

APPENDIX H BIRD SURVEYS



DILLON
CONSULTING

NATURAL FORCES DEVELOPMENTS LP

Bird Surveys

Westchester Mountain Wind Project - Appendix H

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Introduction

The Proponent engaged the expertise of Dillon Consulting Ltd. (Dillon) to conduct biophysical surveys for the Westchester Wind Project (Project) including surveys to characterize bird populations and their habitats that exist or that may exist throughout the Local Assessment Area (LAA) for birds. Dillon's qualified professionals (biologists skilled at bird identification) have been involved in several resource development projects in Atlantic Canada and have assisted many Proponents through the provincial environmental assessment processes.

Several factors that greatly influence the diversity and abundance of birds in Nova Scotia include habitat factors, geography and seasonality (i.e., the timing of important annual events including migration and breeding) (Davis and Browne 1996). In Nova Scotia is an important migration pathway for birds due to the extensive coastline and abundance of important bird habitats such as mud flats ; therefore bird assemblages can vary greatly seasonally and between regions.

Birds in Nova Scotia have protection under both provincial and federal legislation. Most bird species, are protected under the federal Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22), which prohibits the killing of a migratory bird as well as the disturbance, destruction, and take of a migratory bird egg or nest without a permit from Environment Canada. Birds of prey and upland game birds, meanwhile, are not protected under the Migratory Birds Convention Act but instead have similar protection under the provincial Wildlife Act (R.S.N.S.1989, c. 504).

In Canada, important bird habitats are recognized by the Important Bird and Biodiversity Areas Program. This program aims to conserve, and monitor a network of sites that provide essential habitat for Canada's bird populations (IBA Canada 2022). The nearest designated Important Bird Area (IBA), Cobequid Bay (NS019) is located approximately 15 kilometres south from the nearest proposed WTG location. This IBA is approximately 480 km² and is located within the eastern arm of the Bay of Fundy. The area consists of intertidal habitats including mudflats, sandflats and salt marshes that provide foraging opportunities for migrating shorebirds. Between 1 and 2 million shorebirds use the mud flats of the head of the Bay of Fundy (in this and other adjacent IBAs) in the fall for staging before the southern migration. (IBA Canada 2022).

As such, a study design was proposed and discussed with Nova Scotia Department of Natural Resources and Renewables (NSDNRR) biologists prior to being implemented with consideration for the ecological setting of the site and the nearby important bird habitat. The study included field surveys for breeding birds, migratory birds and resident bird populations with strategic timing designed to match breeding and migratory windows specific for the region.

This appendix details the methods and results of bird assessments and surveys that were conducted during the 2021 as part of the Environmental Assessment for the Project.

1.1 Scope of Work

Based on the recommended ECCC and CWS protocols, and feedback from NSECC and NSDNRR during the consultation process, the following scope of work was completed as part of the bird and bird habitat surveys for the proposed project. As field work progressed, and as more information became available, the surveys were refined based on the available habitat types and expected species diversity within the Project study area. The scope of work included:

- Background and Desktop Analysis;
- Winter Residency Surveys (targeting overwintering/resident bird species);
- Spring Surveys (targeting migrating birds using the area as a stopover and breeding nocturnal owls);
- Summer Surveys (targeting breeding birds, including a targeted common nighthawk survey; and
- Fall Surveys (targeting migrating birds).

The methodologies used for the scope of the desktop analysis and field surveys listed above are outlined within the following sections.

For the purpose of this assessment, the spatial boundaries for the field surveys (i.e., the local assessment area) have been identified as a 500 m buffer surrounding the project footprint of the proposed turbine locations, substation, connector lines, new roads and road upgrades.

2.0 Methods

2.1 Desktop Review

Based on the project risk category for the proposed Project (EC, 2007a), and the findings of the initial literature review, the following approach for the avian surveys was completed with the objective of gaining an estimate of both the number of bird species using the Project area, and their relative abundance.

- The desktop review included the follow information sources:
- Important Bird Areas (IBAs);
- Maritime Breeding Bird Atlas (MBBA);
- Nova Scotia Significant Species and Habitats Database;
- Nova Scotia Provincial Landscape Viewer; and
- Atlantic Canada Conservation Centre.

2.2 Field Surveys

The surveys were performed by experienced bird specialists skilled at identifying birds by song, call and sight. The surveys were scheduled so that observations were made during all seasons to evaluate which species regularly use the area at what times throughout the year. Survey protocols were developed based on professional experience, knowledge of the Project area, and review of recommended techniques from the CWS guidance documents (EC, 2007a; EC, 2007b). The locations of point count transects, and nocturnal bird survey locations are shown on Figures H-1, H-2 and H-3 for transect-based point counts, winter area searches and watch count locations, respectively. Transect and point count locations were selected as a mechanism to capture the representative terrain and habitat types within the LAA. Table H-1 in a summary of the habitat at each point count location.

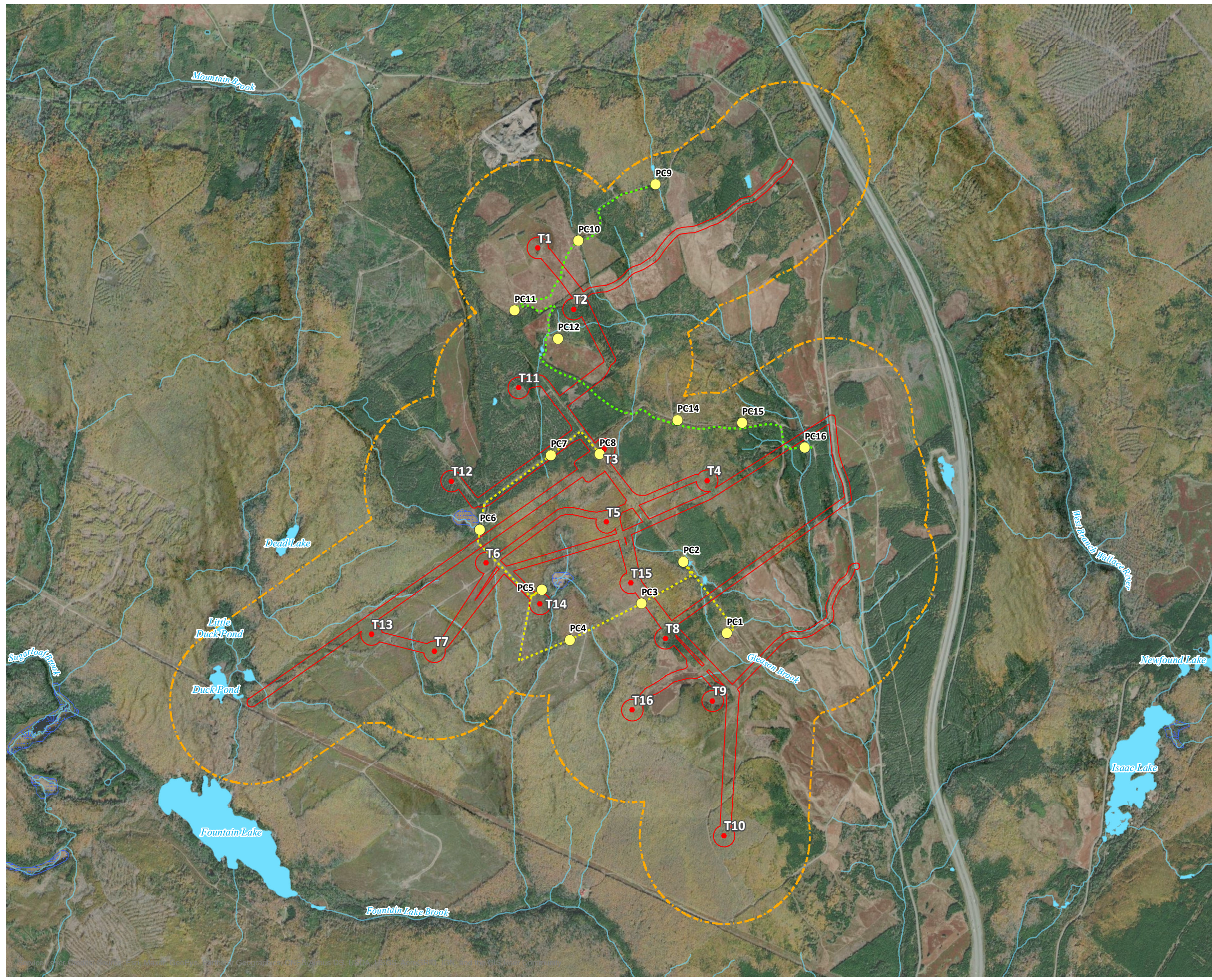
Table H-1 Habitat at Survey Locations within the LAA

| Point Count Location | Primary Habitat | Secondary Habitat(s) |
|----------------------|-------------------------------|----------------------------------------------------|
| PC1 | Wetland (Swamp) | Blueberry Field, Mixed-wood Forest |
| PC2 | Wetland (Fen) | Conifer plantation (mature), Mixed-wood Forest |
| PC3 | Cleared area (Clear cut) | Mixed-wood Forest |
| PC4 | Conifer plantation (immature) | Mixed-wood Forest (riparian buffer) |
| PC5 | Conifer plantation (immature) | Mixed-wood Forest (riparian buffer), Wetland (Fen) |
| PC6 | Mixed-wood Forest | Wetland (Fen), Conifer plantation (immature) |
| PC7 | Conifer Plantation (mature) | n/a |
| PC8 | Hardwood Forest | Conifer plantation (mature) |
| PC9 | Mixed-wood Forest | Hardwood Forest |
| PC10 | Cleared Area (fields) | Blueberry Field, Softwood Forest |
| PC11 | Softwood Forest | Blueberry Field |
| PC12 | Wetland (Swamp) | Blueberry Field, Softwood Forest |
| PC13 | Hardwood Forest | n/a |
| PC14 | Hardwood Forest | Mixed-wood Forest |
| PC15 | Hardwood Forest | Mixed-wood Forest |
| PC16 | Wetland (Swamp) | Conifer plantation (mature) |

SURVEY LOCATIONS AND LOCAL ASSESSMENT AREA FOR BIRDS

FIGURE H-1

- Proposed Turbine Location
- Point Count Location
- - - Transect 1
- - - Transect 2
- Project Development Area
- Local Assessment Area
- Watercourse
- Waterbody
- Wetland



SCALE 1:24,000

MAP DRAWING INFORMATION:
 DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: MEC
 MAP CHECKED BY: KB
 MAP PROJECTION: NAD 1983 UTM ZONE 20N



WESTCHESTER WIND PROJECT

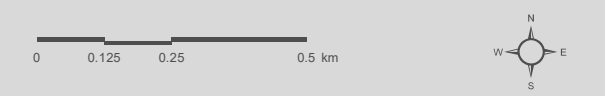
SURVEY LOCATIONS AND LOCAL ASSESSMENT AREA FOR BIRDS

FIGURE H-2

- Proposed Turbine Location
- ▭ Project Development Area
- ▭ Local Assessment Area
- Watercourse
- Waterbody
- ▭ Wetland

Winter Area Search

- February 25, 2020 (5.4 km)
- February 26, 2020 (5.85 km)
- March 12, 2020 (6.44 km)
- March 13, 2020 (7.37 km)



SCALE 1:14,000
 MAP DRAWING INFORMATION:
 DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: MEC
 MAP CHECKED BY: KB
 MAP PROJECTION: NAD 1983 UTM ZONE 20N

