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Burchill Wind Energy Project: 2019 Bird Study



PREPARED FOR NATURAL FORCES
DEVELOPMENTS LIMITED PARTNERSHIP

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REPORT TO

Natural Forces Developments Limited Partnership
C/O Amy Pellerin
202 Hampton Rd,
Quispamsis, NB
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ON

Burchill Wind Project,
Bird Study 2019
Saint John, NB

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LIST OF ACRONYMS

ACCDC	Atlantic Canadian Conservation Data Centre
BSC	Bird Studies Canada
BWP	Burchill Wind Project
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DU	Ducks Unlimited
ECCC	Environment and Climate Change Canada
NBDELG	New Brunswick Department of Local Government and Environment
NBNRED	New Brunswick Department of Natural Resource and Energy Development
GPS	Global Positioning System
HA	Hectares
IBA	Important Bird Area
KM	Kilometers
M	Meters
M ²	Square meters
MEWC	Mature Eastern White Cedar
MHWD	Mature Hardwood
MMXD	Mature Mixedwood
MSWD	Mature Softwood
MBCA	Migratory Bird Convention Act
MBBA	Maritime Breeding Bird Atlas
MBS	Migratory Bird Sanctuary
NBDELG	New Brunswick Department of Environment and Local Government
NBNRED	New Brunswick Department of Natural Resource and Energy Development
PDA	Primary Development Area
RAA	Regional Assessment Area
SAR	Species at Risk
SARA	Species at Risk Act
SOCC	Species of Conservation Concern
S-rank	Status rank
WL	Wetland
YMXD	Young Mixedwood
YSWD	Young Softwood

1 Introduction

Boreal Environmental Inc. (Boreal) was retained by Natural Forces Development Limited Partnership (Natural Forces) to collect and summarize bird data for Burchill Wind Project (BWP). The Burchill Wind Project is located on Crown land approximately 15 km southwest of the City of Saint John, near Lorneville and the existing Coleson Cove Generating Station. This project will make use of the existing Burchill Road for access and will consist of 5 to 10 wind turbines with a total installed capacity ranging between 20 and 42 MW and will connect to the Saint John Energy electrical grid. The purpose of this report is to summarize the 2019 bird survey data for the proposed development. The Bird surveys focussed on breeding, resident and migrating birds and were conducted in spring, fall, and winter of 2019. The intent of this study is to summarize the findings of these surveys in order to predict potential effects on birds in support of the Environmental Impact Assessment (EIA), where this information will be used to develop appropriate mitigation, as needed, and determine the significance of residual effects on birds. Additional studies involving electronic bird detection methods are also being conducted in support of the EIA for the project, but they are outside the scope of this study and the results will be submitted to regulators in a separate report.

2 Regulatory Framework

New Brunswick's Environmental Impact Assessment Regulation provides a framework for proactive environmental planning and opportunities for public involvement (NBDELG, 2019a). The BWP requires a provincial environmental impact assessment registration as a power generating facility with a production rating of three megawatts or more, as stipulated under Schedule A of the Environmental Impact Assessment Regulation.

The scope of the assessment was prescribed by the following documents:

- *Guide to Environmental Impact Assessment in New Brunswick* (NBDELG, 2012)
- *New Brunswick Sector Specific Guidelines: Additional Requirements for Wind Turbines* (NBDELG 2019b);
- *Wind Turbines and Birds: A Guidance Document for Environmental Assessment*. (CWS, 2007a);

Field survey protocols and locations were developed in consultation with NRED Forest Planning and Stewardship (FPS) Branch and NBDELG and were subsequently undertaken during May 2018. The Level of Concern for the Project was evaluated via species records (avifauna, terrestrial wildlife and vegetation) from various sources and databases, as well as from direct observations within the Project Area. In addition, consideration of site-specific characteristics of the Project Area was accounted for in the determination process. As part of this process, a review of potentially significant avifauna (bird) use of the regional area, and presence of important habitats for birds were reviewed within and surrounding the Study Area and a Priority Species List was developed.

Federal legislation has also been used to guide this report and methodology in terms of issues scoping, effects assessment and mitigation requirements, including, but not limited to the Species at Risk Act (SARA) and Migratory Birds Convention Act (MBCA), 1994.

The Migratory Bird Convention Act (MBCA) provides overarching protection for individual and populations of birds and their nests against harm or destruction (Government of Canada, 1994). The MBCA and

associated regulations are administered by Environment Canada through the Canadian Wildlife Service (Government of Canada 1994a). Species groups protected by the MBCA include; songbirds, waterfowl, and seabirds; however, grouse, hawks, eagles, owls, blackbirds or jays are not afforded protection under the MBCA (Environment Canada 1991), but are covered under the New Brunswick Fish and Wildlife Act (2004).

In 2002, the federal Species at Risk Act (*SARA*) was created to provide additional protection for plant and wildlife species against extirpation, extinction or endangerment from human activities. Currently, only the species listed in Schedule 1 of *SARA* are protected federally (Government of Canada 2002). Provisions to protect and recover a species come into effect once it has been listed in Schedule 1 of *SARA*. The New Brunswick Species at Risk Act (*NBSARA*) provides legislative protection for species listed on Schedule A, which includes four bird species: Peregrine Falcon (*Falco peregrinus anatum*), Bald Eagle (*Haliaeetus leucocephalus*), Harlequin Duck (*Histrionicus histrionicus*).

3 Spatial and Temporal Parameters

The bird studies in the report focus on multiple spatial scales:

- 1) **Primary Development Area (PDA):** This is the maximum area of anticipated disturbance based on the current facility layout which includes turbine pads, access roads, power transmission, maintenance, and personnel facilities. The PDA is significantly larger than the likely project footprint but allows for some spatial adjustments of roads and other facilities to avoid constraints. The current turbine layout may also change but the general location and extent of the PDA will remain similar to that presented in Figure 1. This area was used to focus surveys for breeding and resident birds, which are more closely tied to species landscape and habitat features. It was also used to calculate potential for bird collisions with turbines. This is the area where potential direct effects on birds are most likely to occur.
- 2) **Study Area:** This is a larger area around the PDA that encompasses much of the undeveloped portion of the Lorneville peninsula. This area was used for migration surveys and as a reference for habitat availability in the immediate area around the PDA.
- 3) **Regional Assessment Area (RAA):** This is a loosely defined area surrounding the Study Area that is used to provide ecological context for the Study Area when considering bird flight paths and behaviour, and regional habitat availability. The RAA with areas important to birds near the Study Area is shown on Figure 1.

This study considers all birds with potential to occur in the Study Area, including those breeding there, resident birds in winter, and those migrating through in spring and fall. It provide summaries of the findings of bird studies conducted between spring of 2019 and winter of 2019/2020. Bird surveys were conducted to capture activity and use of the Study Area and PDA during spring migration, fall migration, breeding season, and for resident birds in winter. Targeted surveys were conducted for owls and raptors in spring of 2019, and Common nighthawks in the summer of 2019.

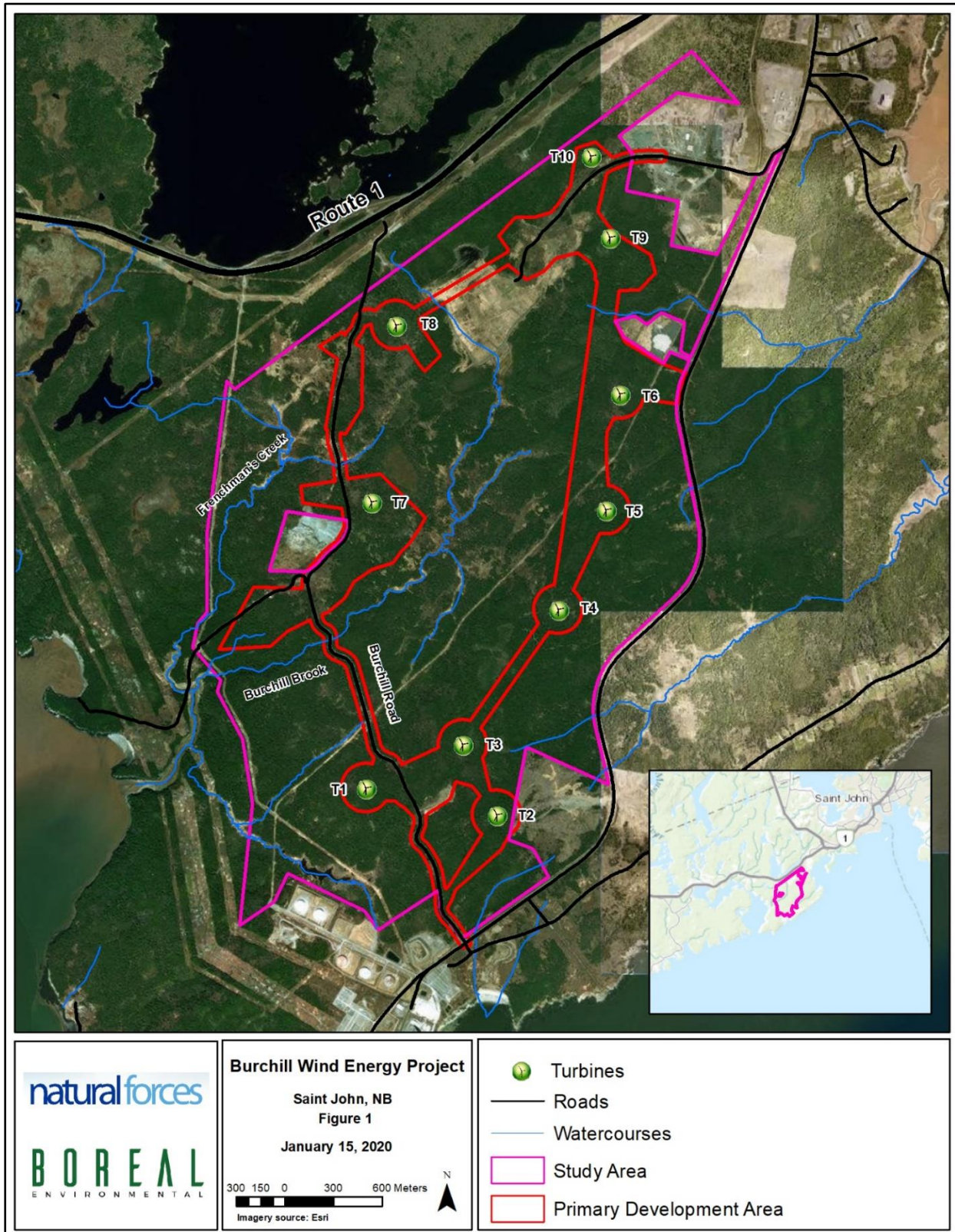


Figure 1. Overview of Study Area, Primary Development Area, and turbine Layout.

4 Site Sensitivity

The scope of work for bird studies supporting wind development Environmental Assessments, as recommended by Environment and Climate Change Canada (ECCC), is based on an evaluation of the level of concern for the proposed development to affect migrating and resident birds. The overall level of concern category is determined using a matrix that incorporates site sensitivity and size of the facility (CWS 2007). A list of parameters to aid in determination of site sensitivity is provided in the EA Guidance Document: Wind Turbines and Birds (CWS, 2007). Using the lists of parameters provided in this guidance document, a Project may be identified to have site sensitivity of: very high, high, medium or low. CWS now classifies all turbine sites with wind turbines greater than 150 m in height as being 'Very High' sensitivity. This would place the proposed development into Category 4, thereby potentially triggering a requirement for additional seasons of electronic detection surveys (radar + acoustic surveys) for higher flying and nocturnally migrating birds. However, those elements of the study are outside the scope of this survey and will be addressed in a separate report. The concern category does affect the temporal scope of work for the studies carried out for this report but does inform the study design by providing an awareness of the anticipated potential effects.

Due to the presence of nearby important bird habitats that are known for their role in long-range migrating shorebirds, waterfowl and for nesting gulls, and the position of the PDA along the coast, additional effort was focussed on passage migration and diurnal watch count surveys. The level of effort for this was beyond the minimum recommendation of 10 surveys per season (CWS 2007).

5 Desktop Survey

When determining key issues for a proposed development, there are several data sources publicly available that can assist in identifying potential key interactions between the development and the surrounding environment. These data sources provide information of the general setting of the proposed development, general habitat conditions in an around the development, important habitats and protected areas in and nearby the development, and know records for breeding areas and/or potentially sensitive or protected species in and around the development. These data sources include:

- Data request from the Atlantic Canada Conservation Data Centre (ACDC) that includes known records for rare or protected species within a 5 km radius of the Study Area, and well as important and protected habitats nearby.
- New Brunswick Natural Resources and Energy Development (NBNRED) forest inventory data containing species composition and development stage.
- New Brunswick Department of Environment and Local Government (NBDELG) wetland and surface water feature data;
- Aerial imagery from a variety of publicly available sources;
- Migration Count and monitoring data from a variety of regional sources (which are often captured in the ACDC data)

In addition to the regulatory requirements described in Section 2, and site sensitivity described in Section 4, the focus of field studies is determined by key concerns that area identified using the data sources above.

As a part of this process, the information is used to understand the availability of habitat types within and around the Study Area and allow us to quantify the potential changes in the availability of different habitat types as a result of the proposed development. The following sections 5.1 and 5.2 provide summaries of the known use of the site by sensitive bird species, identify sensitive habitats, and summarize general habitat availability, composition, and anticipated changes to that habitat availability based on the current project layout (PDA).

5.1 Project Setting and Habitat Conditions

The proposed Burchill Wind Energy Project is situated in southern New Brunswick on the Bay of Fundy at the western limits of Saint John on the Lorneville Peninsula between Lorneville Harbour and Musquash Harbour. The Bay of Fundy and it’s New Brunswick and Nova Scotia shorelines represents the eastern tributary of the Atlantic Flyway, which is a major north-south migratory pathway for many bird populations. There are also areas in the Saint John region that represent important stopping points for birds that will make long oceanic flights to South America. Such areas have been identified as being of special ecological concern including some that are important specifically to birds (Figure 2).

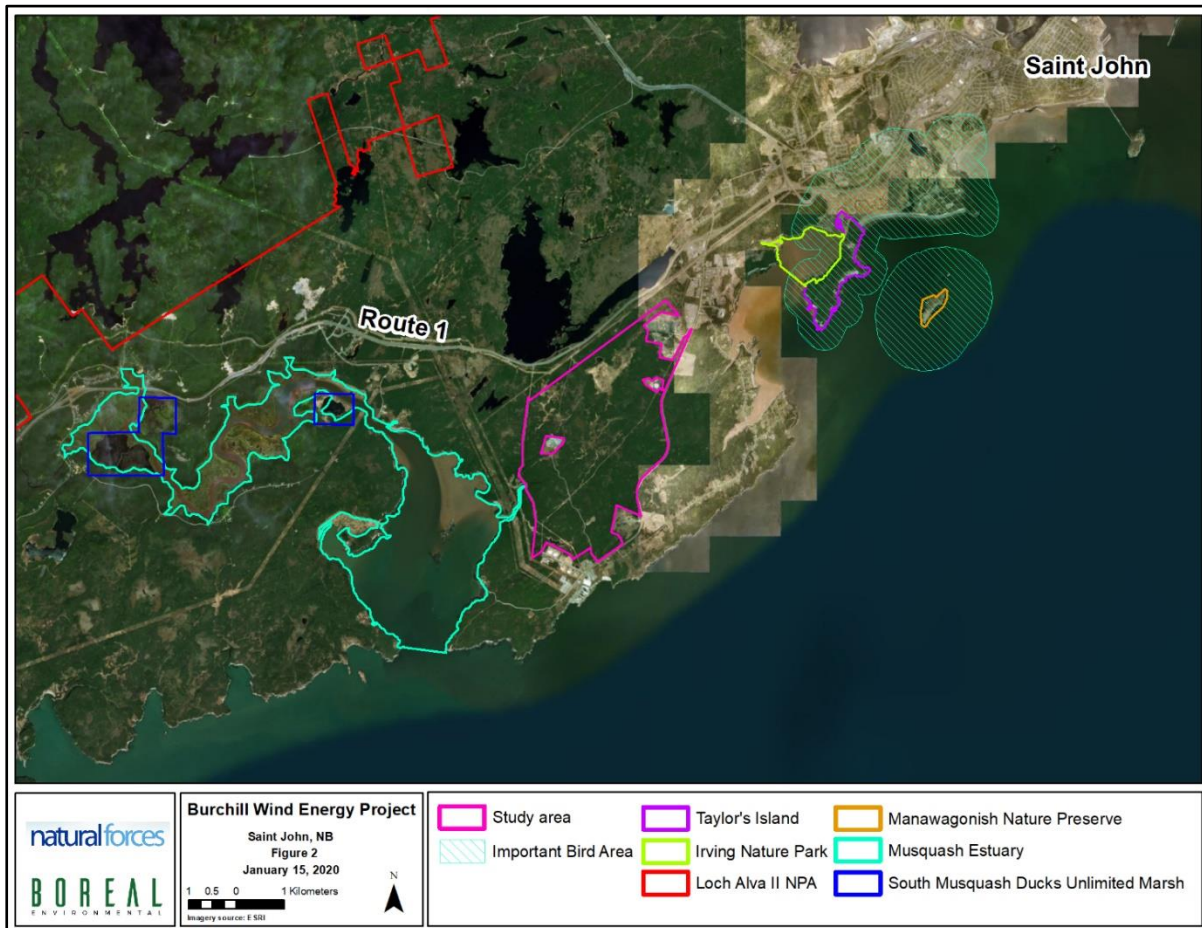


Figure 2. Important bird habitats in the vicinity of the project Study Area.

1. Saint's Rest Marsh and Beach Important Bird Area (IBA NB022; Bird Studies Canada, 2020) incorporates the Manawagonish Nature Preserve, Taylor's Island and Irving Nature Park and is located approximately 3.2 km east of the closest proposed turbine location within the PDA. Saint's Rest Marsh and Beach IBA contains several habitat types important to birds including salt marshes/brackish marshes, tidal rivers/estuaries, mud and sand flats, and inlets/Coastal features. Residential, commercial and industrial urban development dominates upland areas north to the north of the IBA (Bird Studies Canada 2020).

The IBA contains a large gravel sandbar connecting the Taylor Peninsula and the Irving Nature Park with the mainland, and a tidal marsh associated with Manawagonish Creek. These areas within the IBA are considered crucial stop-over sites for sandpipers, other shorebird, and waterfowl species during fall migration. Globally significant numbers of semipalmated sandpipers and semipalmated plovers visit these sites during fall migration between late July and early September where they feed on small invertebrates commonly called 'mud-shrimp' (*Corophium volutator*) in mud flats before departing on a 3,000-4,000 km non-stop flight to South America. Results from the Maritime Shorebird Survey (MSS) conducted in 1976, 1985, and 1986 showed a three-year average of over 50,000 semipalmated sandpipers accounting for over 1% of the North American population visit the site. The same survey showed a three-year average of 1,500 semipalmated plovers at this site accounting for approximately 3% of the North American population (Bird Studies Canada 2020). MSS surveys have not been conducted consistently over the past few decades and less formal studies have indicated that shorebird populations at this location are in decline. Results from the Irving Nature Park Shorebird Conservation and Education Project conducted every weekend from mid-August until mid-September 2019 indicate the approximately 3400 semipalmated sandpipers and 200 semipalmated plovers were observed (Scarth 2019). Lesser yellowlegs, least sandpiper and pectoral sandpipers also frequent the site during fall migration in fewer numbers. Many species of waterfowl are attracted to the marsh where SOCC species are known to occur (Bird Studies Canada 2020). Nearly two thirds of all species known to occur in New Brunswick have been recorded at this location (Zelazny 2003).

Manawagonish Nature Preserve is a 20-ha bird sanctuary owned and managed by the New Brunswick Nature Trust (NBNT) consisting of Manawagonish Island and Thumb Cap Island is also included within the IBA. This sanctuary within the IBA is an important breeding habitat for several species of seabirds including; double-crested cormorants, herring and great black-backed gulls and common eider. It is also important breeding habitat for great blue heron (Bird Studies Canada 2020).

2. Musquash Estuary Marine Protected Area (MPA) is located approximately 1.1 km west of the nearest proposed turbine location. Musquash Estuary is the largest intact estuary in the Bay of Fundy and is characterized by expansive salt and freshwater marshes (DFO 2020). The Musquash Estuary encompasses the Musquash Harbour, Island Ecological Significant Area (ESA 868) and the Duck's Unlimited (DU) South Musquash marsh. The MPA is a large estuarine embayment located between rocky headlands, pocket beaches, and intertidal flats of sand and muddy sand that margin the harbour (ACCDC 2020). Dyked and drained marshland south of Route 1 is referred to as the South Musquash Marsh and is maintained by DU. Hawks, horned lark, and snow bunting frequent these areas in the fall and winter while several duck species, bitterns and large wading birds are observed in the spring (SJNC 2020). Numerous records of bird SOCC species have been observed throughout the MPA especially in South Musquash Marsh adjacent to Route 1.

3. Mary's Point is closest RAMSAR site, located approximately 132 km east-northeast of the Study Area.

The Study Area is located on a peninsula by nature of the estuarine bays to the east and west, although it does not project into the Bay of Fundy beyond the surrounding coastline at a larger scale.

The Study Area is situated in a largely contiguous forest habitat dominated by mature softwood with networks of shrub dominated riparian wetlands along watercourse flowing in a general northeast to southwest direction. The dominant tree species are red spruce (*Picea rubens*), balsam fir (*Abies balsamea*) and eastern white cedar (*Thuja occidentalis*). There are some small areas of ponded water visible in the Study Area but no large fresh waterbodies. There are several cleared corridors and areas including a former (i.e., decommissioned) municipal landfill site, a crude oil pipeline, roads and a former Quarry.

The Bay of Fundy shoreline is located within 400 m of the southern boundary of the Study Area, and 1.1 km south of the nearest proposed turbine location. Burchill Brook and Frenchman's Creek, both provincially mapped watercourses, are the largest watercourses located within the Study Area. These watercourses are not large enough to draw large concentrations of breeding, foraging or migratory birds.

There are a number of mapped and unmapped wetlands within the Study Area which are addressed in detail in the Watercourse and Wetland Assessments Report produced by Fundy Engineering for the Burchill Wind Project.

5.2 Habitat Conditions within the Study Area

The Study Area is approximately 1048.8 ha in size and characterized by rough uneven terrain sloping away to the ocean in a general southward aspect. There are no significant open water features. There are two named watercourses: Burchill Brook and Frenchman's Creek that are fed by small networks of minor tributaries and drain to the southwest and west, respectively. The vast majority of the Study Area is forested representing 989.9 ha (94.4%) of the total area including wetlands that are, in general, forested swamps.

The habitat types identified in the Study Area were adapted from the New Brunswick Natural Resources and Energy Development (NBNRED) forest inventory based on species composition and development stage. Forest stand types were verified in the field during the various bird survey and adjusted accordingly where the forest inventory differed from the field survey. The arrangement of the various habitat types within the Study Area is shown in Figure 3 and descriptions of each habitat type and the relative proportion of the Study Area that each habitat type comprise are provided in Table

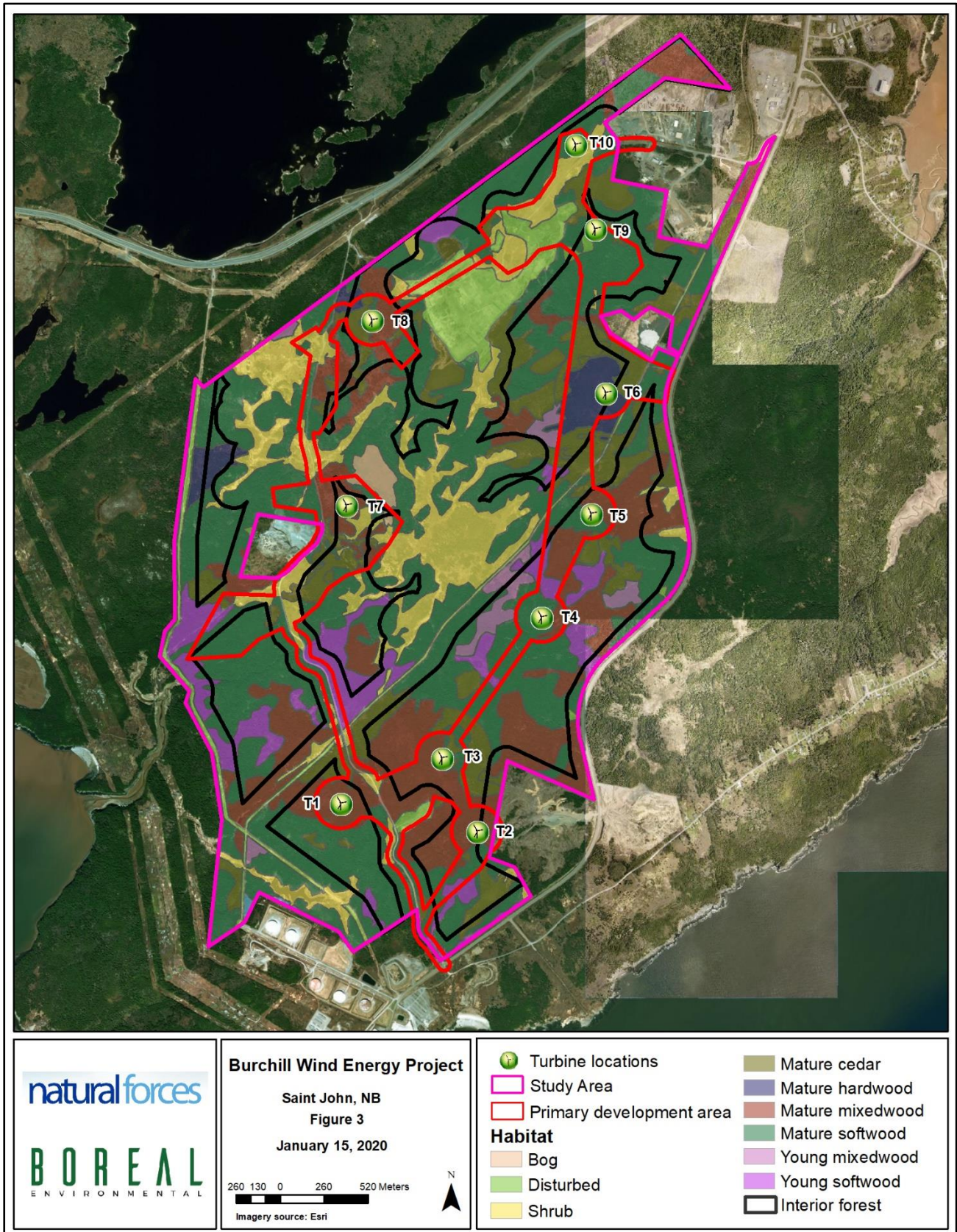


Figure 3. Habitat types within the Study Area, including areas of interior forest.

Table 1 provides a summary of the relative proportions of the various habitat types along with descriptions of the dominant vegetation species within each habitat type within the Study Area.

Table 1. Summary of habitat type by area and percent cover.

Stand Type	Area (ha)	Percent of Study Area (%)	Habitat Description
Disturbed	58.7	5.6	Vegetated areas dominated by various graminoid and forb species and regenerating patches of speckled alder (<i>Alnus incana</i>) and tamarack (<i>Larix laricina</i>). Unvegetated cover includes gravel and asphalt.
Bog	6.7	0.6	Ombrotrophic bog dominated by low ericaceous shrubs, stunted tree species, and herbaceous vegetation typical of this habitat type. The common shrub species include; eastern larch (<i>Larix laricina</i>), black spruce (<i>Picea mariana</i>), Leatherleaf (<i>Chamaedaphne calyculata</i>), Rhodora (<i>Rhododendron canadense</i>), lambkill (<i>Kalmia angustifolia</i>), Labrador tea (<i>Ledum groenlandicum</i>), and black crowberry (<i>Empetrum nigrum</i>). The most common herbaceous species are seeded sedge (<i>Carex trisperma</i>), Coastal sedge and (<i>Carex exilis</i>) and cloudberry (<i>Rubus chamaemorus</i>).
Shrub	128.2	12.2	Shrub habitat is generally associated with tall shrub swamp, riparian areas and regenerating disturbed areas and is dominated by speckled alder. The largest patch of Shrub habitat is located in the low-lying central portions of the Study Area and associated with Burchill Brook, Frenchman's Creek and their small tributaries. The remaining Shrub habitat is located, for the most part, in the northern portion of the Study Area near Paddy's Hill. It consists of dense speckled alder and various forb species regenerating on previously disturbed upland.
Mature eastern white cedar (MEWC)	132.1	12.6	Tends to be associated with forest swamps. MEWC is dominated by mature eastern white cedar (<i>Thuja occidentalis</i>) and scattered eastern larch (<i>Larix laricina</i>) and black spruce (<i>Picea mariana</i>). Understory vegetation is sparse due to closed canopy conditions except where small openings occur regeneration of eastern white cedar is dense. The herbaceous layer tends to be sparse with cinnamon fern (<i>Osmunda cinnamomea</i>), three-seeded sedge (<i>Carex trisperma</i>) and bristly-stalked sedge (<i>Carex leptalea</i>) scattered throughout.
Mature hardwood (MHWD)	22.4	2.1	MHWD habitat tends to be closed canopied and consists of early to mid-successional tree species. The tree stratum is predominantly made up of mountain paper birch (<i>Betula papyifera cordifolia</i>) and yellow birch (<i>Betula alleghaniensis</i>) and scattered balsam fir (<i>Abies balsmaea</i>). The shrub layer tends to be discontinuous and not well developed. When present, the most common shrub species are wild raisin (<i>Viburnum nudum</i>) and mountain holly (<i>Nemopanthus mucronatus</i>). In general, the herbaceous layer tends to be well developed, dominated by bunchberry (<i>Cornus canadensis</i>), wild lily-of-the-valley (<i>Maianthemum canadense</i>), wild sarsaparilla (<i>Aralia nudicaulis</i>), intermediate fern (<i>Dryopteris intermedia</i>), hayscented fern (<i>Dennstaedtia punctilobula</i>) and starflower (<i>Trientalis borealis</i>).
Mature mixedwood (MMXD)	187.5	17.9	MMXD habitat is closed canopied and consists of mid to late successional tree species. The tree layer is predominantly made up of mountain paper birch, balsam fir, and red spruce (<i>Picea rubens</i>). The shrub layer tends to be sparse with balsam fir, red spruce and wild raisin making up the majority of

			understory species. The herbaceous layer can be well developed depending on canopy closure with bunchberry, wild lily-of-the-valley, wild sarsaparilla, and intermediate fern being the dominant species.
Mature softwood (MSWD)	433.0	41.3	MSWD is made up of mid to late successional species typical of the region. The tree stratum is dominated by red spruce (<i>Picea rubens</i>), balsam fir and scattered white birch. The shrub layer is not well developed due to close canopy conditions, but scattered mountain holly, balsam fir and red spruce persist. The herbaceous layer is patchy, where present bunchberry, wild lily-of-the-valley, yellow clintonia (<i>Clintonia borealis</i>) and wild sarsaparilla form a dense mat. Bryophytes are patchy as well.
Young mixedwood (YMXD)	17.0	1.6	YMXD habitat is closed canopied and consists of early successional tree species. The tree layer is predominantly made up of mountain paper birch, balsam fir, red maple (<i>Acer rubrum</i>), and red spruce. The shrub layer tends to be absent or very sparse, which is typical of early successional stands at this stage of development. The herbaceous is well developed with bunchberry, wild lily-of-the-valley, wild sarsaparilla, and intermediate fern.
Young softwood (YSWD)	63.2	6.0	YSWD is similar to YMXD; however, it is dominated by conifer tree species. Residual mature trees are scattered throughout. The tree layer is dominated by balsam fir, mountain paper birch, and red spruce. The shrub layer is various developed with wild mountain holly and balsam fir being the most commonly observed shrubs. The herbaceous layer consists of bunchberry, bracken fern, starflower and wild lily-of-the-valley.
Total	1048.8	100	

5.2.1 Turbine specific habitat

The provincial sector guidance for wind energy developments (NBDELG 2019b) requires that the habitat types within each turbine pad location is summarized in support of the EIA. Table 2 summarizes the habitat at each of the 10 proposed turbine locations. Descriptions of each habitat type can be found in Table 1 above. All proposed turbine locations fall within mature habitat.

Table 2. Summary of turbine specific habitat.

Habitat	Turbine
Mature mixedwood	1, 2, 3, 7 and 10
Mature softwood	4, 5
Mature hardwood	6
Mature cedar	8, 9 and 10

5.2.2 Interior Forest

Patches of contiguous forest greater than 10 ha and free from edge effect or 'Interior Forest' are important for several bird species that rely on this habitat type for foraging and breeding. Interior forest is preferred by some species that are less adaptable to disturbance than others. There were seven large patches of interior forest identified within the Study Area with a total area of 448.9 ha. The forest within the interior forest patches was mature and patch size ranged from 16.6 ha to 184.6 ha (See Figure 3).

Several species that are considered interior forest bird species were detected during breeding bird survey, however none were SOCC. Nonetheless, interior forest is important breeding habitat for these species and

others, and larger patches are becoming less common across the landscape due to development, roads, transmission lines, pipelines, and logging roads.

A few interior forest species were observed during breeding birds survey namely; Bared owl (*Strix varia*), Blue-headed vireo (*Vireo solitarius*), Ovenbird (*Seiurus aurocapilla*), Black-throated green warbler (*Dendroica virens*), and Winter wren (*Troglodytes troglodytes*). Table 3 summarizes habitat loss including interior forest based on the current proposed turbine and associated infrastructure layout. This analysis represents the worst-case scenario using the current project layout, these numbers are subject to change based on the final layout.

Table 3. Summary of habitat that would be altered or lost within PDA.

Habitat	Area		
	Total Habitat	Residual Habitat	Potential Habitat Loss
Disturbed	58.7	43.9	14.8
Bog	6.7	5.8	1.0
Shrub	128.2	97.6	30.5
Mature cedar	132.1	92.3	39.8
Mature hardwood	22.4	9.5	12.9
Mature mixedwood	187.5	129.9	57.6
Mature softwood	433.0	361.1	72.0
Young mixedwood	17.0	16.9	0.1
Young softwood	63.2	54.8	8.4
Interior forest	408.3	190.9	217.4

Some studies have found that some species have a preference towards large contiguous patches of forest where food availability tends to be higher and predation lower (Marzluff *et al.* 2004, Burke and Nol 1998). These species are sensitive to forest fragmentation caused by road-building, logging as well construction and other development activities which increases the amount of edge effect and reduces patch size. For instance, many studies have shown that Ovenbirds are sensitive to forest fragmentation. The ability of these species to establish territories and breed successfully may be dependent on large contiguous tracts interior forest (Hannon and Schmiegelow 2002, Nol *et al.* 2005). Bayne *et al.* (2005) found that Ovenbird density was not affected by linear feature (i.e., 8 m wide seismic lines) densities below 8.6 km/km². Betts *et al.* (2006) found that Ovenbird density is dependent on patch size only when patches small and isolated. These studies suggest that factors other than fragmentation such as; patch geometry, edge effect, connectivity and habitat quality influence the abundance of species considered to be interior forest species.

Given the close proximity of Saint John, a major urban center, it is unusual to have an abundance of interior forest. However, areas to the west and north of the Study Area are, for the most part, undeveloped and there are large swaths of interior forest due to the number of the have protected status in the region. As previously stated, Musquash estuary is a large MPA and much of the adjacent headlands are owned and managed by the Nature Conservancy of Canada (NCC). Loch Alva Protected Natural Area (LAPNA), a large ecological reserve nearly 22,000 ha in size, is located 5 kms to the north. Additionally, the Spruce Lake

watershed is protected under the Watershed Designation Order, in effect, this area acts as an ecological reserve. Regionally, interior forest bird habitat is not limiting and will likely remain undeveloped because of the amount of protected area. Much of the headlands surrounding the Musquash MPA have been protected over the past decade through the conservation efforts of NCC. It is expected that these areas will be expanded in the future through the continuing conservation efforts of NCC.

5.3 Species of Conservation Concern

Species of Conservation Concern (SOCC) include those whose populations are potentially vulnerable to disturbance or changes in environment to the extent that individual mortality has the potential to compromise the long-term sustainability of the populations in the area. For the purposes of this study it refers to species that are rare to uncommon (i.e., S1 to S3) as defined by the Atlantic Canadian Conservation Data Centre (ACDC) and all species listed as Endangered, Threatened, or of Special Concern under federal or provincial Species at Risk assessments. While all migratory bird species are protected under the Migratory Bird Convention Act, others in this category are also protected by species-specific federal and/or provincial Species at Risk Legislation. This list of Species of Conservation Concern is first determined by reviewing and compiling species from the following sources and comparing them against known habitat within the BWP Study Area. The sources included:

- 1) Committee on the Status of Endangered Wildlife in Canada (COSEWIC 2019) and the Federal Species-at Risk Act (SARA 2019). All species listed as Endangered, Threatened, or of Special Concern;
- 2) New Brunswick Species at Risk Act (NBSARA 2012). All species listed as Endangered, Threatened, or Species of Special Concern; and,
- 3) Conservation Rank: All species designated as S1, S2 or S3 as defined by the Atlantic Canadian Conservation Data Centre (ACDC).

The ACDC data for the Study Area includes records within 5 km of the Study Area as well as provincially and federally Endangered species that might occur within the Study Area based on recorded sightings near the Study Area and availability of suitable habitat (Appendix A). The priority list of species was developed using the ACDC list of known and potential SOCC occurrences and then narrowed by broad geographic area and specific habitat requirements for each species. The habitat requirements were then compared against the known, or expected habitat, at the BWP Study Area. Finally, a short-list was created to outline those species with the moderate or high potential of either breeding within the BWP Study Area or flying over the Study Area, either during migration or daily commutes. The SOCC list is presented below in Table 4 with an assessment of the likelihood of breeding within the Study Area (based on breeding habitat availability) or migrating or flying over on daily commutes (based on known bird use of the area and field observations). Where birds were confirmed within the Study Area throughout the course of 2019 fieldwork, their status was updated in Table 4 as “Confirmed” (Con). The likelihood of project effects on each of the Bolded Species is discussed in Section 9.1.1.

Table 4. Summary of Species of Conservation Concern (SOCC) within or near the Study Area. Bolded species represent Focal Species that have a moderate or high likelihood of occurring within the Study Area.

Common Name	Scientific Name	Migration/ Flyover	Breeding	SARA/NBESA	S-Rank	General Status
Red knot rufa ssp	<i>Calidris canutus rufa</i>	Mod	Low	Endangered	S2M	At Risk
Bald eagle	<i>Haliaeetus leucocephalus</i>	Con	Mod	Endangered	S4	At Risk
Peregrine falcon	<i>Falco peregrinus</i>	Con	Low	Endangered	S1, S3M	At Risk
Wood thrush	<i>Hylocichla mustelina</i>	Mod	Low	Threatened	S1S2B, S1S2M	May Be At Risk
Barn swallow	<i>Hirundo rustica</i>	Mod	Low	Threatened	S2B, S2M	Sensitive
Bicknell's thrush	<i>Catharus bicknelli</i>	Mod	Low	Threatened	S2B, S2M	At Risk
Bank swallow	<i>Riparia riparia</i>	Low	low	Threatened	S2S3B, S2S3M	Sensitive
Olive-sided Flycatcher	<i>Contopus cooperi</i>	Con	Mod	Threatened	S3S4B, S3M	At Risk
Canada warbler	<i>Wilsonia canadensis</i>	Mod	Mod	Threatened	S3S4B, S3M	At Risk
Bobolink	<i>Dolichonyx oryzivorus</i>	Mod	Low	Threatened	S3B, S3M	Sensitive
Common nighthawk	<i>Chordeiles minor</i>	Con	Con	Threatened	S3B, S4M	At Risk
Redheaded woodpecker	<i>Melanerpes erythrocephalus</i>	Low	Low	-	SNA	Accidental
Brown thrasher	<i>Toxostoma rufum</i>	Mod	Mod	-	S2B, S2M	Sensitive
Horned lark	<i>Eremophila alpestris</i>	Con	Low		S1B, S4N, S5M	May be at Risk
Evening grosbeak	<i>Coccothraustes vespertinus</i>	Con	Low	-	S3B, S3S4N, SUM	Sensitive
Rusty blackbird	<i>Euphagus carolinus</i>	Mod	Low	Special Concern	S3B, S3M	May Be At Risk
Eastern wood- pewee	<i>Contopus virens</i>	Mod	Low	Special Concern	S4B, S4M	Secure
Horned grebe	<i>Podiceps auritus</i>	Mod	Low	Special Concern	S4N, S4M	Secure
Yellow-throated vireo	<i>Vireo flavifrons</i>	Low	Low	-	S1?B,S1?M	Accidental
Greater yellowlegs	<i>Tringa melanoleuca</i>	Mod	Low	-	S1?B, S5M	Secure
Redhead	<i>Aythya americana</i>	Low	Low	-	S1B, S1M	Accidental
Common moorhen	<i>Gallinula chloropus</i>	Low	Low	-	S1B, S1M	Sensitive
Wilson's phalarope	<i>Phalaropus tricolor</i>	Low	Low	-	S1B, S1M	Sensitive
Laughing gull	<i>Leucophaeus atricilla</i>	Low	Low	-	S1B, S1M	Sensitive

Common Name	Scientific Name	Migration/ Flyover	Breeding	SARA/NBESA	S-Rank	General Status
Carolina wren	<i>Thryothorus ludovicianus</i>	Low	Low	-	S1B, S1M	Accidental
Ruddy duck	<i>Oxyura jamaicensis</i>	Low	Low	-	S1B, S2S3M	Secure
Lesser scaup	<i>Aythya affinis</i>	Mod	Low	-	S1B, S4M	Secure
Greater scaup	<i>Aythya marila</i>	Mod	Low	-	S1B, S4M, S2N	Secure
Brant	<i>Branta bernicla</i>	Con	Low	-	S1N, S2S3M	Secure
Black-headed gull	<i>Chroicocephalus ridibundus</i>	Low	Low	-	S1N, S2M	Sensitive
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	Mod	Low	-	S1S2B, S1S2M	Sensitive
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	Low	Low	-	S1S2B, S1S2M	May Be At Risk
Baird's sandpiper	<i>Calidris bairdii</i>	Low	Low	-	S1S2M	Sensitive
Marsh wren	<i>Cistothorus palustris</i>	Low	Low	-	S2B, S2M	Sensitive
Northern mockingbird	<i>Mimus polyglottos</i>	Mod	Mod	-	S2B, S2M	Sensitive
Brown thrasher	<i>Toxostoma rufum</i>	Mod	Mod	-	S2B, S2M	Sensitive
Gadwall	<i>Anas strepera</i>	Mod	Low	-	S2B, S3M	Secure
Solitary sandpiper	<i>Tringa solitaria</i>	Mod	Low	-	S2B, S5M	Secure
Great cormorant	<i>Phalacrocorax carbo</i>	Mod	Low	-	S2N, S2M	Secure
Long-eared owl	<i>Asio otus</i>	Low	Low	-	S2S3	Undetermined
Northern shoveller	<i>Anas clypeata</i>	Mod	Low	-	S2S3B, S2S3M	Secure
Great crested flycatcher	<i>Myiarchus crinitus</i>	Low	Low	-	S2S3B, S2S3M	Sensitive
Cliff swallow	<i>Petrochelidon pyrrhonota</i>	Low	Low	-	S2S3B, S2S3M	Sensitive
American golden plover	<i>Pluvialis dominica</i>	Mod	Low	-	S2S3M	Sensitive
Lapland longspur	<i>Calcarius lapponicus</i>	High	Low	-	S2S3N, SUM	Sensitive
Black guillemot	<i>Cephus grylle</i>	Con*	Low	-	S3	Secure
Red crossbill	<i>Loxia curvirostra</i>	Mod	Mod	-	S3	Secure
Pine Siskin	<i>Carduelis pinus</i>	High	High	-	S3	Secure
Turkey vulture	<i>Cathartes aura</i>	Con	Mod	-	S3B, S3M	Secure

Common Name	Scientific Name	Migration/ Flyover	Breeding	SARA/NBESA	S-Rank	General Status
Virginia rail	<i>Rallus limicola</i>	Mod	Low	-	S3B, S3M	Sensitive
Killdeer	<i>Charadrius vociferus</i>	Con	Mod	-	S3B, S3M	Sensitive
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	Mod	Mod	-	S3B, S3M	Secure
Indigo bunting	<i>Passerina cyanea</i>	Mod	Low	-	S3B	At Risk
Brown-headed cowbird	<i>Molothrus ater</i>	Mod	Mod	-	S3B, S3M	Secure
Common eider	<i>Somateria mollissima</i>	Low	Low	-	S3B, S4M, S3N	Secure
Cape May warbler	<i>Dendroica tigrina</i>	High	High	-	S3B, S4S5M	Secure
Northern pintail	<i>Anas acuta</i>	Mod	Mod	-	S3B, S5M	Sensitive
Red-breasted merganser	<i>Mergus serrator</i>	Con*	Low	-	S3B, S5M, S4S5N	Secure
Ruddy turnstone	<i>Arenaria interpres</i>	Mod	Low	-	S3M	Secure
Black scoter	<i>Melanitta nigra</i>	Con*	Low	-	S3M, S1S2N	Sensitive
Bufflehead	<i>Bucephala albeola</i>	Mod	Low	-	S3M, S2N	Sensitive
Purple sandpiper	<i>Calidris maritima</i>	Low	Low	-	S3M, S3N	Secure
*recorded outside Study Area (over water) only						

5.3.1 SAR with Likelihood of Occurrence Within the Study Area

According to ACCDC species data in Table 4, of the SOCC found within 5 km of the Study Area, 3 Endangered, 7 Threatened, and 3 species of Special Concern have been historically identified within 5km of the Study Area. All of these species have at least a moderate potential to fly over the area either during migration or during local commutes. Of these, only four have at least a moderate potential to breed in the Study Area: Bald eagle, Olive-sided flycatcher, Canada warbler, and Common nighthawk. All of the species that have at least ‘moderate’ potential to occur within the Study Area are discussed below as potential concerns.

Red Knot (*rufa* subspecies) (Endangered SARA)

Red knot nests on high Arctic tundra. In migration and winter, they forage on sandy or stony beaches, mudflats, sandbars, saltwater marshes, tidal flats. There are three subspecies of Red knot that occur in North America and the species that occurs in New Brunswick is the *rufa* spp. They are occasionally recorded in the Irving Nature Park Marsh, and along Saint’s rest beach to the east large concentrations of Red Knots gather on the shores of Delaware Bay in May during northward migration to eat eggs of Horseshoe crabs. They do not breed in the area but may stop over on migration, making their long migration flights at night.

Bald Eagle (*Endangered NBSARA*)

This species was carried over to Schedule A of the New Brunswick Species at Risk Act from the older New Brunswick Endangered Species Act, to which it was added decades ago during a period of steep population declines throughout its range which have been attributed largely to reproductive harm from pesticides. In the decades since, Bald eagles have made substantial recovery in most areas of its range, including New Brunswick. As a result of the population recovery, the species was removed from Schedule 1 of the federal Species at Risk Act after a reassessment, but a provincial reassessment has not yet occurred despite it being fairly common and having a New Brunswick ACCDC ranking of S4.

New Brunswick has two different Bald eagle populations. One is a permanent resident and spends its winters here. The other migrates annually to the southeastern United States. The Bald eagle uses sticks and plant material to build its nest in the top of a tall tree, often a large white pine. It usually uses the same nest for several years. The bald eagle becomes territorial during breeding season and will defend an area up to two kilometres around its nest. It prefers a site near open water with an abundant source of fish. In New Brunswick, a number of our Coastal islands provide suitable habitat and are common nesting sites. In winter, the bird is frequently found in the southwestern part of the province. This location provides a good source of food since the Bay of Fundy does not freeze over.

There are no known nests in the Study Area and Bald eagles have large ranges that they use to forage, so the presence of flying eagles does not necessarily indicate breeding presence. The Crane Mountain landfill site is located 15 km to the north and is an important feeding site for Bald eagles and gulls so densities of these birds are likely higher than average within a certain radius of that feature and commuting between the landfill and bodies of water such as Grand Bay, Spruce Lake and the Bay of Fundy is likely frequent.

Peregrine falcon (*Endangered NBSARA*)

Two subspecies of Peregrine falcons occur in New Brunswick. *Falco peregrinus tundrius* breeds in the Arctic and is seen in the province during migration. *Falco peregrinus anatum* breeds in New Brunswick, along the shores of the Bay of Fundy and the mouth of the Saint John River. Both subspecies typically winter in the southern and eastern United States through to South America. The Peregrine falcon was never considered common in New Brunswick, and current population levels may be at historic levels. On a continental scale, the population has increased since the banning of DDT and initiation of conservation efforts.

In New Brunswick, this falcon most often constructs its nest on a cliff. Occasionally, a nest can also be found on an office tower or bridge, but this usually occurs in cities. Peregrine falcons have been known to nest on the Harbour Bridge in Saint John. In 1982, a program was established to reintroduce the peregrine falcon to the Bay of Fundy. We now have roughly a dozen nesting pairs a year in New Brunswick.

There are numerous records of Peregrine Falcons foraging along the shorelines of the Bay of Fundy during migration in pursuit of shorebirds and other smaller migrators. While there is some potential for peregrine falcon to nest on the tall stacks at Colson Cove Generating Station to the South of the Study Area, they are not known to breed there. There are no likely nesting structures within the Study Area but there were once a pair nesting on the cliffs of Manawagonish Island but they have not been present in recent years (NB Nature Trust 2018). Use of the area by Peregrine falcons is likely limited to migration periods.

Olive-sided flycatcher (*Threatened SARA*)

This species breeds in boreal forests, wooded borders of bogs, coniferous forests, edges of clearings, and shores of wilderness lakes. According to the second Maritime Breeding Bird Atlas, they are found throughout most of the Maritime Provinces, but in New Brunswick, records are slightly more concentrated in the northern portion of the province. It is almost always seen perched on high, very conspicuous dead branches. This is true even in migration. Nests are typically located high in coniferous trees, on a horizontal branch, far from the trunk. The nest is compact, firmly attached with cobwebs; of twigs, rootlets, lichen, pine needles, most lined with lichen, grass, rootlets.

It is currently unknown whether the availability of breeding habitat is a limiting factor in Canada. An important factor in their decline is often cited as a steep reduction in non-breeding habitat (Columbia and Venezuela, south to Peru) and reduced insect availability in certain parts of its range. Breeding Bird Surveys have indicated a 3.4% annual rate of decline in population (Environment Canada 2015).

The Study Area contains some beaver ponds along streams and forest edges along wetland, roads, and pipelines that may provide suitable habitat for Olive-sided flycatcher.

Common nighthawk (*Threatened SARA*)

Common nighthawk is an insectivorous, crepuscular (i.e., active at dawn and dusk) bird species. Common nighthawks prefer nesting in sparsely vegetated habitat with flat to rolling topography such as; sand dunes; beaches; burn areas; forest clearings; logged areas; pastures; open forests; bogs; marshes; graveled areas; rocky outcrops and gravel roof tops in developed areas for nesting (COSEWIC 2007).

In 2018, COSEWIC re-assessed the common nighthawk as Special Concern due to stabilizing population trends in recent years. However, as with many insectivorous birds, there remain long-term viability concerns due to declining insect abundance and loss of over-wintering habitat.

While the Study Area is largely forested, there is a patch of suitable habitat for nesting Common nighthawks in the northern portion of the Study Area at the site of a former landfill. Common nighthawks would potentially migrate through the area in day or night.

