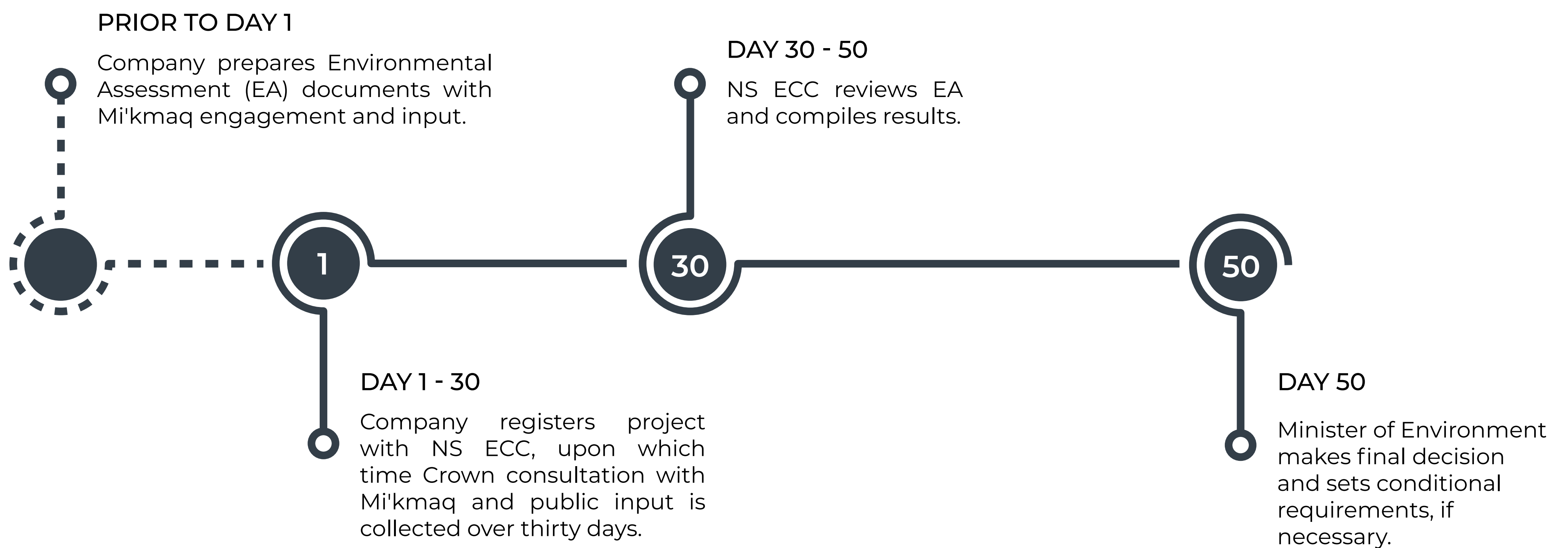


RED SPRUCE WIND ENERGY PROJECT

ENVIRONMENTAL ASSESSMENT CLASS I PROCESS

- Is required by Nova Scotia Environment & Climate Change (NS ECC) to ensure that a Project's environmental effects are minimized.
- Identifies and evaluates environmental effects at an early stage in Project development, and recommends mitigation to reduce adverse impacts.
- Public consultation is an integral part of this process. Community is invited to comment on the environmental assessment during the review period.
- Reviewed by NS ECC and other relevant government agencies.
- Nova Scotia Minister of the Environment only provides approval once satisfied that environmental effects have been adequately assessed and addressed.



TYPICAL BASELINE STUDIES

	AVIFAUNA		WETLANDS		VISUAL AESTHETICS		AIR QUALITY
	GENERAL WILDLIFE		WATERCOURSES & FISH HABITAT		CULTURAL & HERITAGE RESOURCES		SOUND MODELING
	PLANTS		GROUNDWATER & GEOLOGY		SOCIOECONOMIC CONDITIONS		

RED SPRUCE WIND ENERGY PROJECT

BASELINE SURVEYS

AVIFAUNA (BIRD SURVEYS)

SURVEY TYPE

METHOD

SIGNIFICANT RESULTS

BREEDING BIRD*

10-minute point counts were conducted on site from sunrise to ~11AM. The same procedure was carried out on two different 3-day sampling periods.

