life history attributes, are sensitive to oiling, and signs of oiling are readily observable. The contamination percentage determined for indicator species only provides an estimation of the contamination percentage for the other species in the incident area. This type of assessment is likely to underestimate the actual contamination rate of the most vulnerable aquatic species, such as sea ducks and alcids, and overestimate the contamination of the more coastal species, such as geese and dabbling ducks (Lehoux and Bordage 1999). Additional details on how to assess rates of oiling for indicator species is provided in the *Guidance and Protocols for Wildlife Surveys for Emergency Response* (ECCC-CWS 2021a).

4.0 COMPONENTS OF A WILDLIFE RESPONSE PLAN

A WRP is a plan that describes the objectives and methods for undertaking Wildlife Emergency response, specific to an area and Pollution or Non-Pollution Incident(s). The aim of a WRP is to avoid or minimize injury or harm to Wildlife during Pollution and Non-Pollution Incidents.

The following section outlines attributes that should be considered within a WRP (IPIECA 2014; Hebert and Schlieps 2018). An annotated WRP template is provided as an example in Appendix A, to be adapted and scaled based on the nature of individual Wildlife Emergencies. A checklist of activities that should be completed within the first 24, 48, and 72 hours of an incident involving Wildlife is provided in Appendix B.

4.1 INTRODUCTION

The Introduction section of the WRP provides the basis and rationale for how a Wildlife response will be handled. The Introduction will provide a general description of the types of issues that will be addressed by the

WRP. Where appropriate, the Introduction will describe how this WRP interfaces with various aspects of an ICP, including other response plans that WRP activities may interact with.

4.2 NOTIFICATION PROCEDURES

The Notification Procedures section outlines the agencies, organizations, and other technical specialists that will be notified during incidents involving Wildlife response. Where appropriate, this section will describe how notifications operate within the incident-specific ICS structure, as well as any intra- and interdepartmental communication requirements.

4.3 REGULATORY REQUIREMENTS

The Regulatory Requirements section provides a brief description of the applicable Wildlife legislation, where it applies, and whether supporting permits or authorizations are required to support a Wildlife response. In most cases, incidents involving Wildlife will need to consider the MBCA, the SARA, and possibly the CWA (see Section 2), as well as other provincial or territorial legislation. Additional permits and authorizations may also be required outside the regulatory authority of ECCC-CWS.

4.3.1 Permits and Authorizations

For any Wildlife Emergency involving the development of a WRP, the plan will identify any WROs or contracted subject-matter experts that will be engaged to support Wildlife response activities. Authorized organizations or individuals must have the training and resources necessary to meet Wildlife response requirements. Where permits or authorizations are identified, this section will highlight:

- a) what the authorization is for
- b) the issuing agency
- c) activities that are authorized
- d) who holds authorization to conduct those activities
- e) if a technical specialist or qualified professional is required to supervise or participate in the authorized activity (e.g., supervision or guidance of bird deterrence activities by ECCC-CWS or a WRO supervision of bird deterrence activities)
- f) reporting requirements, if any, for these authorizations

With respect to strategic WRPs prepared in advance for specific activities or areas, this section will also identify permits which are already in place and relevant information on renewal and reporting cycles.

4.4 RESOURCES-AT-RISK

The WRP will outline potential Wildlife and habitat resources-at-risk from the incident's current and reasonably foreseeable impacts. The resources-at-risk section of the WRP will describe:

- the geographic extent for which resources are being identified

- Migratory Bird sensitivities
- Species at Risk sensitivities
- important habitats for consideration and protection:
 - critical habitat
 - protected areas
 - colonial nesting areas
 - general nesting areas
 - seasonal stopover, molting, or staging areas
 - key areas (e.g., Important Bird Areas, Ecologically and Biologically Significant Areas)
 - other important habitat features such as estuaries

In addition to these general factors, the characterization of resources-at-risk should consider area- and species-specific factors such as seasonal presence, abundance, life stage, and habitat associations. Where available, incident-specific observations should be referenced in the description of resources-at-risk to characterize current conditions. Resources-at-risk should also consider details on mitigations related to habitats including priority sites, protection measures, clean-up restrictions, and information relevant to Net Environmental Benefits Assessment (NEBA) or Spill Impact Mitigation Assessment (SIMA) (e.g., IPIECA 2016, 2018).

4.5 WILDLIFE MANAGEMENT AND RESPONSE

This section will describe the nature of Wildlife management and response activities that are, or will be undertaken as part of the incident. The nature and scale of a WRP will depend on the incident, and the known or potential impacts to Wildlife.

For the early phases of an incident, the WRP should include, at minimum, a description of the initial approaches for Wildlife impact assessment (e.g., reconnaissance and monitoring activities). This section of the WRP will be revised as an incident evolves. Where appropriate, aspects of Wildlife management and response may warrant standalone plans that could be appended, and referenced in this section (e.g., detailed plans for Wildlife rehabilitation).

4.5.1 Operational Objectives

This section briefly describes the primary objectives for the activities that will be implemented during the operational period(s) this plan is expected to apply to until its next iteration. Objectives will consider the ethical considerations in context with situational, technical, and financial feasibility of implementation (IPIECA 2014). Objectives will change based on Wildlife concerns as well as personnel and equipment resource availability. These objectives form the basis for the nature and scope of activities described in this section of the WRP.

4.5.2 Initial Wildlife Impact Assessment (0 to 24 Hours)

In order to effectively plan for and direct Wildlife response efforts, an Initial Wildlife Impact Assessment needs to be conducted as early in the incident response as possible, to determine:

- existing information on Wildlife and habitats
- current/initial estimates of Wildlife impacts
- projection of potential impacts to Wildlife
- initial Wildlife response recommendations
- initial habitat protection recommendations
- initial resource, personnel, equipment, and facility requirements

As with all phases of a response, the Initial Wildlife Impact Assessment must be completed in consideration of the health and safety of response personnel and adhere to all incident-specific health and safety requirements (see Section 4.7).

4.5.3 Reconnaissance Surveys (24 to 48 Hours)

Reconnaissance surveys should be conducted in a timely manner on a large geographic scale to assess the outer limits of the incident. These surveys serve to obtain current information on impacted habitats, areas of special concern (e.g., colonial nesting areas) and the abundance and distribution of Wildlife within the general area of the incident, recognizing that Wildlife movements may extend beyond the geographic limits of the incident area. Initial reconnaissance surveys should take place as early in the response as possible to determine current conditions and inform potential response priorities and strategies. In all cases, reconnaissance should extend, at minimum, to the expected geographic limits of the incident area, recognizing those boundaries may change as the incident progresses. Reconnaissance surveys may be conducted on a recurring basis to inform response activities (e.g., deterrence and dispersal, Wildlife capture), or if the situation of the incident changes (e.g., following a storm). Reconnaissance surveys help identify the most suitable approaches for the surveillance or monitoring phase of the response. Reconnaissance may occur from land, boat, or air. Reconnaissance surveys are not systematic and the goal is not to precisely assess Wildlife densities but rather to conduct informal surveys to rapidly assess the distribution of impacted, or potentially impacted, Wildlife and habitats for a prompt response.

Primary objectives of reconnaissance surveys are to:

- determine the geographic scale of the incident
- identify Wildlife and habitats that have already been impacted
- estimate relative abundance and distribution of Wildlife with potential to be impacted
- evaluate key habitats of importance to Wildlife with potential to be impacted
- inform development of appropriate response strategies
- inform mitigation activities to minimize further damage to Wildlife
- inform suitability of various survey methods (e.g., shore, boat, or aerial surveys) for subsequent surveillance or monitoring for the duration of the incident
- inform Incident Command on the status of known or potential impact on Wildlife

If impacts to Wildlife or their habitats are known or anticipated, an approach for systematically surveying and monitoring Wildlife should be developed and articulated in the WRP (see Section 4.5.4). Standardized protocols

have been developed for conducting systematic Migratory Bird surveys during an emergency response in Canada and are summarized in the *Guidance and Protocols for Wildlife Surveys for Emergency Response* (ECCC-CWS 2021a). The following stages of a Wildlife response (Sections 4.5.5 to 4.5.10) should be developed and implemented by trained and qualified personnel under the supervision of the Wildlife Branch Director in the Wildlife Branch and/or Wildlife Technical Specialist(s) in the Environmental Unit, depending on the structure of the response (see also Section 3.1).

4.5.4 Surveillance (Monitoring) Surveys (48 to 72 Hours and Onwards)

If impacts to Wildlife or their habitats are known or anticipated, Wildlife Branch will develop a systematic surveillance (monitoring) survey program with an appropriate temporal and geographic scope. If surveillance is required, the RP will secure qualified personnel to develop and execute the program and who will report to Wildlife Branch Director and/or Wildlife Technical Specialist(s). The methods and general approach(es) may be described in strategic WRPs and ECCC-CWS can advise on survey design and implementation for incident-specific WRPs, consistent with the *Guidance and Protocols for Wildlife Surveys for Emergency Response* (ECCC-CWS 2021a).

Primary objectives of surveillance surveys are to:

- monitor and refine the identification of Wildlife and habitats in the impacted area
- monitor and identify areas where Wildlife would be potentially at risk from further impacts
- monitor and refine estimates of abundance and distribution of Wildlife in the impacted area
- monitor and estimate Wildlife densities for damage assessment
- monitor and estimate number of dead and moribund Wildlife affected by incident
- identify areas where affected Wildlife can be collected
- inform other response activities such as habitat protection and Wildlife deterrence and dispersal
- inform Incident Command

Implemented throughout the response in accordance with the plan, data collected during surveillance provides critical response information and can also be used to document damage assessment following the incident.

4.5.5 Deterrence and Dispersal

For some incidents, deterrence and dispersal can be an effective early means to deter Wildlife from moving into or near the incident area and coming into contact with contaminants. Use of these techniques can also be helpful in excluding Wildlife from impacted areas throughout the response phase. Deterrent devices used to disperse Wildlife include both visual and auditory techniques and range in their effectiveness depending on the species, number of individuals, time of year, and habitat where the incident occurs.

If deterrence or dispersal is required or recommended, the RP will retain a qualified and, if applicable, authorized WRO to develop and execute a Wildlife deterrence and dispersal program. In the absence of an RP, the Lead Agency may develop and execute a Wildlife deterrence and dispersal program. Guidance to

conduct activities related to deterrence and dispersal are outlined in Lehoux and Bordage (2000), with revisions and updates in development by ECCC-CWS. Other guidance to consider in the development of deterrence and dispersal tactics for WRP include Gorenzel and Salmon (2008) and IPIECA (2017). Deterrence will be conducted only by appropriately trained personnel, and under direct guidance and supervision (as required) from the Wildlife Branch Director and/or Wildlife Technical Specialist(s). A WRP may also outline protocols for Wildlife Technical Specialists in the field to monitor and document the use and effectiveness of deterrence and dispersal techniques so that updates may be made to subsequent WRPs. ECCC-CWS may provide guidance on deterrence and dispersal strategies and may also supervise deterrence and dispersal techniques for habitats or species that are particularly sensitive to these types of response measures (e.g., in proximity to breeding colonies). Strategic WRPs may outline a set of applicable techniques for a particular industry or facility, whereas an incident-specific WRP may then specify actions to be put in place given the species observed and environmental conditions at the time (e.g., weather).

Deterrence activities should be determined on a species-specific and location-specific basis that considers the following factors:

- What is the location and/or the extent of the spill
- Where are alternative species-appropriate habitats that birds can be dispersed to
- What species are present or likely to be at risk
- What is the life history status of the birds present (e.g., roosting, staging, breeding)
- What qualified personnel and equipment is available with experience and knowledge for deterrent use and Wildlife dispersal
- What are the environmental conditions
- Can the deterrence and dispersal plan be enacted in a safe manner for response personnel and Wildlife

4.5.6 Exclusion, Pre-emptive Capture, and Relocation

WRPs often implement measures designed to pre-emptively limit the potential for Wildlife to become impacted during Pollution Incidents. Often, marine, aquatic and terrestrial Wildlife can be excluded from areas that are known or have potential to become impacted through a combination of mechanical and physical techniques designed to dissuade habitat use (e.g., visual or acoustical deterrents, fence or net installation, physical habitat modification). Pre-emptive Wildlife capture and relocation similarly seeks to collect Wildlife before they are impacted during a Wildlife Emergency. Planning for Wildlife collection requires considerations for capture, transport, holding, and release strategies. If pre-emptively captured Wildlife need to be contained for a period of time, a WRO authorized to carry out these activities must be identified to provide appropriate species-specific housing, nutritional support, and medical care (if necessary) for a potentially extended period. Guidance and protocols on pre-emptive capture and care for Wildlife during a Pollution Incident are described in the *Guidelines for the Capture, Transport, Cleaning, and Rehabilitation of Oiled Wildlife* (ECCC-CWS 2021b). Where appropriate, the WRP should describe plans for Wildlife collection and relocation activities.