Wood thrush (*Threatened SARA*)

Wood thrush nests primarily in mature deciduous and mixed forests, with a well-developed understory of saplings and shrubs. It prefers large forest mosaics, but may also nest in small forest fragments (COSEWIC 2012). There is minor potential for wood thrush breeding in the Study Area, but the forests tend to lack a well-developed understory preferred by wood thrush, and breeding records are rare along the coast according to the 2nd Maritime Breeding Bird Atlas (BSC 2019).

Barn swallow (*Threatened SARA*)

Before European colonization, Barn swallows nested mostly in caves, holes, crevices and ledges in cliff faces and they would have been rare in New Brunswick. Following European settlement, they shifted largely to nesting in and on artificial structures, including barns and other outbuildings, garages, houses, bridges, and road culverts and their populations grew significantly. However, since the use of traditional wooden barns

is declining, along with falling aerial insect abundance, barn swallows are again declining in population in New Brunswick.

Barn swallows prefer various types of open habitats for foraging, including grassy fields, pastures, various kinds of agricultural crops, lake and river shorelines, cleared rights-of-way, cottage areas and farmyards, islands, wetlands, and subarctic tundra (Audubon 2017).

There are no buildings or structures within the Study Area that would offer good potential for nesting for Barn Swallows, but there are records of them migrating through the area.

Bicknell's thrush (*Threatened SARA*)

Bicknell's thrush is a nondescript, secretive thrush that breeds in remote forests of northern New Brunswick, Cape Breton, and in the high country along the mouth of the St. Lawrence River in Quebec. This species is not expected to breed in the vicinity of the Study Area, but has been recorded near the Study Area during migration.

Canada warbler (*Threatened SARA*)

Canada warbler prefers forested habitat with a well-developed shrub layer and structurally complex forest floor. This species is most abundant in moist, mixed, riparian shrub forests on slopes and in ravines. Regenerating stands also provide good habitat (COSEWIC 2008). Canada warbler can be found in a variety of forest conditions where well-developed understory or shrub layers are present and most forested landscapes in New Brunswick are likely to support this species for breeding.

Bobolink (*Threatened SARA*)

Bobolink originally nested in the tall-grass prairie of the mid-western U.S. and south-central Canada. As prairie was converted to agricultural land forests in North America were cleared to create hayfields and meadows that provided habitat for the birds. Since the conversion of the prairie to cropland and the clearing of the eastern forests, the Bobolink has nested in forage crops (e.g., hayfields and pastures dominated by a variety of species, such as clover, Timothy, Kentucky Bluegrass, and broadleaved plants) (COSEWIC 2017). The former landfill site at the northern side of the Study Area could provide suitable nesting habitat for Bobolinks.

6 Scope of Fieldwork

With consideration for the ecological setting of the site and the nearby important bird habitats, a study design was proposed to Shawn Hamilton of NBDELG and Hubert Askanas of NBNRED by email on March 29th, 2019 and further discussed in a follow-up meeting that was held in Fredericton on April 4th. Attending the meeting were Derrick Mitchell of Boreal Environmental, Shawn Hamilton, and Colette Lemieux of NBDELG and Hubert Askanas of NBNRED. The study design was agreed on in those discussions and is described in detail below. Because of the location of the PDA along the Bay of Fundy coast and proximity to important bird habitats, the study was designed to answer the following questions:

- What species use the site for breeding?
- Are there Species of Conservation Concern (SOCC) present that are sensitive to the proposed changes to the habitat or operation of the development?

- What is the migratory activity near or over the site?
- What is the seasonal use of the site?
- At what height are the birds moving through or flying over the site?
- How close are the proposed turbine sites to important feeding or staging locations, and are these likely to be disrupted by construction?

All of these questions are addressed in the context of diurnal and crepuscular bird activity. A concurrent study is being conducted by researchers at Acadia University on behalf of Natural Forces. They are conducting radar and acoustic surveys to address nocturnal activity.

6.1 Spring Migration Methods

Surveys for spring migration included both passage migration/diurnal watch counts and transect surveys for migratory stop-overs. The methodologies for these are described below.

6.1.1 Passage Migration/Diurnal Watch Counts

Passage migration counts were used to estimate the numbers of birds flying through an area during migration periods. Local naturalists indicated that migration peaks for 4 weeks between April 15 and May 15. The watch count surveys recorded behavioural elements of the sightings such as elevation, flock sizes, and flight direction. The observer also indicated whether the individuals were resident, migrating, commuting, or foraging. Behavioral studies seek to understand how birds are using the area. Site regions of particular focus include areas that will be swept by wind turbine blades and sites that will be directly affected by the construction process. (CWS 2007b). Local ornithologist Richard Blaquiere (MSc.) conducted 20 six-hour long (9 am to 3 pm) passage migration/diurnal watch counts (120-hour survey time) on April 2, 5, 7, 8, 11, 12, 14, 17, 18, 24, 26, 28 and May 1, 2, 6, 11, 16, 19, 23, and 28 of 2019. The three locations are shown on Figure 4. The first day's watch count split equally between the Quarry, Coast station, and Paddy's Hill. Paddy's Hill was dropped after first survey because the Quarry station offered an excellent, 360-degree view of the entire Study Area and a full view of the over-water migration route. After the first day, watch counts alternated between the Coast Station and Quarry until May 1st. After that, the surveys were conducted from Quarry station exclusively. Figures 5, 6, and 7 are panoramic views of the two main spring migratory watch count locations at the Quarry and Coast stations.

During all surveys, weather conditions (i.e., precipitation and visibility) were monitored and confirmed to be within the parameters required by monitoring programs such as ECCC's Breeding Bird Survey. If weather conditions changed during a survey to the point that they were unsuitable (i.e. high wind, rain, fog, etc.), the survey was postponed until suitable conditions were available.

Estimated distance to birds were recorded for each individual observation or flock. Numbers of individuals in flocks was counted or estimated when numbers were very high. Each time a flyover was observed, its flight height and direction were recorded to support behavioural observation, and to support the calculation of collision risk for each bird group.

The key watch count station during both the spring and fall migratory periods was the Quarry location as it offered the best visibility. Given that many wind development locations are heavily forested with trees blocking certain aspects or views from even the best vantage points, this position offered a unique opportunity to watch over the Study Area as well as providing a good view of birds moving over water along

the coast. The main concern for watch counts were to identify the position and use of the main migratory pathways, and to understand potential daily commuting behaviour of birds that might be flying over the Study Area between Musquash Harbour to the west, Spruce Lake to the north, and the Important Bird Area (IBA) to the east.

Raw data for bird surveys is presented in Appendix B.

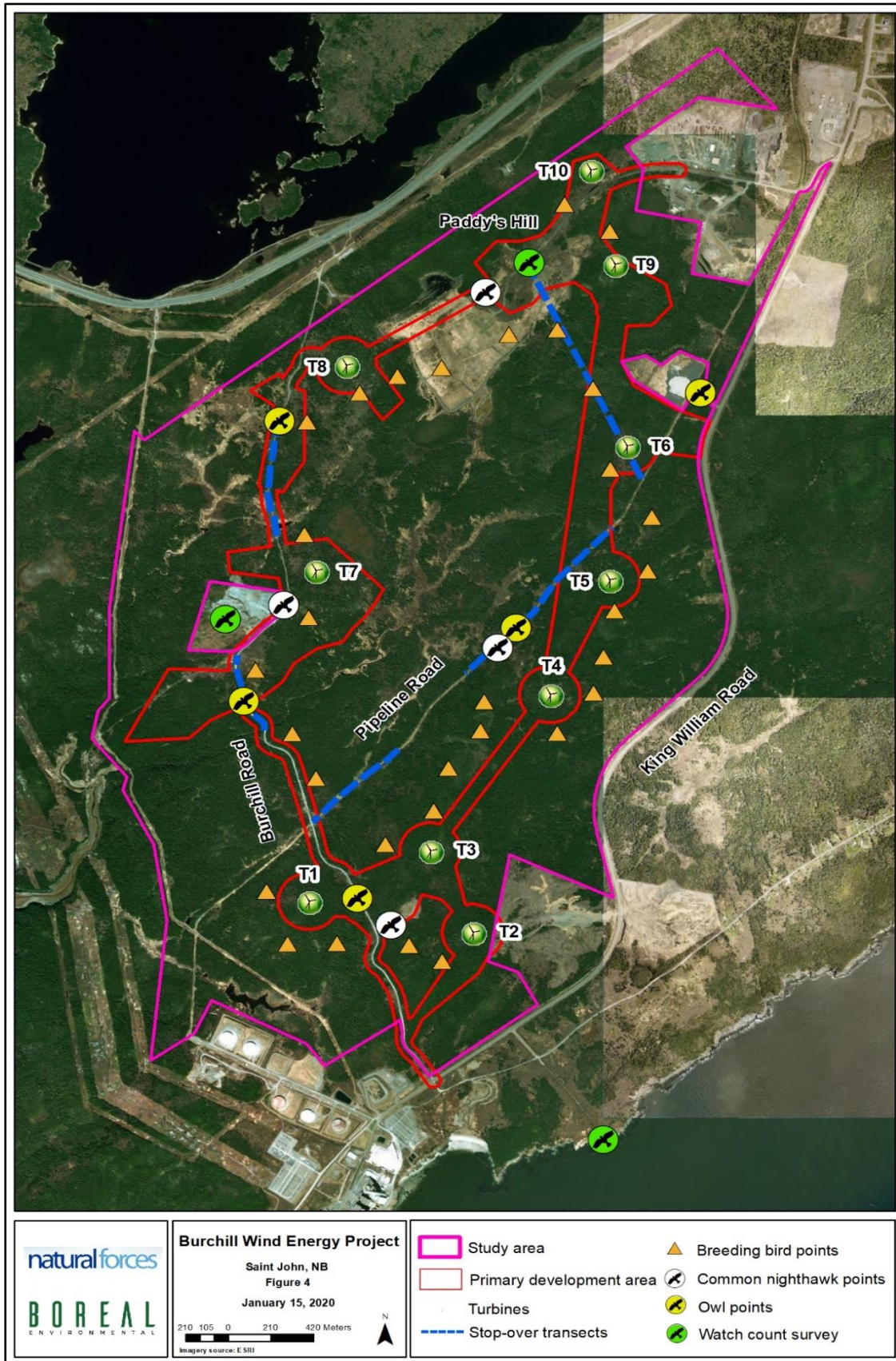


Figure 4. Map showing the locations of point counts, watch count stations, and transects for all bird surveys done in 2019.



Figure 5. Panoramic view looking south from the Quarry watch count location. Note Coleson Cove stacks in background.



Figure 6. Panoramic view looking north from the Quarry watch count location.



Figure 7. Coast watch count location looking southwest toward Coleson Cove power generating station.

6.1.2 Migratory Stop-over Transects

The purpose of stop-over counts is to estimate the abundance of birds (particularly songbirds) using the Study Area as a stop-over site on migration for resting and/or foraging. The following methodology achieved the objectives outlined in CWS guidance (2007b):

Routes (line transects) were selected along the network of trails, roads and pipeline corridors in areas where roads intersected multiple major songbird habitats. Routes vary in length depending on the size and shape of adjacent habitat patches. This route configuration allows for all major habitats to be sampled several times per survey (Figure 4).

Transects were walked twice a week in the early morning (i.e, no more than 4 hours after sunrise) during the peak migration period and once per week during the shoulder periods. The actual distance to each bird detected was estimated perpendicular to the line transect. Evidence of breeding birds such as nests, territorial displays, alarm calling, individuals flushed, mating, and aggressive defending of territories was recorded.

12 transect surveys were conducted between April 3 and May 28, 2019. The frequency of these surveys increased during peak migration (May 1 to May 19). The total survey time along the transect as shown on Figure 4 was 12 hours 39 mins. The surveys were conducted on April 3, 11, 17, 22, 28 and May 2, 7, 11, 16, 19, 23, and 28.

6.2 Breeding Bird Survey Methods

Breeding bird point count surveys were conducted. In addition, targeted surveys were also conducted for Owls (which tend to begin breeding early in the spring) and common nighthawks (which are most detectable in the evening at dusk). Incidental records were also recorded for any SOCC or new species records encountered during terrestrial surveys conducted by Derrick Mitchell in support of other aspects of the EIA throughout the breeding season.

6.2.1 Spring Owl Surveys

Between March and May of 2019, a series of points were visited at sunset to survey for owls when they are settling into their breeding areas. A series of five sample point locations (Figure 4) were selected using a desktop review of available habitat types. Larger stands of mature softwood and mature mixedwood that were accessible by ATV or vehicle at night were chosen as areas most likely to get responses to playback calls. Surveys were conducted using a playback and listening method based on the Nova Scotia Nocturnal Owl Survey protocol (Bird Studies Canada 2007). The NS playback protocol consists of Boreal and Barred owl calls interspersed with silent listening periods.

6.2.2 Breeding Bird Point Count Surveys

Two rounds of Breeding bird point count monitoring were conducted between June 5th and June 23rd 2019 using 31 different point count location (Figure 4). Table 5 provides a summary of the survey times for each point count.

Point count locations were laid out within the Study Area to be concentrated in and around the anticipated project footprint (actual PDA was determined after these studies were conducted), covering a large enough area to capture the representative habitats within the entire Study Area. Point count locations were spaced at least 250 m apart to avoid overlap in the detection of birds from another point. The point count centres were usually placed outside of the areas planned for clearing or construction to provide a baseline understanding of breeding activity in and around the PDA. Point count locations are shown on Figure 4. Each point count location was surveyed for a period of 10 minutes during the survey. The breeding status of each species was determined using the criteria used in the MBBA. Data were collected for each bird detected including: number, species, behavior, and location in relation to the survey point. Species observed or heard singing in suitable nesting habitat were classified as possible breeders. Species exhibiting the following behaviours were also classed as probable breeders:

- courtship behaviour between a male and female;

- birds visiting a probable nest site;
- birds displaying agitated behaviour; and
- male and female observed together in suitable nesting habitat.

Species were confirmed as breeding if any of the following items or activities were observed:

- nest building or adults carrying nesting material;
- distraction display or feigning injury;
- recently fledged young;
- occupied nest located; and
- adult observed carrying food or fecal sac for young.

Furthermore, incidental sightings were recorded while travelling between points and conducting other terrestrial surveys. Incidental recording of birds focussed on species that had not yet been recorded in the Study Area or SOCC, when encountered.

Table 5. Summary of breeding bird point count survey schedule.

Date	Start	End	Points surveyed
5-Jun-19	5:31	9:13	PT1, PT2, PT3, PT4, PT5, PT6, PT7, PT8
7-Jun-19	5:32	9:37	PT9, PT10, PT11, PT12, PT13, PT14, PT15, PT16, PT17, PT18, PT19, PT20
8-Jun-19	5:46	9:28	PT21, PT22, PT23, PT24, PT25, PT26, PT27, PT28, PT29, PT30, PT31
19-Jun-19	5:45	9:20	PT23, PT24, PT25, PT26, PT27, PT28, PT29, PT30, PT31
20-Jun-19	5:47	9:35	PT12, PT13, PT14, PT15, PT16, PT17, PT18, PT19, PT20, PT21, PT22
23-Jun-19	5:50	9:44	PT1, PT10, PT11, PT2, PT3, PT4, PT5, PT6, PT7, PT8, PT9
62 point counts, total survey time 620 minutes			

6.2.3 Common Nighthawk Surveys

The Common nighthawk (*Chordeiles minor*) typically nest on open ground, bare earth, or gravel and forages most actively during the period shortly after sunset. Suitable nesting habitat available for common nighthawk within Study Area was limited, and concentrated largely in the Paddy’s Hill former landfill area in the northern portion of the Study Area, therefore dedicated surveys for the Common nighthawk were conducted in one Common nighthawk survey was conducted on June 28th, 2019 between 8:30 pm and 9:55 pm temperature ranged from 18 to 15°C, winds were very light (Beaufort 0), the sky was clear and the moon was in the third quarter. The survey locations were established where visual detection of nighthawks foraging over the Study Area would be facilitated (Fig 3). All species, including non-target species that were detected during the survey were recorded.

The survey followed the methodology outlined in the Canadian Wildlife Service (CWS) protocol for conducting nightjar surveys (April 2016). Surveys started no earlier than 1 hour before sunset and ended no later than 2 hours after sunset. Weather parameters including wind speed (Beaufort scale), temperature, and percent cloud cover/sky illumination were collected at the beginning of each survey. Each survey began

with 1 minute of silence followed by 6 minutes of passive listening broken in to 1-minute recording intervals. Common nighthawk calls were broadcast with a mobile phone and portable amplified speakers for 2 minutes followed by a final 2-minute listening period which concluded the survey.

6.2.4 Raptor Surveys

The spring transect surveys described above in Section 7.1.2. were also used to attempt to detect raptors' nests. Because the Study Area was comprised largely of mature coniferous forest, a ground-based walkover prior to leaf-out would not have been a reliable means to detect raptors' nests due to the dense evergreen canopy. However, watch count surveys conducted in August from the Quarry station allowed a full view of the Study Area and provided some indication of raptors breeding in the area. Bird transects, point count surveys, and extensive terrestrial vegetation and wetland surveys conducted by one of the birders also provided additional opportunities to detect breeding raptors. A discussion of observations from these surveys and the likelihood of breeding raptor presence in the Study Area is provided in Section 11.2.5.

6.3 Fall Migration Methods

Fall migration surveys were conducted using a combination of transect surveys used to capture diurnal activity of migrating passerines and land birds that tend to migrate at night, but will stop-over at areas along the coast during the day to rest and feed. The diurnal watch counts were used to capture daytime migration activity which was anticipated to largely occur over water, and consist mainly of larger water birds and raptors.

6.3.1 Fall Migration Transects

Fall migration point count surveys were completed by Derrick Mitchell BScF., RPF, on August 20, August 30, September 8, September 14, September 19, September 27, October 4, and October 10, 2018. Transect locations are shown on Figure 4.

6.3.2 Fall Passage Migration/Diurnal Watch Counts

Fall migration watch count surveys were completed by local ornithologist Richard Balquiere (MSc) using a series of 18, six-hour watch counts, occurring between 9 am and 3 pm on August 17, 23, 31, September 3, 5, 9, 12, 13, 16, 18, 20, 25, 30, 8, 14, 21, 27, and November 4th. The duration of these surveys was intended to capture the main migration season for most species, while also capturing a portion of the later migration period for raptors.

During fall watch counts, the Quarry station was used exclusively as it provided a complete view of the Study Area, as well as adjacent Coastal areas. The total watch time sampled was 108 hours.

6.4 Winter Resident Bird Surveys

Winter surveys are underway in winter of 2019 and 2020 and the results will be submitted as an addendum to this report. They are conducted by Derrick Mitchell of Boreal Environmental and are conducted along transects that intersect turbine locations.

7 Bird Categories

Bird species were grouped into functional categories to summarize how different types of bird are using the Study Area and adjacent lands. These functional categories are as follows:

1. Waterfowl: Ducks, geese, and other large aquatic birds, especially when regarded as game.
2. Shorebirds: Waders, from the Order Charadriiformes.
3. Other waterbirds: Includes seabirds (i.e. marine birds), grebes (Order Podicipediformes), loons (Order Gaviiformes), Ciconiiformes (i.e. herons, egrets, etc.), Gruiformes (i.e. cranes and rails), kingfishers, and dippers (the only family of passerines considered waterbirds).
4. Raptors: Birds within the families Accipitridae (i.e. hawks, eagles, harriers), Strigiformes (owls), Pandionidae (i.e. Osprey), Falconidae (i.e. falcons), and Cathartidae (i.e. new world vultures).
5. Passerines: Any bird of the Order Passeriformes, which includes more than half of all bird species.
6. Other Land birds: Birds within the Orders Galliformes (i.e. quail, pheasant, and grouse), Columbiformes (i.e. pigeons and doves), Cuculiformes (i.e. cuckoos), Caprimulgiformes (i.e. nighthawks and whip-poor-wills), Apodiformes (i.e. swifts and hummingbirds), and Piciformes (i.e. woodpeckers, flickers and sapsuckers).

Abundance, frequency, and behaviour of species and groups were analyzed along with flight height of birds observed flying over the Study Area. Height was analyzed in relation to the Rotor Swept Arc (RSA) of the turbine.

As well, an evaluation of on-site passerine behavior was completed included evidence of breeding, and presence of Priority Species and their habitat.

8 Bird Mortality Estimation

It is well-known that birds can collide with wind turbine rotors blades, sometimes resulting in fatalities of migratory bird that are protected under the Migratory Birds Convention Act and other protected statuses such as SARA (Environment Canada, 2007). However, wind farms and nuclear power stations have been estimated to be responsible for between 0.3 and 0.4 fatalities per gigawatt-hour (GWh) of electricity (respectively) while fossil-fuelled power stations are responsible for about 5.2 fatalities per GWh (Sovacool, 2009). Cumulatively, 95% of human-caused bird mortality can be attributed to a combination of housecats and collisions with windows, vehicles, and transmission lines with wind power being a small portion of the remaining five percent (Calvert *et al.* 2013). Zimmerling *et al.* (2013) concluded that if impacts to sensitive or rare habitats are minimal or negligible during construction and operation, population level impact on birds by wind farms are unlikely.

Recent regulatory guidance requires predicting mortality rates for birds in order to optimize turbine siting arrangements and/or design to minimize bird fatalities (NBDELG 2019). Historically, predictive models have shown limited power to accurately predict mortality of birds and bats at wind farms and often the best measure is what nearby wind energy developments have experienced as reported in post construction mortality monitoring programs. In that regard, New Brunswick has shown the lowest mortality rates for birds of any province in Canada at 2.4 fatalities per turbine per year (Zimmerling *et al.* 2013). However, it is anticipated that a predictive model will at least provide an order of magnitude estimation of potential bird collisions and highlight any potentially significant negative effects of the development.

To estimate potential collisions, Boreal used a guidance document and associated collision risk model developed by Scottish Natural Heritage (SNH) to calculate estimated collision risk for BWP (Scottish Natural Heritage, 2010). The guidance document describes how to calculate the theoretical collision risk for birds

based on the turbine specifications, Study Area attributes and flight characteristics of bird species (Scottish Natural Heritage, 2010).

Boreal Environmental calculated collision estimates using bird flight data collected during spring and fall watch counts between April 2nd and May 28th, 2019 (Spring) and Aug 17th and Nov 4th, 2019 (Fall).

As previously described in the watch count methodology, flight height and direction were estimated for all birds observed inside and outside of the Study Area during spring and fall watch count surveys. The watch count location gave the observer a view of the entire Study Area and allowed for observation of species flight height and flight behaviour. Watch count data from the spring and fall surveys was combined and species were sorted based on bird groups and further categorized based on similarities in size characteristics (i.e., length and wingspan) for the purpose of our analysis.

Because it is recognized that birds typically avoid turbines while in flight (CWS 2007, Everaert 2014), an estimated avoidance rate was applied to the model results to reflect reality. The Scottish Natural Heritage (2010) recommends a general avoidance rate of 98%. This was applied to the results of the analysis to simulate the proportion of birds that will avoid turbines. While avoidance rates vary among species, this number reflects the average across species.

The calculations are completed in two stages and are as follows:

8.1 Stage 1

1. Identification of a risk window (RW) which is equal to the width of the Study Area perpendicular to the general flight direction of migrating birds multiplied by the height of the proposed turbine rotor sweep, from bottom to top ($RW = \text{Study Area width} \times \text{rotor sweep diameter}$).
2. Estimate of proportion of bird population (n) flying through the risk window. Population estimates are calculated as follows:
 - Number of survey locations (a)
 - Survey location (b)
 - Study Area in m^2 (c)
 - Average number birds per (b) = (d)
 - Population of birds that are in the turbine vicinity that could interact with a turbine at a given time = $(c/b) \times (d) = (e)$
 - Number of birds in the risk window = $((e) / \text{Survey time}) \times \text{total flight hours in a season}^*$ (i.e., spring and fall) = (n)

*The total time estimates (in hours) for survey seasons are based on the assumption of 12 hours of flight time per day.

3. Calculate the area in m^2 occupied by the turbine rotor sweep arc (RSA). $A = \text{Total RSA for all turbines}$
 $\text{number of turbines} \times \text{RSA}$

4. Express the total RSA as a proportion of the risk window (A/W)

5. Number of birds passing through rotors (n) equals the number of birds through the risk window x proportion of area occupied by rotors = $n \times (A/W)$

As a variation of the Scottish Heritage Society's methodology for calculating Risk Window (RW), Boreal used a RW that was limited vertically between the top and bottom of the RSA (i.e., 60 m to 200 m) and applied this RW only to birds that were recorded flying within that height range data that provided the best opportunity for a realistic estimate of potential collisions. This was possible where our data collected during watch count surveys included flight direction and height, species, location and time observed. The vantage point at the Quarry station allowed complete visibility of the Study Area so it is assumed that essentially all bird flying within the actual altitude limits of rotor sweep for the proposed turbine models were recorded. Narrowing the risk window affords us the ability to focus on the species groups that were observed flying at altitudes that would put them at risk of collision with blades and hence, are most likely to be affected. This allows for more focussed and accurate models and fewer assumptions based on the flight characteristics and size of the smaller number of species that were actually recorded flying within the RW.

Breeding point count and transect data was collected, for the most part, under the forest canopy, where most high-flying birds cannot be seen from under the coniferous forest canopy. Including point count data in the model would lead to an underestimation of collisions due to the missed birds at rotor sweep altitude. Conversely, using only spring and fall watch count data has the potential to bias data towards activity levels during migration periods. This could be problematic if migration activity over the Study Area was high in spring or fall, which would lead to an over-estimation of collision by assuming that the spring and fall activity levels within the RW was representative of the entire breeding season. However, a very high percentage of birds flying in the RW were resident birds (mostly gulls and Double-crested cormorants) and so it can be assumed that the activity levels of these birds recorded in April, May, August and September is likely reasonably representative of the entire active season.

8.2 Stage 2

This stage calculates the probability of a bird hitting a turbine blade while passing through a rotor. The probability of collision depends on body length, wingspan, average flight speed, and flight behaviour (i.e., gliding vs. flapping). It is also dependent on turbine attributes such as the width and pitch of turbine blades and turbine rotation speed. The calculations were done using a model excel spreadsheet developed by Scottish Natural Heritage (2010).

A number of assumptions were made in order to complete this stage including;

- a bird shape is a simple cross shaped with the wings located halfway between nose and tail;
- turbines are aligned in a plane across the risk window;
- bird velocity is constant despite changes in upwind and downwind conditions; and
- the turbine is 2-dimensional (i.e., no thickness).

Collision rate estimations were not performed for shorebirds or other landbirds because there were no observations of species within these groups flying in the RW. The waterfowl species group was combined with the other waterbird species group because there were far greater numbers of other waterbirds observed within the RW and they have similar size characteristics with respect to body length, wingspan, and flight movement. Flight speed amongst the waterfowl group is significantly higher than the other

waterbird group; however, their numbers were not high enough to significantly alter the probability results. In fact, combining these groups results in a slight overestimation of collision risk because waterfowl can fly through the rotor blades quicker than species within the other waterbird group which decreases the probability that they will collide with the rotor blades. The raptor species group was assessed as a single group. Flight speeds for all species groups were taken from Alerstam *et al* (2007) and body length, wingspan and flight behaviour were taken from Sibley (2009).

Probability of collision vary by bird group. The inputs provided for the models are based upon average characteristics of species as follows:

1. Other waterbirds:
 - Bird Length = 0.8 m
 - Wingspan = 1.90 m
 - F: Flapping (0) or Gliding (1) = 0
 - Bird Speed = 12 m/sec
2. Raptors
 - Bird Length = 0.5 m
 - Wingspan = 1.22 m
 - F: Flapping (0) or Gliding (1) = 0
 - Bird Speed= 9.8 m/sec
3. Passerines
 - Bird Length = 0.2 m
 - Wingspan = 0.35 m
 - F: Flapping (0) or Gliding (1) = 0
 - Bird Speed= 13 m/sec

9 Field Survey Results

Baseline surveys for birds were conducted between March and November of 2019, with winter resident bird surveys ongoing (to be summarized in an addendum) by Derrick Mitchell (RPF) and Richard Blaquiére (MSc). A total of 16,309 minutes (about 272 hours) of surveys were completed over the course of the year. These surveys resulted in the observation of 19,324 individual birds, representing 101 species within or in proximity to the Study Area.

Across all survey periods a total of sixteen Species of Conservation Concern (SOCC) were observed either during dedicated survey periods or incidentally; both inside and outside the Study Area. Of the 16 SOCC, four are considered Species at Risk (Bald eagle, Peregrine falcon, Olive-sided flycatcher and Common nighthawk). These SOCC observations are discussed in Section 14.

The most abundant group observed during surveys were waterbirds, due to the large number of Ducks, Scoters, and Cormorants passing by over water in the Spring. The seasonal specific survey results are discussed below. All avian survey locations can be seen in Figure 4.

9.1 Spring Migration

The following sections describe the avian results from spring migration point count surveys and watch count surveys. A complete dataset of bird survey observations is provided in Appendix B.

9.1.1 Passage Migration/Diurnal Watch Count Surveys

Passage Migration/Diurnal Watch Counts During spring migration watch count surveys, a total of 15,125 individuals representing 60 species were observed and are summarized in the summary below. Birds that were unclassifiable to species level (i.e. unknown warbler or finch species) from incidental and watch count survey species counts were not included; however, these individuals were included in the total number of birds observed.

Table 6. Spring migration bird species and abundance observed at watch count location.

Common Name	Scientific Name	S-Rank	NB DERD Status	Watch count Location	Group	Records
American crow	Corvus brachyrhynchos	S5	Secure	CO, PH, QU	6	85
American goldfinch	Carduelis tristis	S5B,S5M	Secure	QU	6	15
American kestrel	Falco sparverius	S4B,S4S5M	Secure	CO, PH	4	2
American robin	Turdus migratorius	S5B,S5M	Secure	CO, PH, QU	6	37
Bald eagle	Haliaeetus leucocephalus	S4	At Risk	CO, QU	4	27
Black guillemot	Cepphus grylle	S3	Secure	CO	3	2
Black scoter	Melanitta nigra	S3M,S1S2N	Sensitive	CO	1	294
Black-capped chickadee	Poecile atricapilla	S5	Secure	CO, QU	6	3
Blue jay	Cyanocitta cristata	S5	Secure	QU	6	13
Blue-headed vireo	Vireo solitarius	S5B,S5M	Secure	QU	6	2
Brant	Branta bernicla	S1N, S2S3M	Secure	CO	1	146
Broad-winged hawk	Buteo platypterus	S5B,S5M	Secure	QU	4	12
Canada goose	Branta canadensis	SNAB,S5M	Secure	CO, QU	1	188
Cedar waxwing	Bombycilla cedrorum	S5B,S5M	Secure	QU	6	25
Common eider	Somateria mollissima	S3B,S4M,S3N	Secure	CO	1	909
Common grackle	Quiscalus quiscula	S5B,S5M	Secure	QU	6	6
Common loon	Gavia immer	S4B,S4M,S4N	Secure	CO, QU	3	30
Common merganser	Mergus merganser	S5B,S4N,S5M	Secure	QU	1	7
Common raven	Corvus corax	S5	Secure	CO, QU	6	56
Common yellowthroat	Geothlypis trichas	S5B,S5M	Secure	QU	6	1
Dark-eyed junco	Junco hyemalis	S5	Secure	QU	6	1
Double-crested cormorant	Phalacrocorax auritus	S5B,S5M	Secure	CO, QU	3	847
Duck	Duck sp.	NA	NA	CO, QU	1	2749

Common Name	Scientific Name	S-Rank	NB DERR Status	Watch count Location	Group	Records
Gray catbird	Dumetella carolinensis	S4B,S4M	Secure	QU	6	1
Great black-backed gull	Larus marinus	S5	Secure	CO, QU	3	34
Great blue heron	Ardea herodias	S4B,S4M	Secure	QU	3	2
Gull	Gull sp.	NA	NA	CO, QU	3	697
Hairy woodpecker	Picoides villosus	S5	Secure	QU	7	5
Herring gull	Larus argentatus	S5	Secure	CO, QU	3	323
Iceland gull	Larus glaucoides	S4N,S4M	Secure	CO, QU	3	9
Long-tailed duck	Clangula hyemalis	S4M,S4N	Secure	CO	1	1
Mallard	Anas platyrhynchos	S5B,S4N,S5M	Secure	CO	1	2
Merganser		NA	NA	CO, QU	1	9
Merlin	Falco columbarius	S5B,S5M	Secure	CO, QU	4	5
Northern flicker	Colaptes auratus	S5B,S5M	Secure	CO, QU	7	12
Northern harrier	Circus cyaneus	S4B,S4S5M	Secure	QU	4	8
Osprey	Pandion haliaetus	S4S5B,S5M	Secure	QU	4	2
Passerine	Passerine sp.	NA	NA	QU	6	46
Peregrine falcon- anatum/tundrius	Falco peregrinus pop. 1	S1B,S3M	At Risk	CO, QU	4	4
Pileated woodpecker	Dryocopus pileatus	S5	Secure	QU	7	10
Purple finch	Carpodacus purpureus	S4S5B,SUN,S5M	Secure	QU	6	11
Raptor	Raptor sp.	NA	NA	QU	4	4
Red-breasted merganser	Mergus serrator	S3B,S5M,S4S5N	Secure	CO	1	34
Red-tailed hawk	Buteo jamaicensis	S4	Secure	QU	4	3
Red-throated loon	Gavia stellata	S5M,S4N	Secure	CO	3	3
Ring-billed gull	Larus delawarensis	S3S4B,S5M	Secure	CO	3	94
Rock pigeon	Columba livia	S5	Secure	CO	7	3
Ruby-throated hummingbird	Archilochus colubris	S5B,S5M	Secure	QU	7	1
Savannah sparrow	Passerculus sandwichensis	S4S5B,S5M	Secure	QU	6	1
Scoter		NA	NA	CO	1	8168
Sharp-shinned hawk	Accipiter striatus	S4B,S5M	Secure	QU	4	8
Song sparrow	Melospiza melodia	S5B,S5M	Secure	CO, PH, QU	6	6
Surf scoter	Melanitta perspicillata	S4M,S2N	Secure	CO	1	11
Swallow		NA	NA	QU	6	4
Tree swallow	Tachycineta bicolor	S4B,S4M	Secure	QU	6	2
Turkey vulture	Cathartes aura	S3B,S3M	Secure	CO, PH, QU	4	110

Common Name	Scientific Name	S-Rank	NB DERD Status	Watch count Location	Group	Records
Unknown		NA	NA	QU	0	4
White-throated sparrow	Zonotrichia albicollis	S5B,S5M	Secure	QU	6	24
Wilson's warbler	Wilsonia pusilla	S4B,S5M	Secure	QU	6	1
Woodpecker		NA	NA	QU	7	1
Total						15,125
Watch Count Locations CO = Coastal QU = Quarry PH = Paddy's Hill						

The three most commonly observed species groups during spring migration watch count surveys were Scoter species (8,168), Unidentified Ducks (2749), and Double-crested cormorants (847). However, it should be recognized that 99% of these observations were predominantly observed outside of the Study Area during watch count surveys. The most commonly observed species during spring migration within/above the Study Area was the Turkey vulture, although the records are suspected to represent a smaller number of individuals recorded multiple times.

Watch count observations were generally groups of birds, many of which were less than 60 individuals. Two of the most observed species (Ducks and Black Scoters) were typically observed in flocks with more than 100 individuals, ranging up to several hundred birds.

9.1.2 Migratory Stop-over Transects

During spring migration, a total of 989 individuals representing 63 species were observed. The observations are summarized in Table 7 below.

Table 7. Spring migration bird species and abundance observed along transects.

Common Name	Scientific Name	S-Rank	NB DERD Status	Transect	Group	Breeding status [†]	Records
Alder flycatcher	Empidonax alnorum	S5B,S5M	Secure	3, 5	6	Possible	2
American black duck	Anas rubripes	S5B,S4N,S5M	Secure	5	1	Observed	1
American crow	Corvus brachyrhynchos	S5	Secure	1, 2, 5	6	Observed	10
American goldfinch	Carduelis tristis	S5B,S5M	Secure	1, 2, 3, 4, 5	6	Possible	26
American redstart	Setophaga ruticilla	S5B,S5M	Secure	1, 2, 4, 5	6	Possible	11
American robin	Turdus migratorius	S5B,S5M	Secure	1, 2, 3, 4, 5	6	Possible	90

Bald eagle	<i>Haliaeetus leucocephalus</i>	S4	At Risk	5	4	Observed	1
Barred owl	<i>Strix varia</i>	S5	Secure	1	5	Possible	1
Belted kingfisher	<i>Megaceryle alcyon</i>	S5B,S5M	Secure	1,2, 5	3	Observed	3
Black and white warbler	<i>Mniotilta varia</i>	S5B,S5M	Secure	1, 2, 3, 4, 5,	6	Possible	25
Black throated green warbler	<i>Dendroica virens</i>	S5B,S5M	Secure	1, 2, 3, 4, 5,	6	Possible	61
Black-capped chickadee	<i>Poecile atricapilla</i>	S5	Secure	1, 2, 3, 4, 5,	6	Possible	58
Blue-headed vireo	<i>Vireo solitarius</i>	S5B,S5M	Secure	1, 2, 3, 4, 5,	6	Possible	46
Bluejay	<i>Cyanocitta cristata</i>	S5	Secure	1, 2	6	Probable	2
Boreal chickadee	<i>Poecile hudsonica</i>	S4	Secure	4	6	Possible	4
Broad-winged hawk	<i>Buteo platypterus</i>	S5B,S5M	Secure	1, 5	4	Possible	3
Brown creeper	<i>Certhia americana</i>	S5	Secure	1, 2	6	Possible	6
Canada goose	<i>Branta canadensis</i>	SNAB,S5M	Secure	1, 2, 5	1	Probable	10
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	S5B,S5M	Secure	1	6	Possible	15
Common grackle	<i>Quiscalus quiscula</i>	S5B,S5M	Secure	1, 2, 5	3	Possible	1
Common loon	<i>Gavia immer</i>	S4B,S4M,S4N	Secure	3	6	Possible	9
Common raven	<i>Corvus corax</i>	S5	Secure	1, 4, 5	6	Confirmed	19
Common yellow throat	<i>Geothlypis trichas</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	6	Confirmed	42
Dark-eyed junco	<i>Junco hyemalis</i>	S5	Secure	1, 2, 3, 4, 5	3	Possible	6
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	7	Observed	31
Downy woodpecker	<i>Picoides pubescens</i>	S5	Secure	1, 2, 3, 4, 5	6	Probable	1
Evening grosbeak	<i>Coccothraustes vespertinus</i>	S3B,S3S4N,SU M	Sensitive	5	6	Possible	1
Fox sparrow	<i>Passerella iliaca</i>	S4B,S5M	Secure	1	6	Possible	61
Golden-crowned kinglet	<i>Regulus satrapa</i>	S5	Secure	1, 2, 3, 4, 5	6	Probable	3
Gray catbird	<i>Dumetella carolinensis</i>	S4B,S4M	Secure	3, 4, 5	6	Possible	3
Gray jay	<i>Perisoreus canadensis</i>	S4	Secure	3	3	Probable	1
Great blue heron	<i>Ardea herodias</i>	S4B,S4M	Secure	1	1	Possible	4
Green-winged Teal	<i>Anas crecca</i>	S4B,S5M	Secure	2, 5	7	Probable	17
Hairy woodpecker	<i>Picoides villosus</i>	S5	Secure	2, 3, 4, 5	6	Probable	33
Hermit thrush	<i>Catharus guttatus</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	3	Probable	8
Herring gull	<i>Larus argentatus</i>	S5	Secure	2, 5	2	Possible	1
Killdeer	<i>Charadrius vociferus</i>	S3B,S3M	Sensitive	5	6	Possible	5

Magnolia warbler	<i>Dendroica magnolia</i>	S5B,S5M	Secure	1, 3, 5,	1	Possible	4
Mallard	<i>Anas platyrhynchos</i>	S5B,S4N,S5M	Secure	1, 2, 5	4	Probable	2
Merlin	<i>Falco columbarius</i>	S5B,S5M	Secure	5	6	Possible	3
Nashville warbler	<i>Vermivora ruficapilla</i>	S5B,S5M	Secure	2, 5	7	Possible	26
Northern flicker	<i>Colaptes auratus</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	4	Probable	2
Northern harrier	<i>Circus cyaneus</i>	S4B,S4S5M	Secure	1	6	Probable	5
Northern parula	<i>Parula americana</i>	S5B,S5M	Secure	4, 5	6	Possible	15
Ovenbird	<i>Seiurus aurocapilla</i>	S5B,S5M	Secure	1,2 3, 5	6	Probable	2
Palm warbler	<i>Dendroica palmarum</i>	S5B,S5M	Secure	2	7	Possible	4
Pileated woodpecker	<i>Dryocopus pileatus</i>	S5	Secure	4, 5	6	Possible	36
Purple finch	<i>Carpodacus purpureus</i>	S4S5B,SUN,S5M	Secure	1, 2, 3, 4, 5	1	Possible	2
Red-breasted merganser	<i>Mergus serrator</i>	S3B,S5M,S4S5N	Secure	1, 3	6	Possible	9
Redbreasted nuthatch	<i>Sitta canadensis</i>	S5	Secure	1, 2, 3, 5	6	Possible	24
Ruby-crowned kinglet	<i>Regulus calendula</i>	S4B,S5M	Secure	1, 2, 3, 4, 5	7	Possible	1
Ruby-throated hummingbird	<i>Archilochus colubris</i>	S5B,S5M	Secure	5	7	Possible	29
Ruffed grouse	<i>Bonasa umbellus</i>	S5	Secure	1, 2, 3, 4, 5	6	Probable	4
Savannah sparrow	<i>Passerculus sandwichensis</i>	S4S5B,S5M	Secure	1, 5	6	Possible	44
Song sparrow	<i>Melospiza melodia</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	6	Probable	4
Swamp sparrow	<i>Melospiza georgiana</i>	S5B,S5M	Secure	2, 3, 5	6	Possible	1
Tree sparrow	<i>Tachycineta bicolor</i>	S4B,S4M	Secure	1	4	Possible	3
Turkey vulture	<i>Cathartes aura</i>	S3B,S3M	Secure	1, 3, 5	6	Possible	62
White throated sparrow	<i>Zonotrichia albicollis</i>	S5B,S5M	Secure	1, ,2, 3, 4, 5	6	Probable	2
White-winged crossbill	<i>Loxia leucoptera</i>	S5	Secure	2	6	Possible	38
Winter wren	<i>Troglodytes hiemalis</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	6	Possible	5
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	S4S5B,S5M	Secure	1, 2, 3, 5	6	Possible	40
Yellow-rumped warbler	<i>Dendroica coronata</i>	S5B,S5M	Secure	1, 2, 3, 4, 5	3	Possible	1
Total							989

The four most commonly observed species during spring migration points were the American robin (90), Fox sparrow (61), Black-throated green warbler (61), and Turkey vulture (62).

9.2 Breeding Season

The following sections describe the bird survey results from breeding point count surveys, watch count surveys, and transect surveys. Only one SOCC was recorded as breeding within the Study Area during the breeding season (Common nighthawk). This section summarizes the results for all surveys conducted that targeted breeding birds.

9.2.1 Spring Owl Surveys

Three owls were detected during spring owl surveys. A pair of barred owls responded to playback recordings on the evening of April 28th along the pipeline, north of Turbine T6 (See Figure 4 for survey location). On May 24th an unknown owl responded to playback recordings north of T4. The owl was observed flying-over silhouetted against the sky and was likely a barred owl based on the size and wingspan.

9.2.2 Breeding Bird Point Count Surveys

Breeding bird surveys were conducted in June 2019. In all, 62 point counts were completed over two rounds, one in early June and one in late June. Table 8 summarizes the breeding bird survey data including; rarity ranking/status, location of observation, habitat use and highest breeding status recorded. In total, 516 observations representing 46 species were recorded.

No SOCC were recorded during the Breeding Bird point counts.

The surveyor recorded notes on bird behavior observed, including; distraction display, carrying food, and carrying nesting material. Behavioral information was categorized as recommended by Maritime Breeding Bird Atlas (MBBA 2020):

- Observed - species observed in its breeding season;
- Possible - species observed during breeding season in suitable nesting habitat or singing males or breeding calls heard, in suitable nesting habitat during breeding season;
- Probable - agitated behavior observed or the occurrence of an adult bird, at the same place, on consecutive survey days during breeding season; and,
- Confirmed - adult carrying food or distraction display

The most common species observed during the breeding bird point count surveys were; Black-throated green warbler (88), Hermit thrush (43), Blue-headed vireo (36), Golden-crown kinglet (29), American redstart (22), Overbird (21) and Nashville warbler (20).

No confirmed breeders were identified during the dedicated breeding bird survey. However, over half of the species (28) observed would be considered probable breeders because they were observed at the same point count location in round 1 and 2 of the surveys. The remaining 18 species were determined to be possible breeders; but most of these are considered early breeders and would not be displaying breeding behavior when the second round was conducted. In general, there was a general lack of breeding behavior exhibited by observed species during the survey which seemed to be the trend noted by many local birders. No large flocks of birds were observed during breeding bird surveys.

All the species identified are native species to New Brunswick and were observed within the typical and common habitat associated with the Study Area and surrounding landscape.

Table 8. Breeding Season Species and Abundance of Birds Observed at Point Count Locations

Common Name	Scientific Name	S-Rank	NB DERD Status	Point Count	Habitat	Group	Breeding status [†]	Records
Alder flycatcher	<i>Empidonax alnorum</i>	S5B,S5M	Secure	PT1, PT3, PT30, PT7, PT9	Disturbed, MECW, SHRUB	6	PR	9
American crow	<i>Corvusbrachyrhynchos</i>	S5	Secure	PT12, PT14, PT15, PT16, PT23	MECW, MMXD, MSWD, YSWD	6	PO	5
American goldfinch	<i>Carduelistris</i>	S5B,S5M	Secure	PT1, PT2, PT21, PT3, PT30, PT31, PT6, PT7, PT8, PT9	Disturbed, MECW, MMXD, MSWD, SHRUB, YSWD	6	PR	15
American redstart	<i>Setophagaruticilla</i>	S5B,S5M	Secure	PT1, PT11, PT13, PT2, PT23, PT3, PT30, PT4, PT6, PT7, PT9	Disturbed, MCSW, MECW, MMXD, MSWD, SHRUB, YSWD	6	PR	22
American robin	<i>Turdusmigratorius</i>	S5B,S5M	Secure	PT1, PT12, PT15, PT16, PT2, PT23, PT24, PT31, PT4, PT5, PT6, PT9	Disturbed, MCSW, MECW, MMXD, MSWD, SHRUB, YSWD	6	PR	15
Bay-breasted warbler	<i>Dendroicacastanea</i>	S4B,S4S5M	Secure	PT11, PT17, PT22, PT24, PT26, PT27, PT4	MECW, MMXD, MSWD, YSWD,	6	PR	8
Black and white warbler	<i>Mniotiltavaria</i>	S5B,S5M	Secure	PT10, PT14, PT15, PT16, PT21, PT25, PT27, PT28, PT30, PT4	MEWC, MHWD, MMXD, MSWD, YMXD, YSWD	6	PR	11
Black throated green warbler	<i>Dendroicavirens</i>	S5B,S5M	Secure	PT1, PT10, PT11, PT12, PT13, PT14, PT15, PT16, PT17, PT18, PT19, PT2, PT20, PT21, PT22, PT23, PT24' PT25, PT26, PT27, PT28, PT29, PT30, PT31, PT4, PT5, PT6, PT7, PT8, PT9	Disturbed, MCSW, MECW, MEWC, MHWD, MMXD, MSWD, SHRUB, YMXD, YSWD	6	PR	88
Black-capped chickadee	<i>Poecileatricapilla</i>	S5	Secure	PT10, PT11, PT14, PT24, PT27, PT5, PT6, PT7, PT9	MMXD, MSWD, SHRUB, YSWD	6	PO	9
Blue-headed vireo	<i>Vireo solitarius</i>	S5B,S5M	Secure	PT1, PT10, PT11, PT13, PT14, PT16, PT17, PT18, PT19, PT2, PT20, PT21, PT22, PT23, PT24, PT27, PT28' PT30, PT31, PT6, PT7, PT8, PT9	MCSW, MECW, MHWD, MMXD, MSWD, SHRUB, YMXD, YSWD	6	PR	36
Bluejay	<i>Cyanocitta cristata</i>	S5	Secure	PT14, PT18, PT26	MCSW, MECW, MSWD	6	PO	3

Common Name	Scientific Name	S-Rank	NB DERD Status	Point Count	Habitat	Group	Breeding status [†]	Records
Boreal chickadee	<i>Poecilehudsonica</i>	S4	Secure	PT11	YSWD	6	OB	1
Broad-winged hawk	<i>Buteo platypterus</i>	S5B,S5M	Secure	PT30	MSWD	4	PO	1
Brown creeper	<i>Certhiaamericana</i>	S5	Secure	PT10, PT24, PT28, PT8	MHWD, SHRUB, YSWD	6	PR	5
Cedar waxwing	<i>Bombycillacedrorum</i>	S5B,S5M	Secure	PT3	Disturbed	6	PR	1
Common grackle	<i>Quiscalusquiscula</i>	S5B,S5M	Secure	PT3	Disturbed	6	PO	1
Common raven	<i>Corvuscorax</i>	S5	Secure	PT11, PT20, PT22	MMXD, MSWD	6	PO	3
Common yellow throat	<i>Geothlypistrichas</i>	S5B,S5M	Secure	PT1, PT19, PT2, PT20, PT21, PT3, PT9	Disturbed, MECW, MSWD, SHRUB, YMXD, YSWD	6	PR	11
Dark-eyed junco	<i>Junco hyemalis</i>	S5	Secure	PT13, PT14, PT15, PT16, PT17, PT18, PT19, PT20, PT6, PT7, PT8	BOG, MCSW, MEWC, MMXD, MSWD, YSWD	6	PR	17
Downy woodpecker	<i>Picoidespubescens</i>	S5	Secure	PT9	SHRUB	6	PO	1
Golden-crowned kinglet	<i>Regulus satrapa</i>	S5	Secure	PT10, PT11, PT12, PT13, PT15, PT16, PT18, PT19, PT20, PT22, PT23, PT25, PT26, PT27, PT29, PT30, PT4' PT6, PT8	MCSW, MECW, MEWC, MMXD, MSWD, SHRUB, YSWD	6	PR	29
Hairy woodpecker	<i>Picoidesvillosus</i>	S5	Secure	PT14, PT15, PT30, PT31	MECW, MMXD, MSWD	7	PO	4
Hermit thrush	<i>Catharusguttatus</i>	S5B,S5M	Secure	PT1, PT10, PT11, PT12, PT13, PT15, PT17, PT19, PT2, PT20, PT21, PT22, PT27, PT28, PT29, PT30, PT5' PT6, PT7, PT8, PT9	Disturbed, MCSW, MECW, MHWD, MMXD, MSWD, SHRUB, YMXD, YSWD	6	PR	43
Least flycatcher	<i>Empidonax minimus</i>	S5B,S5M	Secure	PT25	MCSW	6	PO	1
Lincoln's sparrow	<i>Melospizalincolnii</i>	S4B,S5M	Secure	PT3	Disturbed	6	PO	2
Magnolia warbler	<i>Dendroica magnolia</i>	S5B,S5M	Secure	PT1, PT13, PT24, PT26, PT27, PT29, PT30, PT5, PT6, PT7, PT8	MCSW, MECW, MMXD, MSWD, YSWD	6	PR	14
Mourning dove	<i>Zenaida macroura</i>	S4B,S5M	Secure	PT13, PT20, PT27, PT30, PT31	MECW, MEWC, MSWD	7	PO	5

Common Name	Scientific Name	S-Rank	NB DERD Status	Point Count	Habitat	Group	Breeding status [†]	Records
Nashville warbler	<i>Vermivoraruficapilla</i>	S5B,S5M	Secure	PT1, PT11, PT13, PT14, PT18, PT20, PT21, PT22, PT24, PT27, PT29, PT31, PT5, PT8, PT9	MCSW, MECW, MMXD, MSWD, YMXD, YSWD	6	PR	20
Northern flicker	<i>Colaptes auratus</i>	S5B,S5M	Secure	PT19, PT3	Disturbed, MEWC	7	PR	2
Northern parula	<i>Parulaamericana</i>	S5B,S5M	Secure	PT16, PT2, PT22, PT23, PT28, PT29, PT3, PT9	Disturbed, MECW, MHWD, MMXD, MSWD, SHRUB	6	PR	10
Northern waterthrush	<i>Seiurusnoveboracensis</i>	S4B,S5M	Secure	PT19, PT6	MCSW, MEWC, MMXD	6	PR	4
Ovenbird	<i>Seiurusaurocapilla</i>	S5B,S5M	Secure	PT11, PT12, PT15, PT16, PT17, PT21, PT23, PT24, PT28, PT30, PT5, PT6, PT7	MCSW, MHWD, MMXD, MSWD, YMXD, YSWD	6	PR	21
Purple finch	<i>Carpodacuspurpureus</i>	S4S5B,SUN,S5M	Secure	PT1, PT11, PT12, PT15, PT17, PT20, PT24, PT25, PT26, PT5, PT6, PT8, PT9	MCSW, MECW, MEWC, MMXD, SHRUB, YSWD	6	PO	14
Redbreasted nuthatch	<i>Sitta canadensis</i>	S5	Secure	PT12, PT14, PT15, PT21, PT9	MMXD, MSWD, YMXD	6	PR	7
Red-eyed vireo	<i>Vireo olivaceus</i>	S5B,S5M	Secure	PT2, PT20, PT30	Disturbed, MSWD	6	PO	3
Ruby-crowned kinglet	<i>Regulus calendula</i>	S4B,S5M	Secure	PT10, PT19, PT24, PT3	MEWC, MSWD	6	PR	4
Ruffed grouse	<i>Bonasa umbellus</i>	S5	Secure	PT14, PT4, PT7, PT9	MMXD, SHRUB	7	PO	4
Savannah sparrow	<i>Passerculusandwichensis</i>	S4S5B,S5M	Secure	PT2, PT3	Disturbed	6	PR	3
Song sparrow	<i>Melospizamelodia</i>	S5B,S5M	Secure	PT2, PT3	Disturbed, SHRUB	6	PR	8
Tree sparrow	<i>Tachycineta bicolor</i>	S4B,S4M	Secure	PT3	Disturbed	6	PR	1
White-throated sparrow	<i>Zonotrichiaalbicollis</i>	S5B,S5M	Secure	PT1, PT10, PT2, PT3, PT30, PT4, PT7, PT8, PT9	Disturbed, MECW, MSWD, SHRUB	6	PR	13
White-winged crossbill	<i>Loxialeucoptera</i>	S5	Secure	PT24, PT29, PT4, PT8	MECW, MSWD, YSWD	6	PO	4
Winter wren	<i>Troglodytes troglodytes</i>	S5B,S5M	Secure	PT10, PT12, PT14, PT15, PT19, PT22, PT23, PT25, PT3, PT30	Disturbed, MEWC, MMXD, MSWD	6	PR	15
Yellow warbler	<i>Dendroica petechia</i>	S5B,S5M	Secure	PT3, PT30	Disturbed, MSWD	6	PO	2
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	S4S5B,S5M	Secure	PT10, PT11, PT18, PT19, PT20, PT23, PT29	MCSW, MECW, MEWC, MMXD, YMXD, YSWD	6	PR	9
Yellow-rumped warbler	<i>Dendroicacoronata</i>	S5B,S5M	Secure	PT10, PT11, PT13, PT15, PT18, PT19, PT22, PT23, PT27, PT4, PT8, PT9	MCSW, MECW, MEWC, MMXD,	6	PO	12

Common Name	Scientific Name	S-Rank	NB DERD Status	Point Count	Habitat	Group	Breeding status [†]	Records
					MSWD, SHRUB, YSWD			
Total:								516
<i>Breeding Status Codes:</i> <i>OB = observed</i> <i>PO = possible breeder</i> <i>PR = probable breeder</i> <i>CO = confirmed breeder</i>								

9.2.3 Common Nighthawk Surveys

Two Common nighthawks were observed at the same time on the evening of June 22rd, 2019 during targeted surveys. They were flying over the disturbed open grassy habitat near turbines T9 and T10. The location of the pair of Common nighthawks is shown on Figure 9. An additional common nighthawk was seen during fall watch count surveys outside the Study Area.