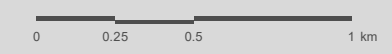
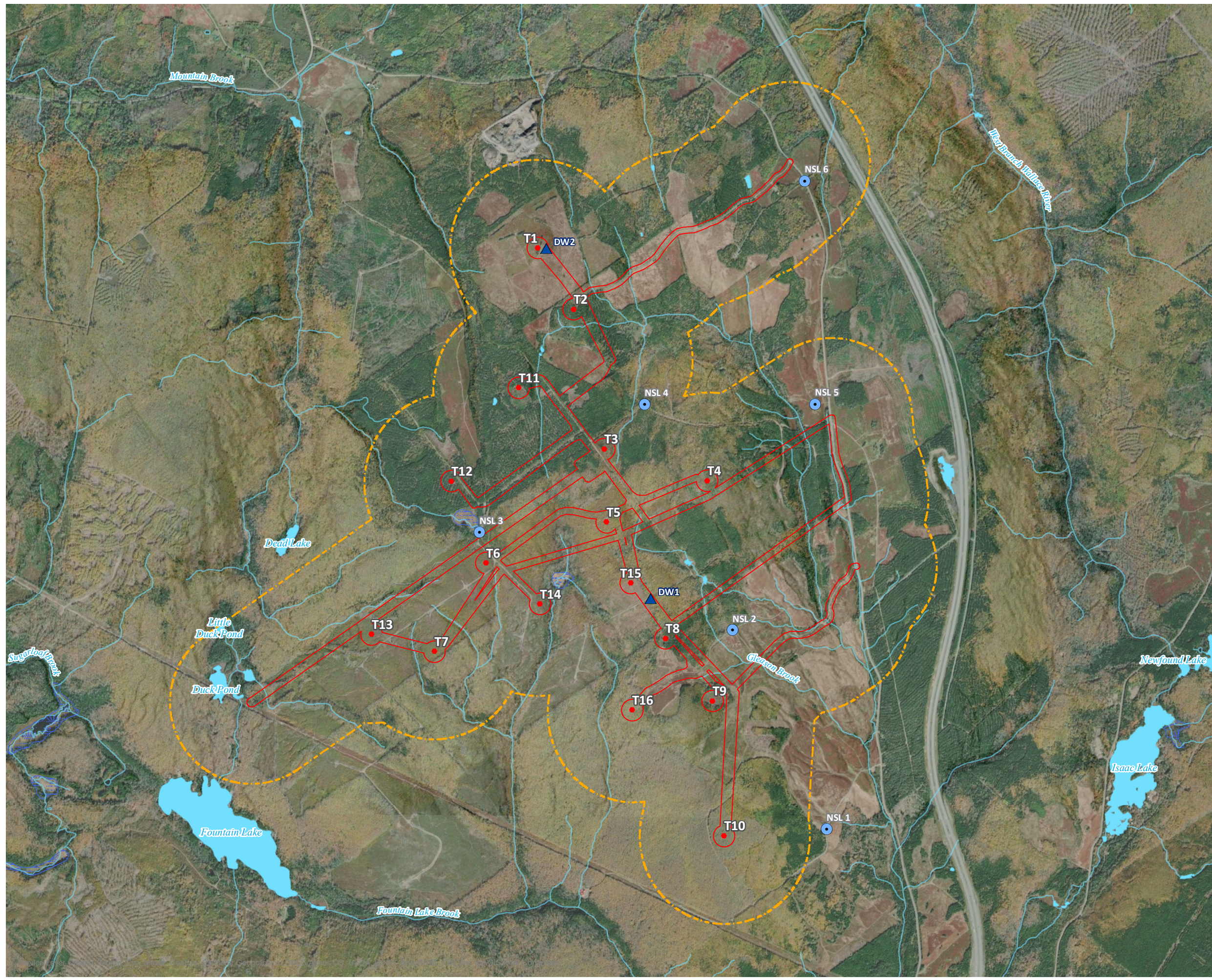


PROJECT: 21-1329
 STATUS: DRAFT
 DATE: 2022-02-08

SURVEY LOCATIONS AND LOCAL ASSESSMENT AREA FOR BIRDS

FIGURE H-3

- Proposed Turbine Location
- ▲ Diurnal Watch Location
- Nocturnal Survey Location
- ▭ Project Development Area
- ▭ Local Assessment Area
- Watercourse
- Waterbody
- Wetland



SCALE 1:24,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: MEC
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MAP PROJECTION: NAD 1983 UTM ZONE 20N

During the spring and fall migration periods, two different types of survey were employed: Migration Stop-over Counts and Diurnal Watch Counts. The former determines the number and kinds of birds that land in the study area during their period of migration, while the latter examines the number, species, altitude and behaviour of birds flying over the study area during the daytime. During the summer months, a Breeding Bird Survey was conducted to determine the number and species of birds that breed in the study area with particular attention paid to their habitat requirements and habitat availability in the study area. This survey was also supplemented by nocturnal surveys for bird species that may breed in the area, but that are typically only detectable at night, or during twilight hours, such as many owls and the common nighthawk. Lastly, during the winter months, a Winter Residency Survey was completed to assess and determine which species are resident in the area and can be anticipated to occur in the project area year-round. Surveys were conducted when weather conditions were appropriate for viewing and listening for birds (i.e., on days or nights with minimal forecasted fog and precipitation).

Migration Stop-over Counts were conducted along two pre-determined transects covering the majority of the study area using an existing network of logging roads and ATV trails. The transect routes were selected to both maximize site coverage, as well as to target habitats similar to where wind turbine generators or other infrastructure will be located. Eight point counts were conducted along each transect at pre-determined locations so they could be repeated consistently across the seasons. The locations were determined following a preliminary desktop assessment of the habitat types present within the study area. Point counts were 10 minutes in length during which all birds seen or heard were recorded. During the spring migration period, each transect was surveyed five times between April 28 and May 26, 2021. During the fall migration, each transect was also surveyed five times between August 25 and October 8, 2021. Migration Stop-over counts typically began 30-60 minutes after sunrise, as many birds become active later in the morning in response to the colder dawn temperatures during these seasons.

Diurnal Watch Counts were conducted during both spring and fall migration at two pre-determined, repeatable observation points within the study area. The choice of the observation points was made based on the extent to which they provided as close as possible to an extended 360 degree view of the air space over the study area and proximity to proposed site for the placement of wind turbines. These counts were often conducted following the completion of Migration Stop-over counts and typically began during the mid-morning and continued into the early afternoon.

Diurnal Watch counts were recorded in 1/2 hour blocks of observations, whereby all birds seen or heard were recorded according to their species, location and altitude relative to the observer (not to the point over which they were flying), flight direction, and number of individuals.

A Breeding Bird Survey was conducted during the summer months following the same two transects established for spring and fall Migration Stop-over Counts. As with the spring and fall surveys, point

counts were also completed at the same pre-determined locations, were 10 minutes in length and all birds seen or heard were recorded. During the peak summer breeding period, each transect was surveyed twice – once during the early peak period and once during the late peak period on June 7 and June 29, 2021.

Targeted playback surveys, using recordings of bird breeding calls, were used occasionally during the Breeding Bird Survey to elicit a response from SAR or SOCC, to either confirm a possible detection (when there is uncertainty) or to simply detect a particular species when surveying appropriate habitat. The detrimental impact of playback recordings on breeding birds is noted and, as such, the use of playback recordings was limited and employed sparingly to avoid undue disturbance to breeding birds.

Additionally, two nocturnal surveys were conducted for breeding bird species not readily detectable during daylight hours, namely a Breeding Nocturnal Owl Survey and a Breeding Common Nighthawk Survey. These surveys were conducted from pre-determined locations within the study area and were based on well established, standardized field protocols. The breeding nocturnal owl survey methodology was based on the 'Guidelines for Nocturnal Owl Monitoring in North America' (Takats et al. 2001), as well as the 'Nova Scotia Nocturnal Owl Survey: Guide for Volunteers (BC 2019)'. The breeding Common Nighthawk survey methodology was based on the 'Canadian Nightjar Survey Protocol' (BSC 2019).

A Winter Resident Survey was also completed for the study area and consisted of four transect-based general area searches in which the birds in a specific area were counted. These general area searches took place on February 25-26 and March 12-13, 2021.

3.0 Results

3.1 Winter Survey Program

A total of 92 individual birds comprised of 13 species were recorded during the Winter Survey program, which consisted of 4 transect-based area searches (Winter Resident Survey), as summarized in Table H-2. Two of the 13 species detected are considered SoCC, these were the Boreal Chickadee and Red-breasted Nuthatch.

Table H-2: Birds Detected During the Winter Residency Survey

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|------------------------|--------------------------|-------------|---------------|--------|
| 32 | Black-capped Chickadee | Poecile atricapillus | | | S5 |
| 15 | Golden-crowned Kinglet | Regulus satrapa | | | S5 |
| 12 | American Crow | Corvus brachyrhynchos | | | S5 |
| 9 | *Boreal Chickadee | Poecile hudsonicus | | | S3 |
| 5 | Dark-eyed Junco | Junco hyemalis | | | S4S5 |
| 4 | Blue Jay | Cyanocitta cristata | | | S5 |
| 4 | White-winged Crossbill | Loxia leucoptera | | | S4S5 |
| 3 | *Red-breasted Nuthatch | Sitta canadensis | | | S3 |
| 3 | Snow Bunting | Plectrophenax nivalis | | | S5N |
| 2 | Common Raven | Corvus corax | | | S5 |
| 1 | Bald Eagle | Haliaeetus leucocephalus | | | S5 |
| 1 | Pileated Woodpecker | Dryocopus pileatus | | | S5 |
| 1 | Red-tailed Hawk | Buteo jamaicensis | | | S5 |
| 92 | TOTAL | - | | | |

* indicates a species is considered a SoCC

3.2 Spring Survey Program

A total of 1,502 individual birds comprised of 70 species were recorded during the Spring Survey program. The majority of these individuals and species, 1,321 and 61 respectively, were detected during point counts conducted for the Spring Migration Stop-over Counts, as summarized in Table H-3. A further 146 individuals and 7 species were added through the Diurnal Watch Count surveys, 4 individuals and 2 species were added as a result of the Breeding Nocturnal Owl Survey, and lastly an additional 31 individuals, but no additional species were added through incidental detections.

Table H-3: Bird Species Detected during the Spring Survey Program (inclusive of all survey types and incidental detections)

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|------------------------------|---------------------------------|------|--------|----------|
| Alder Flycatcher | <i>Empidonax alnorum</i> | | | S5B |
| American Black Duck | <i>Anas rubripes</i> | | | S5 |
| American Crow | <i>Corvus brachyrhynchos</i> | | | S5 |
| American Goldfinch | <i>Spinus tristis</i> | | | S5 |
| *American Kestrel | <i>Falco sparverius</i> | | | S3B |
| American Redstart | <i>Setophaga ruticilla</i> | | | S4S5B |
| *American Robin | <i>Turdus migratorius</i> | | | S5B, S3N |
| ‡American Woodcock | <i>Scolopax minor</i> | | | S5B |
| †Bald Eagle | <i>Haliaeetus leucocephalus</i> | NAR | | S5 |
| ‡Barred Owl | <i>Strix varia</i> | | | S5 |
| *Bay-breasted Warbler | <i>Setophaga castanea</i> | | | S3S4B |
| †Belted Kingfisher | <i>Megasceryle alcyon</i> | | | S5B |
| Black-and-White Warbler | <i>Mniotilta varia</i> | | | S5B |
| Blackburnian Warbler | <i>Setophaga fusca</i> | | | S4B |
| Black-capped Chickadee | <i>Poecile atricapillus</i> | | | S5 |
| *Blackpoll Warbler | <i>Setophaga striata</i> | | | S3S4B |
| Black-throated Blue Warbler | <i>Setophaga caerulescens</i> | | | S5B |
| Black-throated Green Warbler | <i>Setophaga virens</i> | | | S5B |
| Blue Jay | <i>Cyanocitta cristata</i> | | | S5 |
| Blue-headed Vireo | <i>Vireo solitarius</i> | | | S5B |
| *Boreal Chickadee | <i>Poecile hudsonicus</i> | | | S3 |
| †Broad-winged Hawk | <i>Buteo platypterus</i> | | | S5B |
| Brown Creeper | <i>Certhia americana</i> | | | S5 |
| Canada Goose | <i>Branta canadensis</i> | | | S4N |
| *Canada Jay | <i>Perisoreus canadensis</i> | | | S3 |
| Canada Warbler | <i>Cardellina canadensis</i> | T | E | S3B |