A total of 1037 individuals (68 species) were observed. 3 are SAR: Canada Warbler, Olive-sided Flycatcher and Eastern Wood-Pewee and 9 are SOCC: American Bittern, American Kestrel, Bay-Breasted Warbler, Boreal Chickadee, Cape May Warbler, Canada Jay, Pine Siskin, Purple Finch, Red Crossbill.

COMMON NIGHTHAWK

7-minute point counts at 10 survey stations on site.

30 individual Common Nighthawks were observed during surveys.

NOCTURNAL OWL

10-minute point counts with intermittent owl call playback. 11 survey stations across two nights of surveys.

2 Northern Saw-whet Owls, 1 Barred Owl, and 1 Great Horned Owl were identified during surveys. 1 incidental observation of the Northern Saw-whet during early vegetation surveys (June 14, 2022).

SPRING MIGRATION

10-15 ten-minute point counts were completed on site from sunrise to ~11AM across 8 survey dates.

A total of 983 individuals (60 species) were observed. 2 are SAR: Canada Warbler and Olive-sided Flycatcher, and 7 are SOCC: American Kestrel, American Robin, Bay-breasted Warbler, Boreal Chickadee, Canada Jay, Purple Finch, and Rose-breasted Grosbeak.

FALL MIGRATION

10-15 ten-minute point counts were completed on site from sunrise to ~11AM across 6 survey dates. 3-hour diurnal watch surveys were completed on 3 separate occasions.