9.2.4 Raptor Survey

As discussed in the scope of work for field surveys in Section 6.2.4., there was no dedicated raptor survey but the surveyor scanned visible tree-tops for signs of raptor nests during spring transect surveys. No nests were found, but a number of raptors were recorded during other surveys and are reported in those sections. No evidence of breeding raptors were observed with the exception of the Barred owl recorded as described in Section 9.2.1. However, a Broad-winged hawk was seen on multiple occasions near Paddy’s Hill in the mid-way between turbine locations T8 and T10 (See Figure 3)

9.1 Fall Migration

The following sections describe the results from fall stop-over migration transect surveys and passage migration diurnal watch count surveys. The stop-over migration surveys serve to compliment the passage migration/ diurnal watch count surveys by detecting birds, especially passerines, that may be using the Study Area as a stop-over site to forage amongst trees and shrubs before continuing on their long migration. Nonetheless, it is difficult to detect some species groups with either survey type as shorebirds and passerines migrate, for the most part, at night and may migrate over the Study Area without being detected.

9.1.1 Fall Stop-over Migration Transects

Eleven fall stop-over migration surveys (i.e., transects) were conducted commencing on August 25th to October 14th, 2019. A total of 652 individuals representing 49 species were observed. The most commonly observed species in descending order include; Black-capped chickadee (142), Golden-crown kinglet (112), Yellow-rumped (109), Cedar waxwing (91), Black-throated green warbler (79), American goldfinch (74), Common yellowthroat (69) and white-throated sparrow (67). By far, the most abundant species group observed during these surveys were passerines (1095) followed by other landbirds (73). Several small flocks of American goldfinch (50), mixed warblers (32) and White-winged crossbills (20) were observed during falls transects. Two Bald eagles, a SAR, were observed on August 25th soaring at approximately 250 m moving in a southerly direction and likely migrating. No other SAR or SOCC were observed.

Table 9. Fall migration bird species and abundance observed along transects.

Common Name	Scientific Name	S-Rank	NB DERR Status	Transect	Group	Records
Alder flycatcher	<i>Empidonax alnorum</i>	S5B, S5M	Secure	1, 2, 5	6	5
American crow	<i>Corvus brachyrhynchos</i>	S5	Secure	1, 3, 4	6	5
American goldfinch	<i>Carduelis tristis</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	74
American kestrel	<i>Falco sparverius</i>	S4B, S4S5M	Secure	1	4	1
American redstart	<i>Setophaga ruticilla</i>	S5B, S5M	Secure	2, 5	6	3

Common Name	Scientific Name	S-Rank	NB DERD Status	Transect	Group	Records
American robin	<i>Turdus migratorius</i>	S5B, S5M	Secure	1, 2, 3, 4	6	24
Bald eagle	<i>Haliaeetus leucocephalus</i>	S4	At Risk	2	4	2
Belted Kingfisher	<i>Megasceryle alcyon</i>	S5B, S5M	Secure	1, 2, 3	3	4
Black and white warbler	<i>Mniotilta varia</i>	S5B, S5M	Secure	1, 2, 3, 4	6	12
Black throated green warbler	<i>Dendroica virens</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	79
Black-capped chickadee	<i>Poecile atricapilla</i>	S5	Secure	1, 2, 3, 4, 5	6	142
Blue-headed vireo	<i>Vireo solitarius</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	47
Blue jay	<i>Cyanocitta cristata</i>	S5	Secure	1, 2, 3, 4, 5	6	15
Broad-winged hawk	<i>Buteo platypterus</i>	S5B, S5M	Secure	1, 2	4	3
Cedar waxwing	<i>Bombycilla cedrorum</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	91
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	S5B, S5M	Secure	1	6	3
Common grackle	<i>Quiscalus quiscula</i>	S5B, S5M	Secure	4	6	1
Common raven	<i>Corvus corax</i>	S5	Secure	1, 2, 3, 4, 5	6	12
Common yellow throat	<i>Geothlypis trichas</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	69
Dark-eyed junco	<i>Junco hyemalis</i>	S5	Secure	1, 2, 3, 4, 5	6	15
Double-crested cormorant	<i>Phalacrocorax auritus</i>	S5B, S5M	Secure	4	3	1
Downy woodpecker	<i>Picoides pubescens</i>	S5	Secure	1, 2, 3, 5	7	10
Golden-crowned kinglet	<i>Regulus satrapa</i>	S5	Secure	1, 2, 3, 4, 5	6	112
Gray catbird	<i>Dumetella carolinensis</i>	S4B, S4M	Secure	5	6	1
Gray jay	<i>Perisoreus canadensis</i>	S4	Secure	1, 2, 3	6	4
Hairy woodpecker	<i>Picoides villosus</i>	S5	Secure	1, 2, 3, 5	7	16
Hermit thrush	<i>Catharus guttatus</i>	S5B, S5M	Secure	1, 4, 5	6	8
Least flycatcher	<i>Empidonax minimus</i>	S5B, S5M		3, 5	6	3
Lincoln's sparrow	<i>Melospiza lincolnii</i>	S4B, S5M	Secure	5	6	1
Magnolia warbler	<i>Dendroica magnolia</i>	S5B, S5M	Secure	1, 2, 4, 5	6	6
Merlin	<i>Falco columbarius</i>	S5B, S5M	Secure	2, 5	4	4
Mourning dove	<i>Zenaida macroura</i>	S4B, S5M	Secure	4	7	2

Common Name	Scientific Name	S-Rank	NB DERR Status	Transect	Group	Records
Northern flicker	<i>Colaptes auratus</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	7	27
Northern parula	<i>Parula americana</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	15
Ovenbird	<i>Seiurus aurocapilla</i>	S5B, S5M	Secure	5	6	1
Palm warbler	<i>Dendroica palmarum</i>	S5B, S5M	Secure	4, 5	6	6
Pileated woodpecker	<i>Dryocopus pileatus</i>	S5	Secure	4	7	1
Purple finch	<i>Carpodacus purpureus</i>	S4S5B, SUN, S5M	Secure	4	6	1
Redbreasted nuthatch	<i>Sitta canadensis</i>	S5	Secure	1, 2, 3, 4, 5	6	24
Red-eyed vireo	<i>Vireo olivaceus</i>	S5B, S5M	Secure	1, 4, 5	6	18
Ruby-crowned kinglet	<i>Regulus calendula</i>	S4B, S5M	Secure	1	6	1
Ruffed grouse	<i>Bonasa umbellus</i>	S5	Secure	1, 2, 3	7	17
Song sparrow	<i>Melospiza melodia</i>	S5B, S5M	Secure	1, 2, 3, 4	6	21
Spotted sandpiper	<i>Actitis macularius</i>	S3S4B, S5M	Secure	2	2	1
Turkey vulture	<i>Cathartes aura</i>	S3B, S3M	Secure	1	4	3
White throated sparrow	<i>Zonotrichia albicollis</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	67
White-winged crossbill	<i>Loxia leucoptera</i>	S5	Secure	1, 2, 3, 4	6	44
Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	S4S5B, S5M	Secure	4	6	1
Yellow-rumped warbler	<i>Dendroica coronata</i>	S5B, S5M	Secure	1, 2, 3, 4, 5	6	109
Warblers				1, 2, 3, 5	6	55
Total						1187

9.1.2 Fall Passage Migration/Diurnal Watch Counts

Eighteen fall passage migration/diurnal watch count surveys were conducted from August 17th to November 4th, 2019 during which a total of 1,888 individuals representing 45 species were observed. All 18 surveys were conducted from the Quarry location as described in previous sections. The most commonly observed species in descending order include; ‘Gulls’ (572), Double-crested cormorants (396), ‘Passerines’ (232), Common raven (118), Turkey vulture (102), Cedar waxwing (88), American crow (62) and Northern flicker (50). The Gulls and passerines were sometimes lumped when positive identification could not be made due distance from the observed or difficulties in identifying mixed flocks of passerines, especially fall warblers, at a distance. The observer made note that most flocks of ‘Gulls’ were a mix of Herring, Iceland, and Great back-backed gulls. The most abundant species group observed during watch count surveys, in descending order, were; other waterbirds (982), passerines (650) and raptors (188). Only 2 shorebird observations

were made during the entire survey period. All flocks over 20 birds (13) were 'Gulls' (468), Double-crested cormorants (370) or 'Passerines' (45). Several SAR and SOCC were observed including Bald eagles (36), Common nighthawk (1), Horned lark (7), Peregrine falcon (1) and Turkey vulture (102). Most Bald eagle observations were outside of the Study Area over Musquash Harbour to the west and Spruce Lake to the north. Turkey vultures (102) were a commonly observed species in and out of the Study Area. They were observed multiple times on every watch count survey except the last one survey which took place on November 4th. Observations were marginally more frequent to the northeast in and out of the Study Area; however, no strong pattern of diurnal movement was observed. Horned lark (7) were observed on four separate days during fall migration near the observation point. One Common nighthawk was observed migrating through the Study Area on August 31st. One Peregrine falcon was observed west of the Study Area on September 16th flying in a southwesterly direction.

Table 10. Fall migration bird species and abundance observed at Quarry watch count station.

Common Name	Scientific Name	S-Rank	NB DERD Status	Watch count Location	Group	Records
American crow	<i>Corvus brachyrhynchos</i>	S5	Secure	QU	6	62
American goldfinch	<i>Carduelis tristis</i>	S5B, S5M	Secure	QU	6	35
American kestrel	<i>Falco sparverius</i>	S4B, S4S5M	Secure	QU	4	10
American robin	<i>Turdus migratorius</i>	S5B, S5M	Secure	QU	6	23
Bald eagle	<i>Haliaeetus leucocephalus</i>	S4	At Risk	QU	4	36
Black-capped chickadee	<i>Poecile atricapillus</i>	S5	Secure	QU	6	4
Blue jay	<i>Cyanocitta cristata</i>	S5	Secure	QU	6	27
Blue-headed vireo	<i>Vireo solitarius</i>	S5	Secure	QU	6	2
Broad-winged hawk	<i>Buteo platypterus</i>	S5B, S5M	Secure	QU	4	3
Hawk	<i>Hawk sp.</i>	NA	NA	QU	8	7
Canada goose	<i>Branta canadensis</i>	SNAB, S5M	Secure	QU	4	7
Cedar waxwing	<i>Bombycilla cedrorum</i>	S5B, S5M	Secure	QU	6	88
Common Loon	<i>Gavia immer</i>	S4B, S4M, S4N	Secure	QU	3	2
Common nighthawk	<i>Chordeiles minor</i>	S3B, S4M	At Risk	QU	7	1
Common raven	<i>Corvus corax</i>	S5	Secure	QU	6	118
Dark-eyed junco	<i>Junco hyemalis</i>	S5	Secure	QU	6	11
Double-crested cormorant	<i>Phalacrocorax auritus</i>	S5B, S5M	Secure	QU	3	396
Downy woodpecker	<i>Dryobates pubescens</i>	S5	Secure	QU	7	1
Falcon	<i>Falcon sp.</i>	NA	NA	QU	4	2
Great Black-backed gull	<i>Larus marinus</i>	S5	Secure	QU	3	1

Common Name	Scientific Name	S-Rank	NB DERD Status	Watch count Location	Group	Records
Great blue heron	<i>Ardea herodias</i>	S4B, S4M	Secure	QU	3	3
Gull	<i>Gull sp.</i>	NA	NA	QU	3	572
Hairy woodpecker	<i>Leuconotopicus villosus</i>	S5	Secure	QU	7	5
Buteo	<i>Buteo sp.</i>	NA	NA	QU	4	2
Herring gull	<i>Larus argentatus</i>	S5	Secure	QU	3	8
Horned lark	<i>Eremophila alpestris</i>	S1B, S4N, S5M	May be at Risk	QU	6	7
Merlin	<i>Falco columbarius</i>	S5B, S5M	Secure	QU	4	1
Northern flicker	<i>Colaptes auratus</i>	S5B, S5M	Secure	QU	7	50
Northern goshawk	<i>Accipiter gentilis</i>	S4	Secure	QU	4	5
Northern harrier	<i>Circus hudsonius</i>	S4B, S4S5M	Secure	QU	4	2
Northern shrike	<i>Lanius borealis</i>	S4N, S4M	Secure	QU	6	1
Osprey	<i>Pandion haliaetus</i>	S4S5B, S5M	Secure	QU	4	5
Palm warbler	<i>Setophaga palmarum</i>	S5B, S5M	Secure	QU	6	3
Passerine	<i>Passerine sp.</i>	NA	NA	QU	6	232
Peregrine falcon	<i>Falco peregrinus</i>	S1B, S3M	At Risk	QU	4	1
Pileated woodpecker	<i>Dyocopus pileatus</i>	S5	Secure	QU	7	8
Purple finch	<i>Haemorhous purpureus</i>	S4S5B, SUN, S5M	Secure	QU	6	1
Raptor	(blank)	NA	NA	QU	4	1
Red-breasted nuthatch	<i>Sitta canadensis</i>	S5	Secure	QU	6	8
Red-eyed vireo	<i>Vireo olivaceus</i>	S5B, S5M	Secure	QU	6	3
Red-tailed hawk	<i>Buteo jamaicensis</i>	S4	Secure	QU	4	2
Ruby-throated hummingbird	<i>Archilochus colubris</i>	S5B, S5M	Secure	QU	7	1
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S4S5B, S5M	Secure	QU	6	1
Sharp-shinned hawk	<i>Accipiter striatus</i>	S4B, S5M	Secure	QU	4	4
Song sparrow	<i>Melospiza melodia</i>	S5B, S5M	Secure	QU	6	4
Swallow	<i>Swallow sp.</i>	NA	NA	QU	6	2
Turdus migratorius	<i>Larus marinus</i>	S5B, S5M	Secure	QU	6	8
Turkey vulture	<i>Cathartes aura</i>	S3B, S3M	Secure	QU	4	102
Hudsonian whimbrel	<i>Numenius phaeopus hudsonicus</i>	S4M	Secure	QU	2	2

Common Name	Scientific Name	S-Rank	NB DERD Status	Watch count Location	Group	Records
White-throated sparrow	<i>Zonotrichia albicollis</i>	S5B, S5M	Secure	QU	6	5
White-winged crossbill	<i>Loxia leucoptera</i>	S5	Secure	QU	6	1
Yellow-rumped warbler	<i>Setophaga coronata</i>	S5B, S5M	Secure	QU	6	4
Total						1,888
<i>Watch Count Locations:</i> <i>QU = Quarry</i>						

9.2 Winter Resident Bird Surveys

Winter resident bird surveys are currently underway throughout the winter of 2019 and 2020 and the results will be summarized in an addendum to this report.

9.3 Incidentals

Incidental surveys were conducted simultaneous with spring and fall stop-over transects, breeding bird, owl and common nighthawk surveys. Incidental observations were also recorded during rare plant and wetland surveys as one of the observers conducted these surveys. The incidental survey focused on all SOCC and any other common species that were not otherwise recorded during formal bird surveys. Through incidental observations, four additional SOCC records were recorded; Greater yellowlegs, Turkey vulture, Common nighthawk and Olive-sided flycatcher. Only the Olive-sided Flycatcher had not been previously recorded in other surveys.

10 Flight Path Review

Over the course of 2019, extensive data on bird migration, breeding and behaviour in and around the Study Area was collected. This section summarizes observed flight paths and behaviour patterns in an effort to identify which groups or species might be at risk of turbine collisions, and where those risks are greatest. Flight patterns that warrant concern or mitigation may be a part of spring or fall migration patterns, or a part of resident birds' daily commutes or foraging activities. The major limitation of these bird studies is that they do not encompass nighttime migration. Many smaller birds and shorebirds migrate exclusively at night and cannot be detected by traditional visual surveys of the area. As a result, Natural Forces is working with researchers at Acadia University to employ radar and acoustic surveys to better understand nocturnal migration. This study is occurring outside the scope of this document.

10.1 Migration Patterns

Most regulatory guidance for wind developments recognizes that a factor which may lead to a higher potential for collision events would be when wind energy developments are placed in busy migratory flyways. It is important to observe migration behaviour in order to identify any heavily used pathways of migrating birds in both spring and fall. Spring migration is generally more intense and faster than fall migration where the competition for food resources and nesting habitat necessitates a more urgent move towards northern breeding grounds as soon as the climate allows in spring (Kokko 1999). An exception to this may be for shorebird migration which tend to migrate in large masses, making non-stop flights between

wintering areas and key staging areas such as the shores of the Bay of Fundy. At these important staging areas, their arrival must coincide with the availability of often ephemeral key food sources such as the breeding period of Delaware Bay's horseshoe crab population. These stop-over locations provide essential calories for the shorebird populations which they need to sustain their long over-sea flights to South America.

Spring migration along the Fundy coast in the vicinity of the Study Area is generally known to be a busier period than fall migration, at least for larger birds such as sea ducks, scoters and loons (Dietz and Chiasson 2000). Migration patterns for smaller birds tend to be more diffuse and varied across the continent, shifting to take advantage of favorable weather and food conditions and therefore may be more difficult to predict (La Sorte et al 2014). Another potential contributor of this understanding may be that most observations of migration happen during the day, when the human eye can detect birds, but nocturnal patterns are less well understood.

Despite a great many unknowns, our understanding of bird migration patterns is rapidly evolving in recent years thanks to new uses of technology such as radar and long-distance telemetry, with the increasing size reduction in radio-transmitters that can now be affixed to animals as small as butterflies and dragonflies. Coastal migration monitoring has also been conducted along the New Brunswick Fundy coast for many years at nearby locations such as Point Lepreau Bird Observatory, Greenlaw Mountain Hawk Watch, and the St. Andrews Bird Banding Station. A network of Motus towers continues to evolve along the Fundy coastline that records instantaneous locations of individually radio-tagged birds that fly within range. A Study by Acadia University using Radar and acoustic monitoring is underway to compliment this diurnal survey in support of the BWP EIA (under a separate report).

The area around the BWP is well known for migration and movement of several species or groups of birds including:

- Sea ducks including common eiders and scoters (predominantly black scoters) mainly in April and May (estimated that 44% of the eastern North American scoter population fly by Point Lepreau Bird Observatory).
- Shorebirds stopping over before flying south in fall
- Cormorants and loons in spring

According to data from the Point Lepreau Bird Observatory, migration activity is several times higher in spring, compared to fall, and more than 97% of diurnal traffic is comprised of Scoters, Eiders, Loons, and Cormorants (Dietz and Chiasson 2000).

10.2 Flock Flight Paths – Spring Migration

Many flocks (defined here as at least 20 birds) ranging in size from 20 to several hundred individuals were observed mostly outside the Study Area, typically flying in a southwest to northeast direction. Figure 8 shows the flock size and flight direction by species or species group. The flocks' general migration pattern is as expected based on what is known from available data from the Point Lepreau Bird Observatory, with flocks of scoters (mostly black and surf), ducks, double-crested cormorants, and common eiders comprising the majority of records.

With the exception of a handful of small flocks of gulls, Canada Geese, and Double-crested Cormorants, all of the flock records were outside the Study Area to the south, ranging from one to five kilometers from shore. There were many large flocks of Scoter (mostly Black and Surf Scoters with many unidentified) mostly ranging from two to four kms from shore, with mixed flocks of largely unidentifiable ducks further out at the 4-5 km range (from shore). There were a couple of smaller flocks of Common eiders and Brants flying within 2 km of shore.

Smaller flocks of gulls were recorded flying at various directions as they were not in migration but more likely in daily commutes between Spruce Lake and potentially Manawagonish Island, flying northward, possibly toward the Crane Mountain Landfill, which is a major attractant for gulls in the area.

Within the Study Area, migration traffic was low with just a small number of Double crested cormorants, and Canada geese straying through the airspace above the Study Area. A small flock of Cedar waxwings was observed flying directly over the observation point.

These results suggest that the majority of migrating birds travel over water when migrating through the area around BWP. There are roving groups of gulls, however, that follow less predictable flight patterns and seem to commute in a south/north axis, possible between the Spruce Lake area and the Crane Mountain landfill. From the recorded data, it does not that the Study Area is a busy migration route for the species groups recorded, although it does not represent nocturnal migration activity of shorebirds, and passerines. Manawagonish Island is also used by a Double-crested cormorant colony which tend to fly at night.

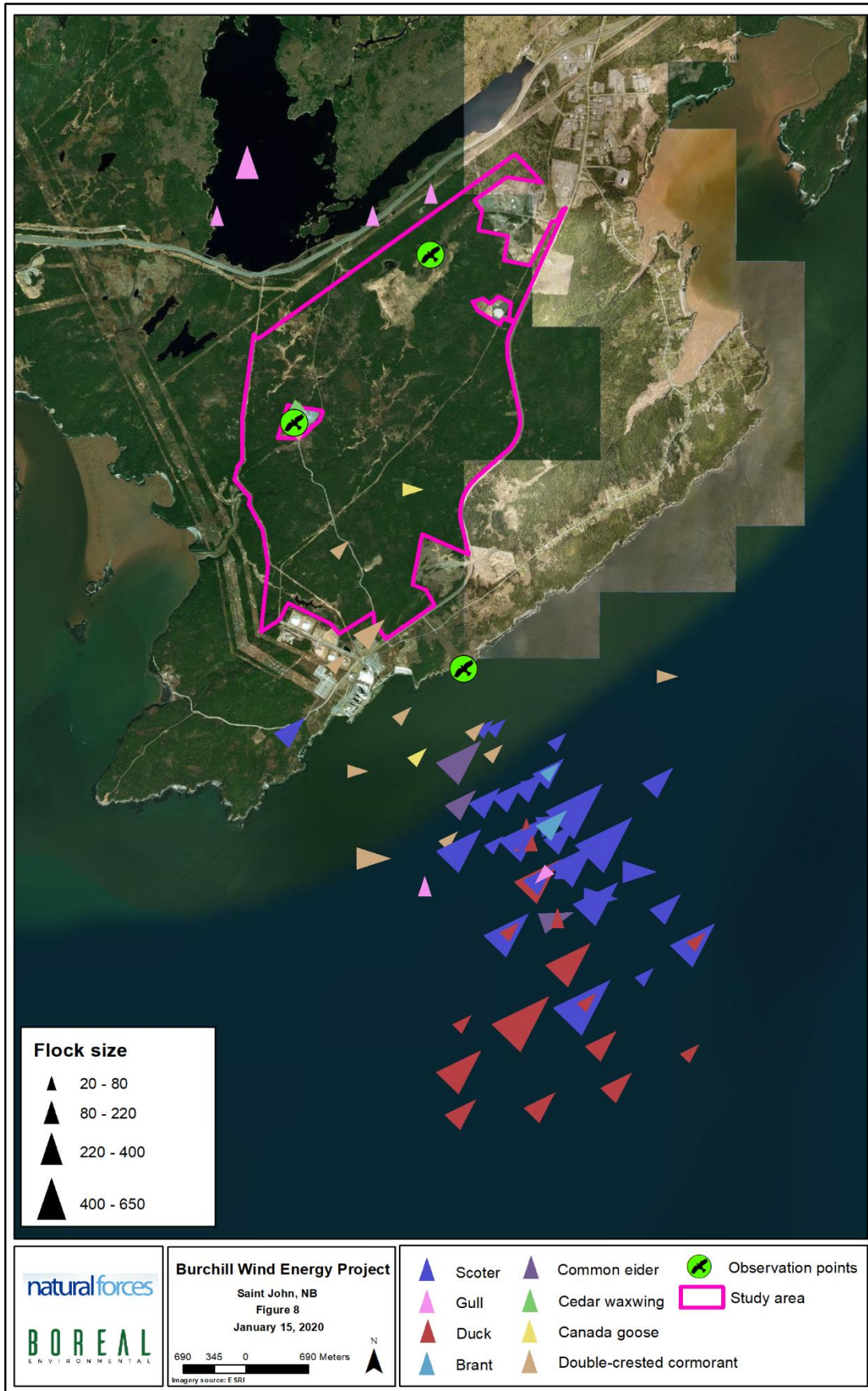


Figure 8. Flock size, location and flight direction of birds during Spring Migration.

10.3 Flock Flight Paths – Fall

Fall migration flock activity observed near the Study Area was much lower than in Spring, which is consistent with observations from Point Lepreau Bird Observatory (Dietz and Chiasson 2000). Fall watch counts were conducted exclusively from the Quarry station. This location offers a good view of the coast and open water, however it is further inland than the Coast station so some flocks further out to sea may have been missed. Given the importance of Saints Rest Beach to the east in fall migration, it was important to have as good of an understanding as possible of the flight patterns over the Study Area and the Quarry site provided the best view. Despite this intensive surveying of the Study Area, few migrating flocks were seen over the Study Area. Bird groups known to migrate through the area in fall such as shorebirds and cormorants tend to migrate at night which will be studied as part of the radar study.

A few flocks of Double-crested cormorants were observed flying overland to the north of the Study Area, and over water to the south. They were consistently flying in a southwest direction, as expected. In addition, flocks of the resident gulls could be seen commuting around the region in a general north-south direction, as they likely had been all summer. One flock of Cedar waxwings was recorded flying over the Quarry station. Figure 9 shows the flock size, and flight direction of these flocks.

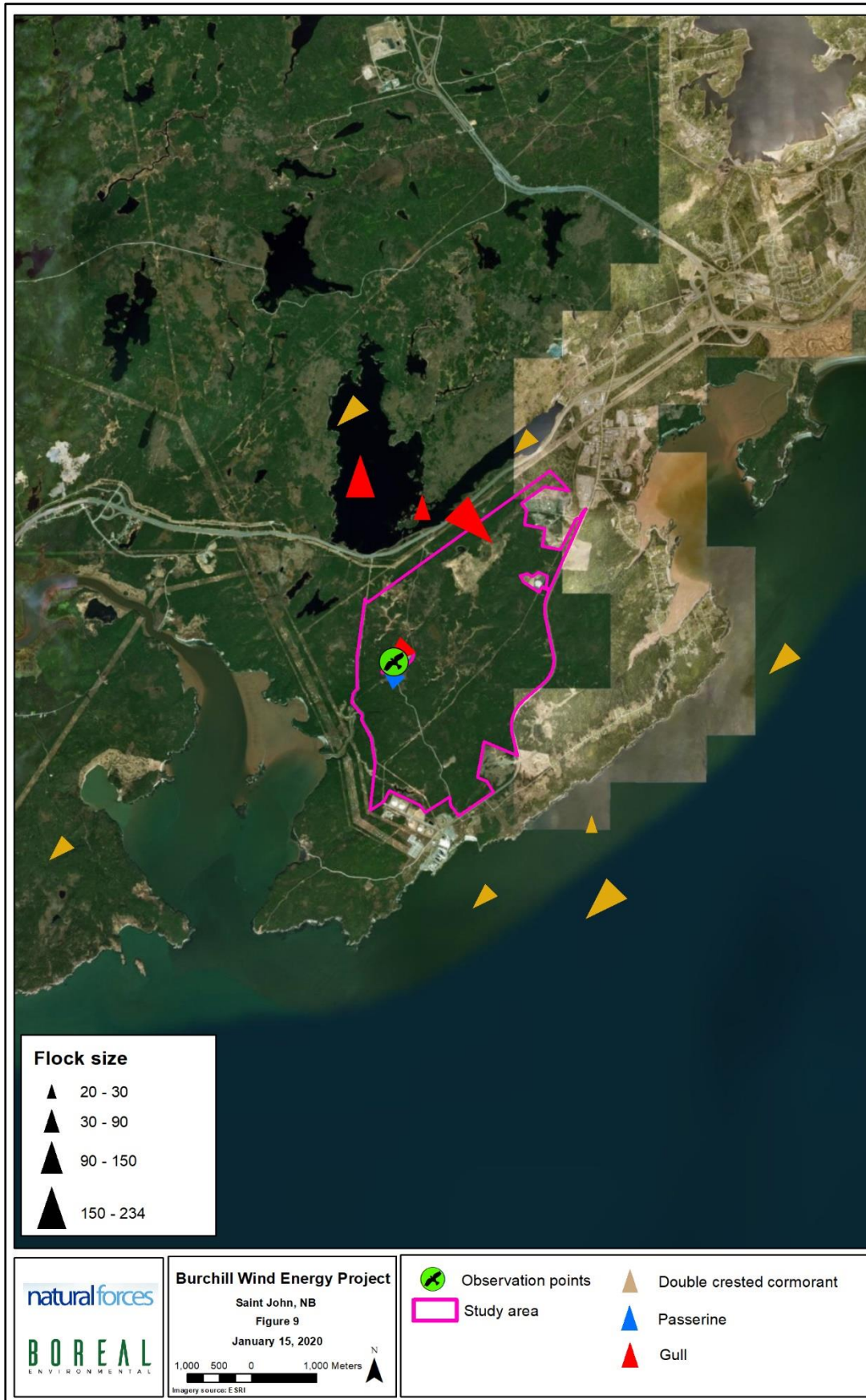


Figure 9. Flock size, location and flight direction of birds during Fall Migration.

11 Bird Mortality Risk

11.1 Collision Rate Estimation

As previously discussed, Boreal has defined the Risk Window (RW) for birds flying through the Study Area as the air space occupied between 60 m and 200 m (i.e., the RSA) above ground level multiplied by the width of the Study Area. The calculation generally assumes this area was used to estimate the probability of collision between flying birds and rotating turbine blades.

Table 11 summarizes the turbine specifications used for the purpose of estimating potential bird mortality. The turbine specifications represent the largest turbines that would be contemplated for the BWP and estimated collision values should be considered an over-estimation.

Table 11. Assumed Turbine Specifications.

Turbine Aspect	Length (m)
Hub Height	130
Blade Length	70
Rotor Diameter	140
Total Height	200

11.2 Flight Behaviour Observations

Table 12 provides a summary of birds observed in flight over the Study Area during watch count surveys. Flight behaviour was observed for 2,079 birds during spring and fall migration.

During spring migration approximately 6.6% (999 observations) of the total number of birds recorded were flying over the Study Area. Of the 999 observations, only 2.7% (414) birds were recorded flying within the RW.

During fall migration, approximately 57.2% (1,080) of the total number of birds observed in flight were over the Study Area. Of these observations, 18.3% (380 observations) were flying within the RW. As indicated, a greater proportion of individuals were observed flying over the Study Area in the fall. However, there were far more total observations for spring watch counts because spring watch counts were conducted along the coast, south of the Study Area, on alternate days during the month of April. Many large flocks of seabirds were observed at this location which skews the total number of observations for spring surveys.

Four SAR were amongst the recorded species flying between 60 m and 200 m during spring and fall migration watch count and targeted common nighthawk surveys and are addressed below.

Bald eagle

Eleven Bald eagles flying between 50 m and 200 m were observed during spring and fall watch counts. Six of ten bald eagle observations were made on April 5, 2019 between the proposed locations of T5 and T6. Two other Bald eagles were recorded in close proximity of proposed turbine locations, one near T3 and one near T7, flying at a height of 200 m and 50 m, respectively.

Peregrine falcon

Two separate Peregrine falcons observations were made on April 17, 2019 in hour 1 of the survey. One was located above the watch count survey location flying at a height of approximately 75 m 450 m west of T7. The other observation was near T3 at a height of 50 m. The observer, Richard Blacquiere, noted that the two observations were likely the same bird.

Common nighthawk

Four Common nighthawk observations were made during surveys. Two individuals, an assumed pair, were observed foraging at an average of 100 m during targeted common nighthawk surveys on the evening of June 22, 2019 within 225 m of the proposed location for T9. The other two were observed near T7 flying at a height of 40 m and 50 m, respectively. One of the observations occurred during watch count and the other during incidental surveys.

Turkey vulture

There were 87 observations of Turkey vulture, the only SOCC observed flying between 50 m and 200 m within the Study Area, 86 during spring and fall watch counts and one incidental record. The flight height range for all turkey vultures observed flying in the Study Area was between 20 m and 200 m with the majority of observations at 150 m. It is difficult to determine exactly how many turkey vultures these records can be attributed to; however, the highest number of individuals observed at one time was five. Turkey vultures have large foraging ranges and could be nesting/roosting many kilometers from the Study Area (pers com. R. Blacquiere).

Table 12. Summary of birds observed during spring and fall migration watch count surveys.

Season	Total birds observed		In flight over Study Area		In flight over Study Area within RW	
	# Individuals	# Species	# Individuals	# Species	# Individuals	# Species
Spring	15,120	60	999 (6.6% of total)	44	414 (2.7% of total)	19
Fall	1,888	52	1,080 (57.2% of total)	47	380 (18.3% of total)	15

Flight height characteristics are summarized for species group observed flying within the Study Area during spring and fall watch count surveys in Table 13 and Table 14.

A total of 999 individuals representing 47 bird species within 6 species groups were observed flying within the Study Area. Flight heights documented in the spring were between 10 m and 500 m.

Table 13. Flight height characterized by species group during spring migration watch counts.

Species Group	# Individuals Observed in Study Area	Flight height for Observed Species Group (m)			# Individuals Observed in RW
		Lowest	Highest	Average	
Unknown	3	10	10	10	0
Waterfowl	254	10	500	420	67
Other waterbirds	347	20	400	182	259
Raptors	88	10	400	112	55
Passerines	281	5	200	37	33
Other landbirds	26	5	15	6.6	0
Total	999				

A total of 1080 individuals representing 47 bird species within 6 species groups were observed flying within the Study Area. Flight heights documented in the fall were between 10 m and 400 m.

Table 14. Flight height characteristics by species group during fall migration watch counts.

Species Group	# Individuals Observed in Study Area	Flight height for Observed Species Group (m)			# Individuals Observed in RW
		Lowest	Highest	Average	
Waterfowl	7	25	150	29	2
Shorebirds	3	20	20	20	0
Other waterbirds	327	30	200	6.3	318
Raptors	85	10	400	72	45
Passerines	594	10	200	12	15
Other landbirds	64	10	50	9.4	0
Total	1080				

11.3 Collision estimate parameters and calculations

Table 15 summarizes the parameters that were used in the calculation of turbine collision estimates; these values are based on specifications for the largest turbine that would be considered for this site, the amount of time spent surveying birds during spring and fall watch count, and the number of observations made. Additional information includes; the number of survey locations, the survey and Study Area, and the average number of birds observed per survey area.

Table 15. Summary of collision estimation parameters.

Parameter	Calculation Inputs
Rotor Diameter	140 m
Hub Height	130 m
Maximum Rotor Height	200 m
Minimum Rotor Height	60 m
Width of Study Area	3590 m
Risk Window (RW)	3590 m x 200 m = 502,600 m ²
Rotor Swept Arc (πR^2)	15,393 m ²
Total RSA (A) = Number of turbines x RSA	10 x 15,393 m ² = 153,938 m ²
Number of survey locations (a)	1 (Observer could see Study Area from one location)
Survey location observation area (b)	10,488,000 m ²
Number of Turbines	10
Width of the Study Area	3,590 m
Survey Time Total	210 hours
Total number of birds observed flying within RW during spring and fall	794
Population of bird groups with potential with a turbine (e)	Other Waterbirds/waterfowl = 7973 Raptors = 1234 Passerines/Landbirds = 592
Total flight hours estimate for survey period (fh)	137 days (April 2 – Nov 4) x 12 hrs flight time / day = 2592 flight hours
Number of bird flights in risk window (n) = e*(fh)	Other waterbirds/waterfowl = 2442 Raptors = 378 Passerines = 181

Total rotor area as a proportion of the risk window = a/RW	0.31
Probability of Collision (Scottish Natural Heritage Model 2010)	Waterfowl = 9.7 % Raptors = 11.4 % Passerines = 6.8 %

11.4 Collision estimate

Using the parameters above, the predicted estimate of bird collision as the result of BWP (by bird group) is provided in Table 16. Because most birds practice avoidance behaviours with respect to wind turbines, estimated collision rates must be attenuated by incorporating an avoidance factor for each species group. Several studies have attempted to calculate an avoidance rate for wind farms. Krijgsveld *et al.* (2011) calculated an avoidance rate of 97.6% for all bird species flying through a wind farm using radar data from offshore wind farms. Desholm & Kahlert (2005) calculated an avoidance rate of 83.7% and 93.5% for migrant sea ducks flying through a wind farm during the day and night, respectively. Everaert (2014) found that gulls avoided turbines 96.1% and 96.3% on average for birds, respectively, flying at turbine and rotor height through the wind farms. We applied the recommended default avoidance rate of 98% for species that are not listed in the guidance document to our calculations (Scottish Natural Heritage, 2010).

Table 16. Predicted bird/turbine collision rate.

Species Group	Total Collision Estimates for One Turbine Per Year
Waterfowl	0.47
Raptors	0.09
Passerines	0.02
Total	0.58
Total for BWP (10 Turbines)	5.8

As previously mentioned, the estimates provided in Table 16 were calculated using birds observed within the Study Area during spring and fall watch counts flying at heights between 60 m and 200 m. Birds recorded during spring and fall stop-over and breeding bird surveys were not included in the estimation of collision rates because the vast majority of birds observed were low-flying passerines below the forest canopy; therefore, flight height data was not recorded. During the breeding season most passerines (especially warblers) tend to stay within established territories and when foraging fly at heights they stay just above the tree canopy (approximately 20 m at BWP). This behaviour is not conducive to rotor collisions with 150 m turbines.

Our predicted rate of collision, 0.58 birds/turbine/year, is low when compared to the average mortality rates for non-raptors in Atlantic Canada at 1.81 ± 0.47 birds/turbine/year (Bird Studies Canada 2017). Similarly, Zimmerling *et al.*, (2013) estimated bird mortality from turbine collisions at 2.4 birds/turbine/year in New Brunswick by analysing carcass monitoring data from two wind farms. Nonetheless, field results from watch count surveys does lend support for our prediction that collision rates will be low at BWP. Relatively low bird traffic over the Study Area was observed during spring and fall watch counts. Figures 8 and 9 clearly show that the busy diurnal migratory routes are offshore for most species within the waterfowl and other water bird group. However, caution should be exercised when interpreting our predicted collision rate. As stated previously, calculations do not include nocturnal migration and average collision rates are likely closer to the average rate for Atlantic Canada or New Brunswick.

12 Species of Conservation Concern Using the Study Area

During the course of all 2019 surveys, a total of 9 different bird SOCC (including SAR) were recorded either flying over or breeding within the Study Area and would have had potential to interact with turbines if they were present. The majority of the SOCC were recorded from watch count stations in spring and fall, with Turkey vultures being the most common sighting (97 individuals). While there were many individual records of Turkey vultures, they are likely from fewer than ten individual resident birds that range across the Study Area on daily commutes and foraging. There was no evidence that they were breeding in the Study Area.

Another bird that was recorded numerous times was the Bald eagle, for which there were 16 individuals recorded in the air over the Study Area, and several more records outside. Similar to the Turkey vultures, there was no evidence that Bald eagles were breeding in the Study Area, but the area was part of their daily routine and records are likely from a few individual birds that were seen frequently over the season. The Crane Mountain Landfill located north of the BWP may be an important attraction for both eagles and vultures and may be at the heart of their daily flying circuit.

A Peregrine falcon was seen twice on the same day within the Study Area and assumed to be the same bird by the observer. It was recorded twice within the same week outside the Study Area as well. The Peregrine falcon was once known to nest on Manawagonish Island but is not thought to be currently nesting there. There are no suitable nesting structures within the Study Area for this species. The sightings were in the fall migration period when this species is known to hunt the beaches of the Fundy Coast in search of migrating shorebirds and passerines.

As shown in Table 17, all four of these raptor species tended to fly between 60 and 200 m height which represents the blade sweep zone of the proposed wind turbines. There is some potential for individuals of each of these species to collide with turbines within the Study Area although this risk is expected to be low.

Table 17. SOCC Observations and average flight height at time of observation inside the Study Area. Bolded records tended to fly within the rotor blade sweep zone (60m-200m).

Species	# Observations	Ave. Altitude (m)	Status
Bald eagle	16	117	Resident to Area
Common nighthawk	3	90	Likely Breeding
Evening grosbeak	1	20	Migrating
Greater yellow legs	1	0	Migrating
Horned lark	7	10	Migrating
Killdeer	1	15	Migrating
Olive-sided flycatcher	1	15	Migrating
Peregrine falcon	2	63	Migrating
Turkey vulture	97	112	Resident to Area

No SOCC were recorded during breeding season point counts, although a pair of suspected-breeding Common nighthawks were recorded over the Paddy's Hill area during targeted surveys. This Threatened species also tends to fly within the blade sweep zone and could have interactions with the northern turbines located near Paddy's Hill (Turbines T8, T9 or T10) which border the edges of the suitable nesting habitat but

are not located directly in it. The Common nighthawk was the only SOCC that was observed to be breeding within the Study Area.

All other SOCC birds recorded within the Study Area, as listed in Table 17, were observed during migration. All of these were seen at heights below 60 m or below the blade sweep. It should be noted that most of these species are considered nocturnal migrants. In addition to these species there were two Black guillemots (S3); dozens of Red-breasted mergansers (S3B, S5M); hundreds of Common eider (S3B, S4M); thousands Black and Surf scoters; and over hundred Brants (S1S23M). With the exception of Black guillemots, these species are considered common in migration in this area and are also well represented in the bird data recorded at Point Lepreau Bird Observatory. The flight paths of these SOCC tends to be at least 2 km to the south of the Study Area, over the water. It is not expected that these species will experience high levels of mortality through turbine collisions.

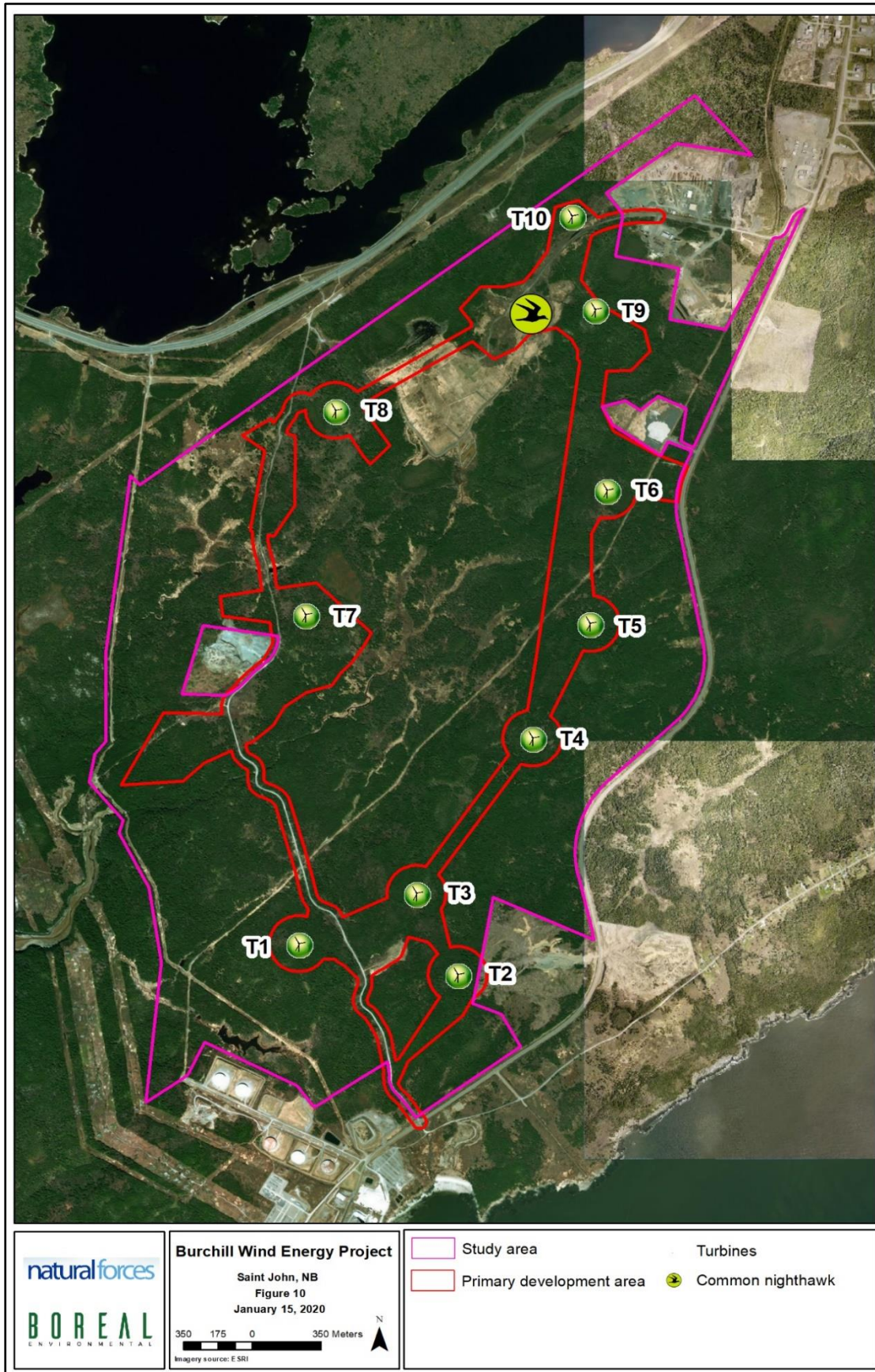


Figure 10. Location of suspected breeding Species of Conservation Concern within the Study Area.

13 Summary of Bird Surveys

A total of 16,309 minutes (about 272 hours) of surveys were completed over the course of the year. These surveys resulted in the observation of 19,324 individual birds, representing 101 species within or in proximity to the Study Area. A higher number of birds were observed during the spring migration period, compared to during the fall migration and breeding periods, which is consistent with migration monitoring data from nearby Point Lepreau Bird Observatory. The highest bird counts were observed during spring watch count surveys in all three seasons. These high numbers are due to large flocks of Double-crested cormorants, Canada geese, mixed Ducks and Black scoters that were returning to breeding grounds further north and east.

Scoter species (mostly Black and Surf) were the most abundant bird observed during all surveys comprising more than half of all birds recorded during spring watch counts. They were seen in the greatest numbers during seasonal watch counts: 8,168 were observed in the spring watch counts and none in the fall watch counts. All of these birds were seen flying over water, typically more than two kilometers from the Study Area (See Figure 8 for flock flight paths).

Despite the large number of Double-crested cormorants thought to breed on Manawagonish Island, very few were observed over the Study Area. Some flocks were recorded flying over water to the north (Spruce Lake) or to the south of the Study Area, with one small flock crossing the Study Area in the Spring. The lack of Cormorant migration activity is likely due to their tendency to migrate at night.

Flight behaviour was observed for 2,079 birds during spring and fall migration. During spring migration approximately 2.7% (999 observations) of the total number of birds recorded were observed flying over the Study Area. Of the 999 observations only 41.4% or 414 birds were recorded flying within the zone of blade sweep for the proposed turbines.