4.5.7 Wildlife Capture, Transport, Rehabilitation, Release, and/or Euthanasia

This section of the WRP will be broken down into detailed phases, each of which are described briefly in Table 3. Planning for these activities may evolve over the course of the incident to include details on the number of monitoring and field staging facilities, capture procedures, rehabilitation facilities, as well as coordination of rehabilitation personnel.

The RP should retain a qualified and authorized WRO to develop and implement these phases of Wildlife response. These programs will adhere to the *Guidelines for the Capture, Transport, Cleaning, and Rehabilitation of Oiled Wildlife* (ECCC-CWS 2021b), *Guidelines for Establishing and Operating Treatment Facilities for Oiled Wildlife* (ECCC-CWS 2021c), as well as an area-specific or incident-specific Health and Safety Plan. Not all phases will be applicable or readily implemented during a response, but all may be considered as options when developing a strategic WRP, and later refined in an incident-specific WRP.

Table 3. Phases of Wildlife Capture, Transport, Rehabilitation, Release, and/or Euthanasia

Phase	Objectives
Pre-emptive Capture	<ul style="list-style-type: none"> • The capture of Wildlife that is at risk of being impacted • Transport of Wildlife to a holding facility
Capture	<ul style="list-style-type: none"> • The capture of impacted Wildlife • Transport of Wildlife to Field Stabilization Site or Oiled Wildlife Rehabilitation Centre
Field Stabilization	<ul style="list-style-type: none"> • Physical evaluation • Removal of gross contaminants • Thermoregulatory support • Fluid therapy and nutritional support • Address life threatening conditions • Euthanasia evaluations based on established criteria and best practices
Transportation	<ul style="list-style-type: none"> • Transport of contaminated animals from field or Field Stabilization Site to an Oiled Wildlife Rehabilitation Centre
Processing	<ul style="list-style-type: none"> • Evidence collection • Birds given individual, temporary band • Feather/fur sample • Photograph • Individual medical record
Intake	<ul style="list-style-type: none"> • Medical examination, triage, and treatment plan development • Critical care concerns addressed • Euthanasia evaluations based on established criteria and best practices
Triage	<ul style="list-style-type: none"> • Ongoing euthanasia and treatment plan evaluation based on medical health status
Euthanasia	<ul style="list-style-type: none"> • Euthanize Wildlife that are assessed by the WRO as not being good candidates for rehabilitation or survival
Stabilization	<ul style="list-style-type: none"> • Fluid, nutritional and medical stabilization of impacted animals • 48–72 hours period • Prepare animals for cleaning process
Cleaning	<ul style="list-style-type: none"> • Removal of all contaminants from an impacted animal by washing • Removal of the cleaning agent by rinsing • Drying cleaned and rinsed animal
Conditioning	<ul style="list-style-type: none"> • Restoring waterproofing and physical condition
Release	<ul style="list-style-type: none"> • Federal banding of individual animals • Consider additional tracking devices on some birds to monitor post-release • Release of cleaned, waterproof animals into a clean environment
Post-release	<ul style="list-style-type: none"> • Determining the effectiveness of rehabilitation of Wildlife impacted during a

Phase	Objectives
Monitoring	Pollution Incident <ul style="list-style-type: none"> • Monitoring the clean Wildlife's condition and activities • Following short-term and long-term survival and breeding status following rehabilitation

4.5.8 Wildlife Carcass Collection Procedures

Dead Wildlife should be removed from the environment to avoid attracting scavengers to the site and secondary contamination of Wildlife. The responsibility for the collection and documentation of dead Wildlife is primarily the responsibility of the Wildlife Branch and is completed under the supervision of authorized organizations (e.g., Wildlife Enforcement Directorate) and personnel with appropriate permits. Protocols for Wildlife collection, storage and documentation will be developed. Wildlife recovery personnel will retrieve dead Wildlife as part of daily activities. Dead Wildlife observed by the public can be reported to a 24-hour hotline (see Section 4.6.1). Members of the public must not pick up dead Wildlife but rather report them to the hotline. The Wildlife Branch will work with the Information Officer to develop appropriate messaging.

Carcass collection information will be used to:

- refine the geographic scale of the incident
- determine the cause of death if the source is unknown
- minimize damage and exposure to unaffected Wildlife by removing affected Wildlife from the environment
- minimize potential for harm or exposure by the public who participate in hunting activities or are supporting aspects of the response
- support appropriate response strategies for the treatment of affected Wildlife
- obtain a minimum number of casualties for damage assessment purposes
- obtain specimens/samples for legal enforcement activities or reporting requirements
- inform Incident Command

These procedures will also outline requirements necessary for proper chain of custody and storage of specimens. Chain of custody, and other record-keeping forms, will be attached as appendices to the WRP.

For additional guidance on collecting dead Wildlife during incidents, see the *Guidance and Protocols for Wildlife Surveys for Emergency Response* (ECCC-CWS 2021a).

4.5.9 Waste Management

Plans for decontamination and disposal of waste materials will be developed. Waste and secondary pollution should be minimized at each step of the Wildlife response. During the various phases of Wildlife cleaning (holding pen, carcass wrapping), waste will be created. Washing Wildlife will cause waste water (e.g., oil with detergent), which will need to be managed (through existing Waste Management Plans or by establishing additional plans as needed). Medical waste (e.g., syringes and gloves) should be considered. The response

plan will identify the legislation and the authorities responsible for waste management.

4.5.10 Demobilization

Regardless of the scale of a Wildlife Emergency, the WRP will describe any processes or considerations for demobilizing Wildlife response activities. As appropriate, demobilization will be scaled in accordance with the size of Wildlife response (e.g., decreased intake of contaminated Wildlife) and must be approved by the Incident Command.

This section of the plan will discuss, as applicable:

- processes for demobilizing equipment, facilities, and personnel
- processes for ongoing involvement in the ICP or post-response impact assessment and monitoring
- processes for chain of custody of data to support enforcement decisions
- processes by which the RP can continue to receive advice and support from ECCC-CWS

4.6 INFORMATION MANAGEMENT AND REPORTING

This section of a WRP should describe how information collected throughout the operational periods of the WRP would be managed, organized, vetted, and reported on. It should include:

- the type of data being collected (e.g., inventory, photos, videos, GIS)
- the personnel that will collect, organize, and vet the data
- the process for maintaining data records during and after the incident
- the process for integrating Wildlife data and activities into an incident information system (often referred to as the Common Operating Picture) within an ICP
- who data will be reported to, including the type and frequency of reports (e.g., daily email tabular summaries to the Environmental Unit Leader)
- how information is disseminated to agencies responsible for overseeing response

4.6.1 Wildlife Reporting From the Public (Wildlife Hotline)

Within the initial phases of an ICP being established where there are potential impacts to Wildlife, ECCC-CWS should ensure that reports of impacted Wildlife are directed to the Environmental Unit by way of a 24-hour hotline (or other reporting mechanism created for an incident). The contact information and instructions to the public for the 24-hour hotline should be outlined in the WRP. This may include the use of already existing environmental emergencies reporting systems, or the development of new hotlines as required for the scale of the incident. The Wildlife hotline may also serve as a platform to relay incident-specific safety information to the public (e.g., avoiding direct contact with contaminated Wildlife).

4.6.2 Media Relations

Media statements help to inform the public and raise awareness regarding Wildlife concerns and treatment, as well as public safety. The WRP should identify how Wildlife response activities will be reported to the public

through media statements, and who within the Environmental Unit or Wildlife Branch are responsible for informing them. Generally, Wildlife Branch Response Director and the incident's Information Officer will jointly develop these statements, with relevant input from Wildlife Technical Specialist(s) and/or Environmental Unit Lead. Where appropriate, public statements involving Wildlife will also be vetted and approved by the ECCC-CWS technical specialists, Media Relations, and the Regional Director.

4.6.3 Permits Reporting

Certain permits which may be issued prior to or during an incident may also have reporting requirements. Most ECCC-CWS issued permits require reporting of activities within 30 days of the permit expiry.

4.7 HEALTH AND SAFETY

Responder safety is of paramount importance when initiating Wildlife response activities. Activities recommended and implemented as part of a WRP will adhere to the incident-specific health and safety plan and be identified in consultation with the Incident Safety Officer. A brief overview of health and safety considerations and requirements will be described in the WRP, with specific mention of Wildlife responder personal protective equipment, zoonoses, and site safety and security (including areas off limits to Wildlife responders). This section will evolve over the course of the incident.

4.7.1 Personal Protective Equipment

For Wildlife management and response activities proposed in a WRP, responders will have appropriate training and equipment for safely operating in shoreline, marine, or aerial environments (depending on incident location and response activities) and for contaminated Wildlife handling within a rehabilitation setting. Responders will have appropriate equipment and clothing to operate for extended periods and that protect against environmental exposure or incident-specific conditions. Basic personal protective equipment recommended for Wildlife management and monitoring activities includes:

- eye protection (e.g., sunglasses, goggles, safety glasses, or face shield)
- oil-resistant rain gear or oil protective clothing (e.g., coated Tyvek, Saranex, etc.)
- water and oil resistant hand protection (e.g., neoprene or nitrile rubber)
- waterproof and oil resistant non-skid boots; steel-toes may be required under the incident-specific health and safety plan
- hearing protection (muff or ear plug type)
- personal flotation device when working on, near, or over water
- air monitoring device when appropriate
- specific gear appropriate for work where personnel are or may be submersed in water (wet suits, dry suits, survival gear)
- species-specific capture and protective gear (welding gloves, steel toed boots etc.)

The above list should not be considered comprehensive or applicable to all incidents. Additional incident-

specific and specialized equipment may be required for other aspects of Wildlife response and will be developed in consultation with WROs and the Safety Officer.

4.7.2 Zoonoses

Zoonoses are infectious diseases that may be transmitted between animals and humans under natural conditions. Personnel handling or coming into contact with Wildlife are at risk of zoonotic disease exposure. Veterinarians, technicians, response personnel, Wildlife handlers, and other animal care personnel who come into direct or indirect contact with Wildlife or any body fluids are at risk of contact with disease agents that may have zoonotic potential. Organisms that may cause or transmit zoonotic diseases include many classifications from viruses, fungi, and bacteria to internal and external parasites. The WRP will describe biosecurity practices that will be employed in all aspects of Wildlife response to reduce risk of disease transmission.

4.7.3 Biosecurity

Biosecurity is a set of preventative measures that reduce the risk of transmission of infectious diseases, pests, and invasive species. Where there is potential for response measures (both overall incident response and Wildlife-specific response) to contribute to issues involving biosecurity, the WRP will outline a suite of measures to control for these risks.

4.8 PERSONNEL REQUIREMENTS

There are many personnel that could be involved in various aspects of WRP implementation. Certain roles, responsibilities, or authorized activities require various types of training or technical expertise.

Where applicable, the WRP will specify which activities individuals with specific training or expertise can complete. This may include outlining training standards and/or experience that may be required for specific industries, areas, or facilities. Industries and Response Organizations should consult with regional ECCC-CWS staff for guidance on relevant standards.