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|------------------------|-----------------------------------|------|--------|---------------|
| *Cape May Warbler | <i>Setophaga tigrina</i> | | | S2B |
| Chestnut-sided Warbler | <i>Setophaga pensylvanica</i> | | | S5B |
| Common Grackle | <i>Quiscalus quiscula</i> | | | S5B |
| Common Raven | <i>Corvus corax</i> | | | S5 |
| Common Yellowthroat | <i>Geothlypis trichas</i> | | | S5B |
| Dark-eyed Junco | <i>Junco hyemalis</i> | | | S4S5 |
| Downy Woodpecker | <i>Dryobates pubescens</i> | | | S5 |
| Evening Grosbeak | <i>Coccothraustes vespertinus</i> | SC | V | S3S4B, S3N |
| Golden-crowned Kinglet | <i>Regulus satrapa</i> | | | S5 |
| Hairy Woodpecker | <i>Dryobates villosus</i> | | | S5 |
| Hermit Thrush | <i>Catharus guttatus</i> | | | S5B |
| Least Flycatcher | <i>Empidonax minimus</i> | | | S4S5B |
| Lincoln's Sparrow | <i>Melospiza lincolni</i> | | | S4B |
| Magnolia Warbler | <i>Setophaga magnolia</i> | | | S5B |
| Merlin | <i>Falco columbarius</i> | NAR | | S5B |
| Mourning Dove | <i>Zenaida macroura</i> | | | S5 |
| Mourning Warbler | <i>Geothlypis philadelphia</i> | | | S4B |
| Nashville Warbler | <i>Oreothlypis ruficapilla</i> | | | S4S5B |
| Northern Flicker | <i>Colaptes auratus</i> | | | S5B |
| *Northern Harrier | <i>Circus hudsonius</i> | NAR | | S3S4B |
| Northern Parula | <i>Setophaga americana</i> | | | S5B |
| Northern Waterthrush | <i>Parkesia noveboracensis</i> | | | S4B |
| †Osprey | <i>Pandion haliaetus</i> | | | S4B |
| Ovenbird | <i>Seiurus aurocapilla</i> | | | S5B |
| Palm Warbler | <i>Setophaga palmarum</i> | | | S5B |
| Pileated Woodpecker | <i>Dryocopus pileatus</i> | | | S5 |

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|--------------------------|---------------------------|------|--------|-----------------|
| *Purple Finch | Haemorhous purpureus | | | S4S5B, S3S4N |
| *Red-breasted Nuthatch | Sitta canadensis | | | S3 |
| Red-eyed Vireo | Vireo olivaceus | | | S5B |
| †Red-tailed Hawk | Buteo jamaicensis | | | S5 |
| Ring-necked Pheasant | Phasianus colchicus | | | SNA |
| *Ruby-crowned Kinglet | Regulus calendula | | | S3S4B |
| Ruffed Grouse | Bonasa umbellus | | | S5 |
| Savannah Sparrow | Passerculus sandwichensis | | | S4S5B |
| †Sharp-shinned Hawk | Accipiter striatus | NAR | | S5 |
| Song Sparrow | Melospiza melodia | | | S5B |
| *Swainson's Thrush | Catharus ustulatus | | | S3S4B |
| Swamp Sparrow | Melospiza georgiana | | | S5B |
| *†Turkey Vulture | Cathartes aura | | | S2S3B |
| White-throated Sparrow | Zonotrichia albicollis | | | S5B |
| Winter Wren | Troglodytes hiemalis | | | S5B |
| Yellow Warbler | Setophaga petechia | | | S5B |
| Yellow-bellied Sapsucker | Sphyrapicus varius | | | S4S5B |
| Yellow-rumped Warbler | Setophaga coronata | | | S5B |

Bold indicates a species is considered a SAR

* indicates a species is considered a SoCC

† indicates a species was only detected during a Diurnal Watch Count Survey

‡ indicates species was only identified during the Breeding Nocturnal Owl Survey.

3.2.1 Spring Migration Stop-over Surveys

A total of 1,321 individual birds comprised of 61 species were recorded during the Spring Migration Stop-over Counts. These data are used to assess abundance of each species, as well as to briefly examine the seasonality of bird diversity migrating through the study area. A summary of the birds observed during the Spring Diurnal Watch Counts is presented in Table H-4. As anticipated, there was a general trend of increasing bird diversity throughout the spring migratory period, which is illustrated in Figure H-4. As the spring progresses, more and more species return to Nova Scotia from their wintering grounds and a higher number of species can be expected to be detected within the LAA. This trend is

exhibited along both Transect 1 and Transect 2, with only 25 and 22 species detected, respectively, during the first spring migratory survey (April 28), but growing to 38 and 37 species detected, respectively, on the final spring migratory survey (May 26).

Table H-4: Spring Diurnal Watch Count Results

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|--------------------|-----------------------|---------|------------|---------|-------|-------------------|--------------|-----------------|----------------|--------------------------------|
| 07-May-21 Watch Location 2 | | | | | | | | | | | | |
| 9:20 | 0 | Northern Harrier | Circus hudsonius | S3S4B | 1 | passing | | 500 | SW | 100-250 | E | |
| | | Northern Harrier | Circus hudsonius | S3S4B | 1 | passing | | | W | 100-250 | N | Possibly same bird |
| | | Northern Flicker | Colaptes auratus | S5B | 2 | local | | 300 | W | <50 | N | moving across blueberry fields |
| | | American Robin | Turdus migratorius | S5B,S3N | 11 | local | | 100 | S | <50 | | foraging in blueberry fields |
| 9:50 | 30 | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | passing | | 250 | W | 50-100 | SW | |
| | | Common Raven | Corvus corax | S5 | 1 | passing | | 500 | N | 100-250 | S | |
| 10:20 | 60 | Osprey | Pandion haliaetus | S4B | 1 | passing | | 500 | W | 100-250 | SE | |
| | | American Crow | Corvus brachyrhynchos | S5 | 3 | passing | | 250 | N | <50 | SE | moving just over canopy height |
| | | Common Raven | Corvus corax | S5 | 2 | passing | | 250 | S | 50-100 | NW | |
| | | Blue Jay | Cyanocitta cristata | S5 | 3 | local | | 250 | N W | <50 | E | |
| 10:50 | 90 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 1000 | N W | 100-250 | S | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|---------------------|-----------------------|--------|------------|----------|-------|-------------------|--------------|-----------------|----------------|-----------------------------------------------|
| 11:20 | 120 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | circling | | 500 | W | 250+ | SE | soaring, gaining altitude |
| | | Broad-winged Hawk | Buteo platypterus | S5B | 1 | passing | | 1000 | W | 100-250 | N | |
| 11:50 | 150 | passerine spp. | - | | 3 | passing | | 100 | W | 50-100 | E | suspected warblers |
| | | Common Raven | Corvus corax | S5 | 1 | passing | | 100 | W | 50-100 | N | |
| | | Turkey Vulture | Cathartes aura | S2S3B | 1 | passing | | 500 | SW | 100-250 | NW | may have been foraging/ searching for carrion |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | circling | | 1000 | SW | 250+ | E | soaring, gaining altitude |
| 12:20 | 180 | Belted Kingfisher | Megasceryle alcyon | S5B | 1 | passing | call | 250 | N | 50-100 | S | agitated, calling |
| | | Northern Harrier | Circus hudsonius | S3S4B | 1 | local | | 250 | S | <50 | | hunting over blueberry fields |
| 12:50 | 210 | American Crow | Corvus brachyrhynchos | S5 | 2 | passing | | 500 | SW | 50-100 | W | |
| 13:20 | 240 | SURVEY END | | | | | | | | | | |
| 14-May-21 Watch Location 1 | | | | | | | | | | | | |
| 9:30 | 0 | Common Yellowthroat | Geothlypis trichas | S5B | 2 | local | sing | 100 | | | | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|--------------------|--------------------------|--------|------------|----------|-------|-------------------|--------------|-----------------|----------------|-------------------------------------------|
| | | American Kestrel | Falco sparverius | S3B | 2 | perched | | 250 | W | | | male and female perched, possible pair |
| | | Northern Flicker | Colaptes auratus | S5B | 1 | local | | 100 | N | <50 | N | moving over cut area |
| 10:00 | 30 | American Crow | Corvus brachyrhynchos | S5 | 2 | passing | | 1000 | SW | 50-100 | SE | |
| | | American Goldfinch | Spinus tristis | S5 | 2 | passing | | 250 | SW | 50-100 | NE | |
| | | Blue Jay | Cyanocitta cristata | S5 | 1 | local | call | 100 | E | <50 | SE | |
| | | passerine spp. | - | | 1 | passing | | 50 | SW | 50-100 | NE | likely a warbler |
| 10:30 | 60 | Turkey Vulture | Cathartes aura | S2S3B | 1 | passing | | 1000 | N | 100-250 | NE | |
| | | American Crow | Corvus brachyrhynchos | S5 | 2 | passing | | 500 | S | 50-100 | E | |
| | | American Kestrel | Falco sparverius | S3B | 2 | perched | | 250 | SW | <50 | SW | likely same two birds seen earlier |
| | | Common Grackle | Quiscalus quiscula | S5B | 1 | passing | call | 250 | W | 50-100 | E | |
| 11:00 | 90 | Bald Eagle | Haliaeetus leucocephalus | S5 | 1 | circling | | 1000 | SW | 100-250 | W | gaining altitude, fading westward (adult) |
| | | Turkey Vulture | Cathartes aura | S2S3B | 1 | passing | | 1000 | N W | 100-250 | W | possibly same bird as earlier |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|------------------------|--------------------------|--------|------------|----------|-------|-------------------|--------------|-----------------|----------------|----------------------------------------------------|
| | | Blue Jay | Cyanocitta cristata | S5 | 1 | local | call | 100 | E | <50 | S | moving just above canopy level |
| 11:30 | 120 | White-throated Sparrow | Zonotrichia albicollis | S5B | 1 | local | sing | 50 | SW | | | |
| 12:00 | 150 | Canada Goose | Branta canadensis | S4N | 2 | passing | | 250 | W | 100-250 | E | |
| | | Bald Eagle | Haliaeetus leucocephalus | S5 | 1 | passing | | 500 | S | 100-250 | E | immature bird, different than one seen earlier |
| 12:30 | 180 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | circling | call | 500 | SE | 100-250 | E | gaining altitude, occasionally calling/ screeching |
| 13:00 | 210 | Blue Jay | Cyanocitta cristata | S5 | 4 | passing | | 250 | W | 100-250 | N | |
| | | American Goldfinch | Spinus tristis | S5 | 1 | passing | call | 100 | S | 100-250 | NE | |
| | | passerine spp. | - | | 3 | passing | call | 100 | W | 100-250 | E | |
| | | Common Raven | Corvus corax | S5 | 1 | passing | | 500 | N W | 100-250 | SW | |
| 13:30 | 240 | SURVEY END | | | | | | | | | | |
| 15-May-21 Watch Location 2 | | | | | | | | | | | | |
| 8:40 | 0 | Common Grackle | Quiscalus quiscula | S5B | 1 | passing | | 50 | NE | 50-100 | S | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|-----------------------|--------------------------|---------|------------|---------|-------|-------------------|--------------|-----------------|----------------|----------|
| | | American Crow | Corvus brachyrhynchos | S5 | 2 | passing | | 500 | N W | 50-100 | E | |
| 9:10 | 30 | American Crow | Corvus brachyrhynchos | S5 | 1 | passing | | 250 | N W | 50-100 | E | |
| | | warbler spp. | - | | 1 | passing | | 500 | SE | 50-100 | NW | |
| | | American Robin | Turdus migratorius | S5B,S3N | 1 | passing | | 500 | SW | 50-100 | E | |
| | | Blue Jay | Cyanocitta cristata | S5 | 1 | passing | | 50 | S | 50-100 | N | |
| 9:40 | 60 | Bald Eagle | Haliaeetus leucocephalus | S5 | 1 | passing | | 500 | SE | 50-100 | NE | |
| | | Yellow-rumped Warbler | Setophaga coronata | S5B | 1 | passing | | 0 | S | 50-100 | N | |
| | | Common Grackle | Quiscalus quiscula | S5B | 9 | passing | | 1000 | SW | 50-100 | E | |
| 10:10 | 90 | American Goldfinch | Spinus tristis | S5 | 1 | passing | | 0 | N W | 50-100 | SE | |
| | | American Robin | Turdus migratorius | S5B,S3N | 1 | passing | | 250 | SW | 50-100 | E | |
| | | Yellow-rumped Warbler | Setophaga coronata | S5B | 1 | passing | | 0 | S | 50-100 | N | |
| 10:40 | 120 | Red-tailed Hawk | Buteo jamaicensis | S5 | 2 | hunting | | 1000 | SE | 100-250 | | |
| | | Common Raven | Corvus corax | S5 | 1 | passing | | 1000 | SW | 50-100 | E | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|--------------------|-----------------------------|-----------------|------------|---------|-------|-------------------|--------------|-----------------|----------------|----------------------------------------|
| | | American Goldfinch | <i>Spinus tristis</i> | S5 | 1 | passing | | 50 | S | 50-100 | N | |
| | | Turkey Vulture | <i>Cathartes aura</i> | S2S3B | 1 | passing | | 2000 | S | 100-250 | NW | |
| | | Blue Jay | <i>Cyanocitta cristata</i> | S5 | 4 | passing | | 500 | N W | 50-100 | S | |
| | | Purple Finch | <i>Haemorhous purpureus</i> | S4S5B, S3S4N | 1 | passing | | 0 | S | 50-100 | NE | |
| | | Sharp-shinned Hawk | <i>Accipiter striatus</i> | S5 | 1 | passing | | 1000 | SW | 100-250 | E | riding updrafts, gradually moving east |
| 11:10 | 150 | Red-tailed Hawk | <i>Buteo jamaicensis</i> | S5 | 1 | hunting | | 1000 | SW | 100-250 | SE | |
| | | passerine spp. | - | - | 1 | passing | | 500 | N W | 100-250 | E | |
| | | Red-tailed Hawk | <i>Buteo jamaicensis</i> | S5 | 1 | hunting | | 2000 | SE | 100-250 | | |
| | | Blue Jay | <i>Cyanocitta cristata</i> | S5 | 1 | passing | | 250 | SW | 50-100 | E | |
| 11:40 | 180 | Red-tailed Hawk | <i>Buteo jamaicensis</i> | S5 | 2 | hunting | | 2000 | S | 100-250 | | |
| 12:10 | 210 | Common Raven | <i>Corvus corax</i> | S5 | 1 | soaring | | 2000 | S | 250+ | | |
| | | Northern Harrier | <i>Circus hudsonius</i> | S3S4B | 1 | passing | | 500 | SE | 100-250 | N | |
| 12:40 | 240 | SURVEY END | | | | | | | | | | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|---------------------|---------------------|---------|------------|---------|-------|-------------------|--------------|-----------------|----------------|---------------------------------|
| 20-May-21 Watch Location 2 | | | | | | | | | | | | |
| 8:50 | 0 | American Kestrel | Falco sparverius | S3B | 1 | passing | | 250 | N W | <50 | SE | |
| 9:20 | 30 | American Kestrel | Falco sparverius | S3B | 1 | passing | | 250 | N W | <50 | SE | |
| 9:50 | 60 | *no birds detected* | - | | | | | | | | | |
| 10:20 | 90 | *no birds detected* | - | | | | | | | | | |
| 10:50 | 120 | Common Raven | Corvus corax | S5 | 1 | passing | | 1000 | SW | 50-100 | E | |
| 11:20 | 150 | Blue Jay | Cyanocitta cristata | S5 | 1 | passing | | 0 | N | 50-100 | S | |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 500 | SW | 100-250 | N | |
| 11:50 | 180 | American Robin | Turdus migratorius | S5B,S3N | 1 | passing | | 100 | NE | 50-100 | SW | |
| | | American Goldfinch | Spinus tristis | S5 | 1 | passing | | 50 | SE | 50-100 | W | |
| 12:20 | 210 | Common Raven | Corvus corax | S5 | 1 | passing | | 1000 | SE | 50-100 | N | |
| | | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | passing | | 100 | SE | 100-250 | N | |
| 12:50 | 240 | SURVEY END | | | | | | | | | | |
| 21-May-21 Watch Location 1 | | | | | | | | | | | | |
| 9:20 | 0 | Blue Jay | Cyanocitta cristata | S5 | 2 | local | call | 100 | E | <50 | NE | staying just above canopy level |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|---------------------|-----------------------|--------|------------|---------|-------|-------------------|--------------|-----------------|----------------|---------------------------------------------------------|
| | | American Kestrel | Falco sparverius | S3B | 1 | local | | 250 | W | <50 | W | (male) hunting over cut area, erratic flight (hawking?) |
| 9:50 | 30 | American Kestrel | Falco sparverius | S3B | 1 | perched | | 250 | W | | | same bird (male), perched amongst dead/dying trees |
| | | American Crow | Corvus brachyrhynchos | S5 | 2 | passing | | 500 | SW | 50-100 | NW | |
| 10:20 | 60 | Blue Jay | Cyanocitta cristata | S5 | 1 | passing | | 250 | W | 50-100 | E | |
| | | Common Grackle | Quiscalus quiscula | S5B | 1 | passing | call | 250 | NE | 50-100 | W | |
| | | duck spp. | - | | 2 | passing | | 500 | W | 100-250 | E | probably American Black Duck |
| 10:50 | 90 | *no birds detected* | | | | | | | | | | |
| 11:20 | 120 | Northern Harrier | Circus hudsonius | S3S4B | 1 | passing | | 500 | NE | 50-100 | SW | dipping lower over cut area to hunt |
| 11:50 | 150 | Common Raven | Corvus corax | S5 | 2 | passing | | 1000 | N W | 50-100 | N | |
| | | American Goldfinch | Spinus tristis | S5 | 1 | passing | call | 50 | SW | 50-100 | N | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|--------------------|-----------------------|--------|------------|---------|-------|-------------------|--------------|-----------------|----------------|-----------------------------------------------------------------|
| 12:20 | 180 | Hairy Woodpecker | Dryobates villosus | S5 | 1 | passing | | 100 | NE | <50 | SE | just staying above canopy level |
| | | Blue Jay | Cyanocitta cristata | S5 | 1 | passing | | 250 | N W | <50 | SW | |
| 12:50 | 210 | American Kestrel | Falco sparverius | S3B | 1 | perched | | 250 | W | | | (female) perched in same patch of trees the male was in earlier |
| | | American Crow | Corvus brachyrhynchos | S5 | 5 | passing | | 1000 | SE | 50-100 | SW | |
| | | American Goldfinch | Spinus tristis | S5 | 2 | passing | | 100 | W | 50-100 | E | |
| 13:20 | 240 | SURVEY END | | | | | | | | | | |
| | | | | | | | | | | | | |
| Totals | 1,200 (20h) | | | | 146 | | | | | | | |