We predicted a rate of collision at 0.58 birds/turbine/year using a model developed by the Scottish Heritage Foundation. This calculated rate based on numbers of birds observed flying through a vertical risk window, is low when compared to the average mortality rates for non-raptors in Atlantic Canada at 1.81 ± 0.47 birds/turbine/year (Bird Studies Canada 2017). It is also low relative to an average of published rates of bird mortality derived from carcass surveys for previous wind developments in New Brunswick at 2.4 birds/turbine/year. Also, field results from watch count surveys lend support for our prediction that collision rates will be low at BWP. Relatively low bird traffic over the Study Area was observed during spring and fall watch counts. Flight patterns clearly show that the busy diurnal migratory routes are offshore for most species within the waterfowl and other water bird group. However, caution should be exercised when interpreting our predicted collision rate. As stated previously, calculations do not include nocturnal migration and average collision rates are likely closer to the average rate for Atlantic Canada or New Brunswick.

A total of 9 different bird SOCC (including SAR) were recorded within the Study Area (eight flying over and only one species breeding). The majority of the SOCC were recorded from watch count stations in spring and fall, with Turkey vultures being the most common, followed by Bald eagles. Peregrine falcons were also seen flying over the Study Area. There was no evidence that any of these raptors were breeding in the Study Area. The majority of individual SOCC were seen migrating outside the Study Area and would not

likely interact with turbines in the Study Area, if they were present. The only SOCC found breeding within the Study Area was a pair of Common nighthawk, seen flying in the northern portion of the Study Area.

14 Report Disclaimers and Disclosures

The sole purpose of this report and the associated services performed by Boreal Environmental Inc. was to complete a bird study and report for Natural Forces Developments Limited Partnership for the Burchill Wind Project in Saint John, NB.

The observations made and facts presented in this report are based on a site visit and site investigation conducted from March 19th to November 4th, 2019. Site conditions at the time of visitation / sampling are reflected in this document and no independent confirmation of this information was made.

This report has been prepared on behalf of and for the exclusive use of Natural Forces Developments Limited Partnership. The report expresses the professional opinion of Boreal Environmental Inc., and is based on technical / scientific knowledge. Boreal Environmental Inc., accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report or data by any third party. Boreal Environmental Inc., makes no guarantee that the result of this analysis may not be different based on the services of another consultant. Boreal Environmental Inc., makes no guarantee that Natural Forces Wind Energy will be successful in the regulatory approval process.

15 Closing

This Report has considered factors relevant to the scope of the assessment and has completed the analyses in accordance with the methodologies described. The Report was prepared by Derrick Mitchell, if you have any questions or require clarification on particular elements of the report please contact the undersigned at derrick@borealenvironmental.com



Boreal Environmental Inc.,

Derrick Mitchell, B.Sc.F., R.P.F

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DATA REPORT 5982: West Saint John, NB

Prepared 8 December 2017
by J. Churchill, Data Manager

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Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (ACCDC) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The ACCDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the ACCDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees. URL: www.ACCDC.com.

Upon request and for a fee, the ACCDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the ACCDC includes locations of managed areas with some level of protection, and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename	Contents
WStJohnNB_5982ob.xls	All Rare and legally protected <i>Flora and Fauna</i> in your study area
WStJohnNB_5982ob100km.xls	A list of Rare and legally protected <i>Flora and Fauna</i> within 100 km of your study area
WStJohnNB_5982ma.xls	All <i>Managed Areas</i> in your study area
WStJohnNB_5982sa.xls	All <i>Significant Natural Areas</i> in your study area
WStJohnNB_5982wf.xls	Rare and common <i>Waterfowl</i> in your study area (CWS database)
WStJohnNB_5982sf.xls	Rare and common <i>Saltwater Fish</i> in your study area (DFO database)

1.2 RESTRICTIONS

The ACCDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting ACCDC data, recipients assent to the following limits of use:

- a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
- b) Data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
- c) The ACCDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data if necessary at that time.
- d) ACCDC data responses are restricted to the data in our Data System at the time of the data request.
- e) Each record has an estimate of locational uncertainty, which must be referenced in order to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
- f) ACCDC data responses are not to be construed as exhaustive inventories of taxa in an area.
- g) The absence of a taxon cannot be inferred by its absence in an ACCDC data response.

1.3 ADDITIONAL INFORMATION

The attached file DataDictionary 2.1.pdf provides metadata for the data provided.

Please direct any additional questions about ACCDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries

Sean Blaney, Senior Scientist, Executive Director

Tel: (506) 364-2658

sblaney@mta.ca

Animals (Fauna)

John Klymko, Zoologist

Tel: (506) 364-2660

jklymko@mta.ca

Plant Communities

Sarah Robinson, Community Ecologist

Tel: (506) 364-2664

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Data Management, GIS

James Churchill, Data Manager

Tel: (902) 679-6146

jlchurchill@mta.ca

Billing

Jean Breau

Tel: (506) 364-2657

jrbreau@mta.ca

Questions on the biology of Federal Species at Risk can be directed to ACCDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Stewart Lusk, Natural Resources: (506) 453-7110.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Sherman Boates, NSDNR: (902) 679-6146. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NSDNR Regional Biologist:

Western: Duncan Bayne

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Terrance.Power@novascotia.ca

For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

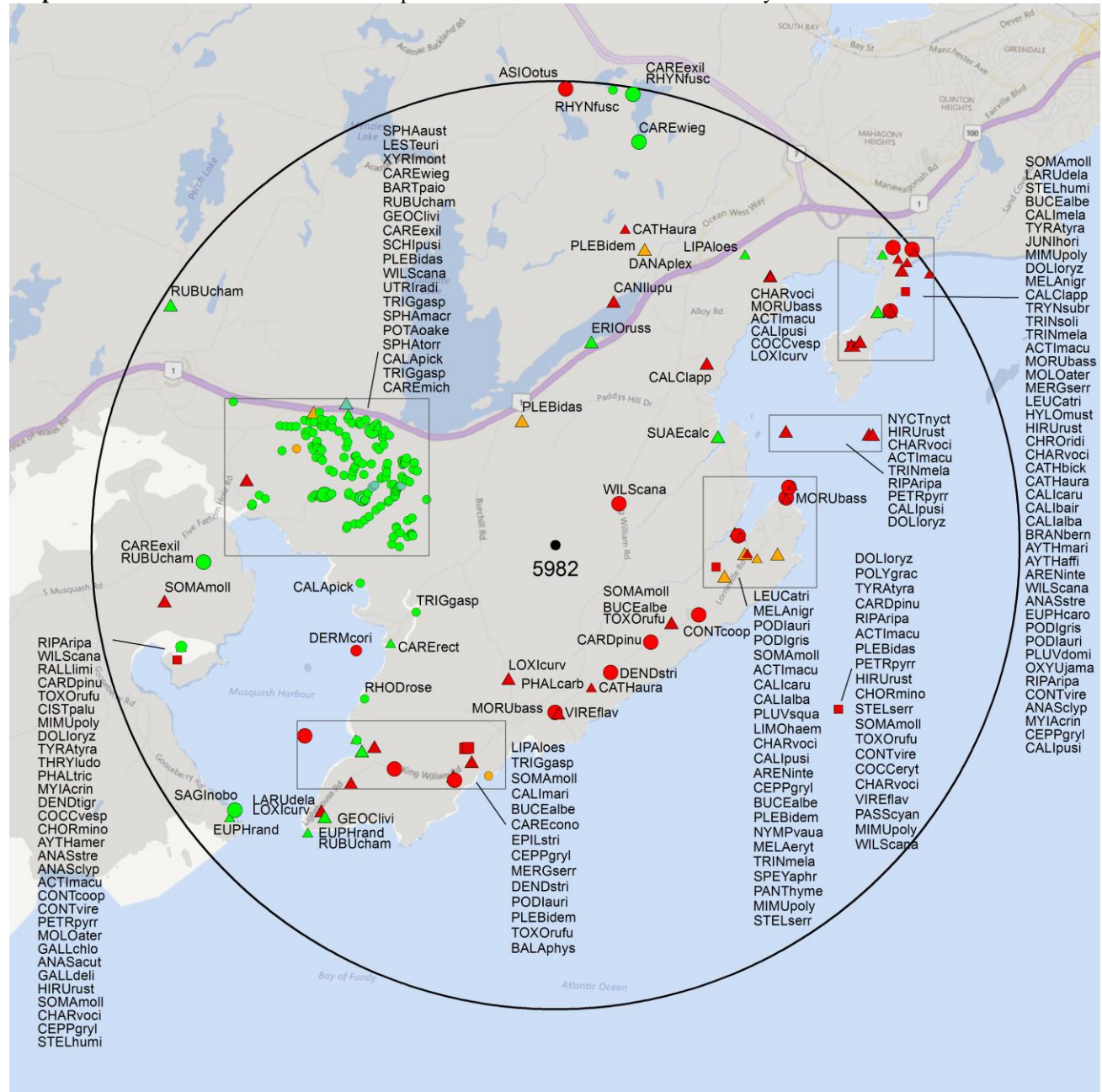
2.1 FLORA

The study area contains 212 records of 24 vascular, 5 records of 3 nonvascular flora (Map 2 and attached: *ob.xls).

2.2 FAUNA

The study area contains 473 records of 74 vertebrate, 16 records of 8 invertebrate fauna (Map 2 and attached data files - see 1.1 Data List). Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



RESOLUTION

- 4.7 within 50s of kilometers
- 4.0 within 10s of kilometers
- 3.7 within 5s of kilometers
- △ 3.0 within kilometers
- △ 2.7 within 500s of meters
- ⊙ 2.0 within 100s of meters
- ⊙ 1.7 within 10s of meters

HIGHER TAXON

- vertebrate fauna
- invertebrate fauna
- vascular flora
- nonvascular flora

3.0 SPECIAL AREAS

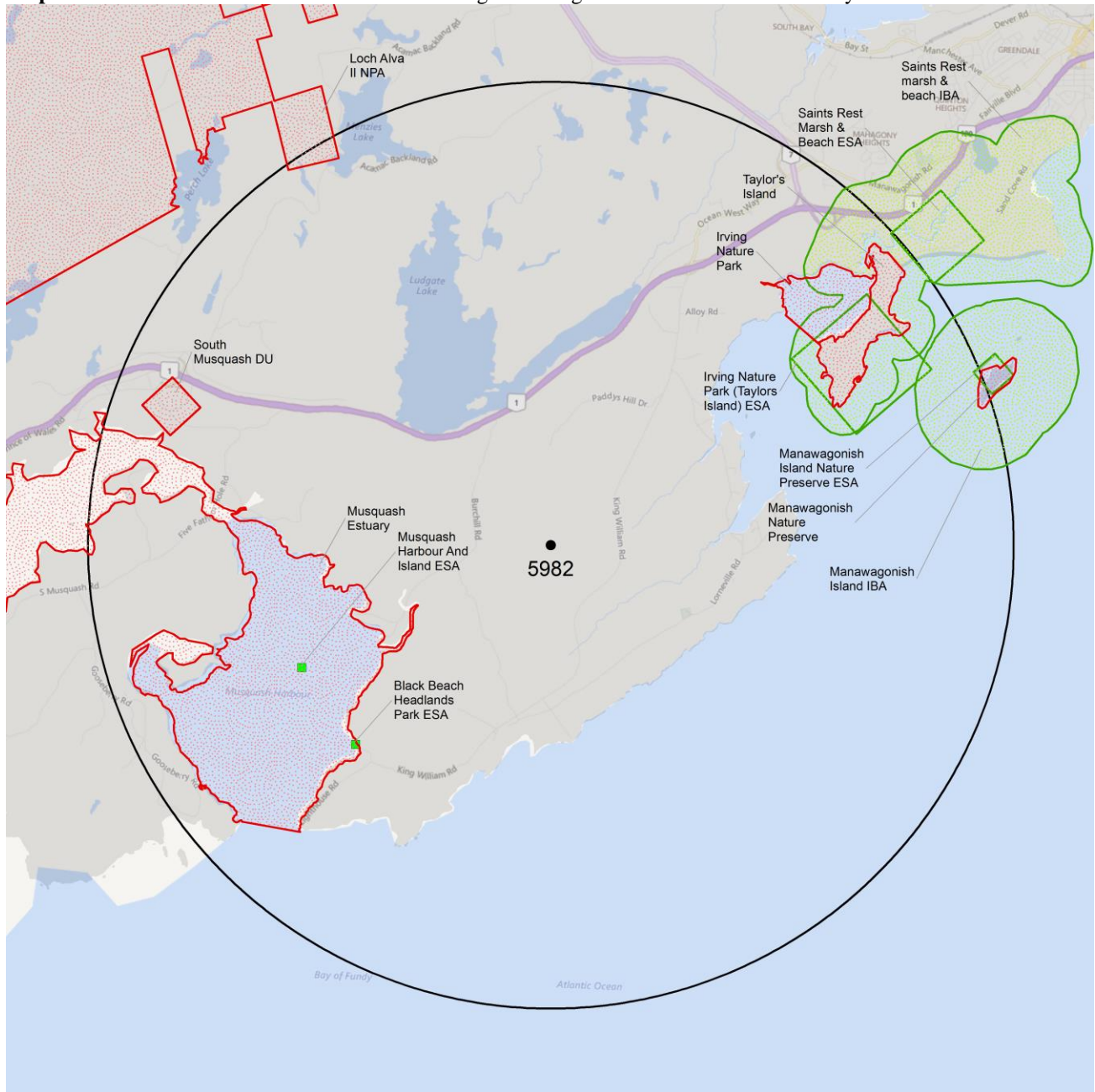
3.1 MANAGED AREAS

The GIS scan identified 6 managed areas in the vicinity of the study area (Map 3 and attached file: *ma*.xls).

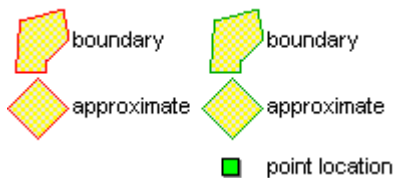
3.2 SIGNIFICANT AREAS

The GIS scan identified 7 biologically significant sites in the vicinity of the study area (Map 3 and attached file: *sa*.xls).

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



MANAGED AREAS SIGNIFIIGANT AREAS



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding “location-sensitive” species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (\pm the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
N	<i>Sphagnum macrophyllum</i>	Sphagnum				S1	2 May Be At Risk	1	2.9 \pm 0.0
N	<i>Sphagnum torreyanum</i>	a Peatmoss				S3S4	4 Secure	3	2.5 \pm 0.0
N	<i>Sphagnum austinii</i>	Austin's Peat Moss				S3S4	4 Secure	1	3.8 \pm 1.0
P	<i>Schizaea pusilla</i>	Little Curlygrass Fern				S1	2 May Be At Risk	9	2.5 \pm 0.0
P	<i>Sagina nodosa ssp. borealis</i>	Knotted Pearlwort				S2	3 Sensitive	1	6.3 \pm 0.0
P	<i>Euphrasia randii</i>	Rand's Eyebright				S2	2 May Be At Risk	2	5.7 \pm 0.0
P	<i>Bartonia paniculata ssp. iodandra</i>	Branched Bartonia				S2S3	3 Sensitive	1	3.3 \pm 0.0
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	3	5.8 \pm 0.0
P	<i>Rhodiola rosea</i>	Roseroot				S3	4 Secure	1	3.7 \pm 0.0
P	<i>Utricularia radiata</i>	Little Floating Bladderwort				S3	4 Secure	2	2.6 \pm 0.0
P	<i>Epilobium strictum</i>	Downy Willowherb				S3	4 Secure	1	4.3 \pm 1.0
P	<i>Carex conoidea</i>	Field Sedge				S3	4 Secure	1	4.3 \pm 1.0
P	<i>Carex exilis</i>	Coastal Sedge				S3	4 Secure	55	2.2 \pm 0.0
P	<i>Carex michauxiana</i>	Michaux's Sedge				S3	4 Secure	10	2.4 \pm 0.0
P	<i>Carex wiedandii</i>	Wiegand's Sedge				S3	4 Secure	8	2.2 \pm 0.0
P	<i>Carex recta</i>	Estuary Sedge				S3	4 Secure	1	2.9 \pm 0.0
P	<i>Rhynchospora fusca</i>	Brown Beakrush				S3	4 Secure	3	6.9 \pm 0.0
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3	4 Secure	2	4.2 \pm 0.0
P	<i>Calamagrostis pickeringii</i>	Pickering's Reed Grass				S3	4 Secure	66	2.1 \pm 0.0
P	<i>Xyris montana</i>	Northern Yellow-Eyed-Grass				S3	4 Secure	1	3.7 \pm 0.0
P	<i>Suaeda calceoliformis</i>	Horned Sea-blite				S3S4	4 Secure	1	2.9 \pm 1.0
P	<i>Rubus chamaemorus</i>	Cloudberry				S3S4	4 Secure	28	2.3 \pm 0.0
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	4 Secure	6	2.2 \pm 0.0
P	<i>Juniperus horizontalis</i>	Creeping Juniper				S3S4	4 Secure	1	6.0 \pm 1.0
P	<i>Eriophorum russeolum</i>	Russet Cottongrass				S3S4	4 Secure	1	3.1 \pm 1.0
P	<i>Triglochin gaspensis</i>	Gasp \bar{r} Arrowgrass				S3S4	4 Secure	7	2.3 \pm 0.0
P	<i>Potamogeton oakesianus</i>	Oakes' Pondweed				S3S4	4 Secure	1	3.0 \pm 0.0

4.2 FAUNA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Dermochelys coriacea</i> (Atlantic pop.)	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered	Endangered	S1S2N	1 At Risk	1	3.4 \pm 0.0
A	<i>Calidris canutus rufa</i>	Red Knot rufa ssp	Endangered		Endangered	S2M	1 At Risk	6	2.7 \pm 0.0
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened		Threatened	S1S2B,S1S2M	2 May Be At Risk	1	5.5 \pm 1.0
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S2B,S2M	3 Sensitive	16	4.9 \pm 7.0
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Special Concern	Threatened	S2B,S2M	1 At Risk	1	5.5 \pm 1.0
A	<i>Riparia riparia</i>	Bank Swallow	Threatened		Threatened	S2S3B,S2S3M	3 Sensitive	10	4.9 \pm 7.0
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	4	2.4 \pm 0.0
A	<i>Wilsonia canadensis</i>	Canada Warbler	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	7	1.1 \pm 0.0
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3B,S3M	3 Sensitive	5	4.9 \pm 7.0
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B,S4M	1 At Risk	2	4.9 \pm 7.0
A	<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	Threatened	Threatened	Threatened	SNA	8 Accidental	1	2.9 \pm 0.0
A	<i>Balaenoptera physalus</i>	Fin Whale - Atlantic pop.	Special Concern	Special Concern	Special Concern	S2S3	1 At Risk	1	4.7 \pm 1.0
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S3B,S3M	2 May Be At Risk	1	5.4 \pm 2.0
A	<i>Coccythraustes vespertinus</i>	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	2	5.2 \pm 3.0

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B,S4M	4 Secure	6	4.9 ± 7.0
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern		Special Concern	S4N,S4M	4 Secure	9	3.5 ± 1.0
A	<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper	Special Concern			SNA	8 Accidental	2	5.5 ± 1.0
A	<i>Podiceps griseogena</i>	Red-necked Grebe	Not At Risk			S3N,S2N	3 Sensitive	8	3.6 ± 0.0
A	<i>Canis lupus</i>	Gray Wolf	Not At Risk		Extirpated	SX	0.1 Extirpated	1	3.8 ± 1.0
A	<i>Vireo flavifrons</i>	Yellow-throated Vireo				S1?B,S1?M	8 Accidental	5	2.5 ± 0.0
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S1?B,S5M	4 Secure	11	2.7 ± 0.0
A	<i>Aythya americana</i>	Redhead				S1B,S1M	8 Accidental	1	6.0 ± 7.0
A	<i>Gallinula chloropus</i>	Common Moorhen				S1B,S1M	3 Sensitive	3	6.0 ± 7.0
A	<i>Phalaropus tricolor</i>	Wilson's Phalarope				S1B,S1M	3 Sensitive	1	6.0 ± 7.0
A	<i>Leucophaeus atricilla</i>	Laughing Gull				S1B,S1M	3 Sensitive	2	3.7 ± 0.0
A	<i>Thryothorus ludovicianus</i>	Carolina Wren				S1B,S1M	8 Accidental	1	6.0 ± 7.0
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B,S2S3M	4 Secure	3	5.5 ± 1.0
A	<i>Aythya affinis</i>	Lesser Scaup				S1B,S4M	4 Secure	10	5.5 ± 1.0
A	<i>Aythya marila</i>	Greater Scaup				S1B,S4M,S2N	4 Secure	1	5.5 ± 1.0
A	<i>Branta bernicla</i>	Brant				S1N, S2S3M	4 Secure	2	5.5 ± 1.0
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S1N,S2M	3 Sensitive	1	5.5 ± 1.0
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B,S1S2M	3 Sensitive	1	3.9 ± 1.0
A	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow				S1S2B,S1S2M	2 May Be At Risk	2	2.4 ± 7.0
A	<i>Calidris bairdii</i>	Baird's Sandpiper				S1S2M	3 Sensitive	6	5.5 ± 1.0
A	<i>Cistothorus palustris</i>	Marsh Wren				S2B,S2M	3 Sensitive	2	6.0 ± 7.0
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S2B,S2M	3 Sensitive	7	2.4 ± 7.0
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B,S2M	3 Sensitive	4	2.1 ± 2.0
A	<i>Anas strepera</i>	Gadwall				S2B,S3M	4 Secure	9	5.5 ± 1.0
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	1	5.5 ± 1.0
A	<i>Phalacrocorax carbo</i>	Great Cormorant				S2N,S2M	4 Secure	2	2.2 ± 0.0
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Undetermined	1	6.9 ± 0.0
A	<i>Anas clypeata</i>	Northern Shoveler				S2S3B,S2S3M	4 Secure	2	5.5 ± 1.0
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	2	5.4 ± 4.0
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	4	4.9 ± 7.0
A	<i>Pluvialis dominica</i>	American Golden-Plover				S2S3M	3 Sensitive	12	5.5 ± 1.0
A	<i>Calcarius lapponicus</i>	Lapland Longspur				S2S3N,SUM	3 Sensitive	5	3.6 ± 1.0
A	<i>Cephus grylle</i>	Black Guillemot				S3	4 Secure	9	2.8 ± 0.0
A	<i>Loxia curvirostra</i>	Red Crossbill				S3	4 Secure	3	2.1 ± 1.0
A	<i>Carduelis pinus</i>	Pine Siskin				S3	4 Secure	3	2.1 ± 0.0
A	<i>Cathartes aura</i>	Turkey Vulture				S3B,S3M	4 Secure	8	2.2 ± 0.0
A	<i>Rallus limicola</i>	Virginia Rail				S3B,S3M	3 Sensitive	2	6.0 ± 7.0
A	<i>Charadrius vociferus</i>	Killdeer				S3B,S3M	3 Sensitive	9	2.7 ± 0.0
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B,S3M	4 Secure	1	4.9 ± 7.0
A	<i>Passerina cyanea</i>	Indigo Bunting				S3B,S3M	4 Secure	1	4.9 ± 7.0
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	4	5.5 ± 1.0
A	<i>Somateria mollissima</i>	Common Eider				S3B,S4M,S3N	4 Secure	55	2.1 ± 2.0
A	<i>Dendroica tigrina</i>	Cape May Warbler				S3B,S4S5M	4 Secure	2	6.0 ± 7.0
A	<i>Anas acuta</i>	Northern Pintail				S3B,S5M	3 Sensitive	1	6.0 ± 7.0
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	6	3.3 ± 15.0
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	4 Secure	11	2.7 ± 0.0
A	<i>Melanitta nigra</i>	Black Scoter				S3M,S1S2N	3 Sensitive	12	3.6 ± 0.0
A	<i>Bucephala albeola</i>	Bufflehead				S3M,S2N	3 Sensitive	28	2.1 ± 2.0
A	<i>Calidris maritima</i>	Purple Sandpiper				S3M,S3N	4 Secure	2	3.3 ± 15.0
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	6	4.9 ± 7.0
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	4 Secure	17	2.7 ± 0.0
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3S4B,S5M	4 Secure	1	6.0 ± 7.0

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3S4B,S5M	4 Secure	13	5.3 ± 1.0
A	<i>Dendroica striata</i>	Blackpoll Warbler				S3S4B,S5M	4 Secure	2	2.1 ± 0.0
A	<i>Pluvialis squatarola</i>	Black-bellied Plover				S3S4M	4 Secure	3	2.7 ± 0.0
A	<i>Limosa haemastica</i>	Hudsonian Godwit				S3S4M	4 Secure	1	2.7 ± 0.0
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3S4M	4 Secure	53	2.7 ± 0.0
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3S4M	4 Secure	10	5.5 ± 1.0
A	<i>Calidris alba</i>	Sanderling				S3S4M,S1N	3 Sensitive	21	2.7 ± 0.0
A	<i>Morus bassanus</i>	Northern Gannet				SHB,S5M	4 Secure	4	2.5 ± 2.0
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	1	4.7 ± 1.0
I	<i>Plebejus idas</i>	Northern Blue				S3	4 Secure	3	1.9 ± 1.0
I	<i>Plebejus idas empetri</i>	Crowberry Blue				S3	4 Secure	4	2.9 ± 1.0
I	<i>Speyeria aphrodite</i>	Aphrodite Fritillary				S3	4 Secure	1	3.4 ± 1.0
I	<i>Polygonia gracilis</i>	Hoary Comma				S3	4 Secure	1	4.9 ± 7.0
I	<i>Nymphalis l-album</i>	Compton Tortoiseshell				S3	4 Secure	3	2.9 ± 1.0
I	<i>Lestes eurinus</i>	Amber-Winged Spreadwing				S3	4 Secure	1	4.2 ± 1.0
I	<i>Pantala hymenaea</i>	Spot-Winged Glider				S3B,S3M	4 Secure	2	2.6 ± 1.0

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species “location sensitive”. Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with “YES”.

New Brunswick

Scientific Name	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
<i>Chrysemys picta picta</i>	Eastern Painted Turtle			No
<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	No
<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	No
<i>Haliaeetus leucocephalus</i>	Bald Eagle		Endangered	YES
<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius pop.	Special Concern	Endangered	YES
<i>Cicindela marginipennis</i>	Cobblestone Tiger Beetle	Endangered	Endangered	No
<i>Coenonympha nipisiquit</i>	Maritime Ringlet	Endangered	Endangered	No
<i>Bat Hibernaculum</i>		[Endangered] ¹	[Endangered] ¹	No

¹ *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NB Species at Risk Act.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the ACCDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

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5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 33416 records of 148 vertebrate and 1135 records of 76 invertebrate fauna; 6002 records of 347 vascular, 391 records of 146 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs. All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (\pm the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Myotis lucifugus</i>	Little Brown Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	58	10.4 \pm 1.0	NB
A	<i>Myotis septentrionalis</i>	Northern Long-eared Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	17	11.7 \pm 0.0	NB
A	<i>Perimyotis subflavus</i>	Eastern Pipistrelle	Endangered	Endangered	Endangered	S1	1 At Risk	8	11.7 \pm 0.0	NB
A	<i>Eubalaena glacialis</i>	North Atlantic Right Whale	Endangered	Endangered	Endangered	S1		7	60.3 \pm 5.0	NB
A	<i>Sterna dougallii</i>	Roseate Tern	Endangered	Endangered	Endangered	S1?B,S1?M	1 At Risk	3	43.5 \pm 0.0	NB
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S1B,S1M	1 At Risk	23	7.1 \pm 0.0	NB
A	<i>Dermochelys coriacea</i> (Atlantic pop.)	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered	Endangered	S1S2N	1 At Risk	4	3.4 \pm 0.0	NB
A	<i>Salmo salar pop. 1</i>	Atlantic Salmon - Inner Bay of Fundy pop.	Endangered	Endangered	Endangered	S2	2 May Be At Risk	45	27.7 \pm 0.0	NB
A	<i>Calidris canutus rufa</i>	Red Knot rufa ssp	Endangered		Endangered	S2M	1 At Risk	377	2.7 \pm 0.0	NB
A	<i>Rangifer tarandus pop. 2</i>	Woodland Caribou (Atlantic-Gasp [r-sie pop.]	Endangered	Endangered	Extirpated	SX	0.1 Extirpated	4	32.2 \pm 5.0	NB
A	<i>Sturnella magna</i>	Eastern Meadowlark	Threatened		Threatened	S1B,S1M	2 May Be At Risk	39	38.3 \pm 7.0	NB
A	<i>Ixobrychus exilis</i>	Least Bittern	Threatened	Threatened	Threatened	S1S2B,S1S2M	1 At Risk	29	9.7 \pm 0.0	NB
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened		Threatened	S1S2B,S1S2M	2 May Be At Risk	178	5.5 \pm 1.0	NB
A	<i>Caprimulgus vociferus</i>	Whip-Poor-Will	Threatened	Threatened	Threatened	S2B,S2M	1 At Risk	78	7.4 \pm 7.0	NB
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S2B,S2M	3 Sensitive	1293	4.9 \pm 7.0	NB
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Special Concern	Threatened	S2B,S2M	1 At Risk	24	5.5 \pm 1.0	NB
A	<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	Threatened	S2S3	1 At Risk	85	7.9 \pm 10.0	NB
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1 At Risk	441	15.7 \pm 0.0	NB
A	<i>Riparia riparia</i>	Bank Swallow	Threatened		Threatened	S2S3B,S2S3M	3 Sensitive	393	4.9 \pm 7.0	NB
A	<i>Acipenser oxyrinchus</i>	Atlantic Sturgeon	Threatened		Threatened	S3	4 Secure	1	52.8 \pm 1.0	NB
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	328	2.4 \pm 0.0	NB
A	<i>Wilsonia canadensis</i>	Canada Warbler	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	775	1.1 \pm 0.0	NB
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3B,S3M	3 Sensitive	792	4.9 \pm 7.0	NB
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B,S4M	1 At Risk	310	4.9 \pm 7.0	NB
A	<i>Anguilla rostrata</i>	American Eel	Threatened		Threatened	S4	4 Secure	38	7.0 \pm 0.0	NB
A	<i>Osmerus mordax pop. 2</i>	Lake Utopia Smelt large-bodied pop.	Threatened		Threatened			2	46.6 \pm 10.0	NB
A	<i>Coturnicops noveboracensis</i>	Yellow Rail	Special Concern	Special Concern	Special Concern	S1?B,SUM	2 May Be At Risk	3	68.0 \pm 7.0	NB
A	<i>Histrionicus histrionicus pop. 1</i>	Harlequin Duck - Eastern pop.	Special Concern	Special Concern	Endangered	S1B,S1S2N,S2M	1 At Risk	163	17.1 \pm 17.0	NB
A	<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius	Special Concern	Special Concern	Endangered	S1B,S3M	1 At Risk	626	3.5 \pm 1.0	NB
A	<i>Asio flammeus</i>	Short-eared Owl	Special Concern	Special Concern	Special Concern	S2B,S2M	3 Sensitive	17	45.7 \pm 7.0	NB
A	<i>Bucephala islandica</i> (Eastern pop.)	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	49	10.7 \pm 6.0	NB
A	<i>Balaenoptera physalus</i>	Fin Whale - Atlantic pop.	Special Concern	Special Concern	Special Concern	S2S3		5	4.7 \pm 1.0	NB
A	<i>Acipenser brevirostrum</i>	Shortnose Sturgeon	Special Concern	Special Concern	Special Concern	S3	3 Sensitive	7	13.6 \pm 10.0	NB
A	<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	Special Concern	S3	3 Sensitive	35	31.2 \pm 1.0	NB
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S3B,S3M	2 May Be At Risk	125	5.4 \pm 2.0	NB
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	286	5.2 \pm 3.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern			S3M	3 Sensitive	219	7.1 ± 0.0	NB
A	<i>Phocoena phocoena</i> (NW Atlantic pop.)	Harbour Porpoise - Northwest Atlantic pop.	Special Concern	Threatened		S4		231	14.6 ± 0.0	NB
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B,S4M	4 Secure	599	4.9 ± 7.0	NB
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern		Special Concern	S4N,S4M	4 Secure	270	3.5 ± 1.0	NB
A	<i>Odobenus rosmarus rosmarus</i>	Atlantic Walrus	Special Concern		Extirpated	SX		1	71.3 ± 5.0	NS
A	<i>Hemidactylium scutatum</i>	Four-toed Salamander	Not At Risk			S1?	5 Undetermined	13	77.1 ± 0.0	NS
A	<i>Bubo scandiacus</i>	Snowy Owl	Not At Risk			S1N,S2S3M	4 Secure	30	10.7 ± 6.0	NB
A	<i>Accipiter cooperii</i>	Cooper's Hawk	Not At Risk			S1S2B,S1S2M	2 May Be At Risk	17	48.1 ± 7.0	NB
A	<i>Fulica americana</i>	American Coot	Not At Risk			S1S2B,S1S2M	3 Sensitive	8	47.2 ± 7.0	NB
A	<i>Aegolius funereus</i>	Boreal Owl	Not At Risk			S1S2B,SUM	2 May Be At Risk	5	36.4 ± 7.0	NB
A	<i>Sorex dispar</i>	Long-tailed Shrew	Not At Risk	Special Concern		S2	3 Sensitive	2	35.1 ± 1.0	NB
A	<i>Buteo lineatus</i>	Red-shouldered Hawk	Not At Risk	Special Concern		S2B,S2M	2 May Be At Risk	48	32.5 ± 1.0	NB
A	<i>Chlidonias niger</i>	Black Tern	Not At Risk			S2B,S2M	3 Sensitive	136	39.5 ± 7.0	NB
A	<i>Globicephala melas</i>	Long-finned Pilot Whale	Not At Risk			S2S3		3	15.7 ± 1.0	NB
A	<i>Lynx canadensis</i>	Canadian Lynx	Not At Risk		Endangered	S3	1 At Risk	9	31.6 ± 1.0	NB
A	<i>Desmognathus fuscus</i>	Northern Dusky Salamander	Not At Risk			S3	3 Sensitive	43	10.8 ± 1.0	NB
A	<i>Megaptera novaeangliae</i>	Humpback Whale (NW Atlantic pop.)	Not At Risk	Special Concern		S3		4	63.7 ± 5.0	NB
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B,SUM	3 Sensitive	272	7.5 ± 10.0	NB
A	<i>Podiceps grisegena</i>	Red-necked Grebe	Not At Risk			S3M,S2N	3 Sensitive	679	3.6 ± 0.0	NB
A	<i>Lagenorhynchus acutus</i>	Atlantic White-sided Dolphin	Not At Risk			S3S4		1	15.7 ± 1.0	NB
A	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Not At Risk		Endangered	S4	1 At Risk	1403	3.7 ± 1.0	NB
A	<i>Canis lupus</i>	Gray Wolf	Not At Risk		Extirpated	SX	0.1 Extirpated	4	3.8 ± 1.0	NB
A	<i>Puma concolor pop. 1</i>	Eastern Cougar	Data Deficient		Endangered	SU	5 Undetermined	60	14.6 ± 1.0	NB
A	<i>Morone saxatilis</i>	Striped Bass	E,E,SC			S3	2 May Be At Risk	10	13.6 ± 10.0	NB
A	<i>Salvelinus alpinus</i>	Arctic Char				S1	3 Sensitive	3	82.9 ± 0.0	NB
A	<i>Vireo flavifrons</i>	Yellow-throated Vireo				S1?B,S1?M	8 Accidental	16	2.5 ± 0.0	NB
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S1?B,S5M	4 Secure	940	2.7 ± 0.0	NB
A	<i>Aythya americana</i>	Redhead				S1B,S1M	8 Accidental	4	6.0 ± 7.0	NB
A	<i>Gallinula chloropus</i>	Common Moorhen				S1B,S1M	3 Sensitive	25	6.0 ± 7.0	NB
A	<i>Grus canadensis</i>	Sandhill Crane				S1B,S1M	8 Accidental	9	24.2 ± 0.0	NB
A	<i>Bartramia longicauda</i>	Upland Sandpiper				S1B,S1M	3 Sensitive	45	32.0 ± 0.0	NB
A	<i>Phalaropus tricolor</i>	Wilson's Phalarope				S1B,S1M	3 Sensitive	58	6.0 ± 7.0	NB
A	<i>Leucophaeus atricilla</i>	Laughing Gull				S1B,S1M	3 Sensitive	84	3.7 ± 0.0	NB
A	<i>Progne subis</i>	Purple Martin				S1B,S1M	2 May Be At Risk	217	18.7 ± 7.0	NB
A	<i>Thryothorus ludovicianus</i>	Carolina Wren				S1B,S1M	8 Accidental	35	6.0 ± 7.0	NB
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B,S2S3M	4 Secure	52	5.5 ± 1.0	NB
A	<i>Uria aalge</i>	Common Murre				S1B,S3N,S3M	4 Secure	137	16.2 ± 15.0	NB
A	<i>Aythya affinis</i>	Lesser Scaup				S1B,S4M	4 Secure	203	5.5 ± 1.0	NB
A	<i>Aythya marila</i>	Greater Scaup				S1B,S4M,S2N	4 Secure	37	5.5 ± 1.0	NB
A	<i>Eremophila alpestris</i>	Horned Lark				S1B,S4N,S5M	2 May Be At Risk	29	7.3 ± 1.0	NB
A	<i>Sterna paradisaea</i>	Arctic Tern				S1B,SUM	2 May Be At Risk	127	19.2 ± 16.0	NB
A	<i>Fratercula arctica</i>	Atlantic Puffin				S1B,SUN,SUM	3 Sensitive	164	16.2 ± 15.0	NB
A	<i>Branta bernicla</i>	Brant				S1N, S2S3M	4 Secure	544	5.5 ± 1.0	NB
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S1N,S2M	3 Sensitive	42	5.5 ± 1.0	NB
A	<i>Butorides virescens</i>	Green Heron				S1S2B,S1S2M	3 Sensitive	22	14.4 ± 5.0	NB
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B,S1S2M	3 Sensitive	62	3.9 ± 1.0	NB
A	<i>Empidonax traillii</i>	Willow Flycatcher				S1S2B,S1S2M	3 Sensitive	93	9.0 ± 7.0	NB
A	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow				S1S2B,S1S2M	2 May Be At Risk	19	2.4 ± 7.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Troglodytes aedon</i>	House Wren				S1S2B,S1S2M	5 Undetermined	31	9.0 ± 7.0	NB
A	<i>Rissa tridactyla</i>	Black-legged Kittiwake				S1S2B,S4N,S5M	4 Secure	49	28.3 ± 7.0	NB
A	<i>Calidris bairdii</i>	Baird's Sandpiper				S1S2M	3 Sensitive	101	5.5 ± 1.0	NB
A	<i>Cistothorus palustris</i>	Marsh Wren				S2B,S2M	3 Sensitive	89	6.0 ± 7.0	NB
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S2B,S2M	3 Sensitive	150	2.4 ± 7.0	NB
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B,S2M	3 Sensitive	86	2.1 ± 2.0	NB
A	<i>Pooecetes gramineus</i>	Vesper Sparrow				S2B,S2M	2 May Be At Risk	76	11.4 ± 0.0	NB
A	<i>Anas strepera</i>	Gadwall				S2B,S3M	4 Secure	108	5.5 ± 1.0	NB
A	<i>Alca torda</i>	Razorbill				S2B,S3N,S3M	4 Secure	161	16.2 ± 15.0	NB
A	<i>Pinicola enucleator</i>	Pine Grosbeak				S2B,S4S5N,S4S5M	3 Sensitive	34	39.8 ± 7.0	NB
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	248	5.5 ± 1.0	NB
A	<i>Oceanodroma leucorhoa</i>	Leach's Storm-Petrel				S2B,SUM	3 Sensitive	126	32.4 ± 32.0	NB
A	<i>Chen caerulescens</i>	Snow Goose				S2M	4 Secure	6	7.6 ± 1.0	NB
A	<i>Phalacrocorax carbo</i>	Great Cormorant				S2N,S2M	4 Secure	316	2.2 ± 0.0	NB
A	<i>Somateria spectabilis</i>	King Eider				S2N,S2M	4 Secure	56	40.3 ± 9.0	NB
A	<i>Larus hyperboreus</i>	Glaucous Gull				S2N,S2M	4 Secure	156	7.3 ± 1.0	NB
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Undetermined	16	6.9 ± 0.0	NB
A	<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S2S3	3 Sensitive	9	47.9 ± 7.0	NB
A	<i>Salmo salar</i>	Atlantic Salmon				S2S3	2 May Be At Risk	35	13.7 ± 0.0	NB
A	<i>Anas clypeata</i>	Northern Shoveler				S2S3B,S2S3M	4 Secure	82	5.5 ± 1.0	NB
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	240	5.4 ± 4.0	NB
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	532	4.9 ± 7.0	NB
A	<i>Pluvialis dominica</i>	American Golden-Plover				S2S3M	3 Sensitive	265	5.5 ± 1.0	NB
A	<i>Calcarius lapponicus</i>	Lapland Longspur				S2S3N,SUM	3 Sensitive	38	3.6 ± 1.0	NB
A	<i>Cephus grylle</i>	Black Guillemot				S3	4 Secure	779	2.8 ± 0.0	NB
A	<i>Loxia curvirostra</i>	Red Crossbill				S3	4 Secure	129	2.1 ± 1.0	NB
A	<i>Carduelis pinus</i>	Pine Siskin				S3	4 Secure	292	2.1 ± 0.0	NB
A	<i>Prosopium cylindraceum</i>	Round Whitefish				S3	4 Secure	1	84.3 ± 0.0	NB
A	<i>Salvelinus namaycush</i>	Lake Trout				S3	3 Sensitive	4	16.1 ± 0.0	NB
A	<i>Sorex maritimensis</i>	Maritime Shrew				S3	4 Secure	1	76.2 ± 0.0	NS
A	<i>Eptesicus fuscus</i>	Big Brown Bat				S3	3 Sensitive	45	14.5 ± 1.0	NB
A	<i>Cathartes aura</i>	Turkey Vulture				S3B,S3M	4 Secure	285	2.2 ± 0.0	NB
A	<i>Rallus limicola</i>	Virginia Rail				S3B,S3M	3 Sensitive	119	6.0 ± 7.0	NB
A	<i>Charadrius vociferus</i>	Killdeer				S3B,S3M	3 Sensitive	797	2.7 ± 0.0	NB
A	<i>Tringa semipalmata</i>	Willet				S3B,S3M	3 Sensitive	178	7.1 ± 0.0	NB
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B,S3M	4 Secure	183	4.9 ± 7.0	NB
A	<i>Vireo gilvus</i>	Warbling Vireo				S3B,S3M	4 Secure	230	18.4 ± 7.0	NB
A	<i>Piranga olivacea</i>	Scarlet Tanager				S3B,S3M	4 Secure	119	18.7 ± 7.0	NB
A	<i>Passerina cyanea</i>	Indigo Bunting				S3B,S3M	4 Secure	101	4.9 ± 7.0	NB
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	283	5.5 ± 1.0	NB
A	<i>Icterus galbula</i>	Baltimore Oriole				S3B,S3M	4 Secure	192	12.7 ± 2.0	NB
A	<i>Somateria mollissima</i>	Common Eider				S3B,S4M,S3N	4 Secure	1944	2.1 ± 2.0	NB
A	<i>Dendroica tigrina</i>	Cape May Warbler				S3B,S4S5M	4 Secure	129	6.0 ± 7.0	NB
A	<i>Anas acuta</i>	Northern Pintail				S3B,S5M	3 Sensitive	52	6.0 ± 7.0	NB
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	380	3.3 ± 15.0	NB
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	4 Secure	697	2.7 ± 0.0	NB
A	<i>Phalaropus fulicarius</i>	Red Phalarope				S3M	3 Sensitive	121	32.4 ± 32.0	NB
A	<i>Melanitta nigra</i>	Black Scoter				S3M,S1S2N	3 Sensitive	810	3.6 ± 0.0	NB
A	<i>Bucephala albeola</i>	Bufflehead				S3M,S2N	3 Sensitive	1114	2.1 ± 2.0	NB
A	<i>Calidris maritima</i>	Purple Sandpiper				S3M,S3N	4 Secure	251	3.3 ± 15.0	NB
A	<i>Uria lomvia</i>	Thick-billed Murre				S3N,S3M	5 Undetermined	67	11.9 ± 8.0	NB
A	<i>Synaptomys cooperi</i>	Southern Bog Lemming				S3S4	4 Secure	79	39.0 ± 1.0	NB

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A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	505	4.9 ± 7.0	NB
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	4 Secure	882	2.7 ± 0.0	NB
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3S4B,S5M	4 Secure	661	6.0 ± 7.0	NB
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3S4B,S5M	4 Secure	236	5.3 ± 1.0	NB
A	<i>Dendroica striata</i>	Blackpoll Warbler				S3S4B,S5M	4 Secure	88	2.1 ± 0.0	NB
A	<i>Pluvialis squatarola</i>	Black-bellied Plover				S3S4M	4 Secure	841	2.7 ± 0.0	NB
A	<i>Limosa haemastica</i>	Hudsonian Godwit				S3S4M	4 Secure	92	2.7 ± 0.0	NB
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3S4M	4 Secure	2031	2.7 ± 0.0	NB
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3S4M	4 Secure	304	5.5 ± 1.0	NB
A	<i>Calidris alba</i>	Sanderling				S3S4M,S1N	3 Sensitive	846	2.7 ± 0.0	NB
A	<i>Morus bassanus</i>	Northern Gannet				SHB,S5M	4 Secure	835	2.5 ± 2.0	NB
A	<i>Lanius ludovicianus</i>	Loggerhead Shrike				SXB,SXM	1 At Risk	1	77.1 ± 1.0	NB
C	<i>Quercus macrocarpa</i> - <i>Acer rubrum</i> / <i>Onoclea sensibilis</i> - <i>Carex arcta</i> Forest	Bur Oak - Red Maple / Sensitive Fern - Northern Clustered Sedge Forest				S2		1	77.2 ± 0.0	
C	<i>Acer saccharinum</i> / <i>Onoclea sensibilis</i> - <i>Lysimachia terrestris</i> Forest	Silver Maple / Sensitive Fern - Swamp Yellow Loosestrife Forest				S3		1	62.5 ± 0.0	NB
C	<i>Acer saccharum</i> - <i>Fraxinus americana</i> / <i>Polystichum</i> <i>acrostichoides</i> Forest	Sugar Maple - White Ash / Christmas Fern Forest				S3S4		1	39.0 ± 0.0	NB
I	<i>Cicindela marginipennis</i>	Cobblestone Tiger Beetle	Endangered	Endangered	Endangered	S1	1 At Risk	34	80.6 ± 0.0	NB
I	<i>Gomphus ventricosus</i>	Skillet Clubtail	Endangered		Endangered	S1S2	2 May Be At Risk	48	65.3 ± 0.0	NB
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	105	4.7 ± 1.0	NB
I	<i>Ophiogomphus howei</i>	Pygmy Snaketail	Special Concern	Special Concern	Special Concern	S2	2 May Be At Risk	3	51.6 ± 0.0	NB
I	<i>Alasmidonta varicosa</i>	Brook Floater	Special Concern		Special Concern	S2	3 Sensitive	1	90.7 ± 0.0	NB
I	<i>Lampsilis cariosa</i>	Yellow Lampmussel	Special Concern	Special Concern	Special Concern	S2	3 Sensitive	98	41.7 ± 1.0	NB
I	<i>Bombus terricola</i>	Yellow-banded Bumblebee	Special Concern		Special Concern	S3?	3 Sensitive	14	53.6 ± 0.0	NB
I	<i>Appalachina sayana</i>	Spike-lip Crater	Not At Risk			S3?		1	21.7 ± 1.0	NB
I	<i>Haematopota rara</i>	Shy Cleg				S1	5 Undetermined	1	91.8 ± 1.0	NB
I	<i>Lycaena dorcas</i>	Dorcas Copper				S1	2 May Be At Risk	1	72.2 ± 0.0	NB
I	<i>Erora laeta</i>	Early Hairstreak				S1	2 May Be At Risk	3	68.2 ± 1.0	NS
I	<i>Arigomphus furcifer</i>	Lilypad Clubtail				S1	5 Undetermined	6	71.6 ± 0.0	NB
I	<i>Polites origenes</i>	Crossline Skipper				S1?	5 Undetermined	4	59.3 ± 0.0	NB
I	<i>Plebejus saepiolus</i>	Greenish Blue				S1S2	4 Secure	3	46.3 ± 0.0	NB
I	<i>Ophiogomphus colubrinus</i>	Boreal Snaketail				S1S2	2 May Be At Risk	36	21.9 ± 1.0	NB
I	<i>Brachyleptura circumdata</i>	a Longhorned Beetle				S2		6	79.4 ± 0.0	NB
I	<i>Satyrium calanus</i>	Banded Hairstreak				S2	3 Sensitive	15	71.9 ± 1.0	NS
I	<i>Satyrium calanus falacer</i>	Banded Hairstreak				S2	4 Secure	4	91.3 ± 1.0	NB
I	<i>Strymon melinus</i>	Grey Hairstreak				S2	4 Secure	6	9.8 ± 0.0	NB
I	<i>Aeshna clepsydra</i>	Mottled Darner				S2	3 Sensitive	15	13.4 ± 1.0	NB
I	<i>Somatochlora tenebrosa</i>	Clamp-Tipped Emerald				S2	5 Undetermined	7	82.1 ± 0.0	NB
I	<i>Ladona exusta</i>	White Corporal				S2	5 Undetermined	11	66.0 ± 1.0	NB
I	<i>Hetaerina americana</i>	American Rubyspot				S2	3 Sensitive	2	90.1 ± 0.0	NB
I	<i>Ischnura posita</i>	Fragile Forktail				S2	2 May Be At Risk	26	50.9 ± 0.0	NB
I	<i>Callophrys henrici</i>	Henry's Elfin				S2S3	4 Secure	15	68.2 ± 1.0	NS
I	<i>Celithemis martha</i>	Martha's Pennant				S2S3	5 Undetermined	3	11.7 ± 0.0	NB
I	<i>Sphaeroderus nitidicollis</i>	a Ground Beetle				S3	4 Secure	1	79.4 ± 0.0	NB