4.9 FACILITY AND EQUIPMENT REQUIREMENTS

As part of planning and implementing Wildlife response measures outlined in a WRP, specific equipment and facility requirements may need to be developed. The level of detail of these requirements will vary by the scale of the incident and may be more appropriately described in documents appended to the WRP. Components of equipment and facility considerations may include:

- the type and amount of equipment required
- means of transportation to support Wildlife response elements
- requirements for utilities, waste management, and security
- the nature of equipment or facility requirements (e.g., temporary, mobile, permanent)
- sources of supplies if known

Additional information to support equipment and facility planning is outlined in the *Guidelines for Establishing*

5 EVALUATING WILDLIFE RESPONSE

5.1 EVALUATION AND REVIEW

WRPs should be implemented and evaluated for their effectiveness within a context of adaptive management, where the results are used to refine future iterations (IPIECA 2014, Hebert and Schlieps 2018). Following a Wildlife Emergency, WRP developers and implementers should debrief on strengths and weaknesses of the plan, lessons learned, and gaps or areas for improvement (particularly for strategically developed activity- or area-based WRPs). Evaluation of the WRP should consider a) ease of implementation, b) efficiency of implementation, c) areas of practice that were or were not included, and d) whether the WRP supported the desired response outcome(s), business and legal requirements. ECCC-CWS may be consulted in this review and assist with recommendations for refinement.

5.2 EMERGENCY EXERCISES

Emergency exercises are important for testing the effectiveness of WRPs, identifying potential gaps, and ensuring activity-, area- or incident-specific considerations are planned for in advance of an actual incident occurring (IPIECA 2014). Exercises also allow for government and industry partners to work together and familiarize themselves with the personnel and resources available to support Wildlife response activities. Exercises can also be an excellent means to provide training, or to test certain response strategies in a controlled setting.

Emergency exercises can take place in several formats: notifications, tabletop, field drills, and participation in the Environmental Unit or Wildlife Branch of an ICP. Each exercise will be planned with specific Wildlife response focused objectives in mind, and may center on testing particular aspects of the WRP. WRPs should be updated and revised to incorporate identified gaps and lessons learned into the plans.

6 CUSTODIAN

The custodian for the *Guidelines for Wildlife Response Plans* and any amendments thereto is the:

Director General, Regional Operations Directorate

ECCC-CWS

ECCC

The approval of future updates is vested to the Director General, Regional Operations Directorate, ECCC-CWS.

7 ACKNOWLEDGEMENTS

This publication represents the collective efforts of many members of the ECCC-CWS National Wildlife Emergency Response Working Group (François Bolduc, Daniel Bordage, Andrew Boyne, Brigitte Collins, Jean-François Dufour, Kevin Fort, Carina Gjerdrum, Jeanette Goulet, Jack Hughes, Nancy Hughes, Lesley Howes, Vicky Johnston, Raphael Lavoie, Jim Leafloor, Erika Lok, Craig Machtans, Kim Mawhinney, Ruth Milkereit, Dave Moore, Patrick O'Hara, Mia Pelletier, Lisa Pirie, Jennifer Provencher, Greg Robertson, Myra Robertson, Rob Ronconi, Pierre Ryan, Saul Schneider, Chris Sharp, Eric Shear, Graham Thomas, Mike Watmough, Becky Whittam, Sabina Wilhelm, Megan Willie, and Sydney Worthman) and the ECCC-CWS Permits Working Group. Additional review and comments were provided by Tri-State Bird Rescue and Research (Ryan Wheeler), and Focus Wildlife (Jenny Schlieps, Charlie Hebert). This document is a product of ECCC.

8 LITERATURE CITED

ECCC-CWS. 2021. National Policy on Wildlife Emergency Response. Canada. iii + 16 pages.

ECCC-CWS. 2021a. Guidance and Protocols for Wildlife Surveys for Emergency Response. Canada. v + 54 pages.

ECCC-CWS. 2021b. Guidelines for the Capture, Transport, Cleaning, and Rehabilitation of Oiled Wildlife. Canada. iii + 47 pages.

ECCC-CWS. 2021c. Guidelines for Establishing and Operating Treatment Facilities for Oiled Wildlife. Canada. iii + 43 pages.

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- Lehoux, D. and D. Bordage. 2000. Deterrent techniques and bird dispersal approach for oil spills. Canadian Wildlife Service, Environment Canada. 80 pp.

APPENDIX A: EXAMPLE TEMPLATE OF A WILDLIFE RESPONSE PLAN

APPENDIX B: EXAMPLE CHECKLIST OF WILDLIFE EMERGENCY ACTIVITIES

Table B.1. Example Checklist of Activities to Undertake within the initial 24, 48, and 72 hours of a Wildlife Emergency (adapted from Hebert and Schlieps 2018)

Timeline	Responsibility	Action
0-24 Hours	Incident Command/ Unified Command	<ul style="list-style-type: none"> • Ensure appropriate notifications to relevant government departments and branches • Activate an authorized WRO
	Environmental Unit	<ul style="list-style-type: none"> • Compile existing information on Wildlife • Complete a Resources-at-risk form (i.e., ICS 232) • Initiate Initial Wildlife Impact Assessment • Initiate deterrence and dispersal strategy
24-48 Hours	Incident Command/ Unified Command	<ul style="list-style-type: none"> • Establish a Wildlife Branch under the Operations Section of the ICP • Designate a Wildlife Branch Director
	Environmental Unit and/or Wildlife Branch	<ul style="list-style-type: none"> • Mobilize the WRO • Continue Initial Wildlife Impact Assessment • Conduct Reconnaissance Survey • Refine deterrence and dispersal strategy • Develop Wildlife Branch organization chart • Establish a Wildlife hotline • Initiate incident-specific WRP • Initiate requests for resources (personnel, supplies, facilities, equipment) • Identify Wildlife response health and safety requirements • Ensure ongoing notifications and updates to relevant government department contacts • Identify subject matter experts that might support the ICP
48-72 Hours	Wildlife Branch and/or WRO	<ul style="list-style-type: none"> • Coordinate with the WRO to develop or modify an existing WRP, and a process for WRP implementation • Develop plan for ongoing monitoring • Conduct surveillance and monitoring surveys • Determine locations for field stabilization • Establish field staging areas • Refine incident-specific WRP • Develop internal and external communications with the Information Officer and departmental communications personnel • Ensure ongoing notifications and updates to departmental contacts

Date: February 17th, 2022

To: Candace Quinn, Environmental Assessment Officer

From: Surface Water Staff, Water Resources Management Unit

Subject: **Benjamin Mills Wind Project**

Scope of Review

The scope of this Environmental Assessment Registration review from the NSE Water Resource Management Hydrologist is to assess the potential environmental impacts and proposed mitigations of the proposed undertaking on surface water quantity, quality and management. While comments may also include considerations for impacts on groundwater, freshwater fish habitat, and wetlands, appropriate technical specialists for these areas should be consulted for specific review and comment. The following Benjamin Mills Wind Project (BMWP) Environmental Assessment (EA) Review focuses on the following topics:

- Surface water quality & its management
- Hydrology and surface water quantity

Reviewed Documents

The documents outlined below formed the basis for this EA Registration review:

- The Benjamin Mills Wind Project EA Registration document for a Class I undertaking under Nova Scotia Environmental Assessment Regulations by Natural Forces
- Appendices A-P

Comments

General

- The BMWP includes construction of sections of new access roads, and upgrades to existing access roads in order to have access to the proposed wind turbine locations. Possible changes to drainage patterns could create implications for existing environment, including natural watercourses in close proximity to the site.

- There are many surface water features (watercourses and wetlands) in the project area and intersecting with the BMWP access roads. Named watercourses were identified within the area of the proposed Project include the Mint River, Levy Meadow Brook, and Five Island Brook. Lakes in the vicinity of the Project Area include Five Island Lake, Bennett Lake, Duck Ponds, Pine Lake, and Splash Dam Lake.
- In addition to the footprint of the roads, the construction activities, specifically, grubbing and clearing, have the potential to: alter the existing hydrology, and introduce sediment to the nearby surface waters. Mitigation measures have been proposed to minimize effects of this undertaking.
- The risk of residual effects to the general surface water quality and drainage should be minimal and focused during times of construction based on the mitigations identified by the EA Report, and summarized in Section 7.1.2.2
- It is stated that “[surface water] interactions are not expected during the Operation and Maintenance phase due to the passive nature of that phase.” (S. 7.1.2.2) No consideration or details provided on monitoring and maintenance impacts of access roads and watercourse crossings that will be required during the 25-year project lifespan.
- Details of the final road footprints (new and upgraded) are necessary to confirm the conclusions the applicant has provided and/or further analyze project impact to the surface water resources of site.

Surface Water Quality

- The potential for water quality impacts is generally described as limited to activities consistent with road construction and vehicular use, and maintenance activities for the Project during operation.
- Standard best management practices have been identified as risk mitigation. No site surface water quality monitoring plans were identified by the EA Report.
- In the EMPP, Appendix P, Section 2.7.2, it is stated that ESC measures will be put in place in advance of storm events. Such measures should be functional and ready at any point during the construction of the project, due to higher erosion and sedimentation risks.

Watercourse Alterations

- Several potential crossing locations are shown on Figure 6 as watercourses, though GIS metadata refers to these as ‘disturbed ephemeral crossings’. It is assumed that all watercourses in Figure 6 meet the definition of a watercourse under the Environment Act.
- Proposed upgrades, including widening, to previously constructed access roads on project site potentially require Approval or Notification under the Activities Designation Regulations.
- In Appendix K, it is stated that WC5 and WC7 and WC14 have been deemed to have a high likelihood of fish habitat. S. 7.2.4.1 states that with the

implementation of proposed mitigation measures, interactions between the Project and the fish and fish habitat are not anticipated to be substantive and no follow-up or monitoring is recommended unless required under permit from NSECC or DFO. The applicant has committed to further study for site watercourses, specifically presence/ absence fish surveys to be completed prior to Watercourse Alteration Approvals or Notifications.

Hydrology/Surface Water Resources

- Project earth work activities stated to be conducted so that general overland flow directions are maintained and existing surface drainage and water drainage systems to be unchanged when possible.
- No information is provided justifying statements on the maintenance of pre- and post-construction water flows in the affected watersheds, or water management within the site during construction or operations.

Conclusions and Recommendations

The following are recommended to be included as conditions in support of the potential approvals for the Project:

Planning/Design Issues:

- A surface water management plan developed by a qualified professional engineer should be submitted to NSECC for review and approval prior to construction. This plan should include the final road alignment and turbine pad footprints, demonstrate maintenance of existing drainage patterns, and confirm watercourse crossing locations.

Operational Issues/ Other Permitting Processes

- An erosion and sediment control plan developed by a qualified professional should be submitted for NSECC review and approval prior to the start of construction and operation activities, including clearing, grading and excavating.
- Prior to undertaking any construction activity in the bed or banks of a watercourse, obtain any watercourse alteration construction Approvals or Notification receipts which may be required pursuant to Part V of the Environment Act. t

Comments on Benjamins Mill Wind Project Environmental Assessment Registration

Protected Areas and Ecosystems Branch, NSECC

The Protected Areas and Ecosystems (PAE) Branch is responsible for the planning, designation, and management of provincially designated protected areas (wilderness areas and nature reserves) and supporting private land conservation in Nova Scotia.

The Branch also encourages biodiversity conservation and ecological connectivity on unprotected lands that affect the ecological health and resilience of sites in the provincial protected areas network, and/or that may be of interest for future protection.

NSECCs' *Guide to Preparing an EA Registration Document for Wind Power Projects in Nova Scotia (Revised 2021)* acknowledges the Province's commitment to enhanced land protection, and encourages proponents to contact the PAE Branch to review if project proposals may overlap with lands of interest for conservation or protection. To date, the proponent has not contacted the Branch.

The VEC section of the Guide also encourages proponents to avoid relatively intact natural areas and lands that, due to their location on the landscape and ecological condition, are important for ecological connectivity, including between relatively intact natural areas and between protected areas. Emphasis on ecological connectivity is informed, in part, by direction from the New England Governors and [Eastern Canadian Premiers Resolution 40-3 - Resolution on Ecological Connectivity, Adaptation to Climate Change, and Biodiversity Conservation](#). The Guide also provides guidance to proponents to consider cumulative effects of their projects.

Considering the above, the Branch reviewed the registration document primarily through two lenses:

- 1) Could the proposed project affect existing protected areas and/or does it overlap with lands that have been identified as potential new protected areas, and if so, how is this addressed in the registration document?
- 2) Does the proposed development avoid or minimize: (i) fragmentation of relatively intact natural areas and (ii) overlap with lands that may be important for landscape-scale ecological connectivity; and are any proposed mitigation measures sufficient to address potential impacts?