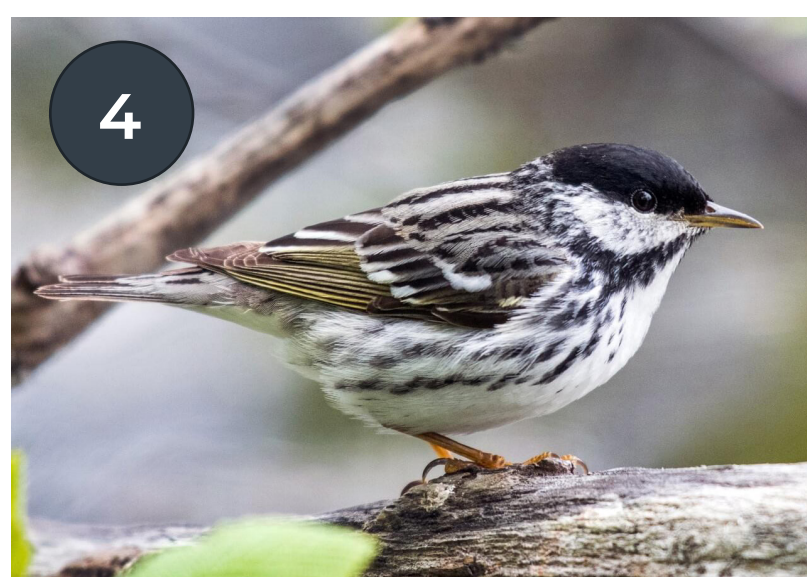
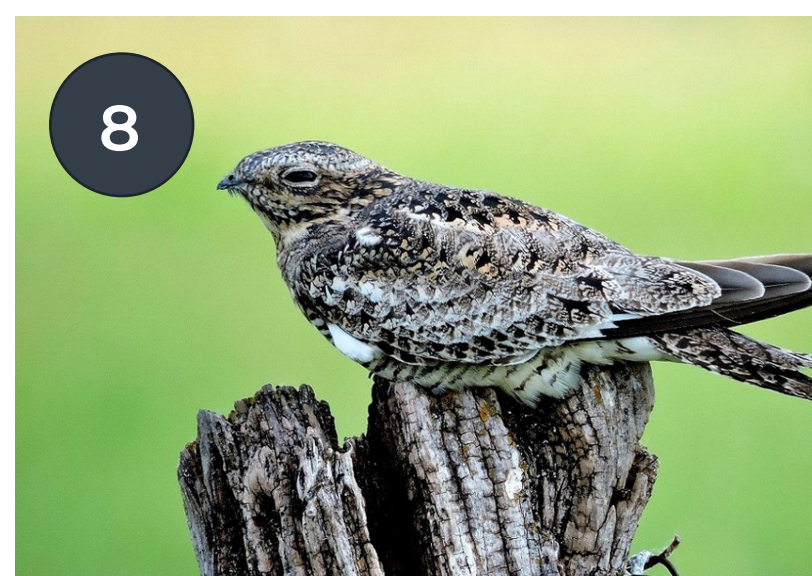
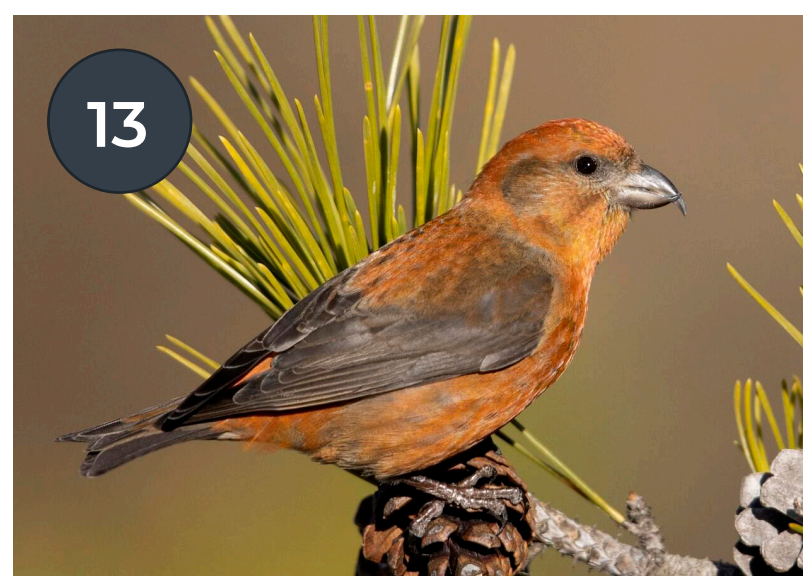
A total of 690 individuals (41 species) were observed during point count surveys and 101 individuals (17 species) were observed during diurnal watch surveys. 9 are SOCC: American Kestrel, American Robin, Blackpoll Warbler, Cape May Warbler, Canada Jay, Northern Shrike, Pine Warbler, Purple Finch and Red Crossbill.

WINTER BIRD

14 ten-minute point counts were conducted on site across 5 different dates.

A total of 238 individuals (27 species) were observed. 7 are SOCC: American Robin, Boreal Chickadee, Canada Jay, Pine Grosbeak, Pine Siskin, Purple Finch, and Red Crossbill.

*Additional surveys to be completed in 2024 due to change in proposed Project Development Area.



SPECIES OF CONSERVATION CONCERN

- 1 American Bittern
Photo Source: Jason Dain
- 2 American Kestrel
Photo Source: Gary Grossman
- 3 American Robin
Photo Source: Alex Eberts
- 4 Blackpoll Warbler
Photo Source: Simon Boivin
- 5 Boreal Chickadee
Photo Source: Ryan Sanderson
- 6 Canada Jay
Photo Source: Andrew Theus
- 7 Cape May Warbler
Photo Source: Keenan Yakola
- 8 Common Nighthawk
Photo Source: Richard Stebbins
- 9 Northern Shrike
Photo Source: Terry & Joanne Johnson
- 10 Pine Siskin
Photo Source: David Mitchell
- 11 Pine Warbler
Photo Source: Ryan Schain
- 12 Purple Finch
Photo Source: Frances Higgs
- 13 Red Crossbill
Photo Source: Michael Stubblefield
- 14 Red-Breasted Grosbeak
Photo Source: Tom Snow