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	<i>Lepturoopsis biforis</i>	a Longhorned Beetle				S3		1	14.7 ± 1.0	NB
	<i>Orthosoma brunneum</i>	a Longhorned Beetle				S3		1	79.8 ± 5.0	NB
	<i>Elaphrus americanus</i>	a Ground Beetle				S3	4 Secure	1	81.6 ± 0.0	NB
	<i>Desmocerus palliatus</i>	Elderberry Borer				S3		4	14.7 ± 1.0	NB
	<i>Agonum excavatum</i>	a Ground Beetle				S3	4 Secure	1	81.6 ± 0.0	NB
	<i>Clivina americana</i>	a Ground Beetle				S3	4 Secure	1	81.6 ± 0.0	NB
	<i>Olisthopus parmatius</i>	a Ground Beetle				S3	4 Secure	1	79.4 ± 0.0	NB
	<i>Paratachys scitulus</i>	a Ground Beetle				S3	5 Undetermined	1	81.6 ± 0.0	NB
	<i>Coccinella hieroglyphica kirbyi</i>	a Ladybird Beetle				S3	4 Secure	1	14.7 ± 1.0	NB
	<i>Hippodamia parenthesis</i>	Parenthesis Lady Beetle				S3	4 Secure	2	14.7 ± 1.0	NB
	<i>Stenocorus vittigera</i>	a Longhorned Beetle				S3		1	81.6 ± 0.0	NB
	<i>Gnathacmaeops pratensis</i>	a Longhorned Beetle				S3		5	14.7 ± 1.0	NB
	<i>Pogonocherus mixtus</i>	a Longhorned Beetle				S3		1	14.7 ± 1.0	NB
	<i>Badister neopulchellus</i>	a Ground Beetle				S3	4 Secure	1	81.6 ± 0.0	NB
	<i>Saperda lateralis</i>	a Longhorned Beetle				S3		2	18.1 ± 0.0	NB
	<i>Hesperia sassacus</i>	Indian Skipper				S3	4 Secure	8	80.5 ± 0.0	NB
	<i>Euphyes bimaculata</i>	Two-spotted Skipper				S3	4 Secure	12	40.7 ± 0.0	NB
	<i>Lycaena hyllus</i>	Bronze Copper				S3	3 Sensitive	4	10.7 ± 1.0	NB
	<i>Satyrium acadica</i>	Acadian Hairstreak				S3	4 Secure	23	14.7 ± 1.0	NB
	<i>Callophrys polios</i>	Hoary Elfin				S3	4 Secure	18	14.7 ± 1.0	NB
	<i>Plebejus idas</i>	Northern Blue				S3	4 Secure	9	1.9 ± 1.0	NB
	<i>Plebejus idas empetri</i>	Crowberry Blue				S3	4 Secure	6	2.9 ± 1.0	NB
	<i>Speyeria aphrodite</i>	Aphrodite Fritillary				S3	4 Secure	29	3.4 ± 1.0	NB
	<i>Boloria bellona</i>	Meadow Fritillary				S3	4 Secure	37	43.1 ± 1.0	NB
	<i>Polygonia satyrus</i>	Satyr Comma				S3	4 Secure	15	24.8 ± 1.0	NB
	<i>Polygonia gracilis</i>	Hoary Comma				S3	4 Secure	6	4.9 ± 7.0	NB
	<i>Nymphalis l-album</i>	Compton Tortoiseshell				S3	4 Secure	24	2.9 ± 1.0	NB
	<i>Gomphus vastus</i>	Cobra Clubtail				S3	3 Sensitive	57	47.1 ± 0.0	NB
	<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail				S3	4 Secure	24	21.7 ± 0.0	NB
	<i>Gomphaeschna furcillata</i>	Harlequin Darner				S3	5 Undetermined	17	88.0 ± 1.0	NB
	<i>Dorocordulia lepida</i>	Petite Emerald				S3	4 Secure	37	18.1 ± 0.0	NB
	<i>Somatochlora cingulata</i>	Lake Emerald				S3	4 Secure	7	17.2 ± 0.0	NB
	<i>Somatochlora forcipata</i>	Forcipate Emerald				S3	4 Secure	17	63.8 ± 1.0	NB
	<i>Williamsonia fletcheri</i>	Ebony Boghaunter				S3	4 Secure	7	72.2 ± 0.0	NB
	<i>Lestes eurinus</i>	Amber-Winged Spreadwing				S3	4 Secure	8	4.2 ± 1.0	NB
	<i>Lestes vigilax</i>	Swamp Spreadwing				S3	3 Sensitive	35	7.4 ± 1.0	NB
	<i>Enallagma geminatum</i>	Skimming Bluet				S3	5 Undetermined	8	21.7 ± 0.0	NB
	<i>Enallagma signatum</i>	Orange Bluet				S3	4 Secure	10	71.5 ± 0.0	NB
	<i>Stylurus scudleri</i>	Zebra Clubtail				S3	4 Secure	67	47.1 ± 0.0	NB
	<i>Alasmidonta undulata</i>	Triangle Floater				S3	3 Sensitive	40	21.2 ± 1.0	NB
	<i>Leptodea ochracea</i>	Tidewater Mucket				S3	4 Secure	59	16.7 ± 1.0	NB
	<i>Striatura ferrea</i>	Black Striate				S3		1	91.3 ± 1.0	NB
	<i>Neohelix albolabris</i>	Whitelip				S3		2	69.0 ± 0.0	NB
	<i>Spurwinkia salsa</i>	Saltmarsh Hydrobe				S3		34	9.6 ± 0.0	NB
	<i>Pantala hymenaea</i>	Spot-Winged Glider				S3B,S3M	4 Secure	4	2.6 ± 1.0	NB
	<i>Satyrium liparops</i>	Striped Hairstreak				S3S4	4 Secure	6	85.6 ± 7.0	NB
	<i>Satyrium liparops strigosum</i>	Striped Hairstreak				S3S4	4 Secure	1	95.0 ± 10.0	NB
	<i>Cupido comyntas</i>	Eastern Tailed Blue				S3S4	4 Secure	8	28.8 ± 5.0	NB
	<i>Coccinella transversoguttata richardsoni</i>	Transverse Lady Beetle				SH	2 May Be At Risk	2	14.7 ± 1.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
N	<i>Erioderma mollissimum</i>	Graceful Felt Lichen	Endangered		Endangered	SH	2 May Be At Risk	1	97.6 ± 1.0	NB
N	<i>Erioderma pedicellatum</i> (Atlantic pop.)	Boreal Felt Lichen - Atlantic pop.	Endangered	Endangered	Endangered	SH	1 At Risk	1	66.8 ± 1.0	NB
N	<i>Peltigera hydrothyria</i>	Eastern Waterfan	Threatened			S1	5 Undetermined	2	98.2 ± 1.0	NB
N	<i>Degelia plumbea</i>	Blue Felt Lichen	Special Concern	Special Concern	Special Concern	S1	2 May Be At Risk	2	65.6 ± 5.0	NB
N	<i>Pseudevernia cladonia</i>	Ghost Antler Lichen	Not At Risk			S2S3	5 Undetermined	17	14.7 ± 0.0	NB
N	<i>Bryum muehlenbeckii</i>	Muehlenbeck's Bryum Moss				S1	2 May Be At Risk	1	16.8 ± 1.0	NB
N	<i>Sphagnum macrophyllum</i>	Sphagnum				S1	2 May Be At Risk	2	2.9 ± 0.0	NB
N	<i>Syntrichia ruralis</i>	a Moss				S1	2 May Be At Risk	1	82.3 ± 0.0	NB
N	<i>Coscinodon cribrosus</i>	Sieve-Toothed Moss				S1	2 May Be At Risk	1	11.9 ± 0.0	NB
N	<i>Cladonia metacorallifera</i>	Reptilian Pixie-cup Lichen				S1	5 Undetermined	4	95.2 ± 1.0	NB
N	<i>Peltigera collina</i>	Tree Pelt Lichen				S1	2 May Be At Risk	1	73.0 ± 10.0	NB
N	<i>Peltigera malacea</i>	Veinless Pelt Lichen				S1	5 Undetermined	1	97.6 ± 1.0	NB
N	<i>Bryoria bicolor</i>	Electrified Horsehair Lichen				S1	2 May Be At Risk	1	97.6 ± 1.0	NB
N	<i>Hygrobiella laxifolia</i>	Lax Notchwort				S1?	6 Not Assessed	1	95.3 ± 1.0	NB
N	<i>Atrichum angustatum</i>	Lesser Smoothcap Moss				S1?	2 May Be At Risk	1	80.0 ± 3.0	NS
N	<i>Bartramia ithyphylla</i>	Straight-leaved Apple Moss				S1?	2 May Be At Risk	1	95.3 ± 0.0	NB
N	<i>Calliergon trifarium</i>	Three-ranked Moss				S1?	2 May Be At Risk	1	8.6 ± 0.0	NB
N	<i>Dichelyma falcatum</i>	a Moss				S1?	2 May Be At Risk	2	31.2 ± 1.0	NB
N	<i>Dicranum bonjeanii</i>	Bonjean's Broom Moss				S1?	2 May Be At Risk	1	92.4 ± 1.0	NB
N	<i>Eurhynchium hians</i>	Light Beaked Moss				S1?	2 May Be At Risk	3	79.2 ± 0.0	NB
N	<i>Plagiothecium latebricola</i>	Alder Silk Moss				S1?	2 May Be At Risk	1	7.0 ± 0.0	NB
N	<i>Racomitrium ericoides</i>	a Moss				S1?	2 May Be At Risk	1	84.0 ± 3.0	NB
N	<i>Rhytidium rugosum</i>	Wrinkle-leaved Moss				S1?	2 May Be At Risk	1	80.8 ± 0.0	NB
N	<i>Splachnum pennsylvanicum</i>	Southern Dung Moss				S1?	2 May Be At Risk	1	95.1 ± 1.0	NB
N	<i>Platylomella lescurii</i>	a Moss				S1?	5 Undetermined	1	70.8 ± 1.0	NB
N	<i>Harpanthus flotovianus</i>	Great Mountain Flapwort				S1S2	6 Not Assessed	1	97.9 ± 1.0	NB
N	<i>Jungermannia obovata</i>	Egg Flapwort				S1S2	6 Not Assessed	1	27.8 ± 0.0	NB
N	<i>Pallavicinia lyellii</i>	Lyell's Ribbonwort				S1S2	6 Not Assessed	1	23.4 ± 1.0	NB
N	<i>Reboulia hemisphaerica</i>	Purple-margined Liverwort				S1S2	6 Not Assessed	1	74.2 ± 1.0	NB
N	<i>Brachythecium acuminatum</i>	Acuminate Ragged Moss				S1S2	5 Undetermined	4	74.1 ± 100.0	NB
N	<i>Bryum salinum</i>	a Moss				S1S2	2 May Be At Risk	1	26.6 ± 1.0	NB
N	<i>Campyllum radicale</i>	Long-stalked Fine Wet Moss				S1S2	5 Undetermined	1	94.1 ± 1.0	NB
N	<i>Tortula obtusifolia</i>	a Moss				S1S2	2 May Be At Risk	1	56.0 ± 0.0	NB
N	<i>Ditrichum pallidum</i>	Pale Cow-hair Moss				S1S2	2 May Be At Risk	3	69.9 ± 3.0	NS
N	<i>Drummondia prorepens</i>	a Moss				S1S2	2 May Be At Risk	1	82.8 ± 0.0	NS
N	<i>Hygrohypnum bestii</i>	Best's Brook Moss				S1S2	3 Sensitive	4	88.3 ± 0.0	NB
N	<i>Sphagnum platyphyllum</i>	Flat-leaved Peat Moss				S1S2	5 Undetermined	2	98.6 ± 0.0	NB
N	<i>Timmia norvegica</i>	a moss				S1S2	2 May Be At Risk	1	67.5 ± 0.0	NB
N	<i>Tomentypnum falcifolium</i>	Sickle-leaved Golden Moss				S1S2	2 May Be At Risk	1	17.2 ± 1.0	NB
N	<i>Tortella humilis</i>	Small Crisp Moss				S1S2	2 May Be At Risk	3	96.6 ± 0.0	NB
N	<i>Pseudotaxiphyllum distichaceum</i>	a Moss				S1S2	2 May Be At Risk	3	26.6 ± 1.0	NB
N	<i>Hamatocaulis vermicosus</i>	a Moss				S1S2	2 May Be At Risk	1	37.2 ± 100.0	NB
N	<i>Bryohaplocladium microphyllum</i>	Tiny-leaved Haplocladium Moss				S1S2	2 May Be At Risk	1	69.9 ± 3.0	NS

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N	<i>Calypogeia neesiana</i>	Nees' Pouchwort				S1S3	6 Not Assessed	1	38.3 ± 1.0	NB
N	<i>Cephaloziella elachista</i>	Spurred Threadwort				S1S3	6 Not Assessed	1	8.2 ± 5.0	NB
N	<i>Porella pinnata</i>	Pinnate Scalewort				S1S3	6 Not Assessed	2	45.0 ± 1.0	NB
N	<i>Amphidium mougeotii</i>	a Moss				S2	3 Sensitive	5	74.5 ± 8.0	NB
N	<i>Anomodon viticulosus</i>	a Moss				S2	2 May Be At Risk	5	11.4 ± 1.0	NB
N	<i>Cirriophyllum piliferum</i>	Hair-pointed Moss				S2	3 Sensitive	1	82.8 ± 0.0	NB
N	<i>Cynodontium strumiferum</i>	Strumose Dogtooth Moss				S2	3 Sensitive	1	74.5 ± 8.0	NB
N	<i>Dicranella palustris</i>	Drooping-Leaved Fork Moss				S2	3 Sensitive	4	61.9 ± 100.0	NB
N	<i>Didymodon ferrugineus</i>	a moss				S2	3 Sensitive	1	36.9 ± 1.0	NB
N	<i>Anomodon tristis</i>	a Moss				S2	2 May Be At Risk	1	81.6 ± 1.0	NB
N	<i>Hypnum pratense</i>	Meadow Plait Moss				S2	3 Sensitive	1	9.5 ± 0.0	NB
N	<i>Isopterygiopsis pulchella</i>	Neat Silk Moss				S2	3 Sensitive	1	99.8 ± 0.0	NB
N	<i>Meesia triquetra</i>	Three-ranked Cold Moss				S2	2 May Be At Risk	1	74.1 ± 100.0	NB
N	<i>Physcomitrium immersum</i>	a Moss				S2	3 Sensitive	6	45.0 ± 1.0	NB
N	<i>Platydictya jungermannioides</i>	False Willow Moss				S2	3 Sensitive	1	97.9 ± 0.0	NB
N	<i>Pohlia elongata</i>	Long-necked Nodding Moss				S2	3 Sensitive	4	96.6 ± 0.0	NB
N	<i>Sphagnum centrale</i>	Central Peat Moss				S2	3 Sensitive	3	69.1 ± 5.0	NS
N	<i>Sphagnum lindbergii</i>	Lindberg's Peat Moss				S2	3 Sensitive	7	9.5 ± 0.0	NB
N	<i>Tayloria serrata</i>	Serrate Trumpet Moss				S2	3 Sensitive	1	43.3 ± 1.0	NB
N	<i>Tetraplodon mnioides</i>	Entire-leaved Nitrogen Moss				S2	3 Sensitive	3	21.3 ± 0.0	NB
N	<i>Thamnobryum alleghaniense</i>	a Moss				S2	3 Sensitive	5	67.4 ± 0.0	NB
N	<i>Tortula mucronifolia</i>	Mucronate Screw Moss				S2	3 Sensitive	1	12.0 ± 0.0	NB
N	<i>Ulota phyllantha</i>	a Moss				S2	3 Sensitive	2	26.6 ± 1.0	NB
N	<i>Anomobryum filiforme</i>	a moss				S2	5 Undetermined	2	63.1 ± 0.0	NB
N	<i>Leptogium corticola</i>	Blistered Jellyskin Lichen				S2	2 May Be At Risk	1	89.8 ± 0.0	NB
N	<i>Nephroma laevigatum</i>	Mustard Kidney Lichen				S2	2 May Be At Risk	2	73.0 ± 10.0	NB
N	<i>Andreaea rothii</i>	a Moss				S2?	3 Sensitive	2	31.0 ± 0.0	NB
N	<i>Brachythecium digastrum</i>	a Moss				S2?	3 Sensitive	2	66.9 ± 0.0	NB
N	<i>Bryum pallescens</i>	Pale Bryum Moss				S2?	5 Undetermined	2	12.7 ± 1.0	NB
N	<i>Dicranum spurium</i>	Spurred Broom Moss				S2?	3 Sensitive	2	11.9 ± 0.0	NB
N	<i>Hygrohypnum montanum</i>	a Moss				S2?	3 Sensitive	1	78.4 ± 1.0	NB
N	<i>Schistostega pennata</i>	Luminous Moss				S2?	3 Sensitive	3	61.9 ± 100.0	NB
N	<i>Seligeria campylopoda</i>	a Moss				S2?	3 Sensitive	1	37.2 ± 100.0	NB
N	<i>Seligeria diversifolia</i>	a Moss				S2?	3 Sensitive	2	63.1 ± 0.0	NB
N	<i>Sphagnum angermanicum</i>	a Peatmoss				S2?	3 Sensitive	2	14.7 ± 10.0	NB
N	<i>Plagiomnium rostratum</i>	Long-beaked Leafy Moss				S2?	3 Sensitive	3	67.3 ± 0.0	NB
N	<i>Nephroma arcticum</i>	Arctic Kidney Lichen				S2?	3 Sensitive	1	98.5 ± 1.0	NB
N	<i>Bryum uliginosum</i>	a Moss				S2S3	3 Sensitive	1	34.2 ± 4.0	NB
N	<i>Buxbaumia aphylla</i>	Brown Shield Moss				S2S3	3 Sensitive	2	74.1 ± 15.0	NB
N	<i>Calliergonella cuspidata</i>	Common Large Wetland Moss				S2S3	3 Sensitive	5	11.4 ± 1.0	NB
N	<i>Campyllum polygamum</i>	a Moss				S2S3	3 Sensitive	1	99.2 ± 0.0	NB
N	<i>Palustriella falcata</i>	a Moss				S2S3	3 Sensitive	2	95.5 ± 0.0	NB
N	<i>Didymodon rigidulus</i>	Rigid Screw Moss				S2S3	3 Sensitive	1	94.6 ± 8.0	NB
N	<i>Ephemerum serratum</i>	a Moss				S2S3	3 Sensitive	2	81.9 ± 0.0	NB
N	<i>Fissidens bushii</i>	Bush's Pocket Moss				S2S3	3 Sensitive	1	80.0 ± 3.0	NS
N	<i>Orthotrichum speciosum</i>	Showy Bristle Moss				S2S3	5 Undetermined	2	59.9 ± 2.0	NB
N	<i>Racomitrium</i>	a Moss				S2S3	3 Sensitive	2	67.0 ± 0.0	NB

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N	<i>fasciculare</i>									
N	<i>Scorpidium scorpioides</i>	Hooked Scorpion Moss				S2S3	3 Sensitive	4	8.6 ± 0.0	NB
N	<i>Sphagnum subfulvum</i>	a Peatmoss				S2S3	2 May Be At Risk	3	17.2 ± 1.0	NB
N	<i>Taxiphyllum deplanatum</i>	Imbricate Yew-leaved Moss				S2S3	3 Sensitive	1	26.6 ± 1.0	NB
N	<i>Zygodon viridissimus</i>	a Moss				S2S3	2 May Be At Risk	3	68.7 ± 3.0	NB
N	<i>Schistidium agassizii</i>	Elf Bloom Moss				S2S3	3 Sensitive	4	59.9 ± 2.0	NB
N	<i>Loeskeobryum brevirostre</i>	a Moss				S2S3	3 Sensitive	7	71.2 ± 3.0	NS
N	<i>Cyrtomnium hymenophylloides</i>	Short-pointed Lantern Moss				S2S3	3 Sensitive	1	95.5 ± 0.0	NB
N	<i>Cladonia acuminata</i>	Scantly Clad Pixie Lichen				S2S3	5 Undetermined	1	97.6 ± 1.0	NB
N	<i>Parmeliopsis ambigua</i>	Green Starburst Lichen				S2S3	5 Undetermined	1	95.2 ± 1.0	NB
N	<i>Sphaerophorus globosus</i>	Northern Coral Lichen				S2S3	3 Sensitive	4	94.0 ± 1.0	NB
N	<i>Cynodontium tenellum</i>	Delicate Dogtooth Moss				S3	3 Sensitive	1	26.6 ± 1.0	NB
N	<i>Hypnum curvifolium</i>	Curved-leaved Plait Moss				S3	3 Sensitive	6	69.8 ± 5.0	NB
N	<i>Schistidium maritimum</i>	a Moss				S3	4 Secure	2	26.6 ± 1.0	NB
N	<i>Solorina saccata</i>	Woodland Owl Lichen				S3	5 Undetermined	5	95.2 ± 1.0	NB
N	<i>Normandina pulchella</i>	Rimmed Elf-ear Lichen				S3	5 Undetermined	2	96.4 ± 1.0	NB
N	<i>Nephroma bellum</i>	Naked Kidney Lichen				S3	4 Secure	1	97.9 ± 1.0	NB
N	<i>Peltigera degenii</i>	Lustrous Pelt Lichen				S3	5 Undetermined	2	98.2 ± 1.0	NB
N	<i>Peltigera membranacea</i>	Membranous Pelt Lichen				S3	5 Undetermined	5	95.2 ± 1.0	NB
N	<i>Cladonia deformis</i>	Lesser Sulphur-cup Lichen				S3	4 Secure	3	95.2 ± 1.0	NB
N	<i>Aulacomnium androgynum</i>	Little Groove Moss				S3?	4 Secure	4	69.8 ± 5.0	NB
N	<i>Dicranella rufescens</i>	Red Forklet Moss				S3?	5 Undetermined	1	93.3 ± 4.0	NB
N	<i>Rhytidiadelphus loreus</i>	Lanky Moss				S3?	2 May Be At Risk	1	80.2 ± 10.0	NB
N	<i>Sphagnum lescurei</i>	a Peatmoss				S3?	5 Undetermined	5	27.4 ± 0.0	NB
N	<i>Anomodon rugelii</i>	Rugel's Anomodon Moss				S3S4	3 Sensitive	2	80.0 ± 3.0	NS
N	<i>Barbula convoluta</i>	Lesser Bird's-claw Beard Moss				S3S4	4 Secure	1	94.6 ± 8.0	NB
N	<i>Brachythecium velutinum</i>	Velvet Ragged Moss				S3S4	4 Secure	3	68.4 ± 0.0	NB
N	<i>Dicranella cerviculata</i>	a Moss				S3S4	3 Sensitive	3	26.6 ± 1.0	NB
N	<i>Dicranum majus</i>	Greater Broom Moss				S3S4	4 Secure	7	21.3 ± 0.0	NB
N	<i>Fissidens bryoides</i>	Lesser Pocket Moss				S3S4	4 Secure	1	37.4 ± 5.0	NB
N	<i>Heterocladium dimorphum</i>	Dimorphous Tangle Moss				S3S4	4 Secure	1	59.9 ± 2.0	NB
N	<i>Isopterygiopsis muelleriana</i>	a Moss				S3S4	4 Secure	6	68.4 ± 0.0	NB
N	<i>Myurella julacea</i>	Small Mouse-tail Moss				S3S4	4 Secure	1	74.5 ± 8.0	NB
N	<i>Physcomitrium pyriforme</i>	Pear-shaped Urn Moss				S3S4	3 Sensitive	5	69.9 ± 3.0	NS
N	<i>Pogonatum dentatum</i>	Mountain Hair Moss				S3S4	4 Secure	1	26.6 ± 1.0	NB
N	<i>Sphagnum torreyanum</i>	a Peatmoss				S3S4	4 Secure	6	2.5 ± 0.0	NB
N	<i>Sphagnum austinii</i>	Austin's Peat Moss				S3S4	4 Secure	1	3.8 ± 1.0	NB
N	<i>Sphagnum contortum</i>	Twisted Peat Moss				S3S4	4 Secure	1	24.1 ± 0.0	NB
N	<i>Splachnum rubrum</i>	Red Collar Moss				S3S4	4 Secure	1	37.0 ± 1.0	NB
N	<i>Tetraphis geniculata</i>	Geniculate Four-tooth Moss				S3S4	4 Secure	6	9.9 ± 0.0	NB
N	<i>Tetraplodon angustatus</i>	Toothed-leaved Nitrogen Moss				S3S4	4 Secure	1	26.6 ± 1.0	NB
N	<i>Weissia controversa</i>	Green-Cushioned Weissia				S3S4	4 Secure	1	80.6 ± 0.0	NS
N	<i>Trichostomum tenuirostre</i>	Acid-Soil Moss				S3S4	4 Secure	4	68.4 ± 0.0	NB
N	<i>Pannaria rubiginosa</i>	Brown-eyed Shingle Lichen				S3S4	3 Sensitive	1	99.6 ± 1.0	NB
N	<i>Ramalina thrausta</i>	Angelhair Ramalina Lichen				S3S4	5 Undetermined	5	94.0 ± 1.0	NB

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N	<i>Hypogymnia vittata</i>	Slender Monk's Hood Lichen				S3S4	4 Secure	15	94.0 ± 1.0	NB
N	<i>Cladonia floerkeana</i>	Gritty British Soldiers Lichen				S3S4	4 Secure	3	96.4 ± 1.0	NB
N	<i>Melanelia panniformis</i>	Shingled Camouflage Lichen				S3S4	5 Undetermined	2	97.6 ± 1.0	NB
N	<i>Protopannaria pezizoides</i>	Brown-gray Moss-shingle Lichen				S3S4	4 Secure	9	86.2 ± 0.0	NS
N	<i>Pseudocyphellaria perpetua</i>	Gilded Specklebelly Lichen				S3S4	3 Sensitive	32	89.0 ± 0.0	NB
N	<i>Pannaria conoplea</i>	Mealy-rimmed Shingle Lichen				S3S4	3 Sensitive	1	89.8 ± 0.0	NB
N	<i>Anaptychia palmulata</i>	Shaggy Fringed Lichen				S3S4	3 Sensitive	3	95.7 ± 0.0	NS
N	<i>Peltigera neopolydactyla</i>	Undulating Pelt Lichen				S3S4	5 Undetermined	5	95.2 ± 1.0	NB
N	<i>Dermatocarpon luridum</i>	Brookside Stippleback Lichen				S3S4	4 Secure	3	95.2 ± 1.0	NB
N	<i>Grimmia anodon</i>	Toothless Grimmiid Moss				SH	5 Undetermined	2	14.4 ± 10.0	NB
N	<i>Leucodon brachypus</i>	a Moss				SH	2 May Be At Risk	5	62.7 ± 100.0	NB
N	<i>Thelia hirtella</i>	a Moss				SH	2 May Be At Risk	2	74.1 ± 100.0	NB
P	<i>Juglans cinerea</i>	Butternut	Endangered	Endangered	Endangered	S1	1 At Risk	36	31.9 ± 1.0	NB
P	<i>Polemonium vanbruntiae</i>	Van Brunt's Jacob's-ladder	Threatened	Threatened	Threatened	S1	1 At Risk	72	21.2 ± 0.0	NB
P	<i>Isoetes prototypus</i>	Prototype Quillwort	Special Concern	Special Concern	Endangered	S2	1 At Risk	27	32.8 ± 0.0	NB
P	<i>Pterospora andromedea</i>	Woodland Pinedrops			Endangered	S1	1 At Risk	6	99.2 ± 0.0	NB
P	<i>Cryptotaenia canadensis</i>	Canada Honewort				S1	2 May Be At Risk	1	80.5 ± 1.0	NB
P	<i>Sanicula trifoliata</i>	Large-Fruited Sanicle				S1	2 May Be At Risk	1	48.6 ± 5.0	NB
P	<i>Antennaria parlinii</i>	a Pussytoes				S1	2 May Be At Risk	7	66.1 ± 1.0	NB
P	<i>Antennaria howellii</i>	Pussy-Toes				S1	2 May Be At Risk	4	12.4 ± 5.0	NB
P	<i>Bidens discoidea</i>	Swamp Beggarticks				S1	2 May Be At Risk	3	79.3 ± 0.0	NB
P	<i>Pseudognaphalium obtusifolium</i>	Eastern Cudweed				S1	2 May Be At Risk	2	98.2 ± 0.0	NB
P	<i>Helianthus decapetalus</i>	Ten-rayed Sunflower				S1	2 May Be At Risk	5	99.9 ± 0.0	NB
P	<i>Hieracium kalmii</i>	Kalm's Hawkweed				S1	2 May Be At Risk	5	13.0 ± 1.0	NB
P	<i>Hieracium kalmii</i> var. <i>kalmii</i>	Kalm's Hawkweed				S1	2 May Be At Risk	7	13.8 ± 1.0	NB
P	<i>Hieracium paniculatum</i>	Panicled Hawkweed				S1	2 May Be At Risk	8	58.6 ± 0.0	NB
P	<i>Hieracium robinsonii</i>	Robinson's Hawkweed				S1	3 Sensitive	2	95.7 ± 0.0	NB
P	<i>Senecio pseudoarnica</i>	Seabeach Ragwort				S1	2 May Be At Risk	14	72.4 ± 0.0	NB
P	<i>Cardamine parviflora</i> var. <i>arenicola</i>	Small-flowered Bittercress				S1	2 May Be At Risk	14	41.9 ± 0.0	NB
P	<i>Cardamine concatenata</i>	Cut-leaved Toothwort				S1	2 May Be At Risk	1	97.4 ± 1.0	NB
P	<i>Draba arabisans</i>	Rock Whitlow-Grass				S1	2 May Be At Risk	16	26.9 ± 0.0	NB
P	<i>Draba glabella</i>	Rock Whitlow-Grass				S1	2 May Be At Risk	8	15.6 ± 1.0	NB
P	<i>Minuartia groenlandica</i>	Greenland Stitchwort				S1	2 May Be At Risk	4	21.1 ± 0.0	NB
P	<i>Chenopodium capitatum</i>	Strawberry-blite				S1	2 May Be At Risk	4	14.6 ± 1.0	NB
P	<i>Chenopodium simplex</i>	Maple-leaved Goosefoot				S1	2 May Be At Risk	9	80.2 ± 1.0	NB
P	<i>Callitriche terrestris</i>	Terrestrial Water-Starwort				S1	5 Undetermined	1	99.6 ± 0.0	NB
P	<i>Triadenum virginicum</i>	Virginia St John's-wort				S1	2 May Be At Risk	4	24.6 ± 0.0	NB
P	<i>Viburnum acerifolium</i>	Maple-leaved Viburnum				S1	2 May Be At Risk	10	92.3 ± 0.0	NB
P	<i>Corema conradii</i>	Broom Crowberry				S1	2 May Be At Risk	3	12.2 ± 10.0	NB
P	<i>Vaccinium boreale</i>	Northern Blueberry				S1	2 May Be At Risk	1	29.6 ± 0.0	NB
P	<i>Vaccinium corymbosum</i>	Highbush Blueberry				S1	3 Sensitive	3	79.7 ± 5.0	NB
P	<i>Chamaesyce</i>	Seaside Spurge				S1	2 May Be At Risk	8	68.3 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>polygonifolia</i> <i>Desmodium glutinosum</i>	Large Tick-Trefoil				S1	2 May Be At Risk	1	95.1 ± 1.0	NB
P	<i>Lespedeza capitata</i>	Round-headed Bush-clover				S1	2 May Be At Risk	7	80.5 ± 0.0	NB
P	<i>Gentiana rubricaulis</i>	Purple-stemmed Gentian				S1	2 May Be At Risk	13	46.8 ± 0.0	NB
P	<i>Lomatogonium rotatum</i>	Marsh Felwort				S1	2 May Be At Risk	2	50.6 ± 0.0	NB
P	<i>Proserpinaca pectinata</i>	Comb-leaved Mermaidweed				S1	2 May Be At Risk	3	30.7 ± 0.0	NB
P	<i>Pycnanthemum virginianum</i>	Virginia Mountain Mint				S1	2 May Be At Risk	4	48.7 ± 0.0	NB
P	<i>Decodon verticillatus</i>	Swamp Loosestrife				S1	2 May Be At Risk	4	99.4 ± 0.0	NS
P	<i>Lysimachia hybrida</i>	Lowland Yellow Loosestrife				S1	2 May Be At Risk	15	88.6 ± 0.0	NB
P	<i>Lysimachia quadrifolia</i>	Whorled Yellow Loosestrife				S1	2 May Be At Risk	16	18.5 ± 1.0	NB
P	<i>Primula laurentiana</i>	Laurentian Primrose				S1	2 May Be At Risk	21	63.5 ± 1.0	NS
P	<i>Ranunculus sceleratus</i>	Cursed Buttercup				S1	2 May Be At Risk	6	7.4 ± 0.0	NB
P	<i>Crataegus jonesiae</i>	Jones' Hawthorn				S1	2 May Be At Risk	5	67.9 ± 0.0	NB
P	<i>Galium brevipes</i>	Limestone Swamp Bedstraw				S1	2 May Be At Risk	1	72.1 ± 5.0	NB
P	<i>Saxifraga paniculata</i> <i>ssp. neogaea</i>	White Mountain Saxifrage				S1	2 May Be At Risk	13	27.4 ± 10.0	NB
P	<i>Agalinis paupercula</i> <i>var. borealis</i>	Small-flowered Agalinis				S1	2 May Be At Risk	8	36.1 ± 1.0	NB
P	<i>Agalinis tenuifolia</i>	Slender Agalinis				S1	2 May Be At Risk	6	88.1 ± 0.0	NB
P	<i>Gratiola aurea</i>	Golden Hedge-Hyssop				S1	3 Sensitive	6	12.1 ± 5.0	NB
P	<i>Pedicularis canadensis</i>	Canada Lousewort				S1	2 May Be At Risk	20	55.5 ± 0.0	NB
P	<i>Viola sagittata</i> <i>var. ovata</i>	Arrow-Leaved Violet				S1	2 May Be At Risk	34	66.3 ± 0.0	NS
P	<i>Alisma subcordatum</i>	Southern Water Plantain				S1	5 Undetermined	4	43.5 ± 0.0	NB
P	<i>Carex atlantica</i> <i>ssp. atlantica</i>	Atlantic Sedge				S1	2 May Be At Risk	1	81.6 ± 0.0	NB
P	<i>Carex backii</i>	Rocky Mountain Sedge				S1	2 May Be At Risk	1	81.7 ± 0.0	NB
P	<i>Carex merritt-feraldii</i>	Merritt Fernald's Sedge				S1	2 May Be At Risk	2	70.4 ± 0.0	NB
P	<i>Carex saxatilis</i>	Russet Sedge				S1	2 May Be At Risk	13	13.0 ± 10.0	NB
P	<i>Carex grisea</i>	Inflated Narrow-leaved Sedge				S1	2 May Be At Risk	10	53.2 ± 0.0	NB
P	<i>Cyperus diandrus</i>	Low Flatsedge				S1	2 May Be At Risk	6	88.0 ± 1.0	NB
P	<i>Cyperus lupulinus</i>	Hop Flatsedge				S1	2 May Be At Risk	6	76.9 ± 0.0	NB
P	<i>Cyperus lupulinus</i> <i>ssp. macilentus</i>	Hop Flatsedge				S1	2 May Be At Risk	16	75.6 ± 0.0	NB
P	<i>Eleocharis olivacea</i>	Yellow Spikerush				S1	2 May Be At Risk	4	84.5 ± 1.0	NS
P	<i>Sisyrinchium angustifolium</i>	Narrow-leaved Blue-eyed-grass				S1	2 May Be At Risk	8	12.6 ± 1.0	NB
P	<i>Juncus greenei</i>	Greene's Rush				S1	2 May Be At Risk	1	37.9 ± 0.0	NB
P	<i>Juncus subtilis</i>	Creeping Rush				S1	2 May Be At Risk	1	56.7 ± 5.0	NB
P	<i>Allium canadense</i>	Canada Garlic				S1	2 May Be At Risk	6	49.0 ± 0.0	NB
P	<i>Goodyera pubescens</i>	Downy Rattlesnake-Plantain				S1	2 May Be At Risk	9	91.8 ± 0.0	NS
P	<i>Malaxis brachypoda</i>	White Adder's-Mouth				S1	2 May Be At Risk	3	72.0 ± 10.0	NB
P	<i>Platanthera flava</i> <i>var. herbiola</i>	Pale Green Orchid				S1	2 May Be At Risk	13	59.8 ± 0.0	NB
P	<i>Platanthera macrophylla</i>	Large Round-Leaved Orchid				S1	2 May Be At Risk	4	80.4 ± 1.0	NB
P	<i>Spiranthes casei</i>	Case's Ladies'-Tresses				S1	2 May Be At Risk	6	99.2 ± 0.0	NB
P	<i>Bromus pubescens</i>	Hairy Wood Brome Grass				S1	5 Undetermined	6	77.1 ± 0.0	NB
P	<i>Cinna arundinacea</i>	Sweet Wood Reed Grass				S1	2 May Be At Risk	22	57.8 ± 0.0	NB
P	<i>Danthonia compressa</i>	Flattened Oat Grass				S1	2 May Be At Risk	6	80.6 ± 0.0	NS
P	<i>Dichanthelium dichotomum</i>	Forked Panic Grass				S1	2 May Be At Risk	19	39.5 ± 1.0	NB
P	<i>Glyceria obtusa</i>	Atlantic Manna Grass				S1	2 May Be At Risk	7	39.0 ± 0.0	NB
P	<i>Potamogeton friesii</i>	Fries' Pondweed				S1	2 May Be At Risk	6	16.3 ± 5.0	NB
P	<i>Potamogeton nodosus</i>	Long-leaved Pondweed				S1	2 May Be At Risk	4	81.6 ± 0.0	NB

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P	<i>Potamogeton strictifolius</i>	Straight-leaved Pondweed				S1	2 May Be At Risk	2	34.0 ± 0.0	NB
P	<i>Xyris difformis</i>	Bog Yellow-eyed-grass				S1	5 Undetermined	5	24.5 ± 0.0	NB
P	<i>Asplenium ruta-muraria</i> var. <i>cryptolepis</i>	Wallrue Spleenwort				S1	2 May Be At Risk	3	26.8 ± 0.0	NB
P	<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern				S1	2 May Be At Risk	1	80.4 ± 1.0	NB
P	<i>Botrychium oneidense</i>	Blunt-lobed Moonwort				S1	2 May Be At Risk	4	60.9 ± 0.0	NB
P	<i>Botrychium rugulosum</i>	Rugulose Moonwort				S1	2 May Be At Risk	1	78.9 ± 1.0	NB
P	<i>Schizaea pusilla</i>	Little Curlygrass Fern				S1	2 May Be At Risk	25	2.5 ± 0.0	NB
P	<i>Hieracium kalmii</i> var. <i>fasciculatum</i>	Kalm's Hawkweed				S1?	5 Undetermined	6	65.4 ± 0.0	NB
P	<i>Cuscuta campestris</i>	Field Dodder				S1?	2 May Be At Risk	3	81.5 ± 10.0	NB
P	<i>Drosera rotundifolia</i> var. <i>comosa</i>	Round-leaved Sundew				S1?	5 Undetermined	5	46.7 ± 1.0	NB
P	<i>Carex laxiflora</i>	Loose-Flowered Sedge				S1?	5 Undetermined	2	70.5 ± 5.0	NS
P	<i>Wolffia columbiana</i>	Columbian Watermeal				S1?	2 May Be At Risk	5	78.2 ± 0.0	NB
P	<i>Rumex aquaticus</i> var. <i>fenestratus</i>	Western Dock				S1S2	2 May Be At Risk	1	86.7 ± 1.0	NB
P	<i>Saxifraga virginensis</i>	Early Saxifrage				S1S2	2 May Be At Risk	3	98.8 ± 0.0	NB
P	<i>Potamogeton bicupulatus</i>	Snailseed Pondweed				S1S2	2 May Be At Risk	5	32.4 ± 0.0	NB
P	<i>Selaginella rupestris</i>	Rock Spikemoss				S1S2	2 May Be At Risk	20	66.6 ± 0.0	NS
P	<i>Thelypteris simulata</i>	Bog Fern				S1S2	2 May Be At Risk	7	81.2 ± 0.0	NB
P	<i>Cuscuta cephalanthi</i>	Buttonbush Dodder				S1S3	2 May Be At Risk	2	11.2 ± 1.0	NB
P	<i>Listera australis</i>	Southern Twayblade			Endangered	S2	1 At Risk	17	90.4 ± 0.0	NB
P	<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely				S2	3 Sensitive	1	70.9 ± 0.0	NB
P	<i>Pseudognaphalium macounii</i>	Macoun's Cudweed				S2	3 Sensitive	8	11.9 ± 0.0	NB
P	<i>Solidago simplex</i> var. <i>racemosa</i>	Sticky Goldenrod				S2	2 May Be At Risk	4	99.7 ± 0.0	NB
P	<i>Ionactis linariifolius</i>	Stiff Aster				S2	3 Sensitive	1	98.1 ± 0.0	NB
P	<i>Symphotrichum racemosum</i>	Small White Aster				S2	3 Sensitive	7	70.8 ± 0.0	NB
P	<i>Impatiens pallida</i>	Pale Jewelweed				S2	2 May Be At Risk	2	93.6 ± 0.0	NS
P	<i>Alnus serrulata</i>	Smooth Alder				S2	3 Sensitive	28	58.4 ± 0.0	NB
P	<i>Arabis drummondii</i>	Drummond's Rockcress				S2	3 Sensitive	10	12.1 ± 1.0	NB
P	<i>Sagina nodosa</i>	Knotted Pearlwort				S2	3 Sensitive	15	27.1 ± 1.0	NB
P	<i>Sagina nodosa</i> ssp. <i>borealis</i>	Knotted Pearlwort				S2	3 Sensitive	2	6.3 ± 0.0	NB
P	<i>Stellaria longifolia</i>	Long-leaved Starwort				S2	3 Sensitive	6	12.7 ± 10.0	NB
P	<i>Atriplex franktonii</i>	Frankton's Saltbush				S2	4 Secure	3	54.0 ± 1.0	NB
P	<i>Chenopodium rubrum</i>	Red Pigweed				S2	3 Sensitive	4	13.2 ± 1.0	NB
P	<i>Hypericum dissimulatum</i>	Disguised St John's-wort				S2	3 Sensitive	7	43.9 ± 1.0	NB
P	<i>Viburnum lentago</i>	Nannyberry				S2	4 Secure	80	83.2 ± 0.0	NB
P	<i>Viburnum recognitum</i>	Northern Arrow-Wood				S2	4 Secure	135	50.0 ± 0.0	NB
P	<i>Astragalus eucosmus</i>	Elegant Milk-vetch				S2	2 May Be At Risk	4	37.2 ± 0.0	NB
P	<i>Oxytropis campestris</i> var. <i>johannensis</i>	Field Locoweed				S2	3 Sensitive	3	26.5 ± 50.0	NB
P	<i>Quercus macrocarpa</i>	Bur Oak				S2	2 May Be At Risk	44	16.6 ± 1.0	NB
P	<i>Gentiana linearis</i>	Narrow-Leaved Gentian				S2	3 Sensitive	5	93.7 ± 5.0	NB
P	<i>Myriophyllum humile</i>	Low Water Milfoil				S2	3 Sensitive	10	71.1 ± 1.0	NB
P	<i>Proserpinaca palustris</i> var. <i>crebra</i>	Marsh Mermaidweed				S2	3 Sensitive	21	45.0 ± 0.0	NB
P	<i>Hedeoma pulegioides</i>	American False Pennyroyal				S2	4 Secure	60	11.7 ± 0.0	NB
P	<i>Nuphar lutea</i> ssp. <i>rubrodiscalis</i>	Red-disked Yellow Pond-lily				S2	3 Sensitive	9	21.4 ± 1.0	NB

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P	<i>Orobanche uniflora</i>	One-Flowered Broomrape				S2	3 Sensitive	13	14.1 ± 1.0	NB
P	<i>Polygala paucifolia</i>	Fringed Milkwort				S2	3 Sensitive	15	51.6 ± 1.0	NB
P	<i>Polygonum amphibium</i> <i>var. emersum</i>	Water Smartweed				S2	3 Sensitive	24	47.2 ± 0.0	NB
P	<i>Polygonum careyi</i>	Carey's Smartweed				S2	3 Sensitive	14	39.0 ± 5.0	NB
P	<i>Podostemum ceratophyllum</i>	Horn-leaved Riverweed				S2	3 Sensitive	22	50.9 ± 0.0	NB
P	<i>Hepatica nobilis</i> <i>var. obtusa</i>	Round-lobed Hepatica				S2	3 Sensitive	27	51.3 ± 1.0	NB
P	<i>Ranunculus flabellaris</i>	Yellow Water Buttercup				S2	4 Secure	17	55.2 ± 0.0	NB
P	<i>Ranunculus longirostris</i>	Eastern White Water-Crowfoot				S2	5 Undetermined	4	63.3 ± 1.0	NB
P	<i>Crataegus scabrida</i>	Rough Hawthorn				S2	3 Sensitive	7	26.8 ± 0.0	NB
P	<i>Crataegus succulenta</i>	Fleshy Hawthorn				S2	3 Sensitive	1	94.1 ± 5.0	NB
P	<i>Cephalanthus occidentalis</i>	Common Buttonbush				S2	3 Sensitive	39	71.3 ± 0.0	NB
P	<i>Salix candida</i>	Sage Willow				S2	3 Sensitive	1	92.1 ± 1.0	NS
P	<i>Agalinis neoscotica</i>	Nova Scotia Agalinis				S2	3 Sensitive	35	63.0 ± 0.0	NB
P	<i>Euphrasia randii</i>	Rand's Eyebright				S2	2 May Be At Risk	23	5.7 ± 0.0	NB
P	<i>Scrophularia lanceolata</i>	Lance-leaved Figwort				S2	3 Sensitive	5	32.5 ± 5.0	NB
P	<i>Dirca palustris</i>	Eastern Leatherwood				S2	2 May Be At Risk	1	99.3 ± 0.0	NB
P	<i>Verbena urticifolia</i>	White Vervain				S2	2 May Be At Risk	3	99.2 ± 1.0	NB
P	<i>Viola novae-angliae</i>	New England Violet				S2	3 Sensitive	4	42.0 ± 0.0	NB
P	<i>Symplocarpus foetidus</i>	Eastern Skunk Cabbage				S2	3 Sensitive	95	22.1 ± 1.0	NB
P	<i>Carex granularis</i>	Limestone Meadow Sedge				S2	3 Sensitive	4	80.5 ± 5.0	NB
P	<i>Carex gynocrates</i>	Northern Bog Sedge				S2	3 Sensitive	5	82.2 ± 1.0	NB
P	<i>Carex hirtifolia</i>	Pubescent Sedge				S2	3 Sensitive	3	56.3 ± 0.0	NB
P	<i>Carex livida</i> <i>var. radicaulis</i>	Livid Sedge				S2	3 Sensitive	1	11.9 ± 2.0	NB
P	<i>Carex plantaginea</i>	Plantain-Leaved Sedge				S2	3 Sensitive	1	98.7 ± 0.0	NB
P	<i>Carex prairea</i>	Prairie Sedge				S2	3 Sensitive	1	72.0 ± 5.0	NS
P	<i>Carex rostrata</i>	Narrow-leaved Beaked Sedge				S2	3 Sensitive	2	68.7 ± 0.0	NB
P	<i>Carex salina</i>	Saltmarsh Sedge				S2	3 Sensitive	2	10.4 ± 1.0	NB
P	<i>Carex sprengeii</i>	Longbeak Sedge				S2	3 Sensitive	3	76.3 ± 0.0	NB
P	<i>Carex tenuiflora</i>	Sparse-Flowered Sedge				S2	2 May Be At Risk	5	73.2 ± 1.0	NB
P	<i>Carex albicans</i> <i>var. emmonsii</i>	White-tinged Sedge				S2	3 Sensitive	4	17.7 ± 0.0	NB
P	<i>Cyperus squarrosus</i>	Awned Flatsedge				S2	3 Sensitive	31	45.4 ± 0.0	NB
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S2	2 May Be At Risk	5	66.8 ± 3.0	NS
P	<i>Blysmus rufus</i>	Red Bulrush				S2	3 Sensitive	3	67.4 ± 0.0	NB
P	<i>Elodea nuttallii</i>	Nuttall's Waterweed				S2	3 Sensitive	8	41.3 ± 0.0	NB
P	<i>Allium tricoccum</i>	Wild Leek				S2	2 May Be At Risk	12	37.8 ± 0.0	NB
P	<i>Najas gracillima</i>	Thread-Like Naiad				S2	3 Sensitive	11	38.3 ± 0.0	NB
P	<i>Calypso bulbosa</i> <i>var. americana</i>	Calypso				S2	2 May Be At Risk	3	20.9 ± 0.0	NB
P	<i>Coeloglossum viride</i> <i>var. virescens</i>	Long-bracted Frog Orchid				S2	2 May Be At Risk	5	48.7 ± 5.0	NB
P	<i>Cypripedium parviflorum</i> <i>var. makasin</i>	Small Yellow Lady's-Slipper				S2	2 May Be At Risk	5	10.0 ± 1.0	NB
P	<i>Spiranthes lucida</i>	Shining Ladies'-Tresses				S2	3 Sensitive	13	36.9 ± 0.0	NB
P	<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses				S2	2 May Be At Risk	11	71.1 ± 0.0	NB
P	<i>Dichanthelium linearifolium</i>	Narrow-leaved Panic Grass				S2	3 Sensitive	12	51.1 ± 0.0	NB
P	<i>Elymus canadensis</i>	Canada Wild Rye				S2	2 May Be At Risk	5	79.5 ± 1.0	NB
P	<i>Leersia virginica</i>	White Cut Grass				S2	2 May Be At Risk	37	55.0 ± 0.0	NB