With respect to Question 1, no existing or candidate protected areas occur within or in the vicinity of the proposed project. A ~1,100 ha block of Crown land that overlaps with a portion of the eastern end of the proposed project contains multiple protection values and could potentially be of interest for protection to help meet government's 2021 legislated commitment to protect 20% of Nova Scotia's land and water by 2030; however, a review of the relative significance of this Crown land for potential protection and selection of candidate protected area sites across the province has not yet been undertaken.

With respect to Question 2, the registration document does not address how the project may affect landscape-scale ecological connectivity or how it may cause fragmentation of relatively intact natural areas, nor how such impacts on biodiversity values could be mitigated. This is a significant information gap. The spatial extent of this project suggests it may have significant and lasting impacts on regional ecological connectivity and fragmentation of natural areas. Factors can include project location, design of turbine locations, cumulative effects with past land use, and extent and spatial arrangement of roads and power lines, for example.

To address the above it is recommended that the proponent provide analysis of potential landscape-scale ecological connectivity and fragmentation impacts on biodiversity values and identify any associated mitigation measures.

Environmental Health Program (EHP)
Regulatory Operations and Enforcement Branch (ROEB)
Atlantic Region
1505 Barrington Street, Suite 1625
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March 24, 2022

Lynn Bowen
Policy, Planning and Environmental Assessment
Nova Scotia Environment
1903 Barrington St. Suite 2085
Halifax, NS, B3J 2P8

Sent by e-mail to: Lynn.Bowen@novascotia.ca

Subject: Health Canada's Comments of the Benjamins Mill Wind Project Environmental Assessment Registration Document¹

Dear Lynn Bowen:

Thank you for your e-mail on January 11, 2022 requesting Health Canada's review of the above-mentioned Environmental Assessment (EA) Registration document¹ with respect to issues of relevance to human health. Health Canada only reviewed **Appendix C: Sound Level Impact Assessment Study**². As Health Canada only reviewed Appendix C some of the comments may have been addressed in other sections of the EA.

Health Canada's role in Impact/Environmental Assessment is founded in statutory obligations under the *Impact Assessment Act*, and Health Canada's knowledge and expertise can be provided upon request to Federal Departments, Agencies and other federal stakeholders (e.g., Impact Assessment Agency of Canada, review panels, and/or Indigenous groups that are under federal jurisdiction). Upon request, Health Canada can also support provincial authorities on EA. How the expertise provided by Health Canada will be used in the EA process will ultimately be determined by the reviewing body(ies). Please note that Health Canada does not approve or issue licenses, permits, or authorizations in relation to the EA.

¹ Natural Forces Development LP, Environmental Assessment Registration for the Benjamins Mill Wind Project. 2022. January.

² Natural Forces Development LP, Appendix C: Sound Level Impact Assessment Study for the Benjamins Mill Wind Project. 2021. December Environmental Assessment Registration for the Benjamins Mill Wind Project. 2022. January.

Health Canada's comments are included in the attached table for your consideration. For more information on Health Canada's guidance relating to the assessment of health risks associated with noise in EAs 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>

Should you have any comments or questions regarding Health Canada's comments, please contact the undersigned.

Sincerely,

ENVIRONMENTAL OFFICER
Health Canada, Atlantic Region

Attached: Table 1: Health Canada's Comments on Appendix C of the **Benjamins Mill Wind Project** EA

Table 1: Benjamins Wind Project – Health Canada’s Comments on Appendix C of the Environmental Assessment (EA)

Comment number	Section	Reference from the Sound Level Assessment Study (Appendix C)	Health Canada Comments
HC-01	Section 1.0 – Introduction (p. 2)	<p>The document states that <i>“While several turbine models are being considered, this assessment has been completed using the Enercon E-160 EP5 E2 turbine. This model has a nameplate capacity of 5.5 MW and a hub height of 120 m.”</i></p> <p>and</p> <p><i>“The operational sound assessment was conducted using the ISO 9613-2: Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation model within the Decibel module of the software package, windPRO version 3.5. The Guide to Preparing an EA Registration Document for Wind Power Projects was consulted during this assessment.”</i></p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>The 28 proposed turbines are each intended to be 5.5 megawatt (MW). It is unclear if the existing modelling software (e.g. windPRO 3.5.552) is appropriate for wind turbines of this capacity. Previous projects reviewed by Health Canada that have used this software have been based on wind turbines with a maximum power output up to approximately 3.5 MW.</p> <p>Rationale be included to support whether this software is appropriate to adequately model wind turbines of this size.</p>



HC-02	Section 2.0 – Construction sound assessment Table 3 (p. 4)	<i>TABLE 3: worst-case sound levels in the surrounding environment calculated using WSDoT (Washington state department of transportation, 2017) guidelines and assuming sound levels in soft environment attenuates at - 7.5 dB[A] per doubling of distance.</i>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>The document indicates that the proponent has assumed that sound levels in soft environments attenuate at a rate of 7.5 A-weighted decibels (dBA) per doubling of distance.</p> <p>In general and under ideal conditions, for point sources, sound levels drop approximately 6 decibels (dB) for every doubling of distance from the source. For line sources, sound levels drop by approximately 3 dB per doubling of distance (because sound will create a cylindrical spreading). It is unclear why 7.5 dBA was selected to represent sound reduction from operational turbines, particularly given that they are in close proximity and may act more as a line source than a point source.</p> <p>Rationale be provided to support the attenuation rates used in Table 3 (7.5 dBA per doubling of distance). In addition, with respect to low frequency noise (LFN), sound level reduction is even lower over distance (see comment HC-06 for additional information on sound propagation with respect to LFN).</p>
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<p>HC-03</p>	<p>Section 2.0 – Construction sound assessment (p. 5)</p> <p>Section 5.0 – Conclusion and Mitigation (p. 7)</p>	<p>The document states that “<i>Many sound level scales refer to 70 dB[A] as an arbitrary base of comparison where levels above 70 dB[A] can be considered annoying to some people (Purdue University). As indicated in Table 3, at 61 m from the construction site, noise levels are approximately 70 dB[A], similar to that of a car travelling at 100 km/h and just at the threshold of possible annoyance (Purdue University, 2000). Also indicated in Table 3, sound levels from the construction site reach ~40 dB[A] at 1 km from the site. With the nearest dwelling located ~1.5 km from a proposed turbine, construction noise is not expected to impact dwellings in the area. Further, the construction noise is not expected to be annoyingly high beyond 61 m from the construction site as sound levels at this distance have already attenuated to approximately 70 dB[A].</i>”</p> <p>and</p> <p>The document states that “<i>While heightened sound levels during construction activities are unavoidable, the sound level assessment for the construction period shows that sounds levels at nearby residences are not expected to be significant. Various mitigation measures will be put in place during construction to limit the heightened sound levels.</i>”</p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>Health Canada (2017)¹ provides guidance related to short-term construction noise (< 1 year) and calculations for deriving long-term high annoyance from long-term construction noise (>1 year) which is based on ISO:1996-1 (2016)² and ANSI (2005)³).</p> <p>In quiet rural areas, Health Canada suggests that during construction, the long-term average day-night sound level (Ldn) be below 57 adjusted dBA at residences. An Ldn of 57 dBA is expected to be the threshold for widespread complaints for construction noise (United States Environmental Protection Agency or US EPA, 1974)⁴. If noise levels at residences are expected to exceed the acceptable level, it is suggested that the report include a discussion about proposed mitigation measures. See Appendix H of Health Canada (2017)¹ for suggested construction noise mitigation measures.</p> <p>If an Ldn of 57 dBA at receptors cannot be obtained with the use of quieter technology, Health Canada suggests that community consultation be undertaken to determine work schedules and to inform the public of the times and durations of noisy activities (including blasting if applicable). In general, Health Canada suggests that impulsive sources (e.g. hammering, pile driving) be avoided at night and in the early morning. Further, Health Canada suggests that noise management and noise monitoring plans, including complaint resolution, as appropriate, be included as part of an Environmental Management Plan.</p>
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¹ 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>

² ISO. 2016. ISO 1996-1:2016 Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures. www.iso.org/iso/catalogue_detail?csnumber=59765

<p>HC-04</p>	<p>Section 2.0 – Construction sound assessment (p. 5)</p>	<p>The document states that “<i>Wind generally increases ambient sound levels in an area and in combination with the vegetative cover will aid in making construction noise less noticeable at even shorter distances (Washington State Department of Transportation, 2017)</i>”.</p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>Health Canada notes that vegetative shields such as trees, hedges and vines generally do not absorb significant amounts of sound (ISO 9613-2:1996)⁵. As noted in Section 3.1, no attenuation was considered from topographical shielding for objects (such as barns, trees, buildings, etc.) located between the turbines and receptors. Health Canada suggests to consider addressing this contradiction and consider removing the statement that vegetative cover will aid in making construction noise less noticeable.</p> <p>In addition, according to Section 6.2.1 of Health Canada (2017)¹, any baseline measurements should not contain non-anthropogenic sounds. Not removing these sources may result in an overestimation of baseline sound pressure levels and impact baseline and future changes in percent highly annoyed (%HA) calculations. Health Canada suggests to consider ensuring any baseline noise measurements do not include any non-anthropogenic sounds.</p>
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³ ANSI. 2005. Quantities and Procedures for Description and Measurement of Environmental Sound Part 4: Noise Assessment and Prediction of Long-Term Community Response (ANSI S12.9-2005/Part 4) Standards Secretariat Acoustical Society of America.

⁴ United States Environmental Protection Agency (US EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Report No. 550/9-74-004).

⁵ International Organization for Standardization (ISO). 1996. ISO 9613-2:1996. Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation. Available at: <https://www.iso.org/standard/20649.html>

<p>HC-05</p>	<p>Section 3.1 - Worst Case Sound Assessment (p. 5)</p>	<p>The document states that <i>“The worst-case sound assessment followed a conservative methodology in calculating sound levels by assuming downwind propagation is occurring simultaneously in all directions of the wind turbines. Sound propagation in an upwind direction would result in a significant reduction of sound levels at any receptor located upwind from the turbine. This means that the resulting sound levels from the assessment are likely calculated as higher than they would be experienced.”</i></p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>This statement would imply that all of the receptors are located upwind, which is unlikely the case and therefore may be subject to downwind conditions, which has been modelled. Health Canada suggests that the conclusion that the assessment is overly conservative with respect to calculating sound levels by assuming downwind propagation be re-evaluated, particularly for any downwind receptors, as not all receptors will be upwind from the turbines.</p>
<p>HC-06</p>	<p>Section 3.1 – Worst Case Sound Assessment</p>	<p>The document states that <i>“No correction for special audible characteristics, such as clearly audible tones, impulses, or modulation of sound levels, was made as part of this assessment. These are not common characteristics of modern WTGs in a well-designed wind farm. It is common that WTG manufacturers guarantee the absence of tonal sound produced by the WTG. Furthermore, impulses and modulation of sound levels from the wind farm under normal conditions would not be of a level to necessitate the application of any penalty.”</i></p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>Wind turbines create modulation noise due to the fact that they rotate, and given the size of these proposed turbines (5.5 MW each), the expectation is that they will rotate slower than smaller wind turbines, hence modulation sounds could be more prevalent and annoying to nearby residents. Health Canada suggests to consider evaluating these sounds in any noise assessment with respect to this project.</p>