SPECIES AT RISK

- 15 Canada Warbler
Photo Source: Dale Bonk
- 16 Eastern Wood Peewee
Photo Source: John Deitsch
- 17 Olive-Sided Flycatcher
Photo Source: Luke Seitz

RED SPRUCE WIND ENERGY PROJECT

BASELINE SURVEYS

BAT SURVEYS

SURVEY TYPE	METHOD	SIGNIFICANT RESULTS
BAT SURVEYS	ECCC's Canadian Wildlife Service (Atlantic Region) - Wind Energy & Birds Environmental Assessment Guidance Update (ECCC, 2022). Passive monitoring using autonomous recording units (ARU's, SM4BAT, Wildlife Acoustics).	A total of 706 bats were detected in the Project Area, including 244 detections of SAR and 75 detections of SOCC. SAR: Little Brown Myotis, Northern Myotis and Eastern Tricoloured Bat; SOCC: Eastern Red Bat, Hoary Bat and Silver-Haired Bat.



SPECIES OF CONSERVATION CONCERN

- 1 Eastern Red Bat
Photo Source: Tiffany Turcotte
- 2 Hoary Bat
Photo Source: Joseph Connors
- 3 Silver-Haired Bat
Photo Source: Jason Headley

SPECIES AT RISK

- 4 Eastern Tricolored Bat
Photo Source: Dave Thomas
- 5 Little Brown Bat
Photo Source: Ron C. Wilson
- 6 Northern Myotis
Photo Source: Chelsea Vincent-Stock

BASELINE SURVEYS

PLANTS, WETLANDS & PELLET SURVEYS

SURVEY TYPE	METHOD	SIGNIFICANT RESULTS
EARLY VEGETATION SURVEYS*	Transects were walked throughout Study Area.	116 species of vascular plants were identified. Mostly native, with exotic species typically observed in disturbed areas. No SAR or SOCC were observed. Total combined length of transects 23.5 km.
LATE VEGETATION SURVEYS*	Transects were walked throughout Study Area.	51 species of vascular plants were identified. Mostly native with exotic species typically observed in disturbed areas. No SAR and 1 SOCC: American Beech. Total combined length of transects: 4.6 km.
WETLAND DELINEATION*	US Army Corps of Engineers Wetlands Delineation Manual and the Northcentral and Northeastern Interim Regional Supplement Version 2.0 (US Army Corps of Engineers, 2012).	77 wetlands were delineated ranging in size between 0.003 ha to 7.140 ha. The wetlands make up 51.1 ha of the study area.
PELLET SURVEYS	Transects were walked throughout Study Area.	Total of 287 observations. The most abundant species were Snowshoe Hare (159), White-tailed Deer (42), and Eastern Coyote (39). No SAR or SOCC were observed. In total, 16.8 km of the Study Area was surveyed for wildlife.

*Additional surveys to be completed in 2024 due to change in proposed Project Development Area.

SPECIES OF CONSERVATION CONCERN

- 1 American Beech
Photo Source: Sara Rall



RED SPRUCE WIND ENERGY PROJECT

ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT (ARIA)

- Required as part of the Environmental Assessment process
- Conducted under the terms of the Special Places Protection Act
- Purpose of the ARIA is to determine the potential for archaeological resources within the project area and to provide recommendations for appropriate resource management strategies.
- Key components of the assessment:
 - Historical Research Permit
 - Historical background study
 - Archaeological reconnaissance



Source: Davis MacIntyre & Associates

STUDY

ARCHAEOLOGICAL RESOURCE IMPACT ASSESSMENT (ARIA)*

METHOD

Historic background study and site reconnaissance survey conducted by Davis MacIntyre & Associates Limited.

SIGNIFICANT RESULTS

The main findings are two small areas of elevated archaeological potential which may require further assessment depending on the final Project Development Area.