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P	<i>Piptatherum canadense</i>	Canada Rice Grass				S2	3 Sensitive	5	58.0 ± 0.0	NB
P	<i>Poa glauca</i>	Glaucous Blue Grass				S2	4 Secure	10	11.9 ± 2.0	NB
P	<i>Puccinellia phryganodes</i>	Creeping Alkali Grass				S2	3 Sensitive	15	20.5 ± 0.0	NB
P	<i>Schizachyrium scoparium</i>	Little Bluestem				S2	3 Sensitive	30	41.1 ± 0.0	NB
P	<i>Zizania aquatica</i> var. <i>aquatica</i>	Indian Wild Rice				S2	5 Undetermined	5	57.7 ± 0.0	NB
P	<i>Potamogeton vaseyi</i>	Vasey's Pondweed				S2	3 Sensitive	4	16.3 ± 1.0	NB
P	<i>Asplenium trichomanes</i>	Maidenhair Spleenwort				S2	3 Sensitive	15	13.2 ± 0.0	NB
P	<i>Woodwardia virginica</i>	Virginia Chain Fern				S2	3 Sensitive	15	80.2 ± 1.0	NB
P	<i>Woodsia alpina</i>	Alpine Cliff Fern				S2	3 Sensitive	6	27.4 ± 0.0	NB
P	<i>Selaginella selaginoides</i>	Low Spikemoss				S2	3 Sensitive	10	11.7 ± 6.0	NB
P	<i>Toxicodendron radicans</i>	Poison Ivy				S2?	3 Sensitive	16	40.4 ± 0.0	NB
P	<i>Symphotrichum novibelgii</i> var. <i>crenifolium</i>	New York Aster				S2?	5 Undetermined	8	14.1 ± 0.0	NB
P	<i>Humulus lupulus</i> var. <i>lupuloides</i>	Common Hop				S2?	3 Sensitive	4	88.8 ± 0.0	NB
P	<i>Rubus recurvicaulis</i>	Arching Dewberry				S2?	4 Secure	5	25.4 ± 5.0	NB
P	<i>Galium obtusum</i>	Blunt-leaved Bedstraw				S2?	4 Secure	4	57.9 ± 1.0	NB
P	<i>Salix myricoides</i>	Bayberry Willow				S2?	3 Sensitive	3	68.0 ± 0.0	NB
P	<i>Carex vacillans</i>	Estuarine Sedge				S2?	3 Sensitive	4	59.1 ± 1.0	NB
P	<i>Platanthera huronensis</i>	Fragrant Green Orchid				S2?	5 Undetermined	2	89.9 ± 0.0	NB
P	<i>Solidago altissima</i>	Tall Goldenrod				S2S3	4 Secure	5	36.4 ± 1.0	NB
P	<i>Barbarea orthoceras</i>	American Yellow Rocket				S2S3	3 Sensitive	6	36.5 ± 0.0	NB
P	<i>Ceratophyllum echinatum</i>	Prickly Hornwort				S2S3	3 Sensitive	16	36.8 ± 0.0	NB
P	<i>Callitriche hermaphroditica</i>	Northern Water-starwort				S2S3	4 Secure	6	42.7 ± 1.0	NB
P	<i>Lonicera oblongifolia</i>	Swamp Fly Honeysuckle				S2S3	3 Sensitive	12	11.8 ± 6.0	NB
P	<i>Elatine americana</i>	American Waterwort				S2S3	3 Sensitive	8	19.0 ± 1.0	NB
P	<i>Bartonia paniculata</i>	Branched Bartonia				S2S3	3 Sensitive	5	7.6 ± 0.0	NB
P	<i>Bartonia paniculata</i> ssp. <i>iodandra</i>	Branched Bartonia				S2S3	3 Sensitive	34	3.3 ± 0.0	NB
P	<i>Geranium robertianum</i>	Herb Robert				S2S3	4 Secure	25	14.6 ± 1.0	NB
P	<i>Myriophyllum quitense</i>	Andean Water Milfoil				S2S3	4 Secure	71	14.7 ± 0.0	NB
P	<i>Epilobium coloratum</i>	Purple-veined Willowherb				S2S3	3 Sensitive	7	14.5 ± 1.0	NB
P	<i>Rumex pallidus</i>	Seabeach Dock				S2S3	3 Sensitive	6	16.1 ± 0.0	NB
P	<i>Rubus pensilvanicus</i>	Pennsylvania Blackberry				S2S3	4 Secure	15	17.3 ± 0.0	NB
P	<i>Galium labradoricum</i>	Labrador Bedstraw				S2S3	3 Sensitive	4	46.4 ± 1.0	NB
P	<i>Valeriana uliginosa</i>	Swamp Valerian				S2S3	3 Sensitive	1	85.6 ± 1.0	NB
P	<i>Carex adusta</i>	Lesser Brown Sedge				S2S3	4 Secure	5	15.2 ± 1.0	NB
P	<i>Corallorhiza maculata</i> var. <i>occidentalis</i>	Spotted Coralroot				S2S3	3 Sensitive	4	70.4 ± 0.0	NB
P	<i>Corallorhiza maculata</i> var. <i>maculata</i>	Spotted Coralroot				S2S3	3 Sensitive	2	91.4 ± 1.0	NB
P	<i>Listera auriculata</i>	Auricled Twayblade				S2S3	3 Sensitive	9	8.2 ± 1.0	NB
P	<i>Spiranthes cernua</i>	Nodding Ladies'-Tresses				S2S3	3 Sensitive	22	37.9 ± 0.0	NB
P	<i>Eragrostis pectinacea</i>	Tufted Love Grass				S2S3	4 Secure	13	56.4 ± 1.0	NB
P	<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Thread-leaved Pondweed				S2S3	3 Sensitive	7	11.9 ± 0.0	NB
P	<i>Stuckenia pectinata</i>	Sago Pondweed				S2S3	3 Sensitive	63	9.6 ± 0.0	NB
P	<i>Potamogeton praelongus</i>	White-stemmed Pondweed				S2S3	4 Secure	12	11.9 ± 1.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>Isoetes acadensis</i>	Acadian Quillwort				S2S3	3 Sensitive	9	41.6 ± 0.0	NB
P	<i>Ophioglossum pusillum</i>	Northern Adder's-tongue				S2S3	3 Sensitive	9	11.3 ± 1.0	NB
P	<i>Panax trifolius</i>	Dwarf Ginseng				S3	3 Sensitive	13	26.1 ± 0.0	NB
P	<i>Artemisia campestris</i>	Field Wormwood				S3	4 Secure	24	77.1 ± 0.0	NB
P	<i>Artemisia campestris ssp. caudata</i>	Field Wormwood				S3	4 Secure	76	70.7 ± 0.0	NB
P	<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane				S3	4 Secure	22	20.7 ± 0.0	NB
P	<i>Prenanthes racemosa</i>	Glaucous Rattlesnakeroot				S3	4 Secure	65	10.5 ± 0.0	NB
P	<i>Tanacetum bipinnatum ssp. huronense</i>	Lake Huron Tansy				S3	4 Secure	12	22.8 ± 1.0	NB
P	<i>Symphotrichum boreale</i>	Boreal Aster				S3	3 Sensitive	7	36.8 ± 0.0	NB
P	<i>Betula pumila</i>	Bog Birch				S3	4 Secure	21	68.1 ± 1.0	NB
P	<i>Arabis glabra</i>	Tower Mustard				S3	5 Undetermined	1	85.8 ± 0.0	NB
P	<i>Arabis hirsuta var. pycnocarpa</i>	Western Hairy Rockcress				S3	4 Secure	12	12.1 ± 0.0	NB
P	<i>Cardamine maxima</i>	Large Toothwort				S3	4 Secure	24	17.8 ± 0.0	NB
P	<i>Subularia aquatica var. americana</i>	Water Awlwort				S3	4 Secure	14	31.1 ± 0.0	NB
P	<i>Lobelia cardinalis</i>	Cardinal Flower				S3	4 Secure	357	47.9 ± 0.0	NB
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	7	5.8 ± 0.0	NB
P	<i>Hudsonia tomentosa</i>	Woolly Beach-heath				S3	4 Secure	3	21.0 ± 0.0	NB
P	<i>Cornus amomum ssp. obliqua</i>	Pale Dogwood				S3	3 Sensitive	189	40.4 ± 0.0	NB
P	<i>Crassula aquatica</i>	Water Pygmyweed				S3	4 Secure	10	56.4 ± 0.0	NB
P	<i>Rhodiola rosea</i>	Roseroot				S3	4 Secure	46	3.7 ± 0.0	NB
P	<i>Penthorum sedoides</i>	Ditch Stonecrop				S3	4 Secure	58	46.2 ± 0.0	NB
P	<i>Elatine minima</i>	Small Waterwort				S3	4 Secure	28	12.3 ± 5.0	NB
P	<i>Astragalus alpinus var. brunetianus</i>	Alpine Milk-Vetch				S3	4 Secure	1	99.8 ± 0.0	NB
P	<i>Hedysarum alpinum</i>	Alpine Sweet-vetch				S3	4 Secure	2	37.1 ± 0.0	NB
P	<i>Gentianella amarella ssp. acuta</i>	Northern Gentian				S3	4 Secure	3	12.2 ± 0.0	NB
P	<i>Geranium bicknellii</i>	Bicknell's Crane's-bill				S3	4 Secure	8	13.0 ± 5.0	NB
P	<i>Myriophyllum farwellii</i>	Farwell's Water Milfoil				S3	4 Secure	23	16.9 ± 0.0	NB
P	<i>Myriophyllum heterophyllum</i>	Variable-leaved Water Milfoil				S3	4 Secure	42	22.1 ± 0.0	NB
P	<i>Myriophyllum verticillatum</i>	Whorled Water Milfoil				S3	4 Secure	17	16.1 ± 1.0	NB
P	<i>Stachys tenuifolia</i>	Smooth Hedge-Nettle				S3	3 Sensitive	6	39.8 ± 0.0	NB
P	<i>Teucrium canadense</i>	Canada Germander				S3	3 Sensitive	5	68.7 ± 1.0	NS
P	<i>Utricularia radiata</i>	Little Floating Bladderwort				S3	4 Secure	36	2.6 ± 0.0	NB
P	<i>Nuphar lutea ssp. pumila</i>	Small Yellow Pond-lily				S3	4 Secure	15	11.9 ± 0.0	NB
P	<i>Epilobium hornemannii</i>	Hornemann's Willowherb				S3	4 Secure	5	21.2 ± 0.0	NB
P	<i>Epilobium hornemannii ssp. hornemannii</i>	Hornemann's Willowherb				S3	4 Secure	1	97.8 ± 0.0	NB
P	<i>Epilobium strictum</i>	Downy Willowherb				S3	4 Secure	16	4.3 ± 1.0	NB
P	<i>Polygala sanguinea</i>	Blood Milkwort				S3	3 Sensitive	12	65.9 ± 0.0	NB
P	<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb				S3	4 Secure	14	55.3 ± 0.0	NB
P	<i>Polygonum punctatum</i>	Dotted Smartweed				S3	4 Secure	2	79.9 ± 0.0	NB
P	<i>Polygonum punctatum var. confertiflorum</i>	Dotted Smartweed				S3	4 Secure	12	63.1 ± 1.0	NB
P	<i>Polygonum scandens</i>	Climbing False Buckwheat				S3	4 Secure	29	43.4 ± 5.0	NB
P	<i>Littorella uniflora</i>	American Shoreweed				S3	4 Secure	21	31.9 ± 0.0	NB
P	<i>Primula mistassinica</i>	Mistassini Primrose				S3	4 Secure	10	9.5 ± 1.0	NB
P	<i>Pyrola minor</i>	Lesser Pyrola				S3	4 Secure	4	22.3 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>Clematis occidentalis</i>	Purple Clematis				S3	4 Secure	14	17.5 ± 5.0	NB
P	<i>Ranunculus gmelinii</i>	Gmelin's Water Buttercup				S3	4 Secure	6	57.7 ± 0.0	NB
P	<i>Thalictrum venulosum</i>	Northern Meadow-rue				S3	4 Secure	73	23.7 ± 5.0	NB
P	<i>Amelanchier canadensis</i>	Canada Serviceberry				S3	4 Secure	16	26.9 ± 1.0	NB
P	<i>Rosa palustris</i>	Swamp Rose				S3	4 Secure	38	8.8 ± 1.0	NB
P	<i>Rubus occidentalis</i>	Black Raspberry				S3	4 Secure	9	59.2 ± 0.0	NB
P	<i>Galium boreale</i>	Northern Bedstraw				S3	4 Secure	7	31.9 ± 1.0	NB
P	<i>Salix interior</i>	Sandbar Willow				S3	4 Secure	16	71.6 ± 0.0	NB
P	<i>Salix nigra</i>	Black Willow				S3	3 Sensitive	108	16.2 ± 1.0	NB
P	<i>Salix pedicellaris</i>	Bog Willow				S3	4 Secure	45	23.6 ± 1.0	NB
P	<i>Comandra umbellata</i>	Bastard's Toadflax				S3	4 Secure	1	84.7 ± 10.0	NB
P	<i>Parnassia glauca</i>	Fen Grass-of-Parnassus				S3	4 Secure	1	96.8 ± 10.0	NB
P	<i>Limosella australis</i>	Southern Mudwort				S3	4 Secure	10	71.2 ± 0.0	NB
P	<i>Veronica serpyllifolia</i> ssp. <i>humifusa</i>	Thyme-Leaved Speedwell				S3	4 Secure	4	92.1 ± 100.0	NB
P	<i>Boehmeria cylindrica</i>	Small-spike False-nettle				S3	3 Sensitive	128	48.2 ± 0.0	NB
P	<i>Pilea pumila</i>	Dwarf Clearweed				S3	4 Secure	20	55.1 ± 0.0	NB
P	<i>Viola adunca</i>	Hooked Violet				S3	4 Secure	8	61.9 ± 1.0	NB
P	<i>Viola nephrophylla</i>	Northern Bog Violet				S3	4 Secure	4	11.2 ± 0.0	NB
P	<i>Carex aquatilis</i>	Water Sedge				S3	4 Secure	16	4.5 ± 1.0	NB
P	<i>Carex arcta</i>	Northern Clustered Sedge				S3	4 Secure	46	57.2 ± 0.0	NB
P	<i>Carex atratiformis</i>	Scabrous Black Sedge				S3	4 Secure	1	11.9 ± 0.0	NB
P	<i>Carex capillaris</i>	Hairlike Sedge				S3	4 Secure	9	11.9 ± 2.0	NB
P	<i>Carex chordorrhiza</i>	Creeping Sedge				S3	4 Secure	19	40.1 ± 1.0	NB
P	<i>Carex conoidea</i>	Field Sedge				S3	4 Secure	29	4.3 ± 1.0	NB
P	<i>Carex eburnea</i>	Bristle-leaved Sedge				S3	4 Secure	1	98.3 ± 0.0	NB
P	<i>Carex exilis</i>	Coastal Sedge				S3	4 Secure	85	2.2 ± 0.0	NB
P	<i>Carex garberi</i>	Garber's Sedge				S3	3 Sensitive	2	36.6 ± 0.0	NB
P	<i>Carex haydenii</i>	Hayden's Sedge				S3	4 Secure	33	18.5 ± 1.0	NB
P	<i>Carex lupulina</i>	Hop Sedge				S3	4 Secure	105	40.0 ± 0.0	NB
P	<i>Carex michauxiana</i>	Michaux's Sedge				S3	4 Secure	60	2.4 ± 0.0	NB
P	<i>Carex ormostachya</i>	Necklace Spike Sedge				S3	4 Secure	5	70.0 ± 1.0	NB
P	<i>Carex rosea</i>	Rosy Sedge				S3	4 Secure	21	36.5 ± 0.0	NB
P	<i>Carex tenera</i>	Tender Sedge				S3	4 Secure	43	39.9 ± 0.0	NB
P	<i>Carex tuckermanii</i>	Tuckerman's Sedge				S3	4 Secure	66	40.0 ± 0.0	NB
P	<i>Carex vaginata</i>	Sheathed Sedge				S3	3 Sensitive	8	83.2 ± 0.0	NB
P	<i>Carex wiegandii</i>	Wiegand's Sedge				S3	4 Secure	35	2.2 ± 0.0	NB
P	<i>Carex recta</i>	Estuary Sedge				S3	4 Secure	7	2.9 ± 0.0	NB
P	<i>Cyperus dentatus</i>	Toothed Flatsedge				S3	4 Secure	128	16.4 ± 0.0	NB
P	<i>Cyperus esculentus</i>	Perennial Yellow Nutsedge				S3	4 Secure	36	53.1 ± 0.0	NB
P	<i>Eleocharis intermedia</i>	Matted Spikerush				S3	4 Secure	2	94.3 ± 0.0	NB
P	<i>Eleocharis quinqueflora</i>	Few-flowered Spikerush				S3	4 Secure	4	24.2 ± 0.0	NB
P	<i>Rhynchospora capitellata</i>	Small-headed Beakrush				S3	4 Secure	9	52.8 ± 0.0	NB
P	<i>Rhynchospora fusca</i>	Brown Beakrush				S3	4 Secure	36	6.9 ± 0.0	NB
P	<i>Trichophorum clintonii</i>	Clinton's Clubrush				S3	4 Secure	19	20.6 ± 0.0	NB
P	<i>Schoenoplectus fluviatilis</i>	River Bulrush				S3	3 Sensitive	46	20.7 ± 0.0	NB
P	<i>Schoenoplectus torreyi</i>	Torrey's Bulrush				S3	4 Secure	30	11.5 ± 0.0	NB
P	<i>Lemna trisulca</i>	Star Duckweed				S3	4 Secure	17	27.2 ± 1.0	NB
P	<i>Triantha glutinosa</i>	Sticky False-Asphodel				S3	4 Secure	6	36.7 ± 0.0	NB
P	<i>Cypripedium reginae</i>	Showy Lady's-Slipper				S3	3 Sensitive	19	9.9 ± 0.0	NB
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3	4 Secure	14	4.2 ± 0.0	NB
P	<i>Platanthera blephariglottis</i>	White Fringed Orchid				S3	4 Secure	43	89.7 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>Platanthera grandiflora</i>	Large Purple Fringed Orchid				S3	3 Sensitive	31	15.6 ± 1.0	NB
P	<i>Bromus latiglumis</i>	Broad-Grummed Brome				S3	3 Sensitive	1	54.7 ± 0.0	NB
P	<i>Calamagrostis pickeringii</i>	Pickering's Reed Grass				S3	4 Secure	106	2.1 ± 0.0	NB
P	<i>Dichanthelium depauperatum</i>	Starved Panic Grass				S3	4 Secure	27	54.2 ± 0.0	NB
P	<i>Muhlenbergia richardsonis</i>	Mat Muhly				S3	4 Secure	2	99.8 ± 0.0	NB
P	<i>Heteranthera dubia</i>	Water Stargrass				S3	4 Secure	53	12.6 ± 0.0	NB
P	<i>Potamogeton obtusifolius</i>	Blunt-leaved Pondweed				S3	4 Secure	12	23.4 ± 0.0	NB
P	<i>Potamogeton richardsonii</i>	Richardson's Pondweed				S3	3 Sensitive	16	11.9 ± 1.0	NB
P	<i>Xyris montana</i>	Northern Yellow-Eyed-Grass				S3	4 Secure	26	3.7 ± 0.0	NB
P	<i>Zannichellia palustris</i>	Horned Pondweed				S3	4 Secure	5	15.4 ± 0.0	NB
P	<i>Adiantum pedatum</i>	Northern Maidenhair Fern				S3	4 Secure	2	16.3 ± 1.0	NB
P	<i>Cryptogramma stelleri</i>	Steller's Rockbrake				S3	4 Secure	2	33.3 ± 1.0	NB
P	<i>Asplenium trichomanes-ramosum</i>	Green Spleenwort				S3	4 Secure	17	9.5 ± 1.0	NB
P	<i>Dryopteris fragrans</i> var. <i>remotiuscula</i>	Fragrant Wood Fern				S3	4 Secure	16	13.4 ± 0.0	NB
P	<i>Woodsia glabella</i>	Smooth Cliff Fern				S3	4 Secure	18	40.7 ± 1.0	NB
P	<i>Equisetum palustre</i>	Marsh Horsetail				S3	4 Secure	6	83.1 ± 10.0	NB
P	<i>Isoetes tuckermanii</i>	Tuckerman's Quillwort				S3	4 Secure	28	21.2 ± 0.0	NB
P	<i>Lycopodium sabinifolium</i>	Ground-Fir				S3	4 Secure	9	15.6 ± 1.0	NB
P	<i>Huperzia appalachiana</i>	Appalachian Fir-Clubmoss				S3	3 Sensitive	15	15.4 ± 1.0	NB
P	<i>Botrychium dissectum</i>	Cut-leaved Moonwort				S3	4 Secure	27	9.3 ± 0.0	NB
P	<i>Botrychium lanceolatum</i> var. <i>angustisegmentum</i>	Lance-Leaf Grape-Fern				S3	3 Sensitive	6	11.8 ± 0.0	NB
P	<i>Botrychium simplex</i>	Least Moonwort				S3	4 Secure	8	64.1 ± 0.0	NB
P	<i>Polypodium appalachianum</i>	Appalachian Polypody				S3	4 Secure	8	14.9 ± 1.0	NB
P	<i>Utricularia resupinata</i>	Inverted Bladderwort				S3?	4 Secure	19	7.0 ± 0.0	NB
P	<i>Crataegus submollis</i>	Quebec Hawthorn				S3?	3 Sensitive	17	9.0 ± 1.0	NB
P	<i>Mertensia maritima</i>	Sea Lungwort				S3S4	4 Secure	27	7.5 ± 2.0	NB
P	<i>Lobelia kalmii</i>	Brook Lobelia				S3S4	4 Secure	14	14.6 ± 1.0	NB
P	<i>Suaeda calceoliformis</i>	Horned Sea-blite				S3S4	4 Secure	6	2.9 ± 1.0	NB
P	<i>Myriophyllum sibiricum</i>	Siberian Water Milfoil				S3S4	4 Secure	26	15.4 ± 0.0	NB
P	<i>Stachys pilosa</i>	Hairy Hedge-Nettle				S3S4	5 Undetermined	5	62.2 ± 1.0	NB
P	<i>Utricularia gibba</i>	Humped Bladderwort				S3S4	4 Secure	32	7.1 ± 0.0	NB
P	<i>Rumex maritimus</i>	Sea-Side Dock				S3S4	4 Secure	1	66.1 ± 1.0	NB
P	<i>Potentilla arguta</i>	Tall Cinquefoil				S3S4	4 Secure	17	36.5 ± 0.0	NB
P	<i>Rubus chamaemorus</i>	Cloudberry				S3S4	4 Secure	55	2.3 ± 0.0	NB
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	4 Secure	9	2.2 ± 0.0	NB
P	<i>Juniperus horizontalis</i>	Creeping Juniper				S3S4	4 Secure	22	6.0 ± 1.0	NB
P	<i>Cladium mariscoides</i>	Smooth Twigrush				S3S4	4 Secure	36	10.8 ± 0.0	NB
P	<i>Eriophorum russeolum</i>	Russet Cottongrass				S3S4	4 Secure	2	3.1 ± 1.0	NB
P	<i>Triglochin gaspensis</i>	Gasp Arrowgrass				S3S4	4 Secure	18	2.3 ± 0.0	NB
P	<i>Spirodela polyrrhiza</i>	Great Duckweed				S3S4	4 Secure	34	46.8 ± 0.0	NB
P	<i>Corallorhiza maculata</i>	Spotted Coralroot				S3S4	3 Sensitive	11	12.4 ± 1.0	NB
P	<i>Calamagrostis stricta</i>	Slim-stemmed Reed Grass				S3S4	4 Secure	1	16.7 ± 2.0	NB
P	<i>Distichlis spicata</i>	Salt Grass				S3S4	4 Secure	3	85.7 ± 0.0	NB
P	<i>Potamogeton oakesianus</i>	Oakes' Pondweed				S3S4	4 Secure	49	3.0 ± 0.0	NB
P	<i>Montia fontana</i>	Water Blinks				SH	2 May Be At Risk	1	47.8 ± 1.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>Solidago caesia</i>	Blue-stemmed Goldenrod				SX	0.1 Extirpated	2	14.6 ± 1.0	NB
P	<i>Celastrus scandens</i>	Climbing Bittersweet				SX	0.1 Extirpated	2	96.6 ± 100.0	NB
P	<i>Carex swanii</i>	Swan's Sedge				SX	0.1 Extirpated	51	66.5 ± 0.0	NS

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The recipient of these data shall acknowledge the ACCDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

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Appendix B

2019 Bird survey date

Spring Passage migration/watch count surveys

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
1	2-Apr-19	Watch count	Coastal	7:30	9:15	1	HERG	3	Herring Gull	Larus argentatus	6	600	160	225	150	2522936.9	7353004.0	
2	2-Apr-19	Watch count	Coastal	7:30	9:15	1	HERG	3	Herring Gull	Larus argentatus	4	600	160	225	50	2522936.9	7353004.0	
3	2-Apr-19	Watch count	Coastal	7:30	9:15	1	ICGU	3	Iceland Gull	Larus glaucoides	1	400	160	45	50	2522868.5	7353191.9	
4	2-Apr-19	Watch count	Coastal	7:30	9:15	1	HERG	3	Herring Gull	Larus argentatus	1	150	160	225	100	2522783.0	7353426.8	
5	2-Apr-19	Watch count	Coastal	7:30	9:15	1	COEI	1	Common Eider	Somateria mollissima	2	900	150	45	2	2525262.4	7350068.5	
6	2-Apr-19	Watch count	Coastal	7:30	9:15	1	AMRO	6	American Robin	Turdus migratorius	1	800	245	335	50	2522006.7	7353229.7	migrants
7	2-Apr-19	Watch count	Coastal	7:30	9:15	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	250	160	225	200	2522817.2	7353332.9	
8	2-Apr-19	Watch count	Coastal	7:30	9:15	1	HERG	3	Herring Gull	Larus argentatus	2	400	160	225	100	2522868.5	7353191.9	
9	2-Apr-19	Watch count	Coastal	7:30	9:15	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	400	170	225	300	2522801.2	7353173.9	
10	2-Apr-19	Watch count	Coastal	7:30	9:15	1	GBBG	3	Great Black-backed Gull	Larus marinus	2	600	170	225	200	2522835.9	7352976.9	
11	2-Apr-19	Watch count	Coastal	7:30	9:15	1	SOSP	6	Song Sparrow	Melospiza melodia	1	50	40	0	0	2522763.8	7353606.1	
12	2-Apr-19	Watch count	Coastal	7:30	9:15	1	HERG	3	Herring Gull	Larus argentatus	1	300	170	225	75	2522783.8	7353272.4	
13	2-Apr-19	Watch count	Coastal	7:30	9:15	2	COEI	1	Common Eider	Somateria mollissima	2	600	160	45	2	2525017.6	7350284.1	
14	2-Apr-19	Watch count	Coastal	7:30	9:15	2	CORA	6	Common Raven	Corvus corax	1	600	358	0	0	2522710.8	7354167.4	
15	2-Apr-19	Watch count	Coastal	7:30	9:15	2	HERG	3	Herring Gull	Larus argentatus	1	500	170	225	50	2522818.5	7353075.4	
16	2-Apr-19	Watch count	Coastal	7:30	9:15	2	GBBG	3	Great Black-backed Gull	Larus marinus	2	350	170	225	50	2522792.5	7353223.1	
17	2-Apr-19	Watch count	Coastal	7:30	9:15	2	GBBG	3	Great Black-backed Gull	Larus marinus	1	350	170	225	50	2522792.5	7353223.1	
18	2-Apr-19	Watch count	Coastal	7:30	9:15	2	HERG	3	Herring Gull	Larus argentatus	3	200	358	225	150	2522724.7	7353767.7	overhead
19	2-Apr-19	Watch count	Coastal	7:30	9:15	2	COEI	1	Common Eider	Somateria mollissima	1	1000	190	225	2	2524638.8	7349863.1	
20	2-Apr-19	Watch count	Coastal	7:30	9:15	2	BLSC	1	Black Scoter	Melanitta nigra	35	1500	140	45	2	2525776.6	7349698.8	
21	2-Apr-19	Watch count	Coastal	7:30	9:15	2	HERG	3	Herring Gull	Larus argentatus	2	1000	145	45	150	2523305.3	7352748.6	
22	2-Apr-19	Watch count	Coastal	7:30	9:15	2	HERG	3	Herring Gull	Larus argentatus	2	1000	145	45	150	2523305.3	7352748.6	
23	2-Apr-19	Watch count	Coastal	7:30	9:15	3	COEI	1	Common Eider	Somateria mollissima	9	1000	155	45	1	2525235.0	7349941.6	
24	2-Apr-19	Watch count	Coastal	7:30	9:15	3	COEI	1	Common Eider	Somateria mollissima	15	1300	175	0	0	2524925.7	7349552.9	
25	2-Apr-19	Watch count	Coastal	7:30	9:15	3	COEI	1	Common Eider	Somateria mollissima	6	800	170	225	1	2524951.3	7350060.1	
26	2-Apr-19	Watch count	Coastal	7:30	9:15	3	HERG	3	Herring Gull	Larus argentatus	1	500	155	225	100	2522943.0	7353114.6	
27	2-Apr-19	Watch count	Coastal	7:30	9:15	3	BLSC	1	Black Scoter	Melanitta nigra	2	1000	150	45	10	2525312.4	7349981.9	
28	2-Apr-19	Watch Count	Quarry	10:00	12:00	1	CORA	6	Common Raven	Corvus corax	4	350	225	315	150	2522484.2	7353320.3	Resident
29	2-Apr-19	Watch Count	Quarry	10:00	12:00	1	CORA	6	Common Raven	Corvus corax	1	350	225	135	100	2522484.2	7353320.3	Resident
30	2-Apr-19	Watch Count	Quarry	10:00	12:00	1	PASS	6	Passerine		1	100	225	315	20	2522661.0	7353497.1	
31	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	1	AMKE	4	American Kestrel	Falco sparverius	1	100	97	90	150	2524329.7	7355476.5	
32	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	1	SOSP	6	Song Sparrow	Melospiza melodia	1	20	280	0	0	2524210.1	7355474.8	
33	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	400	122	0	30	2524569.0	7355259.3	
34	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	400	122	45	100	2524569.0	7355259.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
35	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	145	225	30	2524459.2	7355143.6	
36	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	300	89	0	75	2524529.8	7355476.5	
37	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	2	400	120	180	100	2524576.2	7355271.3	Probable pair
38	2-Apr-19	Watch Count	Paddy's Hill	12:30	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	20	120	225	15	2524247.1	7355461.3	perched ~100 m SW
39	5-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	15	85	120	5	2522746.6	7353569.1	
40	5-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	75	90	90	50	2522806.7	7353567.8	
41	5-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	75	90	100	50	2522806.7	7353567.8	
42	5-Apr-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	400	100	260	75	2523125.6	7353498.3	
43	5-Apr-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	4	500	110	350	100	2523201.5	7353396.8	
44	5-Apr-19	Watch Count	Quarry	9:00	3:00	2	NOHA	4	Northern Harrier	Circus cyaneus	1	400	180	260	40	2522731.7	7353167.8	
45	5-Apr-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	6	2000	75	320	150	2524663.6	7354085.4	
46	5-Apr-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	310	0	0	2522348.7	7353889.2	
47	5-Apr-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	6000	225	90	1000	2518489.1	7349325.2	
48	5-Apr-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	2	2000	70	340	150	2524611.1	7354251.8	
49	5-Apr-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	1350	120	350	50	2523900.8	7352892.8	
50	5-Apr-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	1500	190	10	100	2522471.2	7352090.6	
51	5-Apr-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	1800	40	60	200	2523888.7	7354946.7	
52	5-Apr-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		1	4000	130	225	100	2527659.2	7348218.2	
53	5-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBME	1	Red-breasted Merganser	Mergus serrator	1	100	125	45	100	2524676.9	7350732.0	
54	5-Apr-19	Watch Count	Coastal	9:00	3:00	1	ICGU	3	Iceland Gull	Larus glaucoides	1	200	165	225	150	2524646.8	7350596.2	
55	5-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	300	160	225	200	2524697.6	7350507.5	
56	5-Apr-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		3	800	170	45	300	2524733.9	7350001.6	prob. Ad HERG
57	5-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	500	160	45	100	2524766.0	7350319.6	
58	5-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	500	200	225	75	2524424.0	7350319.6	
59	5-Apr-19	Watch Count	Coastal	9:00	3:00	2	ICGU	3	Iceland Gull	Larus glaucoides	1	250	170	45	50	2524638.4	7350543.2	Iceland Gull
60	5-Apr-19	Watch Count	Coastal	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	200	190	270	30	2524560.3	7350592.4	water to forest
61	5-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	300	190	225	5	2524542.9	7350494.0	
62	5-Apr-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	100	150	225	75	2524645.0	7350702.8	
63	5-Apr-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	100	150	225	100	2524645.0	7350702.8	
64	5-Apr-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	200	125	45	75	2524758.8	7350674.7	
65	5-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	500	200	225	100	2524424.0	7350319.6	
66	5-Apr-19	Watch Count	Coastal	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	270	270	5	2524295.0	7350789.4	briefly above trees
67	5-Apr-19	Watch Count	Coastal	9:00	3:00	5	ROPI	7	Rock Pigeon	Columba livia	3	1000	245	0	75	2523688.7	7350366.8	around smoke stacks
68	5-Apr-19	Watch Count	Coastal	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	2	300	35	0	20	2524767.1	7351035.1	tree top level
69	5-Apr-19	Watch Count	Coastal	9:00	3:00	5	COEI	1	Common Eider	Somateria mollissima	1	150	145	225	1	2524681.0	7350666.5	
70	5-Apr-19	Watch Count	Coastal	9:00	3:00	6	COEI	1	Common Eider	Somateria mollissima	2	150	145	225	1	2524681.0	7350666.5	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
71	5-Apr-19	Watch Count	Coastal	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	200	200	225	20	2524526.6	7350601.5	
72	5-Apr-19	Watch Count	Coastal	9:00	3:00	6	PEFA	4	Peregrine Falcon - anatum/tundrius	Falco peregrinus pop. 1	1	250	250	25	5	2524360.1	7350703.9	
73	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	800	140	45	10	2523245.9	7352955.0	flew close to me
74	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	500	105	70	50	2523214.7	7353438.4	flying past
75	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	1000	120	0	10	2523597.7	7353067.8	calling from forest
76	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	4000	155	225	200	2524422.2	7349942.6	past smoke stacks
77	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	2	1000	345	225	200	2522024.6	7354274.9	toward Hwy 1
78	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	3000	150	45	150	2524231.7	7350969.7	near Colsen Cove
79	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	500	125	0	5	2523141.3	7353281.0	calling forest
80	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2500	80	160	200	2525193.7	7354001.9	very high, pron HERG
81	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	120	180	10	2522991.5	7353417.8	
82	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Picoides villosus	1	200	145	0	5	2522846.4	7353404.0	calling from forest
83	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	UNK	0	Unknown		3	200	80	45	10	2522928.7	7353602.5	RWBL?
84	7-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	2500	55	90	150	2524779.6	7355001.7	
85	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	40	0	5	2523374.5	7354333.8	in trees calling
86	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	5000	45	0	200	2526267.2	7357103.3	soaring
87	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	245	0	100	2520919.1	7352722.6	soaring
88	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	2	1000	170	45	100	2522905.3	7352583.0	
89	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	800	340	270	30	2522458.1	7354319.6	
90	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	200	325	45	400	2522617.0	7353731.6	very high
91	7-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	4	2500	270	315	200	2520231.7	7353567.8	flying ove river
92	7-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMRO	6	American Robin	Turdus migratorius	10	1000	160	70	50	2523073.7	7352628.1	small flock, Robin sized
93	7-Apr-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	150	290	0	0	2522590.7	7353619.1	In trees calling
94	7-Apr-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	500	330	270	30	2522481.7	7354000.8	
95	7-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	15	90	30	2522835.2	7353954.2	
96	7-Apr-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	2	1000	75	0	30	2523697.6	7353826.6	soaring
97	7-Apr-19	Watch Count	Quarry	9:00	3:00	5	RTHA	4	Red-tailed Hawk	Buteo jamaicensis	1	3000	215	225	200	2521011.0	7351110.3	climbed to ~ 600 m
98	7-Apr-19	Watch Count	Quarry	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	1	800	215	0	5	2522272.8	7352912.5	resident bird?
99	7-Apr-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	6	2500	190	270	15	2522297.6	7351105.8	soaring over power lines
100	7-Apr-19	Watch Count	Quarry	9:00	3:00	6	CAGO	1	Canada Goose	Branta canadensis	60	1500	120	90	500	2524030.7	7352817.8	V flying over
101	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	4	400	155	90	1	2524764.0	7350426.9	
102	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	100	160	270	3	2524629.2	7350695.4	just below cliff
103	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	ICGU	3	Iceland Gull	Larus glaucooides	1	250	160	45	3	2524680.5	7350554.5	
104	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	150	160	45	20	2524646.3	7350648.4	poss.same GBBG as above
105	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	BLSC	1	Black Scoter	Melanitta nigra	4	400	160	70	1	2524731.8	7350413.5	
106	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	6	250	160	70	10	2524680.5	7350554.5	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
107	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	ICGU	3	Iceland Gull	Larus glaucooides	1	150	160	70	20	2524646.3	7350648.4	
108	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	5	150	160	70	5	2524646.3	7350648.4	
109	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	4	150	160	70	3	2524646.3	7350648.4	
110	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	250	160	70	30	2524680.5	7350554.5	
111	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	LTDU	1	Long-tailed Duck	Clangula hyemalis	1	1500	170	205	1	2524855.5	7349312.2	
112	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	1	150	160	70	5	2524646.3	7350648.4	
113	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	35	2000	170	45	1	2524942.3	7348819.8	
114	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	MALL	1	Mallard	Anas platyrhynchos	2	300	230	225	10	2524365.2	7350596.6	
115	8-Apr-19	Watch Count	Coastal	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	400	230	225	50	2524288.6	7350532.3	soaring -> SW
116	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	20	180	70	10	2524595.0	7350769.4	flying at edge of cliff
117	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	COEI	1	Common Eider	Somateria mollissima	250	1000	180	45	1	2524595.0	7349789.4	
118	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	CAGO	1	Canada Goose	Branta canadensis	4	1000	160	45	2	2524937.0	7349849.7	
119	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	BLSC	1	Black Scoter	Melanitta nigra	35	2000	180	45	1	2524595.0	7348789.4	
120	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	4	100	160	70	10	2524629.2	7350695.4	
121	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	1500	150	250	100	2525345.0	7349490.4	high, soaring
122	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	GBBG	3	Great Black-backed Gull	Larus marinus	1	100	150	70	10	2524645.0	7350702.8	flew past, cliff height
123	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	BLSC	1	Black Scoter	Melanitta nigra	50	1500	150	70	1	2525345.0	7349490.4	
124	8-Apr-19	Watch Count	Coastal	9:00	3:00	2	ICGU	3	Iceland Gull	Larus glaucooides	1	20	140	225	75	2524607.9	7350774.1	almost overhead
125	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		2	1500	170	45	1	2524855.5	7349312.2	Black or Surf
126	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	250	10	0	0	2524638.4	7351035.6	heard calling
127	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	BLSC	1	Black Scoter	Melanitta nigra	30	700	160	45	1	2524834.4	7350131.6	mixed flock
128	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	SUSC	1	Surf Scoter	Melanitta perspicillata	10	700	160	45	1	2524834.4	7350131.6	mixed flock
129	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	ICGU	3	Iceland Gull	Larus glaucooides	1	30	180	45	5	2524595.0	7350759.4	close to cliff
130	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	50	150	45	5	2524620.0	7350746.1	close to cliff
131	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	BLSC	1	Black Scoter	Melanitta nigra	8	1500	170	70	1	2524855.5	7349312.2	
132	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	COEI	1	Common Eider	Somateria mollissima	9	750	150	70	1	2524970.0	7350139.9	
133	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	BLSC	1	Black Scoter	Melanitta nigra	5	1000	200	225	1	2524253.0	7349849.7	reverse migration
134	8-Apr-19	Watch Count	Coastal	9:00	3:00	3	BLSC	1	Black Scoter	Melanitta nigra	12	1500	170	70	300	2524855.5	7349312.2	
135	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	1000	160	335	300	2523073.7	7352628.1	overhead, turned to river
136	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	6	1500	140	225	400	2523695.9	7352418.7	over ridge
137	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	2	3000	170	225	400	2523252.6	7350613.4	
138	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	COGR	6	Common Grackle	Quiscalus quiscula	2	200	115	25	10	2522913.0	7353483.3	
139	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	TUVU	4	Turkey Vulture	Cathartes aura	1	4000	45	0	100	2525560.1	7356396.2	circling
140	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	4	2000	210	250	150	2521731.7	7351835.7	toward river
141	11-Apr-19	Watch Count	Quarry	9:00	3:00	1	MERG	1	Merganser		3	3000	130	70	250	2525029.8	7351639.4	RBME? Too far away
142	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	2000	210	250	250	2521731.7	7351835.7	to river

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
143	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	6	5000	160	70	300	2524441.8	7348869.3	assumed DCCO
144	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	2	4000	165	250	300	2523767.0	7349704.1	to river
145	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	165	0	400	2523508.2	7350670.0	circling
146	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	2000	210	250	200	2521731.7	7351835.7	to river
147	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	RAPTOR	4	Raptor		1	4000	70	0	50	2526490.5	7354935.9	NOHA?
148	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	2000	0	0	0	2522731.7	7355567.8	calling from forest
149	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	7	4000	155	70	300	2524422.2	7349942.6	assumed DCCO
150	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	285	0	5	2522345.3	7353671.3	prob. Perched, Resident?
151	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	3500	190	0	300	2522123.9	7350121.0	soaring
152	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	500	330	0	0	2522481.7	7354000.8	heard, Resident?
153	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	235	155	0	100	2522831.0	7353354.8	soaring
154	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	COME	1	Common Merganser	Mergus merganser	5	1000	200	45	150	2522389.7	7352628.1	looked like COME
155	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	70	5000	125	90	400	2526827.5	7350699.9	assumed DCCO
156	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	250	160	90	5	2522817.2	7353332.9	heard clalling
157	11-Apr-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	105	5000	170	90	500	2523599.9	7348643.8	assumed DCCO
158	11-Apr-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	30	4000	170	90	400	2523426.3	7349628.6	assumed DCCO
159	11-Apr-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	2	1500	215	0	150	2521871.3	7352339.1	same birds as before?
160	11-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	6	3000	260	315	50	2519777.3	7353046.9	over Mus. River
161	11-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	2000	160	45	100	2523415.7	7351688.4	Calling
162	11-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	3	2500	160	45	100	2523586.8	7351218.6	
163	11-Apr-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	200	185	180	5	2522714.3	7353368.6	sparrow size
164	11-Apr-19	Watch Count	Quarry	9:00	3:00	4	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	25	140	350	225	5	2522707.4	7353705.7	unexpected
165	11-Apr-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	135	0	200	2524853.0	7351446.5	
166	11-Apr-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	3000	140	0	150	2524660.1	7351269.7	
167	11-Apr-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	2	2000	0	0	20	2522731.7	7355567.8	Pair?
168	11-Apr-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	45	0	150	2524853.0	7355689.1	
169	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	700	180	90	100	2524595.0	7350089.4	
170	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		4	800	100	90	50	2525382.8	7350650.5	
171	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	800	100	90	100	2525382.8	7350650.5	assumed DCCO
172	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	DUCKSP	1	Duck		1	700	150	70	100	2524945.0	7350183.2	
173	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	4	600	150	70	75	2524895.0	7350269.8	
174	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	1	700	150	70	75	2524945.0	7350183.2	
175	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	4	800	150	70	10	2524995.0	7350096.6	
176	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		175	3000	140	90	1	2526523.4	7348491.3	
177	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	4	500	130	70	20	2524978.0	7350468.0	
178	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	500	130	70	100	2524978.0	7350468.0	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
179	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		200	3000	150	90	1	2526095.0	7348191.3	
180	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	7	700	150	70	30	2524945.0	7350183.2	
181	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	1	500	180	45	50	2524595.0	7350289.4	
182	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	4	400	150	70	30	2524795.0	7350443.0	
183	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1500	180	45	50	2524595.0	7349289.4	
184	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	BLSC	1	Black Scoter	Melanitta nigra	4	1500	170	45	1	2524855.5	7349312.2	
185	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		10	2000	140	70	1	2525880.6	7349257.3	
186	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	2	1500	140	45	200	2525559.2	7349640.3	
187	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1500	200	225	30	2524082.0	7349379.9	
188	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1000	150	225	100	2525095.0	7349923.4	
189	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	8	1500	150	45	10	2525345.0	7349490.4	
190	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		50	4000	160	25	1	2525963.1	7347030.6	scoter sp
191	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	DUCKSP	1	Duck		2	3000	140	45	150	2526523.4	7348491.3	
192	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	80	3000	170	25	1	2525115.9	7347835.0	
193	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		40	3000	170	25	1	2525115.9	7347835.0	scoter sp
194	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	1000	170	225	100	2524768.6	7349804.6	
195	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1000	160	205	50	2524937.0	7349849.7	
196	12-Apr-19	Watch Count	Coastal	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	300	325	0	0	2524422.9	7351035.1	called twice
197	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		70	3000	160	70	1	2525621.1	7347970.3	scoter sp
198	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	1000	190	225	200	2524421.4	7349804.6	
199	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	RBGU	3	Ring-billed Gull	Larus delawarensis	5	2000	180	70	30	2524595.0	7348789.4	
200	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	SOSP	6	Song Sparrow	Melospiza melodia	1	30	290	0	0	2524566.8	7350799.7	calling from bushes
201	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	2	2000	160	70	100	2525279.0	7348910.0	
202	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	BLSC	1	Black Scoter	Melanitta nigra	100	2000	150	70	1	2525595.0	7349057.3	ID fairly certain
203	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	RBME	1	Red-breasted Merganser	Mergus serrator	1	500	145	160	5	2524881.8	7350379.8	heading into Bay
204	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	COEI	1	Common Eider	Somateria mollissima	7	1500	150	70	1	2525345.0	7349490.4	
205	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	4000	150	70	300	2526595.0	7347325.3	
206	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	5000	150	70	300	2527095.0	7346459.3	
207	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		90	3000	160	70	1	2525621.1	7347970.3	
208	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	2000	160	225	100	2525279.0	7348910.0	
209	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	2	300	345	225	30	2524517.4	7351079.2	Pair?
210	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	400	210	225	75	2524395.0	7350443.0	
211	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	500	150	90	20	2524845.0	7350356.4	Long way out
212	12-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	600	130	70	50	2525054.6	7350403.7	
213	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	12	700	230	0	0	2524058.8	7350339.4	on water
214	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	GBBG	3	Great Black-backed Gull	Larus marinus	3	700	230	0	0	2524058.8	7350339.4	on water

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
215	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	RBGU	3	Ring-billed Gull	Larus delawarensis	2	150	130	0	20	2524709.9	7350693.0	missing direction
216	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	GBBG	3	Great Black-backed Gull	Larus marinus	2	100	150	70	30	2524645.0	7350702.8	
217	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	GULL	3	Gull		1	500	120	45	20	2525028.0	7350539.4	
218	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	RBGU	3	Ring-billed Gull	Larus delawarensis	1	100	120	70	10	2524681.6	7350739.4	Iceland Gull
219	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	BCCH	6	Black-capped Chickadee	Poecile atricapilla	1	50	20	0	0	2524612.1	7350836.4	calling from forest
220	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	300	0	0	2524162.0	7351039.4	calling from forest
221	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	5000	210	90	200	2522095.0	7346459.3	
222	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	4000	180	225	1	2524595.0	7346789.4	
223	12-Apr-19	Watch Count	Coastal	9:00	3:00	3	COEI	1	Common Eider	Somateria mollissima	2	2000	110	225	1	2526474.4	7350105.4	
224	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	SCOTERSP	1	Scoter		35	2500	150	70	1	2525845.0	7348624.3	prob BLSC
225	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	COEI	1	Common Eider	Somateria mollissima	175	3000	160	70	1	2525621.1	7347970.3	
226	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	SCOTERSP	1	Scoter		45	2500	155	0	0	2525651.5	7348523.6	parked
227	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	750	160	225	100	2524851.5	7350084.6	
228	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	COEI	1	Common Eider	Somateria mollissima	1	50	145	0	0	2524623.7	7350748.4	on water
229	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	GBBG	3	Great Black-backed Gull	Larus marinus	1	150	160	250	50	2524646.3	7350648.4	
230	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	20	160	45	5	2524601.8	7350770.6	along cliff
231	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	1	30	140	45	0	2524614.3	7350766.4	swimming
232	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	2	300	120	225	50	2524854.8	7350639.4	
233	12-Apr-19	Watch Count	Coastal	9:00	3:00	4	GULL	3	Gull		1	3000	140	45	100	2526523.4	7348491.3	
234	12-Apr-19	Watch Count	Coastal	9:00	3:00	5	COLO	3	Common Loon	Gavia immer	1	200	175	0	0	2524612.4	7350590.2	on water
235	12-Apr-19	Watch Count	Coastal	9:00	3:00	5	GULL	3	Gull		1	4000	140	45	100	2527166.2	7347725.2	
236	12-Apr-19	Watch Count	Coastal	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	3	150	25	3	2524745.0	7350529.6	along cliff
237	12-Apr-19	Watch Count	Coastal	9:00	3:00	6	BLSC	1	Black Scoter	Melanitta nigra	2	30	160	225	1	2525621.1	7347970.3	just off coast
238	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	150	0	0	2523231.7	7352701.8	Calling from forest
239	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	100	225	50	2523716.5	7353394.2	
240	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		3	3000	110	45	200	2525550.8	7352541.7	
241	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		2	2500	165	45	100	2523378.7	7351153.0	
242	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Picoides villosus	1	500	190	0	0	2522644.9	7353075.4	drumming
243	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	280	0	0	2521746.9	7353741.4	calling
244	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	500	170	0	0	2522818.5	7353075.4	calling
245	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	300	100	0	0	2523027.1	7353515.7	singing, moving SW?
246	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	50	110	225	2	2522778.7	7353550.7	flew past
247	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	290	0	0	2522261.9	7353738.8	calling
248	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	400	100	0	0	2523125.6	7353498.3	calling
249	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	500	140	225	150	2523053.1	7353184.8	flew over
250	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	GBHE	3	Great Blue Heron	Ardea herodias	1	2500	170	45	200	2523165.8	7351105.8	migrating