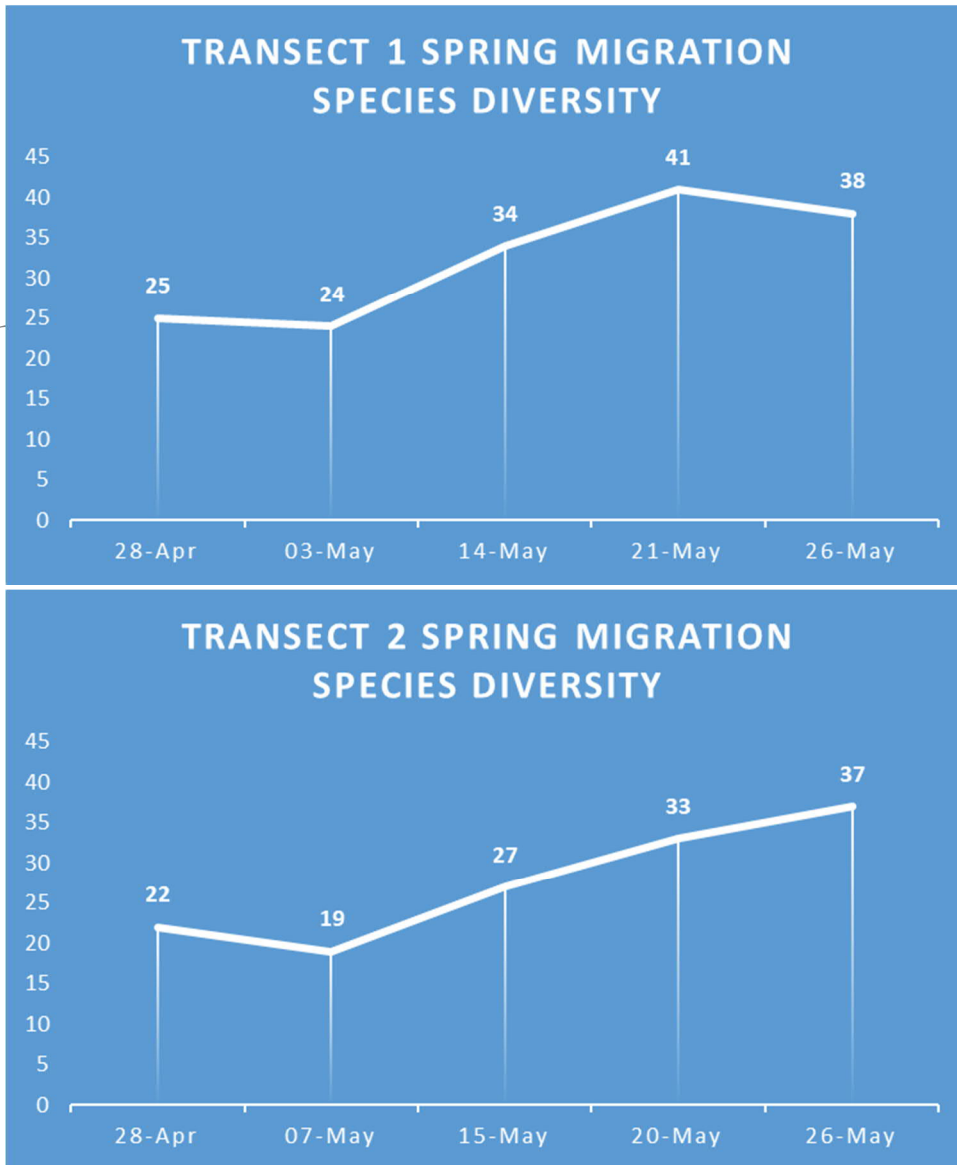


Figure H-4: Number of Bird Species Detected During the 2021 Spring Bird Surveys by Transect Within the Westchester Wind Project LAA

Overall, the majority of the birds detected within the assessment area during the Spring Migration Stop-over Counts are ranked S4 or S5 by the ACCDC indicating that they are considered 'Apparently Secure' or 'Secure', respectively. The abundance of bird species observed during the spring stop-over counts, which only includes data collected during the point count surveys, is included in Table H-5. A discussion of detected SOCC and SAR is available in Section 6.2.3.

Table H-5: Total Abundance of Birds Detected during the 2021 Spring Migration Stop-Over Counts.

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|------------------------------|---------------------------|-------------|---------------|--------------|
| 140 | White-throated Sparrow | Zonotrichia albicollis | | | S5B |
| 125 | *American Robin | Turdus migratorius | | | S5B,S3N |
| 92 | Black-throated Green Warbler | Setophaga virens | | | S5B |
| 73 | Ovenbird | Seiurus aurocapilla | | | S5B |
| 70 | Hermit Thrush | Catharus guttatus | | | S5B |
| 65 | Yellow-rumped Warbler | Setophaga coronata | | | S5B |
| 49 | Dark-eyed Junco | Junco hyemalis | | | S4S5 |
| 48 | Magnolia Warbler | Setophaga magnolia | | | S5B |
| 44 | *Ruby-crowned Kinglet | Regulus calendula | | | S3S4B |
| 39 | Common Yellowthroat | Geothlypis trichas | | | S5B |
| 39 | Song Sparrow | Melospiza melodia | | | S5B |
| 38 | Black-and-White Warbler | Mniotilta varia | | | S5B |
| 37 | Northern Flicker | Colaptes auratus | | | S5B |
| 37 | *Purple Finch | Haemorhous purpureus | | | S4S5B, S3S4N |
| 36 | Black-capped Chickadee | Poecile atricapillus | | | S5 |
| 32 | Blue Jay | Cyanocitta cristata | | | S5 |
| 30 | Blue-headed Vireo | Vireo solitarius | | | S5B |
| 24 | Savannah Sparrow | Passerculus sandwichensis | | | S4S5B |
| 22 | Golden-crowned Kinglet | Regulus satrapa | | | S5 |
| 21 | American Crow | Corvus brachyrhynchos | | | S5 |
| 19 | American Goldfinch | Spinus tristis | | | S5 |