**Additional surveys to be completed in 2024 due to change in proposed Project Development Area.*

MI'KMAW ENGAGEMENT

The Proponent began initiating engagement and consultation with Mi'kmaq communities as early as 2021, establishing communication through various channels to designated contacts for the respective communities. Key engagement activities that have been carried out by the Proponent till date include the following:

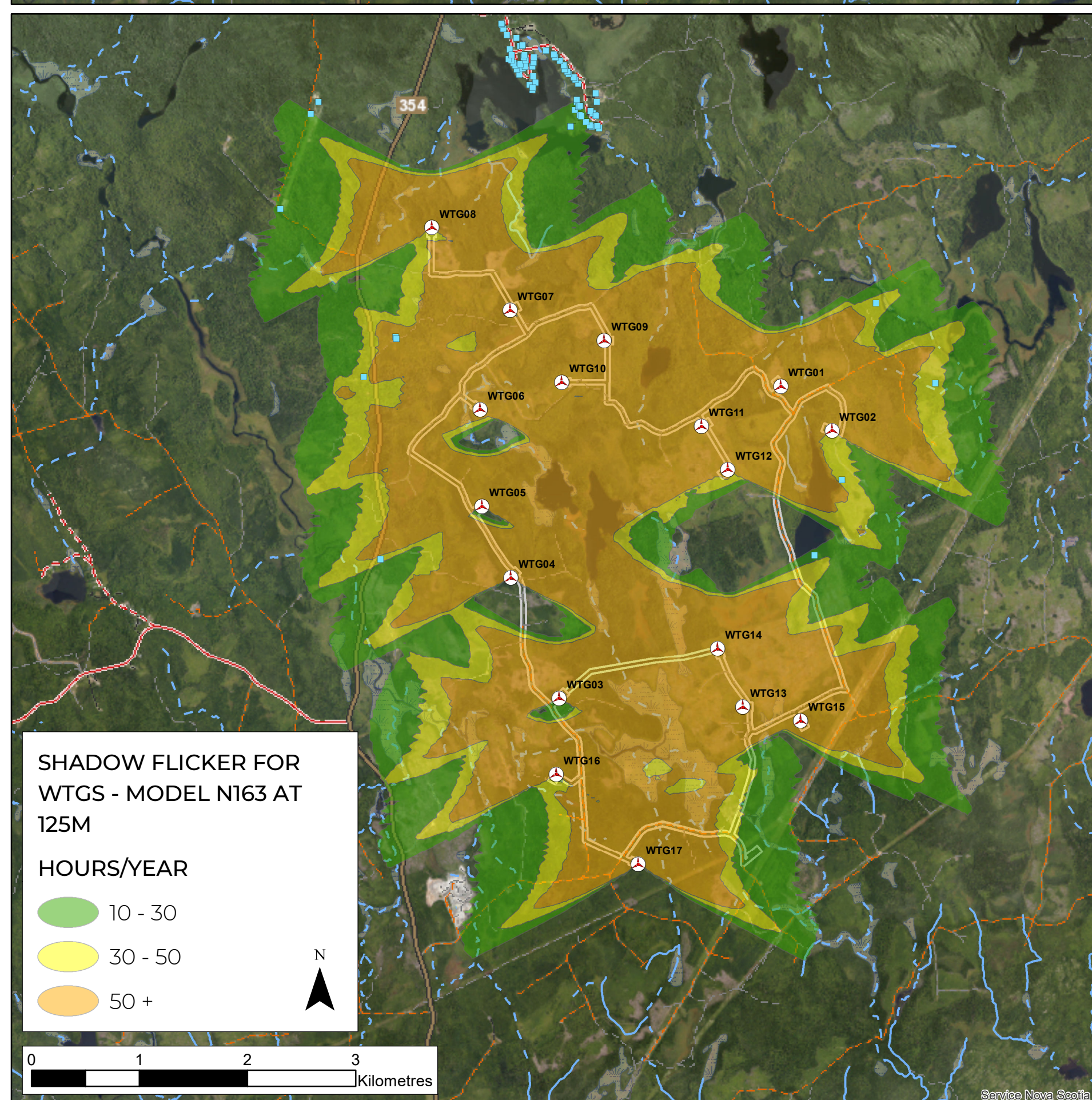
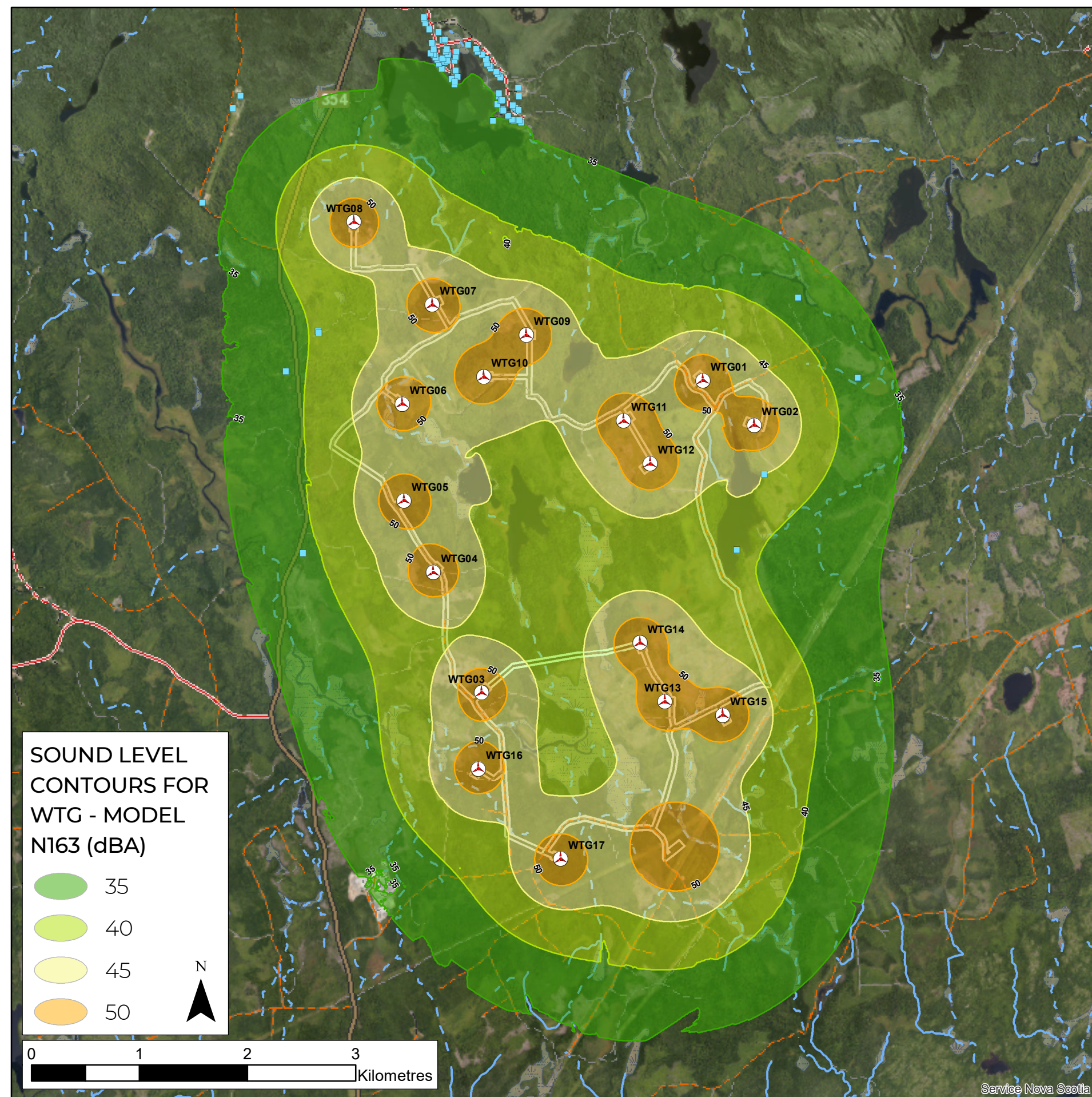
- Introductory email sent to all Mi'kmaq Communities regarding proficiency of Proponent in development of similar projects in Nova Scotia, invitation to further discuss proposed project and potential for collaboration.
- Hand-delivery of letters by SWEB Developmental Director (Jason Parise) to Mi'kmaq communities providing details on the Proponent's Background, plans to develop the proposed project and invitation for further discussion on the projects.
- Convening virtual meetings with representatives of Mi'kmaq communities to provide overview of the proposed project and potential for collaboration.