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
251	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	100	200	135	50	2522697.5	7353473.8	
252	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		2	3000	250	205	100	2519912.6	7352541.7	over Mus. River
253	14-Apr-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	200	150	0	0	2522831.7	7353394.6	singing,
254	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	500	180	225	75	2522731.7	7353067.8	flying to River
255	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	3	750	180	225	150	2522731.7	7352817.8	flying to River
256	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	100	20	135	2	2522765.9	7353661.8	flew past
257	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	3	1500	160	225	100	2523244.7	7352158.3	flying to River
258	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		2	2000	160	225	200	2523415.7	7351688.4	
259	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		1	2500	180	225	200	2522731.7	7351067.8	
260	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	CAGO	1	Canada Goose	Branta canadensis	8	4000	150	45	300	2524731.7	7350103.7	
261	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	400	270	0	0	2522331.7	7353567.8	
262	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	BCCH	6	Black-capped Chickadee	Poecile atricapilla	1	150	200	0	0	2522680.4	7353426.8	
263	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	2000	150	25	200	2523731.7	7351835.7	
264	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		5	2500	170	250	200	2523165.8	7351105.8	
265	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		3	2500	170	250	200	2523165.8	7351105.8	
266	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	DEJU	6	Dark-eyed Junco	Junco hyemalis	1	1		205	0	2522731.7	7354567.8	
267	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	2	750	170	225	200	2522861.9	7352829.2	
268	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	CAGO	1	Canada Goose	Branta canadensis	3	4000	160	45	300	2524099.8	7349809.0	
269	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		2	2500	170	225	250	2523165.8	7351105.8	
270	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	100	330	225	100	2522681.7	7353654.4	
271	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		1	2500	170	225	100	2523165.8	7351105.8	
272	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	2	1500	160	0	10	2523244.7	7352158.3	perched
273	14-Apr-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	2500	190	0	100	2522297.6	7351105.8	soaring
274	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	SAVS	6	Savannah Sparrow	Passerculus sandwichensis	1	10		0	0	2522731.7	7353667.8	on ground
275	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	1500	140	70	100	2523695.9	7352418.7	
276	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		2	3000	160	250	100	2523757.8	7350748.7	Parked diving
277	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	200	225	150	2521705.6	7350748.7	
278	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	1000	160	270	50	2523073.7	7352628.1	
279	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	240	0	200	2519267.6	7351567.8	
280	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	NOHA	4	Northern Harrier	Circus cyaneus	1	300	160	0	5	2522834.3	7353285.9	
281	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	7	2000	300	270	300	2520999.6	7354567.8	
282	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	3	2500	30	90	100	2523981.7	7355732.9	
283	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	400	100	0	0	2523125.6	7353498.3	
284	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	1000	270	270	50	2521731.7	7353567.8	
285	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	2	750	160	270	30	2522988.2	7352863.0	
286	14-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	2000	210	270	100	2521731.7	7351835.7	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
287	14-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	5	50	10	45	250	2522740.4	7353617.0	
288	14-Apr-19	Watch Count	Quarry	9:00	3:00	4	ICGU	3	Iceland Gull	Larus glaucoides	1	50	10	45	250	2522740.4	7353617.0	
289	14-Apr-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	90	0	150	2524731.7	7353567.8	soaring
290	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	7	500	150	90	200	2522981.7	7353134.8	
291	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	NOHA	4	Northern Harrier	Circus cyaneus	1	200	150	45	3	2522831.7	7353394.6	
292	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	4	250	150	225	50	2522856.7	7353351.3	
293	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	2	100	150	225	50	2522781.7	7353481.2	
294	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		4	2500	340	0	150	2521876.6	7355917.0	over Spruce lake ?
295	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		40	2500	340	0	100	2521876.6	7355917.0	over Spruce lake ?
296	14-Apr-19	Watch Count	Quarry	9:00	3:00	5	GBBG	3	Great Black-backed Gull	Larus marinus	1	50	150	45	100	2522756.7	7353524.5	almost overhead
297	14-Apr-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		4	2000	20	315	100	2523415.7	7355447.2	
298	14-Apr-19	Watch Count	Quarry	9:00	3:00	6	RAPTOR	4	Raptor		1	750	170	295	50	2522861.9	7352829.2	
299	14-Apr-19	Watch Count	Quarry	9:00	3:00	6	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2500	340	0	100	2521876.6	7355917.0	soaring
300	14-Apr-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	1250	140	0	25	2523535.2	7352610.2	soaring
301	14-Apr-19	Watch Count	Quarry	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	1	1000	130	45	100	2523497.7	7352925.0	
302	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	2750	180	45	75	2522731.7	7350817.8	
303	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	35	2750	170	45	150	2523209.2	7350859.6	
304	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	PEFA	4	Peregrine Falcon - anatum/tundrius	Falco peregrinus pop. 1	1	1500	140	270	50	2523695.9	7352418.7	to Mush. Marsh
305	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	10	3500	180	45	150	2522731.7	7350067.8	
306	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	9	3000	20	315	25	2523757.8	7356386.9	
307	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1000	90	90	20	2523731.7	7353567.8	circling
308	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	SOSP	6	Song Sparrow	Melospiza melodia	1	2		180	0	2522731.7	7353569.8	on ground
309	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	100	20	0	50	2522765.9	7353661.8	
310	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	PEFA	4	Peregrine Falcon - anatum/tundrius	Falco peregrinus pop. 1	1	100	10	0	75	2522749.1	7353666.3	prob PEFA same as before
311	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	100	10	315	75	2522749.1	7353666.3	
312	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	RAPTOR	4	Raptor		1	750	150	315	20	2523106.7	7352918.3	MERL?
313	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		2	3000	350	90	150	2522210.8	7356522.2	HERG?
314	17-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	80	0	0	2523470.3	7353698.0	Calling from forest
315	17-Apr-19	Watch Count	Quarry	9:00	3:00	2	COGR	6	Common Grackle	Quiscalus quiscula	1	50	200	45	0	2522714.6	7353520.8	not seen,heard overhead
316	17-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	150	220	0	0	2522635.3	7353452.9	Calling from forest
317	17-Apr-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	11	4000	160	45	300	2524099.8	7349809.0	
318	17-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	190	0	75	2522210.8	7350613.4	
319	17-Apr-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		2	1500	160	45	50	2523244.7	7352158.3	migrants?
320	17-Apr-19	Watch Count	Quarry	9:00	3:00	3	PEFA	4	Peregrine Falcon - anatum/tundrius	Falco peregrinus pop. 1	1	2500	190	315	50	2522297.6	7351105.8	prob PEFA same as before
321	17-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	100	0	0	2523470.3	7353437.6	Calling from forest
322	17-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	2000	200	225	100	2521021.6	7348869.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
323	17-Apr-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	3	5000	220	315	50	2520160.5	7350503.6	
324	17-Apr-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		1	4000	220	0	50	2522635.3	7353452.9	
325	17-Apr-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	2	150	240	0	5	2522558.5	7353467.8	
326	17-Apr-19	Watch Count	Quarry	9:00	3:00	4	NOHA	4	Northern Harrier	Circus cyaneus	1	200	100	70	3	2527655.7	7352699.6	hunting
327	17-Apr-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	16	5000	150	45	200	2523231.7	7352701.8	
328	17-Apr-19	Watch Count	Quarry	9:00	3:00	5	NOHA	4	Northern Harrier	Circus cyaneus	1	1000	130	45	5	2526561.9	7350353.9	prob same NOHA as above
329	17-Apr-19	Watch Count	Quarry	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	30	5000	130	45	200	2522808.3	7353503.5	
330	17-Apr-19	Watch Count	Quarry	9:00	3:00	6	NOHA	4	Northern Harrier	Circus cyaneus	1	100	160	45	10	2522731.7	7353567.8	young male?, different bird
331	17-Apr-19	Watch Count	Quarry	9:00	3:00	6	NOHA	4	Northern Harrier	Circus cyaneus	2	200	110	45	10	2522800.1	7353379.9	extra line - remove
332	17-Apr-19	Watch Count	Quarry	9:00	3:00	6	DUCKSP	1	Duck		11	4000	150	70	300	2524731.7	7350103.7	
333	17-Apr-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		14	3000	230	0	100	2520433.6	7351639.4	Soaring
334	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	250	170	45	1	2524638.4	7350543.2	
335	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	100	300	0	0	2524508.4	7350839.4	Calling from the forest
336	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	350	170	45	1	2524655.8	7350444.7	
337	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	400	170	45	1	2524664.5	7350395.5	
338	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	BRAN	1	Brant	Branta bernicla	12	700	170	45	1	2524716.6	7350100.0	
339	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	1	100	170	45	20	2524508.4	7350839.4	
340	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		38	1500	160	45	1	2524855.5	7349312.2	assumed BLSC
341	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		350	3000	170	45	1	2525115.9	7347835.0	assumed BLSC
342	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	DUCKSP	1	Duck		20	3000	170	45	1	2525115.9	7347835.0	prob LTDU
343	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		3	2000	160	45	2	2524942.3	7348819.8	
344	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		1	1500	160	45	2	2525108.0	7349379.9	
345	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	MERG	1	Merganser		2	2000	160	225	30	2524942.3	7348819.8	prob RBME
346	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	300	160	45	1	2524647.1	7350494.0	
347	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	100	310	90	5	2524629.2	7350695.4	
348	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	7	100	90	45	10	2524629.2	7350695.4	
349	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		80	1000	160	45	1	2524937.0	7349849.7	BLSC & S USC mix
350	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	1	300	250	0	0	2524697.6	7350507.5	on water
351	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		110	2500	160	45	1	2522679.9	7352396.4	
352	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	2	2000	160	45	1	2526595.0	7350789.4	
353	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	2000	160	45	2	2525279.0	7348910.0	
354	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		200	2000	160	45	1	2522715.6	7350105.4	
355	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		130	1500	160	45	1	2525108.0	7349379.9	
356	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	300	180	45	5	2524697.6	7350507.5	
357	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		55	2000	160	45	1	2525279.0	7348910.0	
358	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		11	1500	150	45	1	2525108.0	7349379.9	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
359	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	BRAN	1	Brant	Branta bernicla	4	400	150	45	2	2524595.0	7350389.4	
360	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	400	150	45	10	2524731.8	7350413.5	
361	18-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		12	800	150	45	1	2524995.0	7350096.6	
362	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		250	3000	160	45	1	2526095.0	7348191.3	
363	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	600	120	45	20	2524895.0	7350269.8	
364	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		2	1500	150	45	2	2525345.0	7349490.4	
365	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	CAGO	1	Canada Goose	Branta canadensis	3	1500	150	45	1	2525345.0	7349490.4	
366	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	COEI	1	Common Eider	Somateria mollissima	4	300	250	0	0	2524313.1	7350686.8	
367	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	COLO	3	Common Loon	Gavia immer	1	300	250	0	0	2524313.1	7350686.8	
368	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	RBME	1	Red-breasted Merganser	Mergus serrator	2	2500	160	45	1	2525450.1	7348440.2	prob RBME
369	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		70	1500	160	45	1	2525108.0	7349379.9	
370	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		310	2000	160	45	1	2525279.0	7348910.0	poss SUSC
371	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		200	1500	170	45	1	2524855.5	7349312.2	Flying edge of cliff
372	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		4	1500	150	45	1	2525345.0	7349490.4	
373	18-Apr-19	Watch Count	Coastal	9:00	3:00		HERG	3	Herring Gull	Larus argentatus	1	1000	180	45	5	2524595.0	7349789.4	
374	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		40	1500	150	45	1	2525345.0	7349490.4	
375	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	200	150	45	5	2524695.0	7350616.2	
376	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		300	2500	160	45	1	2525450.1	7348440.2	
377	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		350	2500	160	45	1	2525450.1	7348440.2	
378	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		20	750	150	45	2	2524970.0	7350139.9	
379	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	RBGU	3	Ring-billed Gull	Larus delawarensis	11	750	150	45	3	2524970.0	7350139.9	
380	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	750	150	45	2	2524970.0	7350139.9	
381	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	11	500	180	45	10	2524595.0	7350289.4	
382	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		200	2000	160	45	1	2525279.0	7348910.0	
383	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		150	1500	150	45	1	2525345.0	7349490.4	
384	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	RBME	1	Red-breasted Merganser	Mergus serrator	2	1000	150	45	5	2525095.0	7349923.4	
385	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		120	1500	140	45	1	2525559.2	7349640.3	heard BLSC scoter singing
386	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	GBBG	3	Great Black-backed Gull	Larus marinus	1	100	140	45	30	2524659.3	7350712.8	
387	18-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		2	1500	150	45	1	2525345.0	7349490.4	
388	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		30	1500	150	45	1	2525345.0	7349490.4	
389	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		2	1500	140	45	1	2525559.2	7349640.3	
390	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	200	340	90	10	2524526.6	7350977.3	
391	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	AMKE	4	American Kestrel	Falco sparverius	1	100	20	45	10	2524629.2	7350883.4	
392	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	200	150	225	20	2524695.0	7350616.2	
393	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	RBME	1	Red-breasted Merganser	Mergus serrator	11	100	150	45	5	2524645.0	7350702.8	
394	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	10	150	90	25	2524600.0	7350780.7	almost overhead

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
395	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		90	2000	150	45	1	2525595.0	7349057.3	
396	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	BLSC	1	Black Scoter	Melanitta nigra	7	100	140	45	1	2524659.3	7350712.8	close to shore
397	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		30	2000	170	45	1	2524942.3	7348819.8	
398	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	COEI	1	Common Eider	Somateria mollissima	10	2000	170	45	1	2524942.3	7348819.8	
399	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	1500	160	45	30	2525108.0	7349379.9	
400	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	GBBG	3	Great Black-backed Gull	Larus marinus	1	100	150	45	30	2524645.0	7350702.8	
401	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	GULL	3	Gull		1	1500	150	45	30	2525345.0	7349490.4	
402	18-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		5	2000	150	45	1	2525595.0	7349057.3	
403	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	SCOTERSP	1	Scoter		15	1500	140	45	1	2525559.2	7349640.3	
404	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	SCOTERSP	1	Scoter		40	2500	150	45	1	2525845.0	7348624.3	
405	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	750	150	45	30	2524970.0	7350139.9	
406	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	250	150	225	30	2524720.0	7350572.9	
407	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	SCOTERSP	1	Scoter		16	1500	140	45	1	2525559.2	7349640.3	
408	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	100	150	225	30	2524645.0	7350702.8	
409	18-Apr-19	Watch Count	Coastal	9:00	3:00	4	GULL	3	Gull		1	1000	150	45	30	2525095.0	7349923.4	
410	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	1	200	0	0	0	2524595.0	7350989.4	calling from forest
411	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		35	2000	170	45	1	2524942.3	7348819.8	
412	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	200	170	45	30	2524629.7	7350592.4	
413	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	200	10	45	100	2524629.7	7350986.4	over forest
414	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	2	200	120	225	100	2524768.2	7350689.4	
415	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		7	3000	130	45	1	2526893.1	7348861.0	
416	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	400	0	270	10	2524595.0	7351189.4	
417	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	3	500	20	270	20	2524766.0	7351259.2	
418	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	0	270	50	2524595.0	7351289.4	
419	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	GULL	3	Gull		2	100	180	225	75	2524595.0	7350689.4	
420	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	DUCKSP	1	Duck		300	3500	160	45	1	2525450.1	7348440.2	prob. Scoters
421	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	DUCKSP	1	Duck		75	3000	160	0	0	2525621.1	7347970.3	parked on water
422	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		350	2500	150	45	1	2525845.0	7348624.3	
423	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		110	3000	150	45	1	2526095.0	7348191.3	
424	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	35	1000	160	45	2	2524937.0	7349849.7	
425	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	DUCKSP	1	Duck		350	3500	160	45	1	2525792.1	7347500.5	Scoter/eider mix
426	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		5	1500	150	45	1	2525345.0	7349490.4	
427	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	DUCKSP	1	Duck		100	2000	160	0	0	2525279.0	7348910.0	parked on water
428	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		90	2000	160	45	1	2525279.0	7348910.0	
429	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		160	2500	160	45	1	2525450.1	7348440.2	
430	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		500	4000	160	45	1	2525963.1	7347030.6	far out

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
431	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	RBGU	3	Ring-billed Gull	Larus delawarensis	8	1500	150	45	5	2525345.0	7349490.4	
432	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		25	2000	160	45	1	2525279.0	7348910.0	
433	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		300	4000	140	45	1	2527166.2	7347725.2	
434	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	1000	120	45	10	2525461.0	7350289.4	
435	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		600	2000	140	45	1	2525880.6	7349257.3	birds departing off water
436	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		550	2500	140	45	1	2526202.0	7348874.3	
437	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		60	2500	140	45	1	2526202.0	7348874.3	
438	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		175	2500	150	45	1	2525845.0	7348624.3	
439	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		130	3000	150	45	1	2526095.0	7348191.3	
440	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	SCOTERSP	1	Scoter		75	4000	150	45	1	2526595.0	7347325.3	
441	18-Apr-19	Watch Count	Coastal	9:00	3:00	5	RBGU	3	Ring-billed Gull	Larus delawarensis	1	1500	150	45	10	2525345.0	7349490.4	
442	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	BRAN	1	Brant	Branta bernicla	40	1500	140	45	2	2525559.2	7349640.3	
443	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	13	100	120	45	30	2524681.6	7350739.4	
444	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		40	4000	160	45	1	2525963.1	7347030.6	
445	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	6	300	180	45	2	2524595.0	7350489.4	
446	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	SCOTERSP	1	Scoter		5	300	180	45	1	2524595.0	7350489.4	
447	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	COEI	1	Common Eider	Somateria mollissima	100	1500	180	45	1	2524595.0	7349289.4	
448	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	COEI	1	Common Eider	Somateria mollissima	30	2000	170	45	1	2524942.3	7348819.8	
449	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	SCOTERSP	1	Scoter		90	2000	180	45	1	2524595.0	7348789.4	
450	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	5	2000	180	45	1	2524595.0	7348789.4	
451	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		20	4000	160	45	1	2525963.1	7347030.6	prob Scoter
452	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		40	4000	140	45	1	2527166.2	7347725.2	
453	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	MERG	1	Merganser		4	2000	140	45	3	2525880.6	7349257.3	prob RBME
454	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		80	4000	170	45	1	2525289.6	7346850.2	
455	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	GULL	3	Gull		1	3000	150	45	30	2526095.0	7348191.3	
456	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	1	2000	150	45	40	2525595.0	7349057.3	
457	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	COLO	3	Common Loon	Gavia immer	2	450	250	0	0	2524172.1	7350635.5	diving
458	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	GBBG	3	Great Black-backed Gull	Larus marinus	2	50	180	45	30	2524595.0	7350739.4	flew past cliff
459	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	COEI	1	Common Eider	Somateria mollissima	2	400	170	45	2	2524664.5	7350395.5	
460	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	COEI	1	Common Eider	Somateria mollissima	150	2500	160	45	1	2525450.1	7348440.2	
461	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	RBGU	3	Ring-billed Gull	Larus delawarensis	1	200	150	45	10	2524695.0	7350616.2	
462	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		35	4000	180	45	1	2524595.0	7346789.4	
463	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		220	4500	160	45	1	2526134.1	7346560.8	
464	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		400	4500	180	45	1	2524595.0	7346289.4	
465	18-Apr-19	Watch Count	Coastal	9:00	3:00	6	DUCKSP	1	Duck		650	4000	170	45	1	2525289.6	7346850.2	
466	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	300	70	0	0	2523013.6	7353670.4	singing

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
467	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	13	2750	160	45	150	2523672.3	7350983.6	
468	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	SOSP	6	Song Sparrow	Melospiza melodia	1	200	220	0	0	2522603.1	7353414.6	singing
469	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	400	200	0	0	2522594.9	7353191.9	singing
470	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	10	270	90	25	2522721.7	7353567.8	
471	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	DUCKSP	1	Duck		2	400	90	45	30	2523131.7	7353567.8	mallard?
472	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	400	110	0	0	2523107.6	7353431.0	calling from forest
473	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	CAGO	1	Canada Goose	Branta canadensis	2	300	180	45	25	2522731.7	7353267.8	flew over valley
474	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	250	160	0	0	2522817.2	7353332.9	calling from forest
475	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Picoides villosus	1	250	160	0	0	2522817.2	7353332.9	calling from forest
476	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		5	3000	250	0	30	2519912.6	7352541.7	over Mus. River
477	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	4000	190	270	50	2522037.1	7349628.6	over Mus. River
478	24-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	3500	180	270	20	2522731.7	7350067.8	
479	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	2500	180	45	30	2522731.7	7351067.8	
480	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	OSPR	4	Osprey	Pandion haliaetus	1	1500	160	90	50	2523244.7	7352158.3	over ridge
481	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	PUFI	6	Purple Finch	Carpodacus purpureus	1	400	180	0	0	2522731.7	7353167.8	singing
482	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	38	5000	160	45	200	2524441.8	7348869.3	
483	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	100	0	0	2523716.5	7353394.2	calling from forest
484	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	90	0	0	2523031.7	7353567.8	singing
485	24-Apr-19	Watch Count	Quarry	9:00	3:00	2	BHVI	6	Blue-headed Vireo	Vireo solitarius	1	300	180	0	0	2522731.7	7353267.8	singing
486	24-Apr-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	400	210	0	0	2522531.7	7353221.4	calling from forest
487	24-Apr-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	11	2750	160	45	175	2523672.3	7350983.6	
488	24-Apr-19	Watch Count	Quarry	9:00	3:00	3	CAGO	1	Canada Goose	Branta canadensis	8	2500	220	135	100	2521124.7	7351652.7	
489	24-Apr-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	2	2500	160	225	75	2523586.8	7351218.6	
490	24-Apr-19	Watch Count	Quarry	9:00	3:00	3	NOHA	4	Northern Harrier	Circus cyaneus	1	300	100	225	5	2523027.1	7353515.7	
491	24-Apr-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	180	0	200	2522731.7	7350567.8	Circling
492	24-Apr-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	500	100	0	0	2523224.1	7353481.0	calling from forest
493	24-Apr-19	Watch Count	Quarry	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	90	2500	160	45	125	2523586.8	7351218.6	
494	24-Apr-19	Watch Count	Quarry	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	50	3500	160	45	150	2523928.8	7350278.9	
495	24-Apr-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	3000	30	0	100	2524231.7	7356165.9	Circling
496	24-Apr-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	30	3500	160	45	300	2523928.8	7350278.9	
497	24-Apr-19	Watch Count	Quarry	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	28	2500	160	45	200	2523586.8	7351218.6	
498	24-Apr-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	90	0	0	2523231.7	7353567.8	calling from forest
499	24-Apr-19	Watch Count	Quarry	9:00	3:00	6	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	10	0	0	2522818.5	7354060.2	calling from forest
500	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	MERL	4	Merlin	Falco columbarius	1	150	110	115	20	2524736.0	7350738.1	patrolling over water
501	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	300	120	45	50	2524854.8	7350639.4	
502	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU	3	Ring-billed Gull	Larus delawarensis	2	200	110	45	10	2524782.9	7350721.0	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
503	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	7	150	120	45	2	2524724.9	7350714.4	
504	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	400	150	225	50	2524795.0	7350443.0	
505	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	6	1000	150	45	1	2525095.0	7349923.4	
506	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DUCKSP	1	Duck		1	1000	150	45	1	2525095.0	7349923.4	
507	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	5	750	140	0	0	2525077.1	7350214.9	parked
508	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	RTLO	3	Red-throated Loon	Gavia stellata	1	300	230	0	0	2524518.4	7350725.1	parked
509	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	COEI	1	Common Eider	Somateria mollissima	1	1000	140	45	1	2525880.6	7349257.3	
510	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	CAGO	1	Canada Goose	Branta canadensis	3	750	320	270	20	2524582.1	7350804.7	
511	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	100	340	225	10	2524591.6	7350798.8	
512	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	14	2000	170	45	30	2524942.3	7348819.8	
513	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	20	240	225	30	2524577.7	7350779.4	almost overhead
514	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	2	10	170	45	5	2524596.7	7350779.6	
515	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		280	2000	180	45	1	2524595.0	7348789.4	
516	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		120	2500	160	45	1	2525450.1	7348440.2	
517	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	RBGU?	3	Ring-billed Gull	Larus delawarensis	12	2000	140	45	2	2525880.6	7349257.3	assumed RBGU
518	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	SCOTERSP	1	Scoter		175	3500	140	45	1	2526844.8	7348108.2	
519	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	30	270	90	20	2524565.0	7350789.4	almost overhead
520	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DUCKSP	1	Duck		6	1500	140	45	1	2525559.2	7349640.3	
521	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	SUSC	1	Surf Scoter	Melanitta perspicillata	1	100	180	225	1	2524595.0	7350689.4	
522	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	300	170	225	30	2524647.1	7350494.0	
523	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	1000	160	45	15	2524937.0	7349849.7	
524	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	2	1500	180	225	50	2524595.0	7349289.4	
525	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	300	180	225	1	2524595.0	7350489.4	
526	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	1000	170	45	2	2524768.6	7349804.6	
527	26-Apr-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	8	500	160	45	1	2524766.0	7350319.6	
528	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		120	2000	150	45	1	2525595.0	7349057.3	
529	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	MERL	4	Merlin	Falco columbarius	1	200	360	225	15	2524595.0	7350989.4	
530	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	2	50	240	225	50	2524551.7	7350764.4	almost overhead
531	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	5	1000	150	45	1	2525095.0	7349923.4	
532	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	3	750	130	45	200	2525169.5	7350307.3	
533	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	RBME	1	Red-breasted Merganser	Mergus serrator	13	1000	120	45	200	2525461.0	7350289.4	
534	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		25	1500	160	45	1	2525108.0	7349379.9	
535	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	400	110	225	1	2524970.9	7350652.6	
536	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	RTLO	3	Red-throated Loon	Gavia stellata	2	100	160	0	0	2524629.2	7350695.4	parked, diving
537	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	SCOTERSP	1	Scoter		150	2500	120	45	1	2526760.1	7349539.4	
538	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	BRAN	1	Brant	Branta bernicla	90	2000	150	45	200	2525595.0	7349057.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
539	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	4	1500	160	45	1	2525108.0	7349379.9	
540	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	DUCKSP	1	Duck		100	5000	160	45	1	2526305.1	7346090.9	
541	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	DUCKSP	1	Duck		1	2000	160	45	1	2525279.0	7348910.0	
542	26-Apr-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	2000	160	45	15	2525279.0	7348910.0	
543	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DUCKSP	1	Duck		100	5000	180	45	1	2524595.0	7345789.4	
544	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	500	300	0	0	2524162.0	7351039.4	calling
545	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	SOSP	6	Song Sparrow	Melospiza melodia	1	100	300	0	1	2524508.4	7350839.4	perched, singing
546	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DUCKSP	1	Duck		50	5000	150	45	1	2527095.0	7346459.3	
547	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		60	2000	170	45	1	2524942.3	7348819.8	
548	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DUCKSP	1	Duck		100	5000	170	45	1	2525463.2	7345865.4	
549	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	4	200	100	45	150	2524792.0	7350754.7	
550	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	200	190	225	1	2524560.3	7350592.4	
551	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	200	180	45	1	2524595.0	7350589.4	
552	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	400	150	45	30	2524795.0	7350443.0	
553	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	ICGU	3	Iceland Gull	Larus glaucooides	1	300	150	225	25	2524854.8	7350639.4	
554	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	GULL	3	Gull		1	1500	120	45	50	2524334.5	7352266.6	
555	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	150	350	0	0	2524621.0	7350641.7	calling, perched?
556	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	750	170	45	1	2524851.5	7350084.6	
557	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	SCOTERSP	1	Scoter		15	300	160	45	1	2524697.6	7350507.5	
558	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	RBME	1	Red-breasted Merganser	Mergus serrator	3	300	160	45	1	2524697.6	7350507.5	
559	26-Apr-19	Watch Count	Coastal	9:00	3:00	3	GULL	3	Gull		2	750	150	45	1	2524970.0	7350139.9	
560	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	RBGU	3	Ring-billed Gull	Larus delawarensis	1	150	100	45	10	2524742.7	7350763.4	
561	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	250	190	45	2	2524551.6	7350543.2	
562	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	4	1500	160	45	50	2525108.0	7349379.9	
563	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	SCOTERSP	1	Scoter		2	1500	170	45	1	2524855.5	7349312.2	
564	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	2	50	160	225	50	2524612.1	7350742.4	
565	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	50	110	225	50	2524642.0	7350772.3	
566	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	CAGO	1	Canada Goose	Branta canadensis	3	25	110	225	10	2524618.5	7350780.8	very close
567	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	75	120	45	10	2524660.0	7350751.9	
568	26-Apr-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	150	140	225	100	2524646.3	7350648.4	
569	26-Apr-19	Watch Count	Coastal	9:00	3:00	5	DUCKSP	1	Duck		35	5000	160	45	1	2526305.1	7346090.9	
570	26-Apr-19	Watch Count	Coastal	9:00	3:00	5	DUCKSP	1	Duck		10	4000	160	45	1	2525963.1	7347030.6	
571	26-Apr-19	Watch Count	Coastal	9:00	3:00	5	RBGU	3	Ring-billed Gull	Larus delawarensis	1	400	160	45	10	2524731.8	7350413.5	
572	26-Apr-19	Watch Count	Coastal	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	5	1000	140	225	100	2525237.8	7350023.4	
573	26-Apr-19	Watch Count	Coastal	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	4	400	140	45	75	2524852.1	7350483.0	
574	26-Apr-19	Watch Count	Coastal	9:00	3:00	6	SCOTERSP	1	Scoter		5	1000	160	45	1	2524937.0	7349849.7	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
575	26-Apr-19	Watch Count	Coastal	9:00	3:00	6	COLO	3	Common Loon	Gavia immer	2	3000	140	45	200	2526523.4	7348491.3	
576	26-Apr-19	Watch Count	Coastal	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	2	1500	140	225	50	2525559.2	7349640.3	prob HERG
577	26-Apr-19	Watch Count	Coastal	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	25	240	225	50	2524573.3	7350776.9	almost overhead
578	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	400	170	0	0	2522801.2	7353173.9	calling from forest
579	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	800	160	45	50	2523005.3	7352816.0	circling, ->NE
580	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	400	100	0	0	2523125.6	7353498.3	calling from forest
581	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	1000	100	225	75	2523716.5	7353394.2	
582	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	400	160	0	0	2522868.5	7353191.9	heard singing
583	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	COGR	6	Common Grackle	Quiscalus quiscula	1	100	360	45	50	2522731.7	7353667.8	not seen
584	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	400	180	0	0	2522731.7	7353167.8	singing from forest
585	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	500	200	0	0	2522560.7	7353098.0	calling from forest
586	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	TUVU	4	Turkey Vulture	Cathartes aura	1	1000	350	0	50	2522558.1	7354552.6	circling
587	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		5	2000	340	225	100	2522047.7	7355447.2	prob HERG
588	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	200	110	0	0	2522919.6	7353499.4	calling from forest
589	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		3	1000	180	225	150	2522731.7	7352567.8	
590	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	200	0	150	2521705.6	7350748.7	soaring
591	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	750	110	225	75	2523436.5	7353311.3	
592	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1500	110	225	75	2524141.2	7353054.8	over ridge
593	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	COGR	6	Common Grackle	Quiscalus quiscula	1	100	130	45	50	2522808.3	7353503.5	flying over calling
594	28-Apr-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	400	120	0	0	2523078.1	7353367.8	heard singing
595	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	700	130	45	0	2523267.9	7353117.8	
596	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	50	130	0	0	2522770.0	7353535.7	calling from forest
597	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	CAGO	1	Canada Goose	Branta canadensis	7	5000	180	45	200	2522731.7	7348567.8	
598	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	150	90	45	20	2522881.7	7353567.8	not seen
599	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	CAGO	1	Canada Goose	Branta canadensis	40	4000	150	45	200	2524731.7	7350103.7	
600	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	3	1500	130	45	100	2523880.8	7352603.6	
601	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	7	2000	140	225	200	2524017.3	7352035.7	
602	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	300	160	225	50	2522834.3	7353285.9	
603	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	10	2500	180	225	75	2522731.7	7351067.8	
604	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	GBBG	3	Great Black-backed Gull	Larus marinus	2	3000	180	0	75	2522731.7	7350567.8	circling, climbing
605	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		3	1500	170	45	100	2522992.2	7352090.6	
606	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	COGR	6	Common Grackle	Quiscalus quiscula	1	100	360	45	25	2522731.7	7353667.8	almost overhead, not seen
607	28-Apr-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		1	2500	340	225	100	2521876.6	7355917.0	
608	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	180	225	50	2522731.7	7352817.8	
609	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	360	0	0	2522731.7	7354067.8	calling from forest
610	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	130	225	50	2525029.8	7351639.4	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
611	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	AMRO	6	American Robin	Turdus migratorius	1	200	270	225	20	2522531.7	7353567.8	
612	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	3	500	270	225	75	2522231.7	7353567.8	
613	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	HAWO	7	Hairy Woodpecker	Picoides villosus	1	500	260	0	0	2522239.3	7353481.0	calling from forest
614	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	1500	150	225	25	2523481.7	7352268.8	
615	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		2	300	140	45	20	2522924.5	7353338.0	
616	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	10	1500	140	225	50	2523695.9	7352418.7	
617	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	COME	1	Common Merganser	Mergus merganser	2	300	180	225	75	2522731.7	7353267.8	
618	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2000	350	225	100	2522384.4	7355537.4	circling
619	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	2000	260	180	100	2520762.1	7353220.5	
620	28-Apr-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	10	1250	130	225	30	2523689.3	7352764.3	
621	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	200	130	225	10	2522884.9	7353439.2	
622	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	1750	140	45	30	2523856.6	7352227.2	
623	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		4	2500	140	225	75	2524338.7	7351652.7	prob HERG
624	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	750	180	225	30	2522731.7	7352817.8	
625	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	750	360	0	0	2522731.7	7354317.8	heard calling
626	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	50	130	45	30	2522770.0	7353535.7	almost overhead
627	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	750	350	225	50	2522601.5	7354306.4	
628	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	1	500	340	0	0	2522560.7	7354037.6	heard calling
629	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	3000	30	135	50	2524231.7	7356165.9	
630	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	500	130	45	50	2523114.7	7353246.4	
631	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	300	140	225	75	2522924.5	7353338.0	
632	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	2750	150	45	100	2524106.7	7351186.2	
633	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	1000	150	45	150	2523231.7	7352701.8	
634	28-Apr-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	3	300	140	90	50	2522924.5	7353338.0	
635	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	2	30	90	45	250	2522761.7	7353567.8	very high
636	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	300	120	225	50	2522991.5	7353417.8	
637	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	500	160	45	100	2522902.7	7353098.0	
638	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		10	3500	210	0	150	2520981.7	7350536.7	circling over Mush. River
639	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	3	2000	100	225	100	2524701.3	7353220.5	
640	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	1000	150	225	30	2523231.7	7352701.8	
641	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	1000	150	225	20	2523231.7	7352701.8	
642	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	1000	150	225	50	2523231.7	7352701.8	
643	28-Apr-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	25	4000	150	45	150	2524731.7	7350103.7	
644	28-Apr-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		2	2500	150	45	150	2523981.7	7351402.7	
645	28-Apr-19	Watch Count	Quarry	9:00	3:00	6	CAGO	1	Canada Goose	Branta canadensis	45	4000	160	45	300	2524099.8	7349809.0	
646	28-Apr-19	Watch Count	Quarry	9:00	3:00	6	GBBG	3	Great Black-backed Gull	Larus marinus	1	400	150	225	20	2522931.7	7353221.4	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
647	28-Apr-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		2	1000	160	45	100	2523073.7	7352628.1	
648	28-Apr-19	Watch Count	Quarry	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	1	2500	170	225	25	2523165.8	7351105.8	
649	1-May-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		2	2000	220	270	50	2523309.4	7349257.3	
650	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1000	170	45	25	2524768.6	7349804.6	
651	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	2	1000	170	45	25	2524768.6	7349804.6	
652	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1500	170	225	25	2524855.5	7349312.2	
653	1-May-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	500	150	225	1	2524845.0	7350356.4	
654	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1000	160	225	50	2524937.0	7349849.7	
655	1-May-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	300	140	45	1	2524787.8	7350559.6	
656	1-May-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		60	2500	190	0	2	2524160.9	7348327.4	circling over fishing boats
657	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1500	230	270	20	2523445.9	7349825.2	
658	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	500	160	45	25	2524766.0	7350319.6	
659	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	200	140	45	25	2524723.6	7350636.2	
660	1-May-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		1	2500	150	90	50	2525845.0	7348624.3	
661	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	750	180	225	50	2524595.0	7350039.4	
662	1-May-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		1	1500	160	225	75	2525108.0	7349379.9	
663	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	100	160	225	30	2524629.2	7350695.4	close to shore
664	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	1000	180	90	30	2524595.0	7349789.4	
665	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	1000	160	270	2	2524937.0	7349849.7	
666	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	200	140	45	30	2524723.6	7350636.2	
667	1-May-19	Watch Count	Coastal	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	4	750	130	45	15	2525169.5	7350307.3	following boats
668	1-May-19	Watch Count	Coastal	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	1500	210	225	50	2523845.0	7349490.4	
669	1-May-19	Watch Count	Coastal	9:00	3:00	1	BLGU	3	Black Guillemot	Cephus grylle	1	150	215	0	0	2524509.0	7350666.5	parked off rocks
670	1-May-19	Watch Count	Coastal	9:00	3:00	1	GULL	3	Gull		20	2500	160	225	2	2525450.1	7348440.2	following fishing boat
671	1-May-19	Watch Count	Coastal	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	3	3000	180	0	200	2524595.0	7347789.4	circling
672	1-May-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	2500	180	225	50	2524595.0	7348289.4	
673	1-May-19	Watch Count	Coastal	9:00	3:00	2	COEI	1	Common Eider	Somateria mollissima	1	1500	120	225	1	2525894.0	7350039.4	
674	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	500	150	225	30	2524845.0	7350356.4	
675	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	250	160	225	25	2524680.5	7350554.5	
676	1-May-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	1500	160	225	5	2525108.0	7349379.9	
677	1-May-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		3	1500	150	225	20	2525345.0	7349490.4	
678	1-May-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	1500	150	225	20	2525345.0	7349490.4	
679	1-May-19	Watch Count	Coastal	9:00	3:00	2	RBME	1	Red-breasted Merganser	Mergus serrator	1	1000	150	225	5	2525095.0	7349923.4	
680	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	1000	160	225	50	2524937.0	7349849.7	
681	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	2	200	140	225	25	2524723.6	7350636.2	
682	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	50	150	225	25	2524620.0	7350746.1	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
683	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	1500	180	225	50	2524595.0	7349289.4	
684	1-May-19	Watch Count	Coastal	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	200	160	225	10	2524663.4	7350601.5	
685	1-May-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	2500	160	225	30	2525450.1	7348440.2	
686	1-May-19	Watch Count	Coastal	9:00	3:00	2	GULL	3	Gull		1	2500	150	45	10	2525845.0	7348624.3	
687	1-May-19	Watch Count	Coastal	9:00	3:00	3	GULL	3	Gull		1	2500	150	225	150	2525845.0	7348624.3	
688	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	300	170	45	10	2524647.1	7350494.0	
689	1-May-19	Watch Count	Coastal	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	400	350	0	0	2524525.5	7351183.3	calling from forest
690	1-May-19	Watch Count	Coastal	9:00	3:00	3	GBBG	3	Great Black-backed Gull	Larus marinus	1	1500	160	225	50	2525108.0	7349379.9	
691	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	250	150	45	50	2524720.0	7350572.9	
692	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	500	140	225	50	2524916.4	7350406.4	
693	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	1000	150	225	10	2525095.0	7349923.4	
694	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	100	140	45	20	2524659.3	7350712.8	
695	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	400	140	45	75	2524852.1	7350483.0	
696	1-May-19	Watch Count	Coastal	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	750	90	45	50	2525345.0	7350789.4	
697	1-May-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	2	50	90	45	25	2524645.0	7350789.4	
698	1-May-19	Watch Count	Coastal	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	100	360	90	0	2524595.0	7350889.4	calling from forest
699	1-May-19	Watch Count	Coastal	9:00	3:00	4	BLGU	3	Black Guillemot	Cephus grylle	1	50	180	0	0	2524595.0	7350739.4	parked on water
700	1-May-19	Watch Count	Coastal	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	1	50	180	0	0	2524595.0	7350739.4	parked on water
701	1-May-19	Watch Count	Coastal	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	10	180	45	50	2524595.0	7350779.4	flew along cliff
702	1-May-19	Watch Count	Coastal	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	125	280	0	3	2524471.9	7350811.1	perched
703	1-May-19	Watch Count	Coastal	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	100	160	225	10	2524629.2	7350695.4	
704	1-May-19	Watch Count	Coastal	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	500	90	45	100	2525095.0	7350789.4	
705	1-May-19	Watch Count	Coastal	9:00	3:00	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2000	80	45	100	2526564.6	7351136.7	circling over water
706	1-May-19	Watch Count	Coastal	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	10	160	45	5	2524598.4	7350780.0	flew along cliff
707	1-May-19	Watch Count	Coastal	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	500	300	45	20	2524162.0	7351039.4	
708	2-May-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	300	90	0	30	2523031.7	7353567.8	
709	2-May-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	200	180	270	30	2522731.7	7353367.8	
710	2-May-19	Watch Count	Quarry	9:00	3:00	1	UNK	0	Unknown		1	1500	360	270	30	2522731.7	7355067.8	raptor?
711	2-May-19	Watch Count	Quarry	9:00	3:00	1	CAGO	1	Canada Goose	Branta canadensis	1	1500	350	270	50	2522471.2	7355045.0	
712	2-May-19	Watch Count	Quarry	9:00	3:00	1	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	1000	280	270	50	2521746.9	7353741.4	circling
713	2-May-19	Watch Count	Quarry	9:00	3:00	1	BHVI	6	Blue-headed Vireo	Vireo solitarius	1	300	160	0	5	2522834.3	7353285.9	singing
714	2-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	300	270	0	5	2522431.7	7353567.8	singing
715	2-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1000	220	0	150	2522088.9	7352801.8	circling
716	2-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1500	70	0	0	2524141.2	7354080.8	calling from forest
717	2-May-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	1500	340	270	20	2522218.7	7354977.3	treetop level
718	2-May-19	Watch Count	Quarry	9:00	3:00	2	BWHA	4	Broad-winged Hawk	Buteo platypterus	2	2000	315	0	20	2521317.5	7354982.0	poss. Pair?

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
719	2-May-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	2000	310	270	50	2521199.6	7354853.4	
720	2-May-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	2	3000	30	0	100	2524231.7	7356165.9	
721	2-May-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	2	3000	350	0	75	2522210.8	7356522.2	
722	2-May-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	<i>Carduelis tristis</i>	1	10		270	50	2522731.7	7353577.8	
723	2-May-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	50	220	135	25	2522699.6	7353529.5	
724	2-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	2000	10	0	75	2523079.0	7355537.4	
725	2-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		3	1500	360	90	25	2522731.7	7355067.8	HERG or RBGU
726	2-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		7	2000	10	90	25	2523079.0	7355537.4	
727	2-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		3	1500	20	90	25	2523244.7	7354977.3	
728	2-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		2	2000	10	90	25	2523079.0	7355537.4	
729	2-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		2	2000	10	90	25	2523079.0	7355537.4	
730	2-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		5	2000	20	90	25	2523415.7	7355447.2	
731	2-May-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	<i>Corvus brachyrhynchos</i>	1	1000	180	0	0	2522731.7	7352567.8	calling from forest
732	2-May-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	400	140	225	75	2522988.8	7353261.4	
733	2-May-19	Watch Count	Quarry	9:00	3:00	5	BWHA	4	Broad-winged Hawk	<i>Buteo platypterus</i>	1	500	160	45	75	2522902.7	7353098.0	young bird?
734	2-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	3000	70	0	100	2525550.8	7354593.9	
735	2-May-19	Watch Count	Quarry	9:00	3:00	5	SSHA	4	Sharp-shinned Hawk	<i>Accipiter striatus</i>	1	300	90	205	25	2523031.7	7353567.8	flew along valley
736	2-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		1	2000	360	90	50	2522731.7	7355567.8	
737	2-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		3	1500	360	90	30	2522731.7	7355067.8	
738	2-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		8	1500	360	90	30	2522731.7	7355067.8	
739	2-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		2	1500	10	90	50	2522992.2	7355045.0	
740	2-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	1500	130	180	25	2523880.8	7352603.6	
741	2-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		10	2000	30	0	100	2523731.7	7355299.9	circling
742	2-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	2000	100	225	150	2524701.3	7353220.5	
743	2-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	1500	160	225	50	2523244.7	7352158.3	
744	2-May-19	Watch Count	Quarry	9:00	3:00	6	HERG	3	Herring Gull	<i>Larus argentatus</i>	1	1000	110	225	100	2523671.4	7353225.8	
745	2-May-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	<i>Corvus brachyrhynchos</i>	1	2000	170	45	50	2523079.0	7351598.2	
746	6-May-19	Watch Count	Quarry	9:00	3:00	1	CAGO	1	Canada Goose	<i>Branta canadensis</i>	1	1000	350	45	30	2522558.1	7354552.6	
747	6-May-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	<i>Corvus brachyrhynchos</i>	1	2000	340	0	50	2522047.7	7355447.2	
748	6-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		2	3000	340	0	100	2521705.6	7356386.9	
749	6-May-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	<i>Carpodacus purpureus</i>	1	400	160	0	10	2522868.5	7353191.9	singing from forest
750	6-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	<i>Turdus migratorius</i>	1	300	260	0	10	2522436.3	7353515.7	calling from forest
751	6-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	<i>Corvus corax</i>	1	2000	30	90	50	2523731.7	7355299.9	landed in tree
752	6-May-19	Watch Count	Quarry	9:00	3:00	1	GBHE	3	Great Blue Heron	<i>Ardea herodias</i>	1	500	110	45	100	2523201.5	7353396.8	
753	6-May-19	Watch Count	Quarry	9:00	3:00	1	COLO	3	Common Loon	<i>Gavia immer</i>	1	1000	110	45	200	2523671.4	7353225.8	
754	6-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	<i>Zonotrichia albicollis</i>	1	500	160	0	5	2522902.7	7353098.0	singing from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
755	6-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	750	40	315	20	2523213.8	7354142.3	
756	6-May-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	500	330	90	50	2522481.7	7354000.8	
757	6-May-19	Watch Count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2000	270	0	50	2520731.7	7353567.8	
758	6-May-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	3	2000	90	115	100	2524731.7	7353567.8	
759	6-May-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	2500	160	45	50	2523586.8	7351218.6	
760	6-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	300	270	180	30	2522431.7	7353567.8	
761	6-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	400	20	0	5	2522868.5	7353943.7	singing from forest
762	6-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	50	190	270	10	2522723.0	7353518.6	
763	6-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	3	100	240	180	10	2522645.1	7353517.8	
764	6-May-19	Watch Count	Quarry	9:00	3:00	2	GBBG	3	Great Black-backed Gull	Larus marinus	1	750	10	90	100	2522861.9	7354306.4	
765	6-May-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	100	90	180	30	2522831.7	7353567.8	
766	6-May-19	Watch Count	Quarry	9:00	3:00	2	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	1500	260	0	100	2521254.5	7353307.3	circling
767	6-May-19	Watch Count	Quarry	9:00	3:00	2	BWHA	4	Broad-winged Hawk	Buteo platypterus	2	2000	210	0	100	2521731.7	7351835.7	interacting, circling
768	6-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	220	0	100	2521767.5	7352418.7	circling
769	6-May-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	2500	180	45	100	2522731.7	7351067.8	
770	6-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	170	0	150	2523252.6	7350613.4	circling
771	6-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	240	0	50	2521432.7	7352817.8	
772	6-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		4	2500	360	0	100	2522731.7	7356067.8	circling
773	6-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	7	2500	350	0	100	2522297.6	7356029.8	circling (small kettle)
774	6-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		7	2500	160	45	150	2523586.8	7351218.6	
775	6-May-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	500	170	135	25	2522818.5	7353075.4	ribin size
776	6-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		3	1500	350	90	50	2522471.2	7355045.0	
777	6-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	350	0	100	2522471.2	7355045.0	circling
778	6-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		2	2000	20	0	100	2523415.7	7355447.2	circling
779	6-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		3	2000	20	90	50	2523415.7	7355447.2	
780	6-May-19	Watch Count	Quarry	9:00	3:00	5	SWALLOW	6	Swallow		1	500	10	90	50	2522818.5	7354060.2	
781	6-May-19	Watch Count	Quarry	9:00	3:00	5	WOODPECKER	7	Woodpecker		1	300	210	0	15	2522581.7	7353308.0	flew in, HAWO?
782	6-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		5	2000	350	0	100	2522384.4	7355537.4	circling
783	6-May-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	1000	330	270	75	2522231.7	7354433.8	
784	6-May-19	Watch Count	Quarry	9:00	3:00	5	MERL	4	Merlin	Falco columbarius	1	10	130	0	1	2522739.4	7353561.4	close
785	6-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	230	0	50	2521199.6	7352282.2	circling
786	6-May-19	Watch Count	Quarry	9:00	3:00	6	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	290	0	0	2522261.9	7353738.8	calling from forest
787	6-May-19	Watch Count	Quarry	9:00	3:00	6	SWALLOW	6	Swallow		1	300	160	45	30	2522834.3	7353285.9	Tree Swallow?
788	11-May-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	110	180	30	2523201.5	7353396.8	
789	11-May-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	500	180	225	100	2522731.7	7353067.8	
790	11-May-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	5	200	45	20	2522730.0	7353563.1	Circling

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
791	11-May-19	Watch Count	Quarry	9:00	3:00	1	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	360	270	100	2522731.7	7355567.8	
792	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2000	360	45	75	2522731.7	7355567.8	
793	11-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	11	300	200	0	5	2522629.1	7353285.9	Circling
794	11-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	400	160	0	5	2522868.5	7353191.9	Calling from forest
795	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2000	360	0	50	2522731.7	7355567.8	
796	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2000	360	45	50	2522731.7	7355567.8	
797	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2000	360	45	50	2522731.7	7355567.8	
798	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2500	360	45	50	2522731.7	7356067.8	
799	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		3	3000	340	0	50	2521705.6	7356386.9	
800	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		4	2500	10	45	100	2523165.8	7356029.8	
801	11-May-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	300	90	180	150	2523031.7	7353567.8	Singing in forest
802	11-May-19	Watch Count	Quarry	9:00	3:00	1	GBBG	3	Great Black-backed Gull	Larus marinus	2	1000	20	180	150	2523073.7	7354507.5	Singing in forest
803	11-May-19	Watch Count	Quarry	9:00	3:00	1	SWALLOW	6	Swallow		1	500	330	270	30	2522481.7	7354000.8	Circling
804	11-May-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	300	90	0	5	2523031.7	7353567.8	
805	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		5	2000	20	45	50	2523415.7	7355447.2	
806	11-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	100	0	5	2523027.1	7353515.7	
807	11-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	300	100	0	5	2523027.1	7353515.7	Circling
808	11-May-19	Watch Count	Quarry	9:00	3:00	1	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	40	0	0	2523053.1	7353950.8	calling from forest
809	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		5	2000	20	45	50	2523415.7	7355447.2	
810	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		3	2000	20	270	50	2523415.7	7355447.2	heading to lake
811	11-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		4	2000	20	45	50	2523415.7	7355447.2	
812	11-May-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	1000	20	225	150	2523073.7	7354507.5	heading to Mush. River
813	11-May-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		6	2000	20	45	50	2523415.7	7355447.2	
814	11-May-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		11	2000	20	45	50	2523415.7	7355447.2	
815	11-May-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	2	10	120	225	30	2522740.4	7353562.8	overhead
816	11-May-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		2	2000	20	45	50	2523415.7	7355447.2	
817	11-May-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		3	2000	10	270	50	2523079.0	7355537.4	to Lake
818	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		4	2000	20	45	50	2523415.7	7355447.2	
819	11-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	3	2500	40	270	100	2524338.7	7355482.9	circling, ->W later
820	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		2	2000	20	270	50	2523415.7	7355447.2	
821	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		2	2000	20	45	50	2523415.7	7355447.2	
822	11-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	500	90	225	100	2523231.7	7353567.8	
823	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		4	2000	20	45	50	2523415.7	7355447.2	
824	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		2	2000	20	270	50	2523415.7	7355447.2	
825	11-May-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	60	45	50	2523381.2	7353942.8	
826	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		9	2000	20	45	50	2523415.7	7355447.2	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
827	11-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	260	0	100	2521254.5	7353307.3	circling,
828	11-May-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	2000	160	45	150	2523415.7	7351688.4	
829	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		8	4000	150	225	200	2524731.7	7350103.7	
830	11-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		6	2000	20	45	50	2523415.7	7355447.2	
831	11-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	750	20	45	150	2522988.2	7354272.6	circling
832	11-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	750	20	270	150	2522988.2	7354272.6	
833	11-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		8	3000	40	0	200	2524660.1	7355865.9	circling
834	11-May-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	3	2000	260	0	150	2520762.1	7353220.5	circling
835	11-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		15	2000	20	45	50	2522902.7	7354037.6	
836	11-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	4	500	80	90	400	2522780.9	7353576.5	
837	11-May-19	Watch Count	Quarry	9:00	3:00	5	HERG	3	Herring Gull	Larus argentatus	1	50	270	0	200	2520731.7	7353567.8	
838	11-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	50	0	20	2524263.8	7354853.4	tree top level
839	11-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		10	2000	20	45	50	2523415.7	7355447.2	
840	11-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		12	2000	20	45	50	2523415.7	7355447.2	one flock
841	11-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		10	2000	20	45	50	2523415.7	7355447.2	
842	11-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		14	2000	20	45	50	2523244.7	7354977.3	
843	11-May-19	Watch Count	Quarry	9:00	3:00	5	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	1500	20	270	30	2522988.2	7354272.6	
844	11-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	750	10	0	50	2522861.9	7354306.4	soaring over forest
845	11-May-19	Watch Count	Quarry	9:00	3:00	6	GBBG	3	Great Black-backed Gull	Larus marinus	1	750	30	0	150	2524231.7	7356165.9	
846	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		16	3000	40	45	200	2524017.3	7355099.9	high flock
847	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		1	2000	40	45	50	2524017.3	7355099.9	
848	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		2	2000	360	270	50	2522731.7	7355567.8	
849	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		2	2000	20	45	50	2523415.7	7355447.2	
850	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		1	2000	20	270	50	2523415.7	7355447.2	
851	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		2	2000	20	270	50	2523415.7	7355447.2	
852	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		1	2000	20	270	50	2523415.7	7355447.2	
853	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		1	2000	20	45	50	2523415.7	7355447.2	
854	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		5	3000	40	45	150	2524660.1	7355865.9	
855	11-May-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull		1	2000	20	45	50	2523415.7	7355447.2	
856	16-May-19	Watch Count	Quarry	9:00	3:00	1	PUDI	6	Purple Finch	Carpodacus purpureus	1	300	170	0	0	2522783.8	7353272.4	Singing from forest
857	16-May-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	750	190	270	25	2522601.5	7352829.2	Robin size
858	16-May-19	Watch Count	Quarry	9:00	3:00	1	BCCH	6	Black-capped Chickadee	Poecile atricapilla	1	150	150	0	3	2522806.7	7353437.9	Calling from forest
859	16-May-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	100	180	45	20	2522731.7	7353467.8	calling in flight
860	16-May-19	Watch Count	Quarry	9:00	3:00	1	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	750	20	0	10	2522988.2	7354272.6	Calling from forest
861	16-May-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	50	1500	160	45	400	2523244.7	7352158.3	
862	16-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1000	140	0	10	2523374.5	7352801.8	Calling from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
863	16-May-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	1500	170	0	400	2522992.2	7352090.6	
864	16-May-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	350	90	10	2522601.5	7354306.4	
865	16-May-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		1	2000	20	45	30	2523415.7	7355447.2	
866	16-May-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull		1	2000	330	270	30	2521731.7	7355299.9	
867	16-May-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	30	40	0	10	2522751.0	7353590.8	heard overhead
868	16-May-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	400	170	0	5	2522801.2	7353173.9	
869	16-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	2	2500	30	0	50	2523981.7	7355732.9	circling
870	16-May-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	2500	30	0	50	2523981.7	7355732.9	
871	16-May-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull		1	2000	330	270	100	2521731.7	7355299.9	
872	16-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		5	3000	40	0	300	2524660.1	7355865.9	circling
873	16-May-19	Watch Count	Quarry	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	1	2000	160	45	0	2523415.7	7351688.4	not seen
874	16-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		1	2000	20	45	50	2523415.7	7355447.2	
875	16-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		2	2000	20	45	50	2523415.7	7355447.2	
876	16-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	1000	10	0	150	2522905.3	7354552.6	Circling
877	16-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	50	180	100	2524263.8	7354853.4	
878	16-May-19	Watch Count	Quarry	9:00	3:00	5	AMRO	6	American Robin	Turdus migratorius	1	250	270	0	5	2522481.7	7353567.8	calling from forest
879	16-May-19	Watch Count	Quarry	9:00	3:00	6	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	1500	40	0	300	2523695.9	7354716.9	Circling
880	16-May-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	60	180	100	2523597.7	7354067.8	
881	16-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	50	0	100	2524263.8	7354853.4	Circling
882	16-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	5	1500	190	0	200	2522471.2	7352090.6	Circling
883	16-May-19	Watch Count	Quarry	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	1	500	90	0	75	2523231.7	7353567.8	
884	19-May-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	300	80	0	0	2523027.1	7353619.9	singing from forest
885	19-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	400	90	0	0	2523131.7	7353567.8	singing from forest
886	19-May-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	190	0	20	2522723.0	7353518.6	
887	19-May-19	Watch Count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	300	80	0	0	2523027.1	7353619.9	singing from forest
888	19-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	140	0	0	2522924.5	7353338.0	singing from forest
889	19-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	190	0	0	2522679.6	7353272.4	singing from forest
890	19-May-19	Watch Count	Quarry	9:00	3:00	1	RAPTOR	4	Raptor		1	500	180	180	300	2522731.7	7353067.8	large, NOGO?
891	19-May-19	Watch Count	Quarry	9:00	3:00	1	RTHU	7	Ruby-throated Hummingbird	Archilochus colubris	1	2000	90	135	1	2524731.7	7353567.8	
892	19-May-19	Watch Count	Quarry	9:00	3:00	2	COLO	3	Common Loon	Gavia immer	2	2000	100	45	200	2524701.3	7353220.5	probably COLO
893	19-May-19	Watch Count	Quarry	9:00	3:00	2	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	2000	90	180	100	2524731.7	7353567.8	probably SSHA
894	19-May-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	300	20	45	20	2522834.3	7353849.7	
895	19-May-19	Watch Count	Quarry	9:00	3:00	2	COLO	3	Common Loon	Gavia immer	1	1500	90	45	150	2524231.7	7353567.8	
896	19-May-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	1000	140	0	0	2523374.5	7352801.8	calling from forest
897	19-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	30	270	300	2523481.7	7354866.8	
898	19-May-19	Watch Count	Quarry	9:00	3:00	3	HERG	3	Herring Gull	Larus argentatus	1	1000	30	135	300	2523231.7	7354433.8	probably HERG