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|-----------------------------|-----------------------------------|-------------|---------------|-----------|
| 19 | American Redstart | <i>Setophaga ruticilla</i> | | | S4S5B |
| 17 | Palm Warbler | <i>Setophaga palmarum</i> | | | S5B |
| 17 | Ruffed Grouse | <i>Bonasa umbellus</i> | | | S5 |
| 16 | *Boreal Chickadee | <i>Poecile hudsonicus</i> | | | S3 |
| 14 | Winter Wren | <i>Troglodytes hiemalis</i> | | | S5B |
| 13 | Lincoln's Sparrow | <i>Melospiza lincolni</i> | | | S4B |
| 11 | Chestnut-sided Warbler | <i>Setophaga pensylvanica</i> | | | S5B |
| 11 | *Swainson's Thrush | <i>Catharus ustulatus</i> | | | S3S4B |
| 9 | *Bay-breasted Warbler | <i>Setophaga castanea</i> | | | S3S4B |
| 8 | Hairy Woodpecker | <i>Dryobates villosus</i> | | | S5 |
| 7 | Red-eyed Vireo | <i>Vireo olivaceus</i> | | | S5B |
| 7 | Ring-necked Pheasant | <i>Phasianus colchicus</i> | | | SNA |
| 5 | Alder Flycatcher | <i>Empidonax alnorum</i> | | | S5B |
| 5 | *American Kestrel | <i>Falco sparverius</i> | | | S3B |
| 5 | Black-throated Blue Warbler | <i>Setophaga caerulescens</i> | | | S5B |
| 5 | Common Grackle | <i>Quiscalus quiscula</i> | | | S5B |
| 5 | Evening Grosbeak | <i>Coccothraustes vespertinus</i> | SC | V | S3S4B,S3N |
| 5 | Northern Parula | <i>Setophaga americana</i> | | | S5B |
| 5 | Swamp Sparrow | <i>Melospiza georgiana</i> | | | S5B |
| 4 | American Black Duck | <i>Anas rubripes</i> | | | S5 |
| 4 | *Cape May Warbler | <i>Setophaga tigrina</i> | | | S2B |
| 4 | Common Raven | <i>Corvus corax</i> | | | S5 |
| 4 | Downy Woodpecker | <i>Dryobates pubescens</i> | | | S5 |
| 4 | Nashville Warbler | <i>Oreothlypis ruficapilla</i> | | | S4S5B |
| 4 | Yellow-bellied Sapsucker | <i>Sphyrapicus varius</i> | | | S4S5B |
| 3 | Blackburnian Warbler | <i>Setophaga fusca</i> | | | S4B |

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|--------------------------------|--------------------------------|-------------|---------------|--------|
| 3 | Least Flycatcher | <i>Empidonax minimus</i> | | | S4S5B |
| 3 | Mourning Dove | <i>Zenaida macroura</i> | | | S5 |
| 3 | Northern Waterthrush | <i>Parkesia noveboracensis</i> | | | S4B |
| 3 | Pileated Woodpecker | <i>Dryocopus pileatus</i> | | | S5 |
| 2 | *Blackpoll Warbler | <i>Setophaga striata</i> | | | S3S4B |
| 2 | Brown Creeper | <i>Certhia americana</i> | | | S5 |
| 2 | Canada Goose | <i>Branta canadensis</i> | | | S4N |
| 2 | Canada Warbler | <i>Cardellina canadensis</i> | T | E | S3B |
| 2 | Mourning Warbler | <i>Geothlypis philadelphia</i> | | | S4B |
| 2 | *Northern Harrier | <i>Circus hudsonius</i> | NAR | | S3S4B |
| 2 | *Red-breasted Nuthatch | <i>Sitta canadensis</i> | | | S3 |
| 2 | Yellow Warbler | <i>Setophaga petechia</i> | | | S5B |
| 1 | *Canada Jay | <i>Perisoreus canadensis</i> | | | S3 |
| 1 | Merlin | <i>Falco columbarius</i> | NAR | | S5B |
| | | | | | |
| 1321 | Total number of birds detected | | | | |

Bold indicates a species is considered a SAR

* indicates a species is considered a SoCC

3.2.2 Breeding Nocturnal Owl Survey

During the breeding nocturnal owl survey in 2021, there was only one species of nocturnal owl was detected, a single Barred Owl (*Strix varia*). No SAR or SoCC owl species were detected during the 2021 breeding nocturnal owl surveys. The results of the 2021 breeding nocturnal owl surveys are presented in Table H-6.

Table H-6: Results of the 2021 Breeding Nocturnal Owl Survey

| Survey Location | Number detected | Common Name | Scientific Name | Estimated Distance (m) | Estimated Direction | S-rank |
|-----------------|-----------------|-------------------|-----------------------|------------------------|---------------------|--------|
| #1 | 2 | American Woodcock | <i>Scolopax minor</i> | 100-250 | North | S5B |
| #2 | 1 | American Woodcock | <i>Scolopax minor</i> | 200 | South | S5B |
| #3 | nil | n/a | n/a | n/a | n/a | n/a |
| #4 | 1 | Barred Owl | <i>Strix varia</i> | 400 | SW | S5 |
| #5 | nil | n/a | n/a | n/a | n/a | n/a |
| #5 | nil | n/a | n/a | n/a | n/a | n/a |
| #6 | 2 | American Woodcock | <i>Scolopax minor</i> | 100-250 | North | S5B |

3.3 Summer Survey Program

A total of 584 individual birds comprised of 56 species were recorded during the Summer Survey program, as summarized in Table H-7. The majority of these individuals and species, 562 and 54 respectively, were detected during point counts conducted for the Breeding Bird Survey. A further 2 individuals and 1 species were added as a result of the Breeding Common Nighthawk Survey, and lastly, 19 individuals and 1 more species were added through incidental detections.

Table H-7: Alphabetical list of All Bird Species Detected during the Summer Survey Program (inclusive of all survey types and incidental detections)

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|------------------------------|-------------------------------|------|--------|---------|
| Alder Flycatcher | <i>Empidonax alnorum</i> | | | S5B |
| American Black Duck | <i>Anas rubripes</i> | | | S5 |
| American Crow | <i>Corvus brachyrhynchos</i> | | | S5 |
| American Goldfinch | <i>Spinus tristis</i> | | | S5 |
| *American Kestrel | <i>Falco sparverius</i> | | | S3B |
| American Redstart | <i>Setophaga ruticilla</i> | | | S4S5B |
| American Robin | <i>Turdus migratorius</i> | | | S5B,S3N |
| *Bay-breasted Warbler | <i>Setophaga castanea</i> | | | S3S4B |
| Black-and-White Warbler | <i>Mniotilta varia</i> | | | S5B |
| Blackburnian Warbler | <i>Setophaga fusca</i> | | | S4B |
| Black-capped Chickadee | <i>Poecile atricapillus</i> | | | S5 |
| Black-throated Blue Warbler | <i>Setophaga caerulescens</i> | | | S5B |
| Black-throated Green Warbler | <i>Setophaga virens</i> | | | S5B |
| Blue Jay | <i>Cyanocitta cristata</i> | | | S5 |
| Blue-headed Vireo | <i>Vireo solitarius</i> | | | S5B |

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|------------------------|----------------------------|------|--------|-------------|
| *Boreal Chickadee | Poecile hudsonicus | | | S3 |
| ΩBroad-winged Hawk | Buteo platypterus | | | S5B |
| *Canada Jay | Perisoreus canadensis | | | S3 |
| *Cape May Warbler | Setophaga tigrina | | | S2B |
| Cedar Waxwing | Bombycilla cedrorum | | | S5B |
| Chestnut-sided Warbler | Setophaga pensylvanica | | | S5B |
| Common Grackle | Quiscalus quiscula | | | S5B |
| ‡Common Nighthawk | Chordeiles minor | SC | T | S2B |
| Common Raven | Corvus corax | | | S5 |
| Common Yellowthroat | Geothlypis trichas | | | S5B |
| Dark-eyed Junco | e | | | S4S5 |
| Downy Woodpecker | Dryobates pubescens | | | S5 |
| Evening Grosbeak | Coccothraustes vespertinus | SC | V | S3S4B,S3N |
| Golden-crowned Kinglet | Regulus satrapa | | | S5 |
| Hairy Woodpecker | Dryobates villosus | | | S5 |
| Hermit Thrush | Catharus guttatus | | | S5B |
| Least Flycatcher | Empidonax minimus | | | S4S5B |
| Lincoln's Sparrow | Melospiza lincolni | | | S4B |
| Magnolia Warbler | Setophaga magnolia | | | S5B |
| Mourning Warbler | Geothlypis philadelphia | | | S4B |
| Nashville Warbler | Oreothlypis ruficapilla | | | S4S5B |
| Northern Flicker | Colaptes auratus | | | S5B |
| *Northern Harrier | e | NAR | | S3S4B |
| Northern Parula | ee | | | S5B |
| Ovenbird | Seiurus aurocapilla | | | S5B |
| Palm Warbler | Setophaga palmarum | | | S5B |
| *Purple Finch | Haemorhous purpureus | | | S4S5B,S3S4N |
| *Red Crossbill | Loxia curvirostra | | | S3S4 |
| *Red-breasted Nuthatch | Sitta canadensis | | | S3 |
| Red-eyed Vireo | Vireo olivaceus | | | S5B |
| Ring-necked Pheasant | Phasianus colchicus | | | SNA |
| *Ruby-crowned Kinglet | Regulus calendula | | | S3S4B |
| Ruffed Grouse | Bonasa umbellus | | | S5 |
| Savannah Sparrow | Passerculus sandwichensis | | | S4S5B |

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|--------------------------|------------------------|------|--------|--------|
| Song Sparrow | Melospiza melodia | | | S5B |
| *Swainson's Thrush | Catharus ustulatus | | | S3S4B |
| Swamp Sparrow | Melospiza georgiana | | | S5B |
| White-throated Sparrow | Zonotrichia albicollis | | | S5B |
| Winter Wren | Troglodytes hiemalis | | | S5B |
| Yellow-bellied Sapsucker | Sphyrapicus varius | | | S4S5B |
| Yellow-rumped Warbler | Setophaga coronata | | | S5B |

Bold indicates a species is considered a SAR

* indicates a species is considered a SoCC

‡ indicates species was only identified during the Breeding Common Nighthawk Survey.

Ω indicates a species was only detected incidentally

3.3.1 Breeding Bird Survey

A total of 562 individual birds comprised of 54 species were recorded during the summer Breeding Bird Survey, as summarized in Table H-8. These data are used to assess abundance of each species, as well as to briefly examine the seasonality of bird diversity during the earlier and later portion of the peak breeding period.

Figure H-5 illustrates that bird diversity increased between the 'early' and 'late' breeding season, but overall remained relatively high throughout, ranging from 33-39 species detected. Overall, the vast majority of the birds detected within the assessment area during the Summer Breeding Bird Survey are ranked S4 or S5 by the ACCDC indicating that they are considered 'Apparently Secure' or 'Secure', respectively. The abundance of bird species observed during the summer breeding bird surveys, which only includes data collected during the point count surveys, is included in Table H-8. A detailed discussion of detected SoCC and SAR is available in Section 6.2.3 of the registration document for the Westchester Wind Project Environmental Assessment.