The Proponent will continue to employ and sustain consultation efforts with the Mi'kmaq Communities throughout the development of the proposed project to ensure their meaningful participation in decisions that could potentially impact indigenous land and resources.

Where issues/concerns are raised, plans to address the issues will be developed and mitigation measures timely implemented to alleviate potential impacts



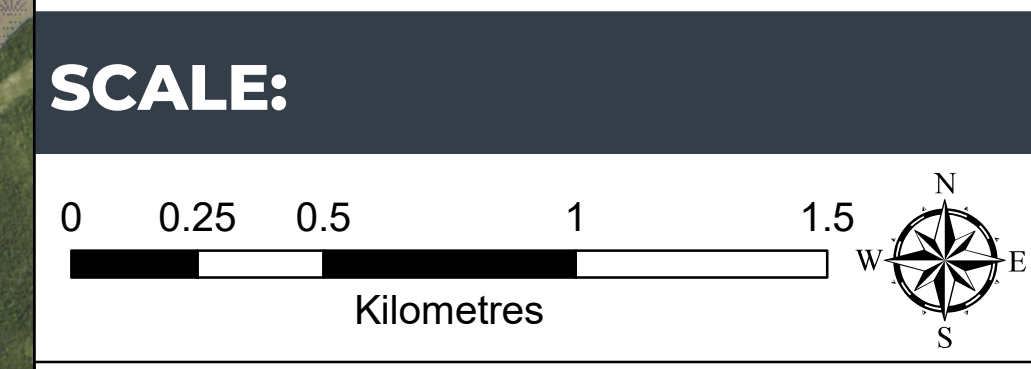
Source: Province of Nova Scotia



- LEGEND:**
- PROPOSED WIND TURBINE GENERATOR (WTG) LOCATIONS
 - PROPOSED PROJECT DEVELOPMENT AREA (PDA)**
 - PROPOSED PDA PRIOR TO 2024
 - PROPOSED PROJECT FOOTPRINT (2024 - Option 1)
 - PROPOSED PDA - OPTION 2
 - NOISE RECEPTORS**
 - RECEPTOR LOCATIONS WITHIN 2KM OF WIND TURBINE GENERATORS
 - BIRD SURVEY LOCATIONS**
 - NOCTURNAL OWL (2022)
 - MIGRATORY BIRD (FALL 2021; SPRING 2022)
 - COMMON NIGHTHAWK (2022)
 - BREEDING BIRD (2022)
 - WINTER BIRD (2021/22)
 - BAT MONITOR LOCATIONS (2023)**
 - WILDLIFE ACOUSTICS INC. SM4 SONG METER
 - BIOPHYSICAL SURVEY AREA**
 - 100 M BUFFER AROUND PDA (<2024)
 - TRAIL CAMERA LOCATIONS (WINTER 2021/22)
 - PELLET SURVEY TRANSECTS (2022)
 - EARLY VEGETATION TRANSECTS (2022)
 - LATE VEGETATION TRANSECTS (2022)
 - FIELD DELINEATED WATERCOURSES & DRAINAGE CHANNELS (2022)
 - FIELD IDENTIFIED WETLANDS (2022)
 - PROVINCIALY MAPPED WATER FEATURES**
 - WATERCOURSE
 - WATERCOURSE (INDEFINITE)
 - WETLANDS

FIGURE:

BASELINE BIOPHYSICAL SURVEY LOCATIONS



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