<p>HC-07</p>	<p>Section 4.1 – Low Frequency Sound (p. 7)</p>	<p>The document states that <i>“Infrasound describes sounds with a frequency less than 20 Hz and can occur when large masses are in motion. The movement of wind turbine blades has generated infrasound in the local environment in some cases. An additional assessment was completed through the Finland Low Frequency module of windPRO v3.5. This assessment showed a minimum frequency of 80 Hz observed at all receptors, 60 Hz higher than the threshold for infrasound.”</i></p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>Modern industrial scale wind turbines produce LFN and this is an important component of the total noise levels experienced by receptors near large wind turbines. In addition to evaluating infrasound, Health Canada suggests to consider completing an assessment of LFN (typically between 20-100 Hz).</p> <p>According to Moller and Pederson (2011)⁶, who evaluated LFN from large wind turbines, <i>“the relative amount of low-frequency noise is higher for large turbines (2.3-3.6 MW) than for smaller turbines, and the result is statistically significant for the one-third-octave bands in the frequency range 63-250 Hz...it is thus beyond any doubt that the low-frequency part of the spectrum plays an important role in the noise at the neighbors”</i>.</p> <p>LFN is not generally well perceived by the human ear. However, it may induce vibrations in lightweight structures in residences or sleeping quarters that may be perceptible or cause a “rattle.” The properties of LFN allow it to travel farther distances with less atmospheric attenuation than higher frequencies. Shepherd and Hubbard (1991)⁷ indicate that low frequencies (below 100 Hz) are only attenuated by 3 dB per doubling of distance downwind of turbines for distances of 0.3 to 20 km, and attenuated by 6 dB per doubling of distance upwind of turbines from 0.4 to 3 km.</p> <p>LFN is also less susceptible to conditions that mitigate the transfer of noise from outdoors to indoors including structural barriers, environmental conditions, and topography. Research indicates that annoyance related to noise is greater when LFN is present (ISO 1996-1:2003)⁸ and one of the main reasons is the annoyance caused by rattles (Schomer and Neathammer, 1987⁹; Schomer and Averbuch, 1989¹⁰). In addition, very little change in the sound pressure level at lower frequencies is needed to</p>
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			<p>have a disproportionate increase in subjective loudness. This annoyance may result in increased complaints from nearby residents.</p> <p>The American National Standards Institutes (ANSI S12.9-2005)³ indicates that there is evidence that noise-induced rattles are very annoying, and this annoyance may be independent of the number or duration of events. To prevent rattles from LFN and the associated annoyance from this effect, the ANSI indicates that the (energy) sum of the sound levels in the 16-, 31.5- and 63-Hz octave bands be less than 70 dB. Additionally, ANSI³ provides a more sophisticated mathematical procedure for assessing % HA when LFN is present. Health Canada recommends using the ANSI procedure when the C-weighted Ldn exceeds the A-weighted Ldn by more than 10 dB. The procedure is further outlined in Appendix D of ANSI S12.9-2005³.</p> <p>Based on current research, large wind turbines produce LFN, modeling may underestimate LFN levels during turbine operation, and annoyance is greater when LFN is present. If the sum of sound levels in the 16-, 31.57- and 63 Hz octave bands exceeds 70 dB, Health Canada recommends that additional mitigation be implemented in order to protect nearby residents from LFN. If the C-weighted Ldn exceeds the A-weighted Ldn by more than 10 dB, the percentage highly annoyed can be calculated using ANSI S12.9-2005³.</p>
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⁶ Moller, H. and C. S. Pederson. 2011. Low-frequency noise from large wind turbines. J. Acoust. Soc. Am. 129(6), June 2011.

⁷ Shepherd, K.P., Hubbard, H.H. 1991. Physical characteristics and perception of low frequency noise from wind turbines, Noise Control Engineering Journal 36(1), pp 5-15.

⁸ International Standards Organization (ISO). 2003. Acoustics - Description, measurement and assessment of environmental noise - Part 1: Basic quantities and assessment procedures. ISO 1996-1:2003.

⁹ Schomer, P.D. & Neathammer, R. D. (1987). The Role of Helicopter Noise-Induced Vibration and Rattle in Human Response. Journal of the Acoustical Society of America. 81(4), 966-976.

¹⁰ Schomer, P. D. and Averbuch, A. 1989. Indoor Human Response to Blast Sounds that Generate Noise. Journal of the Acoustical Society of America. 86(2), 665-671.



HC-08	Section 5.0 – Conclusion and Mitigation (p. 7)	<p>The document states that <i>“The operational sound level modelling for the Project demonstrates that the sound levels expected to be experienced at receptors under worst case conditions adhere to the Nova Scotia guidance. Should excessive sound emissions from the Project be reported during operation at nearby receptors, screening mitigations will be explored for feasibility in the area. Such mitigation measures for heightened sound levels could include increasing vegetation between the receptor and emitting source, and any other appropriate technology available at the time of the required mitigation.”</i></p>	<p>Health Canada recommends that the proponent address the following comment in a revised project document:</p> <p>The limited effectiveness of vegetation as a noise mitigation measure has been noted above (see HC-04). In addition, there are no specific mitigation measures described for the operation phase. Health Canada suggests to consider ensuring that the “appropriate technology” referred to in Section 5 of the Appendix C be defined and elucidated.</p> <p>Additionally, Health Canada suggests to consider implementing a formalized complaint-response protocol (i.e. a formalized means of receiving and responding to complaints in a timely fashion) with additional monitoring and mitigation measures defined, particularly in the event of public complaints.</p>
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Our Rights. Our Future.

February 15th, 2022

Candace Quinn
Environmental Assessment Officer
Nova Scotia Environment and Climate Change
P.O. Box 442
Halifax, N.S., B3J 2P8
Email: Candace.Quinn@novascotia.ca

RE: Environmental Assessment Registration Document – Benjamins Mill Wind Project, West Hants Regional Municipality of Hants County, Nova Scotia - Offer to Consult with the Assembly of Nova Scotia Mi'kmaw Chiefs.

I write in response to your letter dated January 18, 2022, 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.

Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) supports Nova Scotia's intentions to generate clean, renewable energy, and reduce Nova Scotia's reliance on imported energy sources through the development of renewable energy generation and supports the province's objectives of achieving a 53% reduction in greenhouse gas (GHG) emissions by 2030 and becoming net-zero by 2050. It is KMKNO's understanding that Natural Forces intends to bid into upcoming renewable energy procurement program, the Nova Scotia Rate Based Procurement Program, in partnership with Wskijnu'k Mtmu'taquinow Agency Ltd (WMA). Our office recommends that The Department of Natural Resources and Renewables (NRR) considers this project as one of the successful candidates for this program.

The Mi'kmaq Nation of Nova Scotia have a general interest in all lands and resources in Nova Scotia as the Mi'kmaq Nation has never surrendered, ceded, or sold the Aboriginal title to any of its lands in Nova Scotia. The Mi'kmaq have a title claim to all of Nova Scotia and as co-owners of the land and its resources.

KMKNO's Archaeological Research Department (ARD) has reviewed the "BENJAMINS MILL WIND PROJECT ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT (ARIA) ARCHAEOLOGICAL SCREENING 2021 BENJAMINS MILL, NOVA SCOTIA (Heritage Research Permit Number: A2021NS150)". This ARIA was conducted to "investigate the potential for encountering archaeological resources during any development of the property" pertaining to a proposed wind energy project south of Benjamin's Mills in Hants County (CRM Group, HRP: A2021NS150, 2021: i). The ARIA was designed to "to identify, document, interpret, and develop an archaeological potential model of potential cultural resources within the

potential impact area prior to infrastructure planning and the ground-truthing phase (Archaeological Reconnaissance)” and it did not involve sub-surface testing.

The above ARIA offers the results of an Archaeological Screening phase. KMK’s ARD supports the recommendation by CRM Group that “areas of high and moderate archaeological potential be avoided when designing the proposed Benjamin Mill Wind Energy Project” (CRM Group, HRP: A2021NS150, 2021: i). We would like to emphasize that this is an extensive project with a footprint that accounts for approximately 103 hectares (ha) that will require upgrades to existing roads, the creation of new access roads, the development of turbine foundations, crane pads, the development of a substation, collector lines, a proposed transmission line, and a cleared right of way. The project does exhibit complex impacts within a landscape that has a substantial record of Mi’kmaw archaeological heritage. In addition, we would like to encourage expansion of high potential areas to include elevated signalling and surveillance sites that maximizes topographic vistas.

It is strongly recommended all proposed disturbances or impact areas within the Benjamin Mill Wind Energy Project study area be subjected to subsurface testing during the Archaeological Reconnaissance phase of the ARIA and be monitored during activities by a qualified professional archaeologist. 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.

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.

The Environmental Assessment states that appropriate land agreements will be obtained by Natural Forces with the province for infrastructure located on crown land. We acknowledge that an application for these land agreements will be coming soon. We expect that Consultation will occur on the applications and our office will respond to future crown land concerns at that time.

Our office is encouraged to see that Natural Forces has reached out to Membertou Geomatics to scope a Mi’kmaq Ecological Knowledge Study (MEKS) at the Project site. We strongly recommend that an MEKS be completed for Benjamin Mills and future sites in accordance with the Mi’kmaq Ecological Knowledge Protocol.

It is our understanding that Natural Forces has been in contact with The Mi’kmaw Conservation Group for discussions on moose monitoring opportunities for Benjamin Mills and future wind project sites. We strongly encourage this partnership to allow for a Two-Eyed Seeing Approach and to incorporate traditional knowledge into any future monitoring efforts.

The Mi’kmaq are also concerned on how these wind turbine generators will impact the migratory routes and habitats of birds, bats and other species that may reside in the area. Our office should

be informed of future studies and surveys that address these concerns. The Mi'kmaw Conservation Group should participate in any of these surveys where possible to ensure a Two-Eyed Seeing Approach.

Our office is encouraged to see baseline data and surveys collected in Appendix K for Fish and Habitat. Special consideration should be given to Atlantic Salmon, American Eel, and other species significant to The Mi'kmaq should any be found during the project lifespan.

Please continue to keep our office informed and consult on future permits and approvals for this project including the wetland alteration approvals and watercourse alteration approvals or Fisheries Act Authorization that will be required. Please contact Patrick Butler, Mi'kmaw Energy and Mines Advisor at KMKNO for any further questions.

Yours in Recognition of Mi'kmaw Rights and Title,

Director of Consultation
Kwilmu'kw Maw-Klusuaqn Negotiation Office

c.c.:

Kwilmu'kw Maw-klusuaqn Negotiation Office
Nova Scotia Department of Natural Resources and Renewables
Nova Scotia Department of Natural Resources and Renewables
Nova Scotia Office of L'nu Affairs



Native Council of Nova Scotia

The Self-Governing Authority for Mi'kmaq/Aboriginal Peoples residing Off-Reserve in Nova Scotia throughout traditional Mi'kmaq Territory

"Going Forward to a Better Future"

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Aboriginal/Treaty Rights
Negotiations Facilitating
Directorate

NCNS Citizenship
Information Office

Education & Student
Services

Rural & Native
Housing Group

Aboriginal Peoples
Training & Employment
Commission (APTEC)

Netukulimkew'e'l
Commission

Wenjikwom Housing
Commission

Social Assistance
Recipient Support for
Employment & Training
(SARSET)

Micmac Language
Program

Native Social
Counselling Agency

Child Help Initiative
Program (CHIP)

E'pit Nuji Ilmuet
Program (Prenatal)

Reaching Home
Indigenous Program

Parenting Journey
Program

Youth Outreach Program

Mi'Kma'ki Environments
Resource Developments
Secretariat (MERDS)

Aboriginal Connections
in Trades & Apprenticeship
(ACITA)

February 16, 2022

Environmental Assessment Branch
P.O. Box 442
Halifax, Nova Scotia
B3J 2P8

RE: Benjamins Mill Wind Project

To Whom it Concerns,

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 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.

Proponent Engagement and the *Proponents' Guide: The Role of Proponents in Crown Consultation with the Mi'kmaq of Nova Scotia*

On review of *Benjamins Mill Wind Project Environmental Assessment Registration* document, it is of note that the NCNS has been excluded from all lists of Mi'kmaq communities engaged with in regards to the project. Within section 3.3 "Communities Engaged", the Office of L'nu Affairs "clarified that the *Proponents' Guide* would need to be followed and provided a list of Mi'kmaq bands with which engagement is required." The direct exclusion of the NCNS in this list contradicts the guidelines within the Nova Scotia Office of L'nu Affairs' *Proponent's Guide: The Role of*

Proponents in Crown Consultation with the Mi'kmaq of Nova Scotia. Within the *Proponents Guide*, it is clearly stated “Step 1 – Notify Mi'kmaq Early in the Development Process... to contact the Native Council of Nova Scotia (NCNS)”.¹ By excluding the NCNS from the list of Mi'kmaq groups that may also be affected by the project, the Province and Natural Forces is excluding the Off-Reserve community of Mi'kmaq people that have their elected representative body, the NCNS.