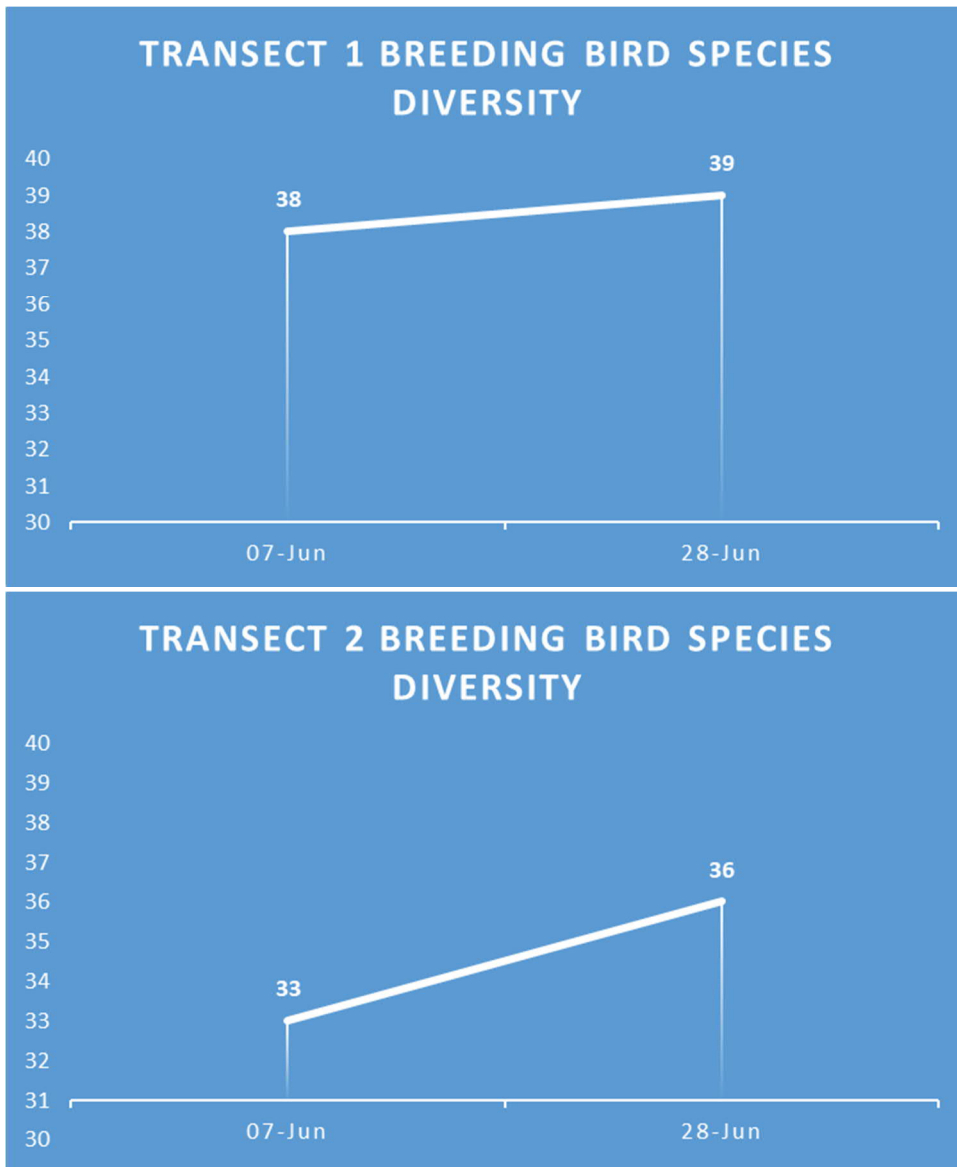


Figure H-5: Number of Bird Species Detected During the 2021 Summer Bird Surveys by Transect at the Westchester Wind Project Site

Table H-8: Total Abundance of Birds Detected During the 2021 Summer Breeding Bird Survey.

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|------------------------------|---------------------------|-------------|---------------|---------|
| 51 | White-throated Sparrow | Zonotrichia albicollis | | | S5B |
| 49 | Black-throated Green Warbler | Setophaga virens | | | S5B |
| 38 | Common Yellowthroat | Geothlypis trichas | | | S5B |
| 32 | Magnolia Warbler | Setophaga magnolia | | | S5B |
| 30 | Ovenbird | Seiurus aurocapilla | | | S5B |
| 28 | Red-eyed Vireo | Vireo olivaceus | | | S5B |
| 27 | Alder Flycatcher | Empidonax alnorum | | | S5B |
| 23 | American Redstart | Setophaga ruticilla | | | S4S5B |
| 21 | American Robin | Turdus migratorius | | | S5B,S3N |
| 19 | Black-and-White Warbler | Mniotilta varia | | | S5B |
| 19 | *Swainson's Thrush | Catharus ustulatus | | | S3S4B |
| 18 | Hermit Thrush | Catharus guttatus | | | S5B |
| 14 | Lincoln's Sparrow | Melospiza lincolni | | | S4B |
| 13 | Blue Jay | Cyanocitta cristata | | | S5 |
| 12 | Yellow-rumped Warbler | Setophaga coronata | | | S5B |
| 11 | Dark-eyed Junco | Junco hyemalis | | | S4S5 |
| 11 | Savannah Sparrow | Passerculus sandwichensis | | | S4S5B |
| 10 | Blue-headed Vireo | Vireo solitarius | | | S5B |
| 9 | *Boreal Chickadee | Poecile hudsonicus | | | S3 |
| 9 | Song Sparrow | Melospiza melodia | | | S5B |
| 8 | Golden-crowned Kinglet | Regulus satrapa | | | S5 |
| 7 | *Bay-breasted Warbler | Setophaga castanea | | | S3S4B |
| 6 | American Black Duck | Anas rubripes | | | S5 |
| 6 | Cedar Waxwing | Bombycilla cedrorum | | | S5B |
| 6 | Chestnut-sided Warbler | Setophaga pensylvanica | | | S5B |

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|-----------------------------|-----------------------------------|-------------|---------------|-----------------|
| 6 | Mourning Warbler | <i>Geothlypis philadelphia</i> | | | S4B |
| 6 | Northern Flicker | <i>Colaptes auratus</i> | | | S5B |
| 6 | *Purple Finch | <i>Haemorhous purpureus</i> | | | S4S5B, S3S4N |
| 5 | Black-capped Chickadee | <i>Poecile atricapillus</i> | | | S5 |
| 5 | *Canada Jay | <i>Perisoreus canadensis</i> | | | S3 |
| 5 | *Ruby-crowned Kinglet | <i>Regulus calendula</i> | | | S3S4B |
| 4 | American Crow | <i>Corvus brachyrhynchos</i> | | | S5 |
| 4 | *American Kestrel | <i>Falco sparverius</i> | | | S3B |
| 4 | Common Raven | <i>Corvus corax</i> | | | S5 |
| 3 | American Goldfinch | <i>Spinus tristis</i> | | | S5 |
| 3 | *Cape May Warbler | <i>Setophaga tigrina</i> | | | S2B |
| 3 | Nashville Warbler | <i>Oreothlypis ruficapilla</i> | | | S4S5B |
| 3 | Palm Warbler | <i>Setophaga palmarum</i> | | | S5B |
| 3 | *Red Crossbill | <i>Loxia curvirostra</i> | | | S3S4 |
| 3 | Ring-necked Pheasant | <i>Phasianus colchicus</i> | | | SNA |
| 3 | Winter Wren | <i>Troglodytes hiemalis</i> | | | S5B |
| 2 | Blackburnian Warbler | <i>Setophaga fusca</i> | | | S4B |
| 2 | Black-throated Blue Warbler | <i>Setophaga caeruleascens</i> | | | S5B |
| 2 | Evening Grosbeak | <i>Coccothraustes vespertinus</i> | SC | V | S3S4B,S3N |
| 2 | Hairy Woodpecker | <i>Dryobates villosus</i> | | | S5 |
| 2 | Northern Parula | <i>Setophaga americana</i> | | | S5B |
| 2 | *Red-breasted Nuthatch | <i>Sitta canadensis</i> | | | S3 |
| 1 | Common Grackle | <i>Quiscalus quiscula</i> | | | S5B |
| 1 | Downy Woodpecker | <i>Dryobates pubescens</i> | | | S5 |
| 1 | Least Flycatcher | <i>Empidonax minimus</i> | | | S4S5B |
| 1 | *Northern Harrier | <i>Circus hudsonius</i> | NAR | | S3S4B |

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|--------------------------------|----------------------------|-------------|---------------|--------|
| 1 | Ruffed Grouse | <i>Bonasa umbellus</i> | | | S5 |
| 1 | Swamp Sparrow | <i>Melospiza georgiana</i> | | | S5B |
| 1 | Yellow-bellied Sapsucker | <i>Sphyrapicus varius</i> | | | S4S5B |
| | | | | | |
| 562 | Total number of birds detected | | | | |

Bold indicates a species is considered a SAR

* indicates a species is considered a SoCC

3.3.2 Common Nighthawk Survey

There were three Common Nighthawk individuals detected during the Breeding Common Nighthawk Survey. This survey took place under a mostly clear sky on the evening of June 21, 2021 (the June 2021 full moon was on June 24, 2021). The results of the survey are summarized below in Table H-9.

Table H-9: Results of the Breeding Common Nighthawk Survey

| Survey Location | Number detected | Common Name | Scientific Name | Estimated Distance (m) | Estimated Direction | SARA | NS ESA | S-rank |
|-----------------|-----------------|------------------|-------------------------|------------------------|---------------------|------|--------|--------|
| #1 | nil | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| #2 | 1 | Common Nighthawk | <i>Chordeiles minor</i> | 500 | NW | SC | T | S2B |
| #3 | 2 | Common Nighthawk | <i>Chordeiles minor</i> | 100-200 | NW | SC | T | S2B |
| #4 | nil | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| #5 | nil | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| #6 | nil | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

3.4 Fall Survey Program

A total of 1,286 individual birds comprised of 64 species were recorded during the Fall Survey program as summarized in Table H-10. The majority of these individuals and species, 1,167 and 63 respectively, were detected during point counts conducted for the Fall Migration Stop-over Counts. A further 107 individuals and 1 more species were added through the Diurnal Watch Count surveys, and lastly, an additional 12 individuals, but no additional species were added through incidental detections.

Table H-10: Master List of Species Detected during the Fall Survey Program

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|------------------------------|---------------------------------|------|--------|---------|
| Alder Flycatcher | <i>Empidonax alnorum</i> | | | S5B |
| American Crow | <i>Corvus brachyrhynchos</i> | | | S5 |
| American Goldfinch | <i>Spinus tristis</i> | | | S5 |
| *American Kestrel | <i>Falco sparverius</i> | | | S3B |
| American Pipit | <i>Anthus rubescens</i> | | | S4M |
| American Redstart | <i>Setophaga ruticilla</i> | | | S4S5B |
| *American Robin | <i>Turdus migratorius</i> | | | S5B,S3N |
| American Woodcock | <i>Scolopax minor</i> | | | S5B |
| Bald Eagle | <i>Haliaeetus leucocephalus</i> | NAR | | S5 |
| *Bay-breasted Warbler | <i>Setophaga castanea</i> | | | S3S4B |
| Belted Kingfisher | <i>Megaceryle alcyon</i> | | | S5B |
| Black-and-White Warbler | <i>Mniotilta varia</i> | | | S5B |
| Blackburnian Warbler | <i>Setophaga fusca</i> | | | S4B |
| Black-capped Chickadee | <i>Poecile atricapillus</i> | | | S5 |
| *Blackpoll Warbler | <i>Setophaga striata</i> | | | S3S4B |
| Black-throated Green Warbler | <i>Setophaga virens</i> | | | S5B |
| Blue Jay | <i>Cyanocitta cristata</i> | | | S5 |
| Blue-headed Vireo | <i>Vireo solitarius</i> | | | S5B |
| *Boreal Chickadee | <i>Poecile hudsonicus</i> | | | S3 |
| Brown Creeper | <i>Certhia americana</i> | | | S5 |
| Canada Goose | <i>Branta canadensis</i> | | | S4N |
| *Canada Jay | <i>Perisoreus canadensis</i> | | | S3 |
| Canada Warbler | <i>Cardellina canadensis</i> | T | E | S3B |
| *Cape May Warbler | <i>Setophaga tigrina</i> | | | S2B |
| Cedar Waxwing | <i>Bombycilla cedrorum</i> | | | S5B |
| Common Grackle | <i>Quiscalus quiscula</i> | | | S5B |
| Common Raven | <i>Corvus corax</i> | | | S5 |