Regarding Natural Forces community engagement, we found it difficult to engage with the proponent, and were largely met with little to no response after we had taken the initiative. Multiple emails were dispatched to Natural Forces from the Maritime Aboriginal Peoples Council (MAPC), on behalf of the NCNS, in an attempt to engage, comment, and advocate for the Off-Reserve community NCNS represents. Emails were sent on January 26th, 27th, and 31st, 2022; additionally, phone calls were placed to the number listed within the EA on January 31st and February 1st, 2022. A response was finally received from Natural Forces end of day February 1st, inviting us to participate in the upcoming open house. The difficulties MAPC endured engaging with Natural Forces is an overt shortcoming in the proponent's responsibility to engage with local communities, and is contradictory to Natural Forces' philosophy stated on the projects home page; “We believe in building true equity partnerships with local community groups, such as First Nations, universities, municipalities, and local community funds for all our renewable energy projects”.² While the open house was insightful, our participation does not excuse the lack of engagement and difficulty MAPC experienced attempting to engage with Natural Forces. Engagement with MAPC brings with it engagement with the Off-Reserve community that has chosen to be represented by the NCNS, and that will indeed be affected by this project.

Consultation with the Mi'kmaq of Nova Scotia

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 Indians, and Lands reserved for the Indians”, and that the “word ‘Indians’ in s. 91(24) includes the Métis and non-Status Indians”.³ Since 2004, in multiple decisions passed by the Supreme Court of Canada: *Haida Nation*⁴, *Taku River Tlingit First Nation*⁵, and *Mikisew Cree First Nation*⁶, has established that,

Where accommodation is required in making decisions 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.⁴

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 Federal 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,

¹ Proponent's Guide: The Role of Proponents in Crown Consultation with the Mi'kmaq of Nova Scotia, 2012.

² Natural Forces, “Delivering Renewable Energy for Communities”, <https://libraryguides.vu.edu.au/oxford-referencing/internet-websites>, (accessed 7 February 2022).

³ *Daniels v. Canada (Indian Affairs and Northern Development)*, 2016 SCC 12, [2016] 1 S.C.R. 99

⁴ *Haida Nation v. British Columbia (Minister of Forests)*, (2004), 3 S.C.R. 511.

⁵ *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)*, (2004), 3 S.C.R. 550.

⁶ *Mikisew Cree First Nations v. Canada (Minister of Canadian Heritage)*, (2005), 3 S.C.R. 388.

represented by the Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO), the KMKNO does not represent the Off-Reserve Aboriginal Community who has elected to be represented by the NCNS, since 1974.

We assert 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 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.

Going Forward To
A Better Future

Habitat and Impact Assessment Manager
Maritime Aboriginal Aquatic Resources Secretariate

Cc: Chief and President, NCNS
Commissioner, Netukulimkewe'l Commission
Director of Intergovernmental Affairs, MAPC

From: @gmail.com>
Sent: January 20, 2022 6:35 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Comments on Benjamins Mill Wind Project

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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

I would like to voice my support for this project. The Benjamins Mill Wind Project stands to offer a substantial benefit the local community and Nova Scotia as a whole in providing clean and renewable energy.

I myself have purchased a hybrid and electric car to try and reduce my personal carbon emissions, and I'm extremely excited to see more wind power projects popping up in the community. I think substantial importance should be placed on the substantial amount of low carbon energy this would add to the Nova Scotia Electric Grid.

This project alone in it's full scope would add enough capacity to the grid to match that of the Point Tupper Generating Station which currently burns imported coal as it's power source.

I'm familiar with the area where these turbines will be installed. I think it is a great location and any possible environmental impact has already been carried out through the clearcutting efforts of the forestry industry.

So once again I'd like to reiterate my overwhelming support for the project, please approve this project.

Thank you,

Resident, West Hant's Municipality

Quinn, Candace M

From: Environment Assessment Web Account
Sent: January 25, 2022 9:12 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

From: @gmail.com>
Sent: January 21, 2022 11:19 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Project: benjamins-mill-wind-project Comments: Hello, As a resident of the Falls Lake area immediately adjacent to the proposed Benjamin Mills Wind Farm project, I should warn all individuals residing within an 6Km radius about the potential health hazards of wind turbines. In several well documented studies across the world, it has been determined that a portion of the population living nearby wind farms will suffer from adverse health effects. Those most affected are people with existing health issues which include sensitivity to light, low frequency noise, sleep disorders, motion sickness, conditions of the nervous system, and developmental disorders. Adverse health effects from proximity to wind turbines are also more pronounced in otherwise healthy older adults. Studies made by the province regarding wind turbines are outdated 2012 and do not include most recent findings. These are some of the studies that the wind farm company is using as one of their guides to base the proximity of proposed turbine installations. There is no way to know what kind of adverse effects in health, lifestyle and property values will occur, should the turbines be installed within the current minimum distance of 1Km from residential dwellings. I hereby request that the Minister of Environment and Climate Change takes these issues into consideration, and that the minimum distance from wind turbine installation to the nearest home is revised from the current 1Km to a minimum of 6.5Km. Your immediate attention to this matter is greatly appreciated. Thank you. Name: Email: [@gmail.com](#) Address: Municipality: Vaughan email_message: Privacy-Statement: agree x: 52 y: 26

Quinn, Candace M

From: Environment Assessment Web Account
Sent: January 25, 2022 3:11 PM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

From: @gmail.com>
Sent: January 24, 2022 11:43 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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

Project: benjamins-mill-wind-project Comments: Hello, I am concerned about the proximity to houses for this project and would like to see the turbines placed a minimum of 5km away from a home. Industrial wind turbines have been known to contribute to a host of health issues in people, as well as negatively affecting property values, and affecting natural animal habitats. I sincerely hope the project developers take this into consideration and move the turbines further from homes. Name: Email: [@gmail.com](#) Address: Municipality:
Vaughan email_message: Privacy-Statement: agree x: 56 y: 24

Quinn, Candace M

From: @gmail.com>
Sent: January 26, 2022 3:47 AM
To: Wind Information; Environment Assessment Web Account
Subject: Wind turbine projects - feedback from living near them

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Hello,

Thank you for the opportunity to give feedback on the various projects proposed.

I want to talk about our experience leading up to and living with the turbines that went up near us, and the impact it's had.

We live in Old Barns, and we are 1 to 1.5km away from the Millbrook project.

Around 2009/201 we purchased 45 acres, among hundreds of acres, very rural, and it was very quiet - peaceful.

Around 2013 we heard about the turbine project. We read the proponent provided information and the environmental assessment. The EA said we would have no visuals, no shadow flicker, and low sound (approximately 35dB). Based on this, and our ignorance, we saw no reason to object.

The turbines went active in 2014 and it was evident that the EA and information was wrong, and that the impact on us was going to be significant.

Depending on the time of year we can see between one and five (out of five) turbines (picture attached). Depending on the time of year we have headache inducing shadow flicker that can last 20 to 25 minutes or so.

Shadow flicker videos:

<https://>

<https://>

The noise is the worst of it. There are two main noises. One is hydraulic hum when the turbine changes pitch or direction to better catch the wind. This sounds a little like a fog horn and can be a short one second burst or a longer burst, one measured at 12 seconds. It can be quiet and barely noticeable, or loud enough to be heard inside the house. For example, on January 25th there was a constant barrage loud enough that it disrupted my wife's, ability to concentrate on her job

The other is the blade noise. It can be a quiet and infrequent woosh, or a constant rumbling that sounds like an airplane that never shows up and is loud enough to be heard inside and occasionally disturb sleep. We've had entire weekends like this.

In both cases the direction and duration can be random. For example it may come from turbine 1, and then 5, and then 2, and then 1, and then 4... it makes it impossible for us to get used to.

Sound recordings. Contains coarse language. I try to censor myself but frustration gets me sometimes:

<https://>

We no longer enjoy being out in the yard most days due to the noise. We don't sit out on the deck. The house itself isn't even a refuge. The turbines have ruined our enjoyment of house and property, and impacted our health through sleep disturbance and added stress.

Our neighbour who is approximately 1.4 to 2km away from the turbines has told me he occasionally hears them inside his house.

Ownership will not do anything about it, I have two lawyer letters for my efforts. Various levels of politicians have tried to bring them to the table with no luck. In seven years of asking various government officials no one has been able to tell me the consequences or penalty for the incorrect assessment, because I don't believe there is one. There also appears to be no protection for people like us that have been impacted and made to bear the results through no fault of our own - other than trusting the system that is in place.

There is no relief for us. I've lost hope that someone, at sometime, will do the right thing, and correct this - that we will see relief without taking a financial hit. When we dream of moving and look at land our house listings we look to see where transmission lines are and dismiss any listing within 5km of those lines.. or if there are significant hills where turbines may go. This experience that's been forced on us has changed us.

No one else should have to go through this.

Current projects proposed:

Based on our experiences the proposed projects across the province scare me and make me extremely worried for the residences around them.

The turbines near us are 80m at the hub and only five of them. The turbines in the proposed projects across the province are larger in size, I've heard from 100 to 130m at the hub, and more numerous - I hear numbers like 15 and 18 turbines tossed around. Yet the setbacks we use are still generally 1km, the protections for people and property are still lacking, the accountability for incorrect assessments and relief for people impacted are still apparently non-existent. We are still operating on old guidelines and a system that completely failed us. I don't see how people won't be impacted in non-trivial ways.

I have had a conversation with Candace Quinn from EA and passed along my feedback for better protections. I hope those have been read and strongly considered. I can resend them to the wind.info address if required.

In short: There is not enough education in place for the public, proponents shouldn't be trusted to do this. These projects tend to already be in motion before the public knows - all of a sudden people hear about or are approached for land leases, hastily called public consultations that downplay the impacts and highlights the dubious benefits. This immediately breeds mistrust. The public, the people potentially impacted, should be the first to know, not when they feel like the boulder is already rolling towards them. There are not enough protections for people and property - we are living that evidence every day. It's industrializing the rural areas, where people traditionally move for quiet, to the benefit or ownership that, more often than not, will never have to deal with the results - only reap the benefits.

I understand the need to get away from fossil fuels but I think we've set a date that's far too close, a number that's too lofty to reach, and there's not enough guardrails to protect people. We're hurtling towards a goal and without enough consideration to how we're getting there or the resulting collateral damage.

I've been told that feedback is only being accepted to these email addresses for two weeks. And in general I think public feedback is only open for a month on projects once the EA is done. That is simply not enough time for people to learn

about, try to get educated on, and provide feedback on something that they will potentially have to deal with for 25 plus years.

On the practicality of industrial wind turbines:

I look at places like Ontario, California, Germany, and the UK and see what they're now struggling with after going heavily into renewables, particularly industrial wind turbines. Grid stability is an issue in all but Ontario where nuclear and hydro do the heavy lifting - a benefit we do not have. In all cases energy prices have risen significantly - we already deal with energy poverty here and I think this will only make it worse.

I don't feel, from what I've learned, that wind turbines make any sense for industrial power generation where stability is required. Batteries? Pumped storage? Why not just do something that makes sense to start with.

I'd encourage people to keep a close eye on Ontario's generation by source - sure wish we had a page like this in Nova Scotia: <https://www.ieso.ca/power-data?fbclid=IwAR19H0Kt2Cbkm4rbEfsizoW3wa3afAC2emj7gpCAk4XpjxyecF2Ke8JGn7s>

I believe a better approach would be to have solar on every house and business to offset use at the source. This would require less infrastructure upgrades and lead to a better distributed system. It would be easier to balance than the unpredictability of wind. The ecological impact would be far less than clearcutting, putting in roads, and cement bases for wind turbines. It would also have a significantly less chance of negative impact on wildlife, people, and property.

I also feel small scale nuclear is the better way to spend our money. It provides safe, stable energy with a much smaller footprint than industrial wind turbines. It's something New Brunswick backed when the chance arose, but we missed the boat. This won't be a popular view I assume, but it's a far superior choice in the long term.

Again, thank you for your time and I apologize for the length of my email.