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|---------------------------|--------------------------------|------|--------|-----------------|
| Common Yellowthroat | <i>Geothlypis trichas</i> | | | S5B |
| Dark-eyed Junco | <i>Junco hyemalis</i> | | | S4S5 |
| Double-crested Cormorant | <i>Phalacrocorax auritus</i> | NAR | | S4B |
| Downy Woodpecker | <i>Dryobates pubescens</i> | | | S5 |
| Golden-crowned Kinglet | <i>Regulus satrapa</i> | | | S5 |
| Hairy Woodpecker | <i>Dryobates villosus</i> | | | S5 |
| Hermit Thrush | <i>Catharus guttatus</i> | | | S5B |
| †Herring Gull | <i>Larus argentatus</i> | | | S5 |
| Least Flycatcher | <i>Empidonax minimus</i> | | | S4S5B |
| Lincoln's Sparrow | <i>Melospiza lincolni</i> | | | S4B |
| Magnolia Warbler | <i>Setophaga magnolia</i> | | | S5B |
| Mourning Warbler | <i>Geothlypis philadelphia</i> | | | S4B |
| Nashville Warbler | <i>Oreothlypis ruficapilla</i> | | | S4S5B |
| Northern Flicker | <i>Colaptes auratus</i> | | | S5B |
| *Northern Harrier | <i>Circus hudsonius</i> | NAR | | S3S4B |
| Northern Parula | <i>Setophaga americana</i> | | | S5B |
| Ovenbird | <i>Seiurus aurocapilla</i> | | | S5B |
| Palm Warbler | <i>Setophaga palmarum</i> | | | S5B |
| Pileated Woodpecker | <i>Dryocopus pileatus</i> | | | S5 |
| *Purple Finch | <i>Haemorhous purpureus</i> | | | S4S5B, S3S4N |
| *Red Crossbill | <i>Loxia curvirostra</i> | | | S3S4 |
| *Red-breasted Nuthatch | <i>Sitta canadensis</i> | | | S3 |
| Red-eyed Vireo | <i>Vireo olivaceus</i> | | | S5B |
| Red-tailed Hawk | <i>Buteo jamaicensis</i> | NAR | | S5 |
| *Ruby-crowned Kinglet | <i>Regulus calendula</i> | | | S3S4B |
| Ruby-throated Hummingbird | <i>Archilochus colubris</i> | | | S5B |
| Ruffed Grouse | <i>Bonasa umbellus</i> | | | S5 |

| Common Name | Scientific Name | SARA | NS ESA | S-rank |
|-------------------------|----------------------------------|------|--------|--------|
| Savannah Sparrow | <i>Passerculus sandwichensis</i> | | | S4S5B |
| Sharp-shinned Hawk | <i>Accipiter striatus</i> | NAR | | S5 |
| Song Sparrow | <i>Melospiza melodia</i> | | | S5B |
| Spruce Grouse | <i>Falcapennis canadensis</i> | | | S4 |
| Swamp Sparrow | <i>Melospiza georgiana</i> | | | S5B |
| White-breasted Nuthatch | <i>Sitta carolinensis</i> | | | S4 |
| White-throated Sparrow | <i>Zonotrichia albicollis</i> | | | S5B |
| White-winged Crossbill | <i>Loxia leucoptera</i> | | | S4S5 |
| Winter Wren | <i>Troglodytes hiemalis</i> | | | S5B |
| Yellow-rumped Warbler | <i>Setophaga coronata</i> | | | S5B |

Bold indicates a species is considered a SAR

* indicates a species is considered a SoCC

† indicates a species was only detected during a Diurnal Watch Count Survey

3.4.1 Fall Migration Stop-over Counts

A total of 1,167 individual birds comprised of 63 species were recorded during the Fall Migration Stop-over Counts. These data are used to assess abundance of each species, as well as to briefly examine the seasonality of bird diversity migrating through the study area.

A summary of all birds observed during the Fall Diurnal Watch Counts is presented in Table H-11. As anticipated, there was a general trend of declining bird diversity throughout the fall migratory period, which is illustrated in Figure H-6. As the fall progresses, more and more species depart Nova Scotia for their more southerly wintering grounds and fewer species can be expected to remain in the LAA. This trend is exhibited along both Transect 1 and Transect 2, with 41 and 26 species detected, respectively, during the first fall migratory survey (August 25), but contracting to 24 and 17 species detected, respectively, on the final fall migratory survey (October 8).

Table H-11: Fall Diurnal Watch Count Results

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|--------------------------|---------------------------|--------|------------|----------|-------|-------------------|--------------|-----------------|----------------|----------------------------------------------------------------|
| 07-Sep-21 Watch Location 2 | | | | | | | | | | | | |
| 11:10 | 0 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 1000 | W | 50-100 | N | |
| | | Savannah Sparrow | Passerculus sandwichensis | S4S5B | 3 | local | | 100 | S | <50 | | |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | hunting | | 250 | W | <50 | | stooped into field |
| 11:40 | 30 | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | hunting | | 500 | W | <50 | | |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 500 | W | 50-100 | SW | |
| | | raptor spp. | - | | 1 | passing | | 5000 | W | 100-250 | SW | stooped into trees |
| | | Double-crested Cormorant | Phalacrocorax auritus | S4B | 1 | passing | | 3000 | N W | 250+ | NE | circling to gain altitude, looked like it eventually headed ne |
| | | Common Raven | Corvus corax | S5 | 1 | passing | | 500 | N W | 50-100 | E | |
| | | warbler spp. | - | | 1 | passing | | 250 | W | <50 | E | |
| 12:10 | 60 | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | passing | | 500 | SW | <50 | S | |
| | | Common Raven | Corvus corax | S5 | 1 | passing | | 500 | W | <50 | NE | |
| | | American Goldfinch | Spinus tristis | S5 | 1 | passing | | 100 | S | <50 | NW | |
| 12:40 | 90 | Bald Eagle | Haliaeetus leucocephalus | S5 | 2 | circling | | 2000 | E | 100-250 | | circling near communications tower |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|-----------------------|--------------------|--------|------------|---------|-------|-------------------|--------------|-----------------|----------------|----------------------------|
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | hunting | | 2000 | E | 100-250 | E | |
| 13:10 | 120 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 1000 | N W | 100-250 | SW | |
| | | Common Raven | Corvus corax | | 1 | passing | | 1000 | S | 50-100 | S | |
| | | Common Raven | Corvus corax | | 1 | passing | | 1000 | N | 100-250 | E | |
| | | warbler spp. | - | | 1 | passing | | 50 | N W | 50-100 | S | fighting wind to get south |
| 13:40 | 150 | Common Raven | Corvus corax | | 1 | passing | | 250 | NE | <50 | W | |
| | | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | passing | | 1000 | SE | 50-100 | NE | |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | hunting | | 500 | S | 100-250 | N | |
| | | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | passing | | 1000 | S | 50-100 | E | stooped into trees |
| 14:10 | 180 | SURVEY END | | | | | | | | | | |
| 15-Sep-21 Watch Location 2 | | | | | | | | | | | | |
| 10:00 | 0 | Canada Goose | Branta canadensis | S4N | 11 | passing | | 2000 | SW | <50 | NE | |
| | | Yellow-rumped Warbler | Setophaga coronata | S5B | 1 | passing | | 0 | E | <50 | W | |
| | | Herring Gull | Larus argentatus | | 2 | passing | | 3000 | N | 100-250 | S | |
| | | Herring Gull | Larus argentatus | | 3 | passing | | 500 | SE | <50 | W | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|---------------------|---------------------------|--------|------------|----------|---------|-------------------|--------------|-----------------|----------------|---------------------------------------------------------------------------|
| 10:30 | 30 | *no birds detected* | - | | | | | | | | | |
| 11:00 | 60 | *no birds detected* | - | | | | | | | | | |
| 11:30 | 90 | Bald Eagle | Haliaeetus leucocephalus | S5 | 1 | circling | | 2000 | N | 250+ | | circling to gain altitude. looked like it was slowly making its way south |
| 12:00 | 120 | raptor spp. | - | | 1 | circling | | 2000 | N | 250+ | | lost bird when switching to scope |
| | | passerine spp. | - | | 2 | passing | | 500 | SE | <50 | N | |
| 12:30 | 150 | buteo spp. | - | | 2 | passing | | 2000 | SE | 100-250 | N | probably Red-tailed hawks |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 2000 | SE | 100-250 | N | |
| | | Bald Eagle | Haliaeetus leucocephalus | S5 | 1 | passing | | 3000 | SE | 250+ | N | |
| | | warbler spp. | - | | 1 | passing | | 250 | NE | <50 | SE | |
| | | Savannah Sparrow | Passerculus sandwichensis | | 1 | local | calling | | | <50 | | |
| 13:00 | 180 | passerine spp. | - | | 2 | passing | | 100 | S | <50 | N | |
| 13:30 | 210 | Common Raven | Corvus corax | S5 | 1 | circling | | 2000 | N | 250+ | | |
| 14:00 | 240 | SURVEY END | | | | | | | | | | |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|-----------------------|--------------------------|----------|------------|---------|---------|-------------------|--------------|-----------------|----------------|-------------------------------------|
| 27-Sep-21 Watch Location 1 | | | | | | | | | | | | |
| 11:00 | 0 | American Kestrel | Falco sparverius | S3B | 1 | passing | | 250 | W | <50 | SW | (female) hunting in cutover areas |
| | | Yellow-rumped Warbler | Setophaga coronata | S5B | 1 | passing | | 50 | NE | <50 | SW | |
| 11:30 | 30 | American Crow | Corvus brachyrhynchos | S5 | 5 | passing | | 500 | SW | 50-100 | N | |
| | | Canada Goose | Branta canadensis | S4N | 5 | passing | | 100 | E | 50-100 | W | family group? |
| | | passerine spp. | - | | 2 | passing | | 100 | NE | 50-100 | NW | small, finch or warbler |
| 12:00 | 60 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 500 | SE | 50-100 | E | |
| | | Blue Jay | Cyanocitta cristata | S5 | 2 | local | calling | 100 | NE | <50 | SE | staying within or just above canopy |
| 12:30 | 90 | American Crow | Corvus brachyrhynchos | S5 | 3 | passing | | 250 | S | <50 | W | |
| | | Bald Eagle | Haliaeetus leucocephalus | S5 | 1 | passing | | 1000 | SW | 100-250 | W | mature, adult bird |
| | | American Robin | Turdus migratorius | S5B,S3 N | 2 | passing | | 250 | N | <50 | SW | |
| 13:00 | 120 | raptor spp. (buteo) | - | | 1 | passing | | 1000 | S | 50-100 | E | initial take was Broad-winged Hawk |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|----------------------------|--------------------------|--------------------|--------------------|--------|------------|---------|---------|-------------------|--------------|-----------------|----------------|------------------------------------------------------------------------------------------|
| 13:30 | 150 | Common Raven | Corvus corax | S5 | 1 | passing | calling | 500 | NE | ? | | only heard, moved away |
| | | American Kestrel | Falco sparverius | S3B | 1 | perch | | 250 | W | | | (female) |
| 14:00 | 180 | SURVEY END | | | | | | | | | | |
| 08-Oct-21 Watch Location 1 | | | | | | | | | | | | |
| 10:10 | 0 | raptor spp. | - | | 1 | passing | | 1000 | SE | 50-100 | N | |
| 10:40 | 30 | American Kestrel | Falco sparverius | S3B | 1 | passing | | 1000 | SE | 50-100 | NW | |
| | | passerine spp. | - | | 3 | passing | | 1000 | NE | 50-100 | S | |
| | | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 1000 | E | 50-100 | NW | birds staying low in wind, flying north, then banking west when reaching valley to north |
| | | raptor spp. | - | | 1 | passing | | 3000 | SW | 100-250 | S | |
| | | Northern Harrier | Circus hudsonius | S3S4B | 1 | passing | | 1000 | NE | 50-100 | W | male |
| | | Common Raven | Corvus corax | S5 | 9 | passing | | 2000 | NE | 50-100 | W | |
| | | Sharp-shinned Hawk | Accipiter striatus | S5 | 1 | passing | | 1000 | NE | 50-100 | W | stooped into woods |

| Survey Time | Total survey time (mins) | Common name | Scientific Name | S-Rank | # Detected | Seen | Heard | Est. Distance (m) | Est. Bearing | Pass Height (m) | Pass Direction | Comments |
|-------------|--------------------------|------------------|-------------------|--------|------------|---------|-------|-------------------|--------------|-----------------|----------------|------------------------------|
| 11:10 | 60 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 1000 | NE | 50-100 | NW | |
| | | passerine spp. | - | | 1 | passing | | 1000 | NE | 50-100 | W | |
| 11:40 | 90 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | passing | | 1000 | W | 100-250 | W | |
| 12:10 | 120 | Common Raven | Corvus corax | S5 | 1 | passing | | 2000 | NE | 100-250 | W | |
| | | Northern Harrier | Circus hudsonius | S3S4B | 1 | passing | | 1000 | W | 50-100 | W | female |
| 12:40 | 150 | raptor spp. | - | | 1 | passing | | 2000 | W | 250+ | SW | |
| 13:10 | 180 | raptor spp. | - | | 1 | passing | | 3000 | - | 250+ | NW | lost when switching to scope |
| 13:40 | 210 | Red-tailed Hawk | Buteo jamaicensis | S5 | 1 | hunting | | 1000 | NE | 100-250 | N | slowly making way north |
| 14:10 | 240 | SURVEY END | | | | | | | | | | |
| | | | | | | | | | | | | |
| Totals | 840 (14h) | | | | 107 | | | | | | | |

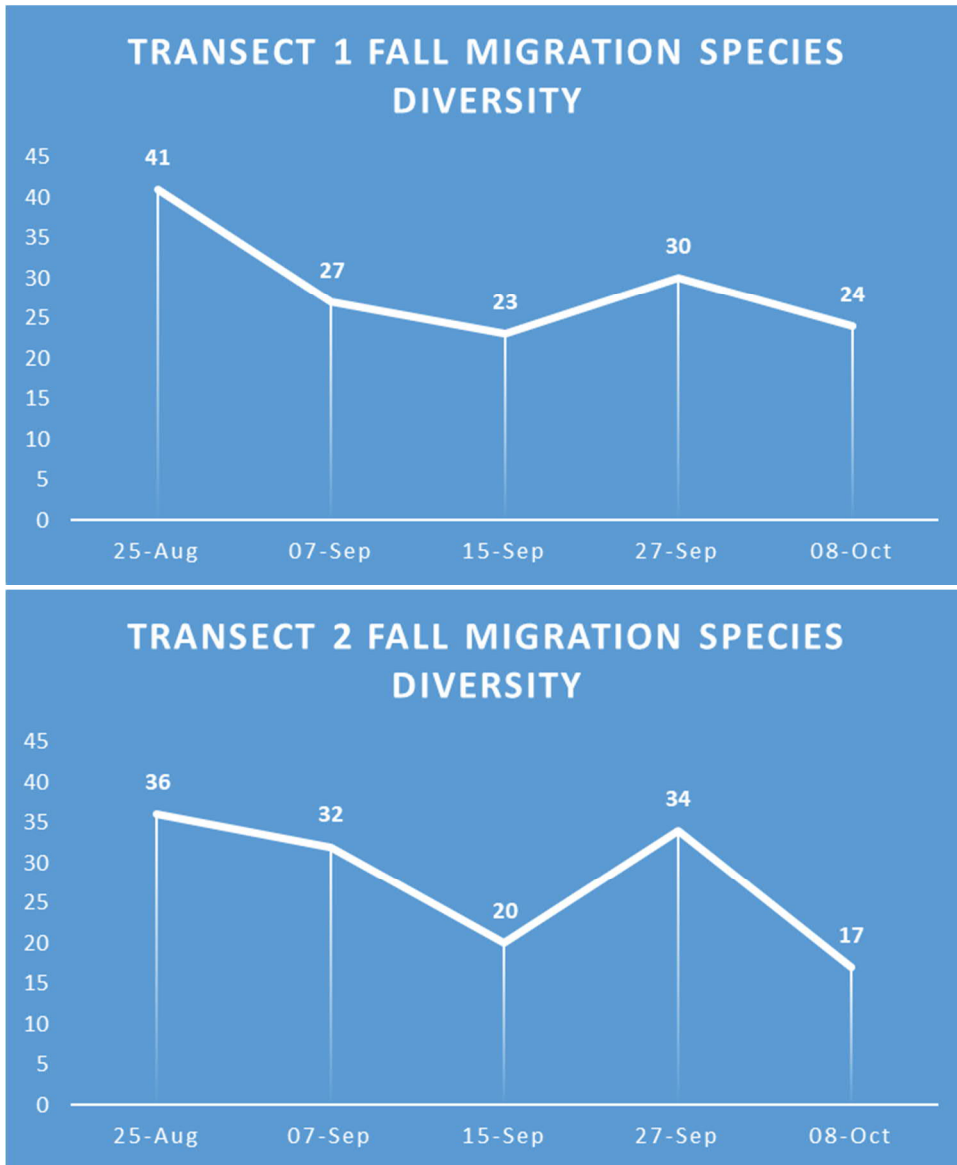


Figure H-6: Number of Bird Species Detected During the 2021 Fall Bird Surveys by Transect at the Westchester Wind Project Site

Overall, the majority of the birds detected within the assessment area during the Fall Migration Stop-over Counts are ranked S4 or S5 by the ACCDC indicating that they are considered 'Apparently Secure' or 'Secure', respectively. A detailed discussion of detected SOCC and SAR is available in Section 6.2.7. The abundance of bird species observed during the fall migration stop-over counts, which only includes data collected during the point count surveys, is included in Table H-12

Table H-12: Total Abundance of Birds Detected during Fall Migration Stop-Over Counts

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|------------------------------|----------------------------------|-------------|---------------|---------|
| 104 | Blue Jay | <i>Cyanocitta cristata</i> | | | S5 |
| 70 | Yellow-rumped Warbler | <i>Setophaga coronata</i> | | | S5B |
| 69 | Black-capped Chickadee | <i>Poecile atricapillus</i> | | | S5 |
| 69 | Golden-crowned Kinglet | <i>Regulus satrapa</i> | | | S5 |
| 63 | White-throated Sparrow | <i>Zonotrichia albicollis</i> | | | S5B |
| 61 | Canada Goose | <i>Branta canadensis</i> | | | S4N |
| 56 | Common Yellowthroat | <i>Geothlypis trichas</i> | | | S5B |
| 56 | Dark-eyed Junco | <i>Junco hyemalis</i> | | | S4S5 |
| 43 | *American Robin | <i>Turdus migratorius</i> | | | S5B,S3N |
| 43 | Cedar Waxwing | <i>Bombycilla cedrorum</i> | | | S5B |
| 39 | Black-throated Green Warbler | <i>Setophaga virens</i> | | | S5B |
| 38 | American Crow | <i>Corvus brachyrhynchos</i> | | | S5 |
| 34 | Palm Warbler | <i>Setophaga palmarum</i> | | | S5B |
| 31 | Red-eyed Vireo | <i>Vireo olivaceus</i> | | | S5B |
| 30 | Northern Flicker | <i>Colaptes auratus</i> | | | S5B |
| 29 | *Red-breasted Nuthatch | <i>Sitta canadensis</i> | | | S3 |
| 28 | American Goldfinch | <i>Spinus tristis</i> | | | S5 |
| 26 | *Boreal Chickadee | <i>Poecile hudsonicus</i> | | | S3 |
| 20 | Song Sparrow | <i>Melospiza melodia</i> | | | S5B |
| 17 | *Ruby-crowned Kinglet | <i>Regulus calendula</i> | | | S3S4B |
| 17 | Savannah Sparrow | <i>Passerculus sandwichensis</i> | | | S4S5B |

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|---------------------------|--------------------------------|-------------|---------------|-----------------|
| 16 | Blue-headed Vireo | <i>Vireo solitarius</i> | | | S5B |
| 15 | White-winged Crossbill | <i>Loxia leucoptera</i> | | | S4S5 |
| 14 | Magnolia Warbler | <i>Setophaga magnolia</i> | | | S5B |
| 13 | Common Raven | <i>Corvus corax</i> | | | S5 |
| 13 | *Purple Finch | <i>Haemorhous purpureus</i> | | | S4S5B, S3S4N |
| 12 | Black-and-White Warbler | <i>Mniotilta varia</i> | | | S5B |
| 12 | Hermit Thrush | <i>Catharus guttatus</i> | | | S5B |
| 11 | Nashville Warbler | <i>Oreothlypis ruficapilla</i> | | | S4S5B |
| 8 | Hairy Woodpecker | <i>Dryobates villosus</i> | | | S5 |
| 8 | Swamp Sparrow | <i>Melospiza georgiana</i> | | | S5B |
| 7 | American Pipit | <i>Anthus rubescens</i> | | | S4M |
| 7 | *Canada Jay | <i>Perisoreus canadensis</i> | | | S3 |
| 7 | *Blackpoll Warbler | <i>Setophaga striata</i> | | | S3S4B |
| 6 | *Cape May Warbler | <i>Setophaga tigrina</i> | | | S2B |
| 6 | Downy Woodpecker | <i>Dryobates pubescens</i> | | | S5 |
| 5 | Brown Creeper | <i>Certhia americana</i> | | | S5 |
| 5 | Northern Parula | <i>Setophaga americana</i> | | | S5B |
| 5 | Ovenbird | <i>Seiurus aurocapilla</i> | | | S5B |
| 5 | Sharp-shinned Hawk | <i>Accipiter striatus</i> | NAR | | S5 |
| 4 | American Redstart | <i>Setophaga ruticilla</i> | | | S4S5B |
| 4 | Red-tailed Hawk | <i>Buteo jamaicensis</i> | NAR | | S5 |
| 4 | Ruby-throated Hummingbird | <i>Archilochus colubris</i> | | | S5B |
| 3 | American Woodcock | <i>Scolopax minor</i> | | | S5B |
| 3 | *Bay-breasted Warbler | <i>Setophaga castanea</i> | | | S3S4B |
| 3 | Pileated Woodpecker | <i>Dryocopus pileatus</i> | | | S5 |
| 3 | *Red Crossbill | <i>Loxia curvirostra</i> | | | S3S4 |
| 3 | Ruffed Grouse | <i>Bonasa umbellus</i> | | | S5 |

| Number Detected | Common Name | Scientific Name | SARA Status | NS ESA Status | S-rank |
|-----------------|--------------------------|--------------------------|-------------|---------------|--------|
| 3 | Winter Wren | Troglodytes hiemalis | | | S5B |
| 2 | Bald Eagle | Haliaeetus leucocephalus | NAR | | S5 |
| 2 | Blackburnian Warbler | Setophaga fusca | | | S4B |
| 2 | Mourning Warbler | Geothlypis philadelphia | | | S4B |
| 2 | *Northern Harrier | Circus hudsonius | NAR | | S3S4B |
| 2 | Spruce Grouse | Falcapennis canadensis | | | S4 |
| 1 | Alder Flycatcher | Empidonax alnorum | | | S5B |
| 1 | *American Kestrel | Falco sparverius | | | S3B |
| 1 | Belted Kingfisher | Megaceryle alcyon | | | S5B |
| 1 | Canada Warbler | Cardellina canadensis | T | E | S3B |
| 1 | Common Grackle | Quiscalus quiscula | | | S5B |
| 1 | Double-crested Cormorant | Phalacrocorax auritus | NAR | | S4B |
| 1 | Least Flycatcher | Empidonax minimus | | | S4S5B |
| 1 | Lincoln's Sparrow | Melospiza lincolnii | | | S4B |
| 1 | White-breasted Nuthatch | Sitta carolinensis | | | S4 |

Bold indicates a species is considered a SAR

* indicates a species is considered a SoCC

4.0

Bird Species at Risk

All detections of bird SAR during the 2021 bird surveys at the Project site are summarized below in Tables 13 to 15.

Table H-13: Summary of Canada Warbler Detections

| Survey | Total Detections | PC5 | PC10 | PC12 | Incidental |
|------------------|------------------|---------------|------------------|---------------|------------------|
| Spring Migration | 3 | May 21 (1) | | May 26 (1) | May 21 (1) |
| Summer Breeding | 0 | - | - | - | - |
| Fall Migration | 2 | - | August 25 (1) | - | August 25 (1) |
| Total Detected | 5 | | | | |

Numbers in parentheses indicate number of individual birds detected

Table H-14: Summary of Common Nighthawk Detections

| Survey | Total Detections | Nocturnal Survey Location #2 | Nocturnal Survey Location #3 | Incidental |
|------------------|------------------|------------------------------------|------------------------------------|------------|
| Spring Migration | 0 | - | - | - |
| Summer Breeding | 3 | June 21(1) | June 21 (2) | |
| Fall Migration | 0 | - | - | - |
| Total Detected | 3 | | | |

Numbers in parentheses indicate number of individual birds detected

Table H-15: Summary of Evening Grosbeak Detections

| Survey | Total Detections | PC3 | PC8 | PC9 | PC15 | PC16 | Incidental |
|------------------|---------------------|-----------------|---------------|-----------------|------------|-------------|----------------|
| Spring Migration | 6 | April 28 (2) | - | April 28 (1) | May 15 (2) | - | May 20 (1) |
| Summer Breeding | 4 | - | June 7 (1) | - | - | June 28 (1) | June 28 (2) |
| Fall Migration | 0 | - | - | - | - | - | - |
| Total Detected | 10 | | | | | | |

Numbers in parentheses indicate number of individual birds detected

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