Please feel free to contact me any time,

Old Barns

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 7, 2022 8:51 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

Follow Up Flag: Follow up
Flag Status: Flagged

From: @accesswave.ca
Sent: February 1, 2022 12:05 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Project: benjamins-mill-wind-project Comments: In my capacity as Mineral Deposit Geologist for the provincial government from 1976-2013 I have frequently dealt with the presence of uranium deposits in the province and, in particular, those within the granites of the South Mountain Batholith. I have read this EA document and am struck with the fact that the proponents were completely ignorant to the fact that this region of the South Mountain Batholith is the most uranium mineralized area in the province. In fact, immediately south of the proposed wind farm is found the sub-economic size Millet Brook Uranium Deposit. I realize the proponent did recognize this during their public review initiatives but the fact this wasn't previously picked up by the proponent experts is disturbing. The few comments presented by the proponent about the potential presence of uranium mineralization suggest to me they are only considering the potential impact of encountered uranium occurrences on groundwater. Although this may be a concern, albeit a minor one, in my opinion, the greater concern would be the inadvertent disturbance of uranium mineralized zones during road building and extraction of locally sourced aggregate for roads and construction of windmill pads. These uranium deposits occur along fault and fracture zones as highly hematized, altered granite. Easily quarried and very friable this material is attractive for road building and can often contain uranium in excess of 0.2 uranium, and less frequently quite a bit higher. My suggestion is that the proponent carry out a gamma-ray scintillometer scan of all aggregate pits and all aggregate removed and used in their road building and windmill pads during construction. Any material measuring greater than 2-3 times background gamma radiation with the scintillometer should not be used. This should be sufficient. Name: Email: @accesswave.ca
Address: Municipality: Dartmouth email_message: Privacy-Statement: agree x: 65 y: 27

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 7, 2022 8:51 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

Follow Up Flag: Follow up
Flag Status: Flagged

From: @gmail.com>
Sent: February 1, 2022 1:39 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Project: benjamins-mill-wind-project Comments: Comments on Benjamins Mill Wind Project I am directing these comments to the avian component of the environmental assessment of the wind project. For eleven years 2008-2018, I conducted numerous pre-construction and post-construction avian risk assessments at Nova Scotia wind energy facilities. Except for most mortality studies, all of my work is available on my website

. In particular, I wish to draw attention to three reports on my acoustic monitoring at the South Canoe Wind Farm from 2015 to 2017. The location of my monitoring station there was 2.6 kilometres from the southern boundary of the Benjamins Mill project site. These studies raise some supplementary questions for the avian assessments at Benjamins Mill. 1. A comparison of my acoustic studies with ten other wind energy sites in Nova Scotia indicates that South Canoe had the second highest rates of nocturnal passage at inland sites after Weaver Mountain in Pictou County. These findings are consistent with early radar studies showing that autumn migration occurs along a broad front in the province. 2. In 2015, the number of Canada Warblers detected at the South Canoe station totalled 112 calls for an estimated 94 individual birds. This number was the most Canada Warblers ever recorded at any monitoring sites since 2008. Only targeted monitoring for Canada Warblers in coastal Yarmouth County, where these birds appear to stage before crossing the Bay of Fundy, has since surpassed that number. The automated recording unit used at South Canoe was a Song Meter 2, produced by Wildlife Acoustics. Their night flight microphone had an altitudinal range comparable to an AudioMoth at approximately 100 to 150 meters. Since the Canada Warbler has a distinct night flight call, the scientists conducting the Benjamins Mill acoustic study should have been able to develop a detector for this species. My question is: How many Canada Warblers did they detect, especially during the peak Canada Warbler migration in August? The report only specifies "owarblers" as a group. 3. The South Canoe studies also found concentrations of Common Nighthawks in mid-August. In 2015, the recorder detected 426 Common Nighthawk calls representing an estimated 148 birds. I hypothesized that this region was a migration staging area for this species and that further studies were required. I do not know if the proponents carried out supplementary studies on Common Nighthawks during their migration. 4. In 2015, the recorder at South Canoe detected 1,166 calls of the Swainson's Thrush for an estimated 580 minimum number of individuals. This species was the second most common nocturnal migrant after the Common Yellowthroat a type of warbler. The acoustic studies at Benjamins Mill make no mention that I could find on the status of Swainson's Thrush. In addition, my recording equipment detected the vast majority of thrushes in the hour before the end of morning twilight civil dawn. This "othrush descent" is a good indicator of the presence of stopover by this species. It is also not uncommon for observers to miss this furtive species on stopover

transects, especially if they are conducted more than half an hour after sunrise. 5. Does a lower number of pre-dawn night flight calls indicate a scarcity of stopover in an area? In my experience, the number of pre-dawn flight calls is often much lower than the evening portion of nocturnal migration. One possibility is that ascending birds take a longer time to gain altitude beyond microphone range in the evening, and descent is faster to specific locations just before dawn. As the authors note, birds might also descend earlier in the morning. Since I first acoustically monitored "morning flight" at the Sable Wind farm in 2016, I am more convinced that the best indicator of the intensity of stopover is by acoustic monitoring at this time. Morning flight is the movement of nocturnal migrants in the hours immediately following sunrise. Ground observers conducting transects can miss this flight because the birds are giving largely unidentifiable by ear flight calls, are obscured by foliage, and may last only during the earliest portion of stopover transects. Observers can overcome this difficulty to some degree if they take a position above the tops of trees where they can see visible migration. However, they must be there at dawn, not mid to late morning as was the case in the Benjamins Mill study. 6. Based on my experience and the literature on this subject, I want to make some final comments on the mortality studies that will be part of the post-construction studies. In my opinion, the mortality studies that I have conducted in Nova Scotia and have seen others complete do not adequately assess mortality at a turbine site. The following measures are seriously lacking: - The clearing of a 100-metre radius circle around a wind turbine for a search area. -The use of trained dogs as searchers. The first measure is necessary to find most birds larger than a hummingbird or warbler since the turbine throws these heavier birds further than the usual 50-metre clearing. The second is needed since humans are poor carcass searchers in general. The fact that carcass searching tests often use specimens that are not representative of the kinds of birds that might be at the turbine's base exacerbates this problem. If one uses quail as test specimens, searchers look for quail and not warblers, sparrows, or thrushes. It is important to note that both the above-listed requirements are necessary since dogs are not successful in thick brush. Name: _____ Email: _____

_____@gmail.com Address: _____

Municipality: Beaver River email_message: Privacy-Statement: agree x: _____

58 y: 31

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 8, 2022 11:20 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

From: @me.com>
Sent: February 3, 2022 9:13 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Project: benjamins-mill-wind-project Comments: 1. The map with the turbines / homes complete with legend shows 1.4 Km distance from T27A turbine to closest home. If this turbine was not installed the distance between turbines and closest home is now 1.9 Km. Consideration to install this turbine. 2. Is this site going to be clear cut with no trees? How will this affect the wind patterns and how snow accumulates around the homes off falls lake? 3. With the red aviation lights mounted on the turbines...how will this affect the sky at night....will brightness affect star gazing? Homes on the East side of Falls lake will have direct line of site of these red lights at night. Will their sky line at night be affected? Name: Email: @me.com Address: Municipality: Vaughan
email_message: Privacy-Statement: agree x: 48 y: 25

Quinn, Candace M

From: @yahoo.ca
Sent: February 7, 2022 7:49 PM
To: Environment Assessment Web Account
Subject: Proposed Project Comments

** EXTERNAL EMAIL / COURRIEL EXTERNE ** 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: benjamins-mill-wind-project Comments: I Do Not approve off this project going into our back yard giving us the noise from the windmills, and taking away our natural environment, down grading our property values. This project should be never be allowed unless itâ?Ts approved by the people that itâ?Ts affecting and lâ?Tm one off many that this project is affecting, and the land that belongs to the Crown should not be touched and left untouched for the animals that lives in this area! Eagles, Deer, Bears, rabbits, minks, falcons, to name a few not mentioned in the survey from my understanding. This is nothing but Greed that should be shut down. Name: Email: 3@yahoo.ca
Address: Municipality: Vaughan email_message: Privacy-Statement: agree x: 57 y: 17

Note to file – Comments from

provided to EA Branch by phone on February 8, 2022

lives near the edge of the project area and is concerned that based on his research of similar projects, and in speaking with others who live near wind projects, as well as the proponent, there is no way to guarantee that this project will not cause adverse physical and mental health effects (from noise, vibration and infrasound) for the duration of the project (25 years). He suggests that the 4 or 5 turbines proposed closest to Pioneer drive be removed and the separation distance between the project and residents be increased to 5 km.

Also has heard other residents express concerns regarding the height of turbines, red aviation lighting and environmental concerns, specifically wildlife.

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 10, 2022 8:41 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

From: @gmail.com>
Sent: February 9, 2022 5:28 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Project: benjamins-mill-wind-project Comments: The impact to our community is not clear. I am very concern that the sound of turbines can be heard in our neighborhood being so closed. As well, Im afraid of the damaging effects that this project could create not only in human life but also to the fauna and general environment. Im totally opposed to the installation of Benjamin Mill project in the area where is currently planned. As homeowner this can affect the value of my cottagewhere I livepermanently and will make difficult to sell it when I decide to do so. I dont see possible benefits to me or my neighborhood. It is to close. Please, look for more suitable places and very far from communities where altering their lives can be very distressful. You need to consult with surrounding neighborhoods. Name:

Email: @gmail.com Address:

. Windsor, N.S. B0N2T0

Municipality: Windsor email_message: Privacy-Statement: agree x: 64 y: 16

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 10, 2022 8:41 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

From: @gmail.com>
Sent: February 9, 2022 1:48 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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

Project: benjamins-mill-wind-project Comments: This project will cause death to birds as it also destroys an area where deer, fox, rabbit, bear, groundhog etc. live. It will increase electromagnetic field around me as it is in my back yard. The noise and appearance of these wind mills will lower the value of my home, while it ruins the beautiful appearance and atmosphere. This project was put into place quietly without consulting home owners in the immediate area. Name:

Email: [@gmail.com](#) Address:

Municipality: Vaughan email_message:

Privacy-Statement: agree x: 61 y: 22

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 14, 2022 7:54 AM
To: Quinn, Candace M
Subject: FW: Benjamins Mill Wind Project

From: @hotmail.com>
Sent: February 13, 2022 8:06 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Benjamins Mill Wind Project

**** EXTERNAL EMAIL / COURRIEL EXTERNE ****

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Good morning,

Re: Benjamins Mill Wind Project -Environmental Impact Assessment

Unfortunately, I am unable to support the project at this time. Here are some of the questions and concerns that have been posed at information meetings, to which the answers are still unclear:

-Mapping of physical sight, sounds, (such as turbine noise), and navigation lighting based on actual proposed windmill locations considering actual terrain/elevation, trees and sound refraction off of nearby watercourses

-Unknown project size and scope. The RFP has not yet been released identifying the maximum project size in terms of megawatts, directly attributing to an undetermined number of windmills and project footprint.

-Unknown requirement for blasting to make site assess or for construction of footings for windmill bases. With that comes an untold impact on water wells and existing structures.

-I understand the requirement for permanent site fencing surrounding all windmill sites and infrastructure for safety reasons. However, do we have any assurance that access for recreating will be maintained? This area gives access to pristine freshwater rivers, streams and lakes. As well as plentiful fishing and hunting.

-Has the impact on property valuations been studied? If our community is viewed as less desirous to live in based on unknown aesthetic, noise and lighting from windmill installation will property assessments be devalued?

-The E.A. process to me seems rushed. If there were responses supplied prior to question deadline, perhaps I could support this undertaking with some assurances that the proponent has addressed the above noted concerns. Can the E.A. deadline be extended until after the proponent at least receives the RFP and finalizes project size and scope?

Thank you for considering the above questions.



Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 14, 2022 7:53 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

-----Original Message-----

From: @hotmail.com>
Sent: February 13, 2022 3:42 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE **** 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: benjamins-mill-wind-project Comments: My husband and I purchased a cottage on Canyon Point Rd. We use our cottage during all 4 seasons, although it isnt our primary home. At the time of purchase we had no idea there would be a Wind project happening or we would have found a cottage somewhere else. We wanted a quiet retreat where we could sit on our deck and watch the squirrels play, watch the hummingbirds eat and chase one another, watch the ducks in the lake. Go for a buggy ride and see the eagles nests. The wind project is going to put an end to all of this. Windmills create low level noise which is very annoying. Kind of like when a noise is driving you crazy and you realize its the fan on your stove. Unlike a lot of noises we dont have the ability to turn these ones off. What will happen to walking and bugging on the trails. Im guessing that will be closed to public access. What happens if our wells are no longer supplying us with clean drinking water. Who is going to pay to replace our wells? All wildlife will be affected by the constant noise. Our property values are going to decrease because, lets face it, these things are hideous looking. Im sure there must be somewhere else to put these windmills where they arent going to disturb people and animals. Thank you,
Name: Email: @hotmail.com Address:
Municipality: Sambro Head email_message: Privacy-Statement: agree x: 68 y: 19

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 16, 2022 8:47 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

-----Original Message-----

From: @gmail.com>
Sent: February 15, 2022 10:03 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE **** 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: benjamins-mill-wind-project Comments: We are writing in response to the Environmental Assessment of the Benjamins Mill Wind Project that was submitted by Natural Forces for your approval. Our community of Canyon Point is comprised of 52 homeowners of whom half are full time residents. With assessed values up to over 400K, we are hardly the hunting camps or cottages that Natural Resource refers to. Our community appears to have been overlooked in the EA as Canyon Point Rd is not included in the site maps. We were first apprised of this project in an email from Hants County Condo Corp #1 on Feb 2, 2022 in which we were advised of a virtual meeting taking place on February 3rd, which we attended. We were unable to access information for the second meeting held on February 10th and after numerous phone calls to the Hants County Municipality it was determined that our community had indeed been overlooked and not notified. Therefore the municipality decided to schedule another meeting on February 23rd, to include our community, however this is after the cut off date of Feb 17th, for submission of comments to your Department. To date, we have not received notification of this meeting. In reviewing the EA and its attachments it is evident that the information is incomplete and inconclusive. Many reports are based on desktop studies which do not reflect actual conditions. Natural Forces refers to the proposed site as "disturbed and fragmented" due to wood clearing activities however it will continue to regenerate and does provide home to an abundance of wildlife including deer, raccoons, bears, fishers and coyotes. There are too many variables in the EA including the number and model of the proposed wind turbines, therefore the environmental effects such as wind turbine noise, shadow flickering and flashing lights cannot be determined at this time. Delivery routes and the construction of new roads and upgrades to existing roads have not been finalized therefore the future of 32 hectares of wetlands within the proposed area remains to be determined. Our pristine lake is home to a variety of fish including trout, turtles, beaver, loons and ducks. Geese, hawks, eagles and owls as well as the monarch butterfly, identified as an endangered species, frequent the area. The residents of Canyon Point rely on a system of drilled wells that are maintained by our Condo Corp. The EA states that studies are not complete on ground water. Uranium is of concern to us as well as vibration from construction and subsequent turbine operation. This can result in impurities in our groundwater resources as appears to be the case in North Kent at this time. This document is being submitted for your consideration. We are not opposed to green energy however we strongly feel that it shouldn't be at the expense of rural communities. For the reasons cited above, we are unable to support this environmental assessment and proposed wind energy project. Respectfully submitted,

Email: @gmail.com Address:
Municipality: Vaughan email_message: Privacy-Statement: agree x: 51 y: 26

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 16, 2022 8:47 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

Follow Up Flag: Follow up
Flag Status: Flagged

-----Original Message-----

From: @hotmail.com @hotmail.com>
Sent: February 15, 2022 8:10 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

**** EXTERNAL EMAIL / COURRIEL EXTERNE **** 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: benjamins-mill-wind-project
Comments: We have significant concerns with the Benjamin mills wind project. One thing that doesn't seem to be taken into consideration is the proximity to canyon point resort. It's being treated as it is one land owner when there are 59 properties individually owned within canyon point upon which 13 of those properties are year round residents. We also have significant concerns that the proposal has the potential to have windmills within 1 km of my residence. I don't believe the environmental study conducted was sufficient. There is lots of wildlife in our area and all that will be gone if this project goes through. We are aware that even the number of windmills has not been determined. Somewhere between 10-30 is too big of a range. Also when they drill for these windmills what happens if my well is no longer useable and becomes contaminated with uranium? Who is going to pay for that? While we do believe windmills provide clean and green power, the main concern is the proximity to the community. If windmills are placed too close to our residences we will hear them, see them, and it will decrease our property value significantly. My property will basically be worthless. Our lake community will be destroyed. I urge you to carefully consider the impacts this windmill project will have based on the current location it's projected for. We are not opposed to windmills but we are opposed to the planned location. Thank you for your consideration. Name:

Email: @hotmail.com Address:

Municipality: Vaughan email_message: Privacy-Statement: agree x: 42 y: 20

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 17, 2022 8:05 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

From: @eastlink.ca>
Sent: February 16, 2022 9:46 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

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Project: benjamins-mill-wind-project Comments: I disagree with this proposed development. I have reviewed the Environmental Assessment and make a few points below. Executive Summary 1. Desktop research, ie. searching the internet for arguments and information to back up the claims made in this Environmental Assessment. The primary source for these arguments and information appears to be the sites of industrial lobbying groups such as the Canadian Wind Energy Association...hardly independent and unbiased sources for such information. 2. As usual, this assessment concludes that any negative environmental impact will be negligible to non-existent. However, bear in mind that Dillon Consulting was hired and paid by the proponent to do this study. This immediately sets up a conflict of interest: how can they do a fair and unbiased study of the environmental impact of this development when the proponent is directly footing the bill? You don't bite the hand that feeds you. A better and less biased way to do the assessment would have been to have Nova Scotia Environment and Climate Change appoint an independent consulting firm to do the assessment...assuming that NSECC are neutral participants in this affair. Project Overview 1. Development of wind energy projects has been instrumental in reducing harmful greenhouse gases associated with traditional carbon-based energy sources, both locally and abroad. In Nova Scotia many industrial wind turbines have been erected in the past 15 - 20 years, all claiming to reduce carbon emissions by replacing fossil-fuel fired generating stations. But how many such generating stations have shut down in that time because wind energy has replaced them? The answer is zero. There have been no such plant closures. The wind energy industry's answer to this fact is to push to build more industrial wind turbines. As an aside, one of the definitions of insanity is to keep doing the same thing over and over again...but expecting to get a different result. 2. The development of wind energy is the most feasible option to help meet renewable energy goals while providing economic development for local communities. With the Ellershouse industrial wind project, one full-time permanent job was created. This job is located in Dartmouth. Dartmouth is not local to Ellershouse. Section 2.3 - Physical Components of the Project Section 2.3.1.1 describes at length the new access roads and improvements to the existing access roads that will be undertaken in the project area. But what happens after the project is up and running? The EA states that the roads will be maintained through the life of the project. Here is what happened thanks to the improved access granted by such roads in both the South Canoe and Ellershouse wind project areas: they allowed clear cutting and whole tree removal to proceed at a vastly accelerated rate and over a much larger area than was possible previously. Both the South Canoe and Ellershouse forests have been stripped bare...leaving only an eroding landscape which will take many, many years to recover...if they ever do. Any alleged green house gas or carbon emission reductions from these industrial wind turbine developments will be more than offset by the reduction in carbon sequestration that clearing these forests entails. Section 2.3.4 - Lighting These industrial wind turbines will have flashing red lights atop them and up the sides of the towers. While red lights are better than white lights from a human perspective, they are still sources of light

pollution. Besides being a source of disorientation for animals at night, light pollution also causes cancer in humans. A few moments of desktop research turned up this reference: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5454613/> It has also been shown that a dark night sky in a rural setting not only enhances quality of life, but also improves property values. This development will lead to a further degradation in the night sky as well as possible health hazards. There are remedies available to minimize the light pollution effect by only activating the flashing lights when an aircraft approaches...but they cost money. These are just a few of the reasons why I do not agree with this development. Quickly, other concerns that I have are that it appears that old growth forest on Crown land is going to be cleared for this development the end of life plan is - as usual - barely mentioned with other developments the so-called end of life plan consists of transferring ownership of the old industrial wind turbines to the land owner and letting them deal with them and the use of discredited research namely the Melancthon Township study, where even the primary author has distanced himself from the paper to claim that industrial wind turbines have no impact on property values. The major flaw in this study was the fact that it studied property values out to a distance of 50 kilometers from the development. To put that into perspective, the town of Chester, Nova Scotia is about 50 kilometers away from this proposed development. Does anyone really believe that this development will have an impact on property values in Chester? The greatest impact from these developments is on properties within 5km. Having such a vastly greater study area merely dilutes the perceived impact of these developments across that area, concealing the true impact on local property values. Name: _____ Email: [@eastlink.ca](mailto:_____@eastlink.ca) Address: _____ Municipality: Ellershous email_message: Privacy-Statement: agree x: 55 y: 21

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 17, 2022 8:05 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

-----Original Message-----

@hotmail.ca>

Sent: February 16, 2022 7:08 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

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Project: benjamins-mill-wind-project Comments: As members of the community we have the following concerns about having wind turbines located near our home 1. Impact on property value 2. Sounds that will be generated 3. the appearance of the turbines 4. Impact on wildlife in the area 5. Restrictions on entry to certain areas We recently moved here from the city for the peace and tranquility and to have a turbine in the area will greatly diminish the peacefulness of the area. Name: Email: @hotmail.ca Address: Municipality:
Vaughan email_message: Privacy-Statement: agree x: 84 y: 28

Quinn, Candace M

From: Environment Assessment Web Account
Sent: February 17, 2022 8:05 AM
To: Quinn, Candace M
Subject: FW: Proposed Project Comments

-----Original Message-----

From: @gmail.com>
Sent: February 16, 2022 9:29 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

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Project: benjamins-mill-wind-project Comments: We are very concerned about the proposal for the wind power turbines coming to our area. - they are being placed very close to our home. - the reason ourselves and many of the people in our community moved to this area is because of the remote, peaceful, quiet area surrounded by beauty. - there will be noise from the windmills. - we have a lot of animals that will be effected. Eagles, ducks, deer, turtles in the pond area. Some which are endangered. - the trail area is used by many recreational ATVs, snow mobiles, hikers etc. If A large fence is placed around the area they will not be able to access the trails. - wind power has been linked to health problems like tinnitus, vertigo, headaches and nausea. - I certainly don't disagree with wind power but I don't believe they should be placed in someone's backyard. There is enough land in NS to have them placed so it doesn't interfere with people's health, our environment, wildlife, and the beauty we chose to live in since we retired from the city. Name: Email: @gmail.com Address: Municipality: Vaughan email_message: Privacy-Statement: agree x: 48 y: 34

From: [Quinn, Candace M](#)
To: [Tutty, Bridget R](#)
Subject: Fwd: Proposed Project Comments
Date: February 28, 2022 8:20:57 AM

-----Original Message-----

@hfx.eastlink.ca>

From:

Sent: February 17, 2022 11:19 AM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

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Project: benjamins-mill-wind-project Comments: Good Morning, My wife and I bought a cottage in Canyon Point resort. Its not our primary residence but we spend a lot of time there all year round.

One of the reasons we purchased the property here was the ease of jumping on my 4 wheeler and driving through the trails. One of my concerns is if the Windmill project takes place access to these trails may be prohibited by being gated off. Another concern is how our wells may possibly be affected. If our water is undrinkable who will pay to have the problem rectified? Another concern is the noise. I want to be able to sit on my deck and listen to the peace and quiet, not the sound of a windmill. I dont want to have to look at the windmills. Theyre just ugly. I believe our property values will decrease if this project takes place. Also concerned about how this is going to affect the wildlife. I could go on but these are son

Email:

Municipality:

@hfx.eastlink.ca Address:

Sambro Head email_message: Privacy-Statement: agree x: 64 y: 27

From: [Quinn, Candace M](#)
To: [Tutty, Bridget R](#)
Subject: Fwd: Proposed Project Comments
Date: February 28, 2022 8:20:35 AM

From: Environment Assessment Web Account <EA@novascotia.ca>
Date: February 24, 2022 at 9:27:13 AM AST
To: "Quinn, Candace M" <Candace.Quinn@novascotia.ca>
Subject: FW: Proposed Project Comments

From: @hotmail.ca>
Sent: February 16, 2022 12:31 PM
To: Environment Assessment Web Account <EA@novascotia.ca>
Subject: Proposed Project Comments

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Project: benjamins-mill-wind-project Comments: As a resident of Canyon Point, we do not support this project. As you are very aware, there are numerous cons to wind farming including documents health conditions for residents living near by and huge environmental impacts on wild life. I have read the information provided but this project has been but we still do not support this endeavour. Name:
Email: [@hotmail.ca](#) Address:
Vaughn, NS B0N 2T0 Municipality: Falls Lake email_message: Privacy-Statement: agree
x: 52 y: 27