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
899	19-May-19	Watch Count	Quarry	9:00	3:00	3	SWALLOW	6	Swallow		1	750	30	270	75	2523106.7	7354217.3	
900	19-May-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	2500	160	225	100	2523586.8	7351218.6	
901	19-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	170	225	75	2522992.2	7352090.6	circling, drifting SW
902	19-May-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	400	150	0	0	2522931.7	7353221.4	calling from forest
903	19-May-19	Watch Count	Quarry	9:00	3:00	3	COLO	3	Common Loon	Gavia immer	1	2500	160	45	200	2523586.8	7351218.6	
904	19-May-19	Watch Count	Quarry	9:00	3:00	3	RTHA	4	Red-tailed Hawk	Buteo jamaicensis	1	750	170	90	30	2522861.9	7352829.2	perched
905	19-May-19	Watch Count	Quarry	9:00	3:00	3	COLO	3	Common Loon	Gavia immer	1	2000	340	0	0	2522047.7	7355447.2	not seen
906	19-May-19	Watch Count	Quarry	9:00	3:00	3	MERL	4	Merlin	Falco columbarius	1	250	70	45	50	2522966.6	7353653.3	almost overhead
907	19-May-19	Watch Count	Quarry	9:00	3:00	3	COLO	3	Common Loon	Gavia immer	1	100	190	45	300	2522714.3	7353469.3	
908	19-May-19	Watch Count	Quarry	9:00	3:00	3	COLO	3	Common Loon	Gavia immer	1	1500	350	45	300	2522471.2	7355045.0	
909	19-May-19	Watch Count	Quarry	9:00	3:00	3	TRSW	6	Tree Swallow	Tachycineta bicolor	2	200	240	225	20	2522558.5	7353467.8	
910	19-May-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	1000	240	45	10	2521865.7	7353067.8	
911	19-May-19	Watch Count	Quarry	9:00	3:00	3	AMGO	6	American Goldfinch	Carduelis tristis	1	200	240	45	20	2522558.5	7353467.8	
912	19-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		20	3000	30	0	200	2524231.7	7356165.9	circling, beyond Paddys Hill
913	19-May-19	Watch Count	Quarry	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	2	2000	160	45	300	2523415.7	7351688.4	
914	19-May-19	Watch Count	Quarry	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	4	4000	160	45	300	2524099.8	7349809.0	
915	19-May-19	Watch Count	Quarry	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	2500	160	225	200	2523586.8	7351218.6	
916	19-May-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	140	45	150	2523695.9	7352418.7	
917	19-May-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull		2	3000	30	0	200	2524231.7	7356165.9	circling,
918	19-May-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	5	1000	320	225	150	2522088.9	7354333.8	
919	19-May-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	50	0	300	2525029.8	7355496.2	circling
920	19-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	360	45	50	2522731.7	7355567.8	
921	19-May-19	Watch Count	Quarry	9:00	3:00	5	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	2000	50	135	100	2524263.8	7354853.4	
922	19-May-19	Watch Count	Quarry	9:00	3:00	5	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	2000	30	0	30	2523731.7	7355299.9	circling, in front of Paddys hill
923	19-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	3000	30	0	50	2524231.7	7356165.9	circling
924	19-May-19	Watch Count	Quarry	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	1	1500	20	45	50	2523244.7	7354977.3	
925	19-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		1	2000	50	315	100	2524263.8	7354853.4	
926	23-May-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	200	0	0	2522629.1	7353285.9	singing from forest
927	23-May-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	20	180	45	10	2522731.7	7353547.8	calling overhead
928	23-May-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	500	210	0	0	2522481.7	7353134.8	calling from forest
929	23-May-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	3	75	150	90	30	2522769.2	7353502.8	migrating?
930	23-May-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	7	2500	180	45	175	2522731.7	7351067.8	
931	23-May-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	3	1500	180	225	100	2522731.7	7352067.8	
932	23-May-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Picoides villosus	1	400	210	0	0	2522531.7	7353221.4	calling from forest
933	23-May-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	2000	200	225	150	2522047.7	7351688.4	
934	23-May-19	Watch Count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	30	0	100	2524231.7	7356165.9	circling

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
935	23-May-19	Watch Count	Quarry	9:00	3:00	1	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	30	0	100	2524231.7	7356165.9	circling
936	23-May-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull		1	2500	50	0	100	2524646.8	7355174.8	
937	23-May-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	200	50	0	20	2522884.9	7353696.4	
938	23-May-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	30	280	0	1	2522702.2	7353573.0	perched in shrub
939	23-May-19	Watch Count	Quarry	9:00	3:00	2	WIWA	6	Wilson's Warbler	Wilsonia pusilla	1	20	140	0	1	2522744.6	7353552.5	perched in shrub
940	23-May-19	Watch Count	Quarry	9:00	3:00	2	PUFI	6	Purple Finch	Carpodacus purpureus	1	300	200	0	0	2522629.1	7353285.9	singing from forest
941	23-May-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	1500	200	225	75	2522218.7	7352158.3	
942	23-May-19	Watch Count	Quarry	9:00	3:00	2	COLO	3	Common Loon	Gavia immer	4	3000	150	45	200	2524231.7	7350969.7	
943	23-May-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	3	3000	150	0	250	2524231.7	7350969.7	circling
944	23-May-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	2000	340	270	100	2522047.7	7355447.2	
945	23-May-19	Watch Count	Quarry	9:00	3:00	3	RTHA	4	Red-tailed Hawk	Buteo jamaicensis	1	1500	30	90	30	2523481.7	7354866.8	
946	23-May-19	Watch Count	Quarry	9:00	3:00	3	MERL	4	Merlin	Falco columbarius	1	1500	30	90	20	2523481.7	7354866.8	
947	23-May-19	Watch Count	Quarry	9:00	3:00	3	COYE	6	Common Yellowthroat	Geothlypis trichas	1	7	70	270	1	2522738.3	7353570.2	
948	23-May-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	500	20	0	0	2522902.7	7354037.6	calling from forest
949	23-May-19	Watch Count	Quarry	9:00	3:00	3	BLJA	6	Blue Jay	Cyanocitta cristata	1	300	110	0	0	2523013.6	7353465.2	calling from forest
950	23-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	30	180	0	100	2522731.7	7353537.8	
951	23-May-19	Watch Count	Quarry	9:00	3:00	3	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	50	150	0	200	2522756.7	7353524.5	
952	23-May-19	Watch Count	Quarry	9:00	3:00	3	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	110	0	0	2523013.6	7353465.2	calling from forest
953	23-May-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	2500	270	0	100	2520231.7	7353567.8	circling
954	23-May-19	Watch Count	Quarry	9:00	3:00	4	COLO	3	Common Loon	Gavia immer	1	2000	90	45	300	2524731.7	7353567.8	
955	23-May-19	Watch Count	Quarry	9:00	3:00	4	AMRO	6	American Robin	Turdus migratorius	1	20	140	0	2	2522744.6	7353552.5	perched, seen
956	23-May-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	90	180	150	2525731.7	7353567.8	
957	23-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	20	225	150	2523415.7	7355447.2	
958	23-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	270	0	50	2521231.7	7353567.8	
959	23-May-19	Watch Count	Quarry	9:00	3:00	5	GRCA	6	Gray Catbird	Dumetella carolinensis	1	50	140	0	1	2522763.8	7353529.5	perched, seen
960	23-May-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	90	180	50	2524231.7	7353567.8	
961	23-May-19	Watch Count	Quarry	9:00	3:00	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	350	0	150	2522210.8	7356522.2	circling
962	23-May-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull		100	3000	350	0	150	2522210.8	7356522.2	circling
963	23-May-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	5	3000	120	45	300	2525329.8	7352067.8	
964	23-May-19	Watch Count	Quarry	9:00	3:00	6	COLO	3	Common Loon	Gavia immer	1	1000	90	0	0	2523731.7	7353567.8	heard calling in flight
965	23-May-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	360	270	15	2522731.7	7355067.8	
966	23-May-19	Watch Count	Quarry	9:00	3:00	6	OSPR	4	Osprey	Pandion haliaetus	1	750	150	45	125	2523106.7	7352918.3	
967	23-May-19	Watch Count	Quarry	9:00	3:00	6	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	1000	10	0	150	2522905.3	7354552.6	circling
968	28-May-19	Watch count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1000	160	90	20	2523073.7	7352628.1	
969	28-May-19	Watch count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	2	20	180	45	10	2522731.7	7353547.8	
970	28-May-19	Watch count	Quarry	9:00	3:00	1	PUFI	6	Purple Finch	Carpodacus purpureus	1	300	170	0	0	2522783.8	7353272.4	singing from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Direction	Ave Ht	X coord	Y coord	Notes
971	28-May-19	Watch count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	2000	210	270	100	2521731.7	7351835.7	
972	28-May-19	Watch count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	<i>Cyanocitta cristata</i>	9	1000	40	90	10	2523374.5	7354333.8	migrating?
973	28-May-19	Watch count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	<i>Carduelis tristis</i>	2	50	200	225	10	2522714.6	7353520.8	
974	28-May-19	Watch count	Quarry	9:00	3:00	2	BWHA	4	Broad-winged Hawk	<i>Buteo platypterus</i>	1	1500	360	90	20	2522731.7	7355067.8	
975	28-May-19	Watch count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	2000	40	0	100	2524017.3	7355099.9	circling
976	28-May-19	Watch count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	2500	200	0	50	2521876.6	7351218.6	circling
977	28-May-19	Watch count	Quarry	9:00	3:00	2	PASS	6	Passerine		18	400	40	90	50	2522988.8	7353874.2	loose flock migrating
978	28-May-19	Watch count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	750	30	45	100	2523106.7	7354217.3	circling
979	28-May-19	Watch count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	750	290	45	100	2522026.9	7353824.3	
980	28-May-19	Watch count	Quarry	9:00	3:00	3	PASS	6	Passerine		8	500	40	45	50	2523053.1	7353950.8	
981	28-May-19	Watch count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	1500	30	0	100	2523481.7	7354866.8	circling
982	28-May-19	Watch count	Quarry	9:00	3:00	3	WTSP	6	White-throated Sparrow	<i>Zonotrichia albicollis</i>	1	300	190	0	0	2522679.6	7353272.4	singing from forest
983	28-May-19	Watch count	Quarry	9:00	3:00	3	SSHA	4	Sharp-shinned Hawk	<i>Accipiter striatus</i>	1	750	10	270	50	2522861.9	7354306.4	
984	28-May-19	Watch count	Quarry	9:00	3:00	3	AMRO	6	American Robin	<i>Turdus migratorius</i>	1	300	240	0	0	2522471.9	7353417.8	calling from forest
985	28-May-19	Watch count	Quarry	9:00	3:00	4	SSHA	4	Sharp-shinned Hawk	<i>Accipiter striatus</i>	1	150	270	180	10	2522581.7	7353567.8	carrying prey
986	28-May-19	Watch count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	1500	150	180	100	2523481.7	7352268.8	
987	28-May-19	Watch count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	<i>Larus argentatus</i>	1	750	290	225	50	2522026.9	7353824.3	
988	28-May-19	Watch count	Quarry	9:00	3:00	4	CORA	6	Common Raven	<i>Corvus corax</i>	1	1500	150	225	75	2523481.7	7352268.8	
989	28-May-19	Watch count	Quarry	9:00	3:00	5	CORA	6	Common Raven	<i>Corvus corax</i>	1	2000	60	0	100	2524463.8	7354567.8	circling
990	28-May-19	Watch count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	3000	30	0	50	2524231.7	7356165.9	circling
991	28-May-19	Watch count	Quarry	9:00	3:00	6	GULL	3	Gull		60	2500	20	0	150	2523586.8	7355917.0	circling
992	28-May-19	Watch count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	400	160	0	30	2522868.5	7353191.9	circling

Fall passage migration/watch count surveys

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
1	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	COLO	3	Common Loon	Gavia immer	1	1000	180		SW	2522731.7	7352567.8	
2	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	200			2522714.6	7353520.8	Called once
3	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	50	200			2522714.6	7353520.8	Perched
4	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	2	50	180	20	SW	2522731.7	7353517.8	
5	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	25	300	20	SW	2522710.0	7353580.3	
6	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	150	310	2		2522616.8	7353664.2	Called once
7	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	40	120	2	SE	2522766.3	7353547.8	
8	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	300	190	20		2522679.6	7353272.4	Perched
9	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	100	220		W	2522667.4	7353491.2	Heard overhead
10	17-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	270	20	N	2522681.7	7353567.8	Heard overhead
11	17-Aug-19	Watch Count	Quarry	9:00	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	300	190	20	E	2522679.6	7353272.4	Perched
12	17-Aug-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	50	180	20	E	2522731.7	7353517.8	Heard overhead
13	17-Aug-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	150	170	20		2522757.7	7353420.1	Perched
14	17-Aug-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	50	220	10	NW	2522699.6	7353529.5	
15	17-Aug-19	Watch Count	Quarry	9:00	3:00	3	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	100	230	3		2522655.1	7353503.5	Perched
16	17-Aug-19	Watch Count	Quarry	9:00	3:00	3	AMGO	6	American Goldfinch	Carduelis tristis	2	0	90	20	W	2522731.7	7353567.8	Heard overhead
17	17-Aug-19	Watch Count	Quarry	9:00	3:00	3	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	20	120	3	NE	2522749.0	7353557.8	Perched
18	17-Aug-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	300	270	200	W	2522431.7	7353567.8	
19	17-Aug-19	Watch Count	Quarry	9:00	3:00	3	AMGO	6	American Goldfinch	Carduelis tristis	1	5	260	10	NE	2522726.8	7353566.9	Heard overhead
20	17-Aug-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	1500	10	50	W	2522992.2	7355045.0	
21	17-Aug-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	190			2522601.5	7352829.2	Calling from forest
22	17-Aug-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	1000	190			2522558.1	7352583.0	Calling from forest
23	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	6	20	160	2		2522738.5	7353549.0	
24	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	3	2500	210	50	E	2521481.7	7351402.7	
25	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	1	2000	40	50	S	2524017.3	7355099.9	
26	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	2500	20	50	E	2523586.8	7355917.0	
27	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	2	100	270	75	S	2522631.7	7353567.8	
28	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	MERL	4	Merlin	Falco columbarius	1	100	10	20	S	2522749.1	7353666.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
29	17-Aug-19	Watch Count	Quarry	9:00	3:00	5	NOFL	7	Northern Flicker	Colaptes auratus	1	500	90			2523231.7	7353567.8	Perched
30	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	CAGO	4	Canada Goose	Branta canadensis	3	500	0	25	SW	2522731.7	7354067.8	
31	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	AMRO	6	American Robin	Turdus migratorius	6	750	220	10	SW	2522249.6	7352993.3	Perched
32	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	500	270	75	SW	2522231.7	7353567.8	
33	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	1000	310	25		2521965.7	7354210.6	Circling
34	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	GBBG	3	Great Black-backed Gull	Larus marinus	1	50	270	50	S	2522681.7	7353567.8	
35	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	54	100	20	75	SW	2522765.9	7353661.8	To Musquash Estuary
36	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	1	300	90	200	SE	2523031.7	7353567.8	
37	17-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	3	1000	280	100	S	2521746.9	7353741.4	
39	17-Aug-19	Watch Count	Quarry	9:00	3:00		GULL	3	Gull	Larus sp.	234	2500	30	100	SE	2523981.7	7355732.9	From Spruce Lake to Lake to Bay
40	23-Aug-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	1	750	210			2522356.7	7352918.3	
41	23-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	10	170		NE	2522733.4	7353558.0	Calling in flight
42	23-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	8	200	150	5	SW	2522831.7	7353394.6	Perched
43	23-Aug-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	750	230			2522157.2	7353085.7	Called once
44	23-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	2	100	140	3	SW	2522796.0	7353491.2	Perched
45	23-Aug-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	100	260	25	SE	2522633.2	7353550.4	
46	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	250	190	5		2522688.3	7353321.6	Calling from forest
47	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	HERG	3	Herring Gull	Larus argentatus	1	500	160		E	2522902.7	7353098.0	Calling in flight
48	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	25	80	10	E	2522756.3	7353572.1	Calling in flight
49	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	1000	280			2521746.9	7353741.4	Calling from forest
50	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	6	250	270	10		2522481.7	7353567.8	Perched
51	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	2	2500	190	150	SW	2522297.6	7351105.8	Calling from forest
52	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	PUFI	6	Purple Finch	Haemorhous purpureus	1	250	160	5		2522817.2	7353332.9	
53	23-Aug-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	300	170	20		2522783.8	7353272.4	Perched
54	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	500	150			2522981.7	7353134.8	Calling from forest
55	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	250	90			2522981.7	7353567.8	Calling from forest
56	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	AMGO	6	American Goldfinch	Carduelis tristis	2	10	170	10		2522733.4	7353558.0	Perched
57	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull	Larus sp.	3	2000	80	150	N	2524701.3	7353915.1	
58	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	250	80	25	SW	2522977.9	7353611.2	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
59	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	AMRO	6	American Robin	Turdus migratorius	1	150	90			2522881.7	7353567.8	Calling from forest
60	23-Aug-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		2	30	150	10	W	2522746.7	7353541.8	CEDW?
61	23-Aug-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	20	200		2523757.8	7356386.9	Soaring, circling
62	23-Aug-19	Watch Count	Quarry	9:00	3:00	4	AMGO	6	American Goldfinch	Carduelis tristis	1	15	70	2	NE	2522745.8	7353572.9	
63	23-Aug-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	4	3000	260	200		2519777.3	7353046.9	Soaring, circling
64	23-Aug-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	2000	250	100	N	2520852.3	7352883.8	
65	23-Aug-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	1000	280	50	SW	2521746.9	7353741.4	
66	23-Aug-19	Watch Count	Quarry	9:00	3:00	4	PASS	6	Passerine		6	1500	100	200		2524208.9	7353307.3	Soaring, circling
67	23-Aug-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	4	3000	140	250		2524660.1	7351269.7	Soaring, circling
68	23-Aug-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	0	200	NW	2522731.7	7355567.8	
69	23-Aug-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	1	2500	0	250	SW	2522731.7	7356067.8	
70	23-Aug-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	1000	80	75	NE	2523716.5	7353741.4	
71	23-Aug-19	Watch Count	Quarry	9:00	3:00	5	AMGO	6	American Goldfinch	Carduelis tristis	1	10	180	15	NW	2522731.7	7353557.8	
72	23-Aug-19	Watch Count	Quarry	9:00	3:00	6	NOGO	4	Northern Goshawk	Accipiter gentilis	1	1500	110	40	NW	2524141.2	7353054.8	
73	23-Aug-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	2	1500	100	75	N	2524208.9	7353307.3	
75	23-Aug-19	Watch Count	Quarry	9:00	3:00		GULL	3	Gull	Larus sp.	10	2500	30	100	NW	2523981.7	7355732.9	From Bay to Spruce Lake
76	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	50	60			2522775.0	7353592.8	Calling
77	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	BCCH	6	Black-capped Chickadee	Poecile atricapillus	1	100	270			2522631.7	7353567.8	Singing
78	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	100	310	10		2522655.1	7353632.1	Perched
79	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	750	260			2521993.1	7353437.6	Calling
80	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	GBHE	3	Great Blue Heron	Ardea herodias	2	1000	350	75	NW	2522558.1	7354552.6	
81	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	1500	20	150	NW	2523244.7	7354977.3	
82	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	200	170	30	W	2522766.4	7353370.8	Perched
83	31-Aug-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	400	190	40	SE	2522662.2	7353173.9	Perched
84	31-Aug-19	Watch Count	Quarry	9:00	3:00	2	NOGO	4	Northern Goshawk	Accipiter gentilis	1	2000	170	100		2523079.0	7351598.2	Soaring, circling NOGO?
85	31-Aug-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		6	30	180	10	NW	2522731.7	7353537.8	
86	31-Aug-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	4	100	50	30	SW	2522808.3	7353632.1	Family group?
87	31-Aug-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	2	1500	110	50		2524141.2	7353054.8	Soaring, circling
88	31-Aug-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	75	120	10	NW	2522796.7	7353530.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
89	31-Aug-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	750	190			2522601.5	7352829.2	Calling from forest
90	31-Aug-19	Watch Count	Quarry	9:00	3:00	3	OSPR?	4	Osprey	Pandion haliaetus	2	2500	20	100	S	2523586.8	7355917.0	Soaring, circling
91	31-Aug-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	300	170	20	E	2522783.8	7353272.4	
92	31-Aug-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	750	50			2523306.2	7354049.9	Calling from forest
93	31-Aug-19	Watch Count	Quarry	9:00	3:00	4	PASS	6	Passerine		1	150	140		NW	2522828.1	7353452.9	
94	31-Aug-19	Watch Count	Quarry	9:00	3:00	4	BUTEO	4	hawk species		2	4000	10	300		2523426.3	7357507.0	Soaring, circling
95	31-Aug-19	Watch Count	Quarry	9:00	3:00	5	AMGO	6	American Goldfinch	Carduelis tristis	1	30	250	3	N	2522703.5	7353557.5	Perched
96	31-Aug-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	30	2500	10	250		2523165.8	7356029.8	Soaring, circling
97	31-Aug-19	Watch Count	Quarry	9:00	3:00	5	NOFL	7	Northern Flicker	Colaptes auratus	1	75	20	5	NE	2522757.4	7353638.3	
98	31-Aug-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	300	200	100	E	2522629.1	7353285.9	
99	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	1	1500	350	250	SW	2522471.2	7355045.0	
100	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	150	3000	350	100		2522210.8	7356522.2	Soaring, circling
101	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	3	1500	160	200		2523244.7	7352158.3	Soaring, circling
102	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	350	150		2522384.4	7355537.4	Soaring, circling
103	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2000	350	150		2522384.4	7355537.4	Soaring, circling
104	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	40	250		2524660.1	7355865.9	Soaring, circling
105	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	1	150	180	150	SW	2522731.7	7353417.8	
106	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	CONI	7	Common Nighthawk	Chordeiles minor	1	1000	70	50		2523671.4	7353909.8	Soaring, circling
107	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	PASS	6	Passerine		4	100	80	10	NW	2522830.2	7353585.2	Perched
108	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	1	1000	80	75	SE	2523716.5	7353741.4	Probably HERG
109	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	HERG	3	Herring Gull	Larus argentatus	4	500	50	100	SW	2523114.7	7353889.2	
110	31-Aug-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	3	2500	240	100	S	2520566.6	7352317.8	Probably HERG
111	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		3	500	220	50	SE	2522410.3	7353184.8	
112	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	200	170	10		2522766.4	7353370.8	Perched
113	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	150	200	25	NW	2522680.4	7353426.8	Perched
114	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	200	20			2522800.1	7353755.7	sang once from forest
115	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	250	20	50	SE	2522817.2	7353802.7	
116	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Leuconotopicus villosus	1	200	40			2522860.3	7353721.0	Calling from forest
117	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1000	270			2521731.7	7353567.8	Calling from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
118	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	220	3		2522699.6	7353529.5	Perched
119	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	100	200			2522697.5	7353473.8	Calling from forest
120	3-Sep-19	Watch Count	Quarry	9:00	3:00	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	5	150	250	10		2522590.7	7353516.5	Flying, then perched
121	3-Sep-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	5	50	210	10		2522706.7	7353524.5	
122	3-Sep-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	1	3000	250	100		2519912.6	7352541.7	Over river
123	3-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	25	230	10		2522712.5	7353551.7	
124	3-Sep-19	Watch Count	Quarry	9:00	3:00	3	BCCH	6	Black-capped Chickadee	Poecile atricapillus	1	150	250			2522590.7	7353516.5	Calling from forest
125	3-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	220	50	S	2521767.5	7352418.7	Soaring, circling
126	3-Sep-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	1000	350			2522558.1	7354552.6	Calling from forest
127	3-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	2500	40	150		2524338.7	7355482.9	Soaring, circling
128	3-Sep-19	Watch Count	Quarry	9:00	3:00	4	AMGO	6	American Goldfinch	Carduelis tristis	1	50	190	10		2522723.0	7353518.6	Flew over, calling
129	3-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	2	3500	40	150	S	2524981.5	7356249.0	Soaring, circling
130	3-Sep-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	150	120			2522861.6	7353492.8	Calling from forest
131	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	5	150	180	20		2522731.7	7353417.8	Perched
132	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	5	170	5	N	2522732.6	7353562.9	passed almost overhead
133	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	20	200	30	SE	2522724.9	7353549.0	passed almost overhead
134	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	80	150	S	2526670.9	7354262.4	
135	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	750	90	100	S	2523481.7	7353567.8	
136	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		1	50	240	30	N	2522688.4	7353542.8	Perched
137	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	20	150		2523415.7	7355447.2	Soaring, circling
138	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	750	60	50	N	2523381.2	7353942.8	
139	3-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	750	200	30		2522475.2	7352863.0	Soaring, circling
140	3-Sep-19	Watch Count	Quarry	9:00	3:00	6	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	50	250	1		2522684.7	7353550.7	Calling from forest
141	3-Sep-19	Watch Count	Quarry	9:00	3:00	6	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	25	270	5		2522706.7	7353567.8	Perched
142	3-Sep-19	Watch Count	Quarry	9:00	3:00	6	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	4	50	200	10		2522714.6	7353520.8	Perched
143	3-Sep-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	3000	280	200		2519777.3	7354088.7	Soaring, circling
144	5-Sep-19	Watch Count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	355	150		2522383.1	7357552.6	Soaring, circling
145	5-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	3	750	350	50	SW	2522601.5	7354306.4	
146	5-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	150	240	30	N	2522601.8	7353492.8	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
147	5-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	75	180	30	SE	2522731.7	7353492.8	
148	5-Sep-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	3	50	240	10	N	2522688.4	7353542.8	
149	5-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	2000	180	50	NE	2522731.7	7351567.8	
150	5-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	2	750	70	50	N	2523436.5	7353824.3	
151	5-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	210	150		2520731.7	7350103.7	Soaring, circling
152	5-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		11	500	40	50	NW	2523053.1	7353950.8	
153	5-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		3	200	100	3	NE	2522928.7	7353533.1	
154	5-Sep-19	Watch Count	Quarry	9:00	3:00	3	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	75	250	3	SW	2522661.2	7353542.1	
155	5-Sep-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	2000	10	75		2523079.0	7355537.4	Soaring, circling
156	5-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	200	350			2522697.0	7353764.8	Heard calling
157	5-Sep-19	Watch Count	Quarry	9:00	3:00	3	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	5	250	10	N	2522727.0	7353566.1	Overhead
158	5-Sep-19	Watch Count	Quarry	9:00	3:00	3	AMGO	6	American Goldfinch	Carduelis tristis	1	25	10	10	E	2522736.0	7353592.4	Calling in flight
159	5-Sep-19	Watch Count	Quarry	9:00	3:00	4	PASS	6	Passerine		1	100	170	20	SE	2522749.1	7353469.3	
160	5-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	260	100		2519777.3	7353046.9	Soaring, circling
161	5-Sep-19	Watch Count	Quarry	9:00	3:00	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	300	170	10		2522783.8	7353272.4	Perched
162	5-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	500	220	50	S	2522410.3	7353184.8	
163	5-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	2	3500	20	100		2523928.8	7356856.7	Soaring, circling
164	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	300	220	10		2522538.9	7353338.0	Singing in forest
165	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	170	10		2522740.4	7353518.6	Calling in flight
166	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	100	260	20	N	2522633.2	7353550.4	
167	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	300	50			2522961.5	7353760.6	Calling from forest
168	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	3	400	40	50	S	2522988.8	7353874.2	
169	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	20			2522834.3	7353849.7	Calling from forest
170	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	150	200	30	S	2522680.4	7353426.8	Flew past, perched
171	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	GBHE	3	Great Blue Heron	Ardea herodias	1	500	30	30	E	2522981.7	7354000.8	Flying just above trees
172	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	3	750	220	50	NW	2522249.6	7352993.3	
173	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	90			2523131.7	7353567.8	Calling from forest
174	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	350	100		2522037.1	7357507.0	Soaring, circling
175	9-Sep-19	Watch Count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	5000	340	150		2521021.6	7358266.3	Soaring, circling

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176	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	4000	10	200	SW	2523426.3	7357507.0	
177	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	300	40	20	NW	2522924.5	7353797.6	
178	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	BCCH	6	Black-capped Chickadee	Poecile atricapillus	1	200	240			2522558.5	7353467.8	Calling from forest
179	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	190			2522679.6	7353272.4	Calling from forest
180	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	1	3000	270	150	E	2519731.7	7353567.8	
181	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	250	260			2522485.5	7353524.4	Calling from forest
182	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	COLO	3	Common Loon	Gavia immer	1	2500	340	150	SW	2521876.6	7355917.0	
183	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	500	140			2523053.1	7353184.8	Calling from forest
184	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	5	20	160	2		2522738.5	7353549.0	Perched
185	9-Sep-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	30	90	20		2522761.7	7353567.8	calling in flight
186	9-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	40	30	10	SE	2522751.7	7353602.4	
187	9-Sep-19	Watch Count	Quarry	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	4000	40	300		2525302.9	7356632.0	Soaring, circling
188	9-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	2	2900	40	100		2524595.8	7355789.3	Perched
189	9-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	350	100		2522210.8	7356522.2	
190	9-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	3	10	180	50	SW	2522731.7	7353557.8	Overhead
191	9-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	3500	50	100		2525412.9	7355817.6	Soaring, circling
192	9-Sep-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	1	2000	210	50	NE	2521731.7	7351835.7	
193	9-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	60	100		2525329.8	7355067.8	Soaring, circling
194	9-Sep-19	Watch Count	Quarry	9:00	3:00	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	190	100		2522210.8	7350613.4	Soaring, circling
195	9-Sep-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	6	3000	60	300		2525329.8	7355067.8	Soaring, circling
196	9-Sep-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	2	4000	240	50	S	2519267.6	7351567.8	Over river
197	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOHA	4	Northern Harrier	Circus hudsonius	1	250	160	50	SW	2522817.2	7353332.9	
198	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	300	60			2522991.5	7353717.8	Calling from forest
199	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	2	2800	40	50		2524531.5	7355712.7	Perched
200	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	9	2000	80	50		2524701.3	7353915.1	Soaring, circling
201	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	200	60	10	SE	2522904.9	7353667.8	
202	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		25	200	200	50	NW	2522663.3	7353379.9	
203	12-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	150	350	10		2522705.7	7353715.5	Perched
204	12-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		3	250	70	50	S	2522966.6	7353653.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
205	12-Sep-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	300	270			2522431.7	7353567.8	Calling from forest
206	12-Sep-19	Watch Count	Quarry	9:00	3:00	2	BLJA	6	Blue Jay	Cyanocitta cristata	1	30	160	1	SE	2522742.0	7353539.6	Perched
207	12-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	300	190			2522679.6	7353272.4	Calling from forest
208	12-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	10	150	W	2523426.3	7357507.0	
209	12-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	4000	10	150	W	2523426.3	7357507.0	
210	12-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	2	2000	160	50	S	2523415.7	7351688.4	
211	12-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		15	300	200	50	NW	2522629.1	7353285.9	
212	12-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	3	1500	20	75	NE	2523244.7	7354977.3	
213	12-Sep-19	Watch Count	Quarry	9:00	3:00	3	AMGO	6	American Goldfinch	Carduelis tristis	2	50	180	50	SW	2522731.7	7353517.8	
214	12-Sep-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2500	10	100		2523165.8	7356029.8	Soaring, circling
215	12-Sep-19	Watch Count	Quarry	9:00	3:00	3	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	1500	340	50	SW	2522218.7	7354977.3	Assumed SSHA
216	12-Sep-19	Watch Count	Quarry	9:00	3:00	4	PASS	6	Passerine		2	25	200	15	NW	2522723.1	7353544.3	
217	12-Sep-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	2	400	100	20	NE	2523125.6	7353498.3	
218	12-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	750	30	50	S	2523106.7	7354217.3	
219	12-Sep-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	40	200		2525302.9	7356632.0	Soaring, circling
220	12-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	300	60			2522991.5	7353717.8	
221	12-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	3000	360	100		2522731.7	7356567.8	Soaring, circling
222	12-Sep-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		3	100	60	20	N	2522818.3	7353617.8	
223	12-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	160	100		2523757.8	7350748.7	Soaring, circling
224	12-Sep-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		2	100	80	75	N	2522830.2	7353585.2	
225	12-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	50	200		2525029.8	7355496.2	Soaring, circling
226	12-Sep-19	Watch Count	Quarry	9:00	3:00	6	BUTEO	4	Buteo		1	1500	60	75		2524030.7	7354317.8	Soaring, circling
227	12-Sep-19	Watch Count	Quarry	9:00	3:00	6	AMGO	6	American Goldfinch	Carduelis tristis	1	25	110	25	MW	2522755.2	7353559.2	
228	12-Sep-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	2000	40	75	SW	2524017.3	7355099.9	
229	12-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	3500	160	200		2523928.8	7350278.9	Soaring, circling
230	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	WHIM	2	Whimbrel	Numenius phaeopus	2	150	60	20	NE	2522861.6	7353642.8	
231	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2500	40	30	NW	2524338.7	7355482.9	
232	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	8	150	250	10	NW	2522590.7	7353516.5	
233	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	AMGO	6	American Goldfinch	Carduelis tristis	1	75	200	15	NW	2522706.0	7353497.3	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
234	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	HOLA	6	Horned Lark	Eremophila alpestris	1	20	350	1	NW	2522728.2	7353587.5	
235	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	NOFL	7	Northern Flicker	Colaptes auratus	1	300	180			2522731.7	7353267.8	Calling from forest
236	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	CAGO	4	Canada Goose	Branta canadensis	2	200	50	150	N	2522884.9	7353696.4	
237	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	200	220			2522603.1	7353414.6	Calling from forest
238	13-Sep-19	Watch Count	Quarry	9:30	3:30	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	17	3500	40	150	SW	2524981.5	7356249.0	
239	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	CORA	6	Common Raven	Corvus corax	3	3000	30	150	N	2524231.7	7356165.9	
240	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	CORA	6	Common Raven	Corvus corax	2	4000	50	200		2525795.9	7356139.0	Soaring, circling
241	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	TUVU	4	Turkey Vulture	Cathartes aura	2	3000	50	150		2525029.8	7355496.2	Soaring, circling
242	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	RTHU	7	Ruby-throated Hummingbird	Archilochus colubris	1	10	20	1	SW	2522735.1	7353577.2	
243	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	750	60	200		2523381.2	7353942.8	Soaring, circling
244	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	AMKE	4	American Kestrel	Falco sparverius	1	25	150	30	SW	2522744.2	7353546.1	
245	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	FALCON	4	Falcon		2	300	210	25	SW	2522581.7	7353308.0	Suspect AMKE
246	13-Sep-19	Watch Count	Quarry	9:30	3:30	2	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	220	150		2521446.1	7352035.7	Soaring, circling
247	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1000	250	100		2521792.0	7353225.8	Soaring, circling
248	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	GULL	3	Gull	Larus sp.	1	4000	250	50		2518972.9	7352199.7	Over river
249	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	PASS	6	Passerine		1	30	160	20	E	2522742.0	7353539.6	
250	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	GULL	3	Gull	Larus sp.	1	1500	10	25	SE	2522992.2	7355045.0	Spruce Lake to Bay
251	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	CORA	6	Common Raven	Corvus corax	1	750	70	50	N	2523436.5	7353824.3	
252	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	150			2522981.7	7353134.8	Calling from forest
253	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	160	100		2523415.7	7351688.4	Soaring, circling
254	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	PASS	6	Passerine		20	5	80	20	W	2522736.6	7353568.7	Overhead
255	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	AMKE	4	American Kestrel	Falco sparverius	1	5	60	100		2522736.0	7353570.3	Overhead
256	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	750	50	30	S	2523306.2	7354049.9	
257	13-Sep-19	Watch Count	Quarry	9:30	3:30	3	NOGO?	4	Northern Goshawk	Accipiter gentilis	1	1000	40	50	S	2523374.5	7354333.8	
258	13-Sep-19	Watch Count	Quarry	9:30	3:30	4	OSPR	4	Osprey	Pandion haliaetus	2	500	160	200	SW	2522902.7	7353098.0	
259	13-Sep-19	Watch Count	Quarry	9:30	3:30	4	BWHA	4	Broad-winged Hawk	Buteo platypterus	2	500	160	400	SW	2522902.7	7353098.0	
260	13-Sep-19	Watch Count	Quarry	9:30	3:30	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	2500	350	75		2522297.6	7356029.8	Soaring, circling
261	13-Sep-19	Watch Count	Quarry	9:30	3:30	4	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	250	90	30		2522981.7	7353567.8	Perched
262	13-Sep-19	Watch Count	Quarry	9:30	3:30	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2800	30	150		2524131.7	7355992.7	Perched

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
263	13-Sep-19	Watch Count	Quarry	9:30	3:30	5	GULL	3	Gull	Larus sp.	1	3000	300	200	NE	2520133.6	7355067.8	
264	13-Sep-19	Watch Count	Quarry	9:30	3:30	5	BUTEO	4	Buteo		1	2000	280	25	W	2520762.1	7353915.1	Small raptor
265	13-Sep-19	Watch Count	Quarry	9:30	3:30	5	TUVU	4	Turkey Vulture	Cathartes aura	1	4000	10	100		2523426.3	7357507.0	Soaring, circling
266	13-Sep-19	Watch Count	Quarry	9:30	3:30	5	SSHA	4	Sharp-shinned Hawk	Accipiter striatus	1	2000	70	300	SW	2524611.1	7354251.8	
267	13-Sep-19	Watch Count	Quarry	9:30	3:30	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	4000	270	400		2518731.7	7353567.8	Soaring, circling
268	13-Sep-19	Watch Count	Quarry	9:30	3:30	6	PASS	6	Passerine		1	750	60	50	N	2523381.2	7353942.8	
269	13-Sep-19	Watch Count	Quarry	9:30	3:30	6	CORA	6	Common Raven	Corvus corax	1	3000	80	200		2525686.1	7354088.7	Soaring, circling
270	13-Sep-19	Watch Count	Quarry	9:30	3:30	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	230			2522157.2	7353085.7	Calling from forest
271	13-Sep-19	Watch Count	Quarry	9:30	3:30	6	TUVU	4	Turkey Vulture	Cathartes aura	1	4000	200	30		2521363.6	7349809.0	Soaring, circling
272	13-Sep-19	Watch Count	Quarry	9:30	3:30	6	NOFL	7	Northern Flicker	Colaptes auratus	1	300	170			2522783.8	7353272.4	Calling from forest
273	16-Sep-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	170	20	W	2522740.4	7353518.6	Calling in flight
274	16-Sep-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	1	2000	290	50	SE	2520852.3	7354251.8	
275	16-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	100	90	200	SW	2522831.7	7353567.8	
276	16-Sep-19	Watch Count	Quarry	9:00	3:00	1	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3500	25	150		2524210.9	7356739.9	Soaring, circling
277	16-Sep-19	Watch Count	Quarry	9:00	3:00	1	HERG	3	Herring Gull	Larus argentatus	1	250	80	200	NE	2522977.9	7353611.2	
278	16-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	2000	170	30	NE	2523079.0	7351598.2	
279	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	25	100	10	SW	2522756.3	7353563.5	
280	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	300	300			2522471.9	7353717.8	Calling from forest
281	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		2	10	100	10	NE	2522741.5	7353566.1	
282	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	YRWA	6	Yellow-rumped Warbler	Setophaga coronata	1	5	60	10	NW	2522736.0	7353570.3	
283	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	3	50	30	20	NW	2522756.7	7353611.1	
284	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		3	25	200	10	NW	2522723.1	7353544.3	
285	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	100	270	20	NE	2522631.7	7353567.8	
286	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	BUTEO	4	Buteo		1	2000	290	100		2520852.3	7354251.8	Soaring, circling
287	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	750	60	150	N	2523381.2	7353942.8	
288	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	1	1000	280	200	NE	2521746.9	7353741.4	
289	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	90	100		2525731.7	7353567.8	Soaring, circling
290	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	1000	250	300		2521792.0	7353225.8	Soaring, circling
291	16-Sep-19	Watch Count	Quarry	9:00	3:00	2	AMKE?	4	American Kestrel	Falco sparverius	1	1000	250	300		2521792.0	7353225.8	Soaring, circling

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
292	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	DOWO	7	Downy Woodpecker	Dryobates pubescens	1	300	40			2522924.5	7353797.6	Calling from forest
293	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	1500	60	30	N	2524030.7	7354317.8	
294	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	1000	280	50	SE	2521746.9	7353741.4	
295	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	2000	190	30	E	2522384.4	7351598.2	
296	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	400	270	30	NW	2522331.7	7353567.8	
297	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	PEFA	4	Peregrine Falcon	Falco peregrinus	1	1000	280	50	SW	2521746.9	7353741.4	
298	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	BLJA	6	Blue Jay	Cyanocitta cristata	1	300	30			2522881.7	7353827.6	Calling from forest
299	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	50	260	30	S	2522682.5	7353559.1	
300	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	250			2522261.9	7353396.8	Calling from forest
301	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	BLJA	6	Blue Jay	Cyanocitta cristata	2	300	220	20	W	2522538.9	7353338.0	Flying, perched
302	16-Sep-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	500	280			2522239.3	7353654.6	Calling from forest
303	16-Sep-19	Watch Count	Quarry	9:00	3:00	4	HERG	3	Herring Gull	Larus argentatus	1	1000	100	30	NE	2523716.5	7353394.2	
304	16-Sep-19	Watch Count	Quarry	9:00	3:00	4	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	300	180	10	SE	2522731.7	7353267.8	Flying, perched
305	16-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	400	100	10	SE	2523125.6	7353498.3	
306	16-Sep-19	Watch Count	Quarry	9:00	3:00	4	AMKE	4	American Kestrel	Falco sparverius	2	300	220	10	SW	2522538.9	7353338.0	Flying in togther
307	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	250	30	100		2522856.7	7353784.3	Soaring, circling
308	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	300	50			2522961.5	7353760.6	Calling from forest
309	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	NOFL	7	Northern Flicker	Colaptes auratus	1	75	270	3	SW	2522656.7	7353567.8	
310	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	NOFL	7	Northern Flicker	Colaptes auratus	1	50	160	3	SE	2522748.8	7353520.8	
311	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	1000	350	150	W	2522558.1	7354552.6	
312	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		2	30	120	30	E	2522757.7	7353552.8	
313	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		1	30	90	25	E	2522761.7	7353567.8	
314	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	AMKE	4	American Kestrel	Falco sparverius	1	2000	340	100	W	2522047.7	7355447.2	
315	16-Sep-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	6	4000	250	150	N	2518972.9	7352199.7	
316	16-Sep-19	Watch Count	Quarry	9:00	3:00	6	NOGO	4	Northern Goshawk	Accipiter gentilis	1	1500	360	75	W	2522731.7	7355067.8	
317	16-Sep-19	Watch Count	Quarry	9:00	3:00	6	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	10	300		2523426.3	7357507.0	Soaring, circling
318	16-Sep-19	Watch Count	Quarry	9:00	3:00	6	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	20	60	5	N	2522749.0	7353577.8	
319	16-Sep-19	Watch Count	Quarry	9:00	3:00	6	SWALLOW	6	Swallow		2	0	60	25	SW	2522731.7	7353567.8	Overhead
320	16-Sep-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	30			2522881.7	7353827.6	Calling from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
321	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	2	1500	210	200	SE	2521981.7	7352268.8	
322	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	300	60			2522991.5	7353717.8	Calling from forest
323	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	500	180	50	W	2522731.7	7353067.8	
324	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	3	40	140	3	E	2522757.4	7353537.2	
325	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	250	180			2522731.7	7353317.8	Calling from forest
326	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	2	2500	270	300	NE	2520231.7	7353567.8	
327	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	1	1000	170	200	NW	2522905.3	7352583.0	
328	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	500	80			2523224.1	7353654.6	Calling from forest
329	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1500	10	30	W	2522992.2	7355045.0	
330	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	5	5000	30	20	W	2525231.7	7357897.9	
331	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOGO	4	Northern Goshawk	Accipiter gentilis	1	1500	60	200	SW	2524030.7	7354317.8	
332	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOHA	4	Northern Harrier	Circus hudsonius	1	2000	350	150	W	2522384.4	7355537.4	
333	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	3	300	160	20		2522834.3	7353285.9	Perched
334	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	25	4000	30	300	SW	2524731.7	7357031.9	
335	18-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		14	250	100	25	NE	2522977.9	7353524.4	
336	18-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	750	90	50	NE	2523481.7	7353567.8	
337	18-Sep-19	Watch Count	Quarry	9:00	3:00	2	BUTEO	4	Buteo		1	2000	90	300		2524731.7	7353567.8	Soaring, circling
338	18-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	130	150		2525795.9	7350996.6	Soaring, circling
339	18-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	2	4000	100	300		2526670.9	7352873.2	Soaring, circling
340	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	360	400		2522731.7	7357567.8	Soaring, circling
341	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	400	160	25	NE	2522868.5	7353191.9	
342	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	280	25		2521254.5	7353828.3	Soaring, circling
343	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	3	1500	180	50		2522731.7	7352067.8	Soaring, circling
344	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	4000	250	300		2518972.9	7352199.7	Soaring, circling
345	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	4000	210	400		2520731.7	7350103.7	Soaring, circling
346	18-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	100	150		2524208.9	7353307.3	Soaring, circling
347	18-Sep-19	Watch Count	Quarry	9:00	3:00	4	PASS	6	Passerine		1	150	20	25	NE	2522783.0	7353708.8	
348	18-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	10	50		2522992.2	7355045.0	Soaring, circling
349	18-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	2500	90	30		2525231.7	7353567.8	Soaring, circling

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
350	18-Sep-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	1000	110			2523671.4	7353225.8	Calling from forest
351	18-Sep-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	2	4000	120	300		2526195.8	7351567.8	Soaring, circling
352	18-Sep-19	Watch Count	Quarry	9:00	3:00	6	PASS	6	Passerine		1	250	50	25	N	2522923.2	7353728.5	
353	18-Sep-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	3	4000	190	300		2522037.1	7349628.6	Soaring, circling
354	18-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	4000	40	400		2525302.9	7356632.0	Soaring, circling
355	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	500	190			2522644.9	7353075.4	Calling from forest
356	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	1500	250	150	SW	2521322.2	7353054.8	
357	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	300	240			2522471.9	7353417.8	Calling from forest
358	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	PAWA	6	Palm Warbler	Setophaga palmarum	3	40	250	2	SW	2522694.1	7353554.1	Flew in, perched
359	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	YRWA	6	Yellow-rumped Warbler	Setophaga coronata	1	40	250	3	SW	2522694.1	7353554.1	Flew in, perched
360	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	300	200			2522629.1	7353285.9	Calling from forest
361	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	300	180			2522731.7	7353267.8	Calling from forest
362	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	BHVI	6	Blue-headed Vireo	Vireo solitarius	1	300	200			2522629.1	7353285.9	Singing briefly
363	20-Sep-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	3	250	270	30	SW	2522481.7	7353567.8	Flew in, perched
364	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	4	4000	280	200	NE	2518792.5	7354262.4	
365	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	SOSP	6	Song Sparrow	Melospiza melodia	4	40	50	1		2522762.3	7353593.5	Perched
366	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	BLJA	6	Blue Jay	Cyanocitta cristata	1	400	270	10	N	2522331.7	7353567.8	
367	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		4	250	160	50	SW	2522817.2	7353332.9	
368	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		8	250	160	50		2522817.2	7353332.9	Soaring, circling
369	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	RTHA	4	Red-tailed Hawk	Buteo jamaicensis	1	3000	30	40		2524231.7	7356165.9	Soaring, circling
370	20-Sep-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	6	50	360	50	SW	2522731.7	7353617.8	
371	20-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	25	220	25	W	2522715.6	7353548.6	
372	20-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	500	280	50	N	2522239.3	7353654.6	
373	20-Sep-19	Watch Count	Quarry	9:00	3:00	4	BLJA	6	Blue Jay	Cyanocitta cristata	2	50	290	2	SW	2522684.7	7353584.9	
374	20-Sep-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	3500	30	200		2524481.7	7356598.9	Soaring, circling
375	20-Sep-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	3000	25	400		2523999.6	7356286.7	Soaring, circling
376	20-Sep-19	Watch Count	Quarry	9:00	3:00	4	BLJA	6	Blue Jay	Cyanocitta cristata	2	300	160			2522834.3	7353285.9	Calling from forest
377	20-Sep-19	Watch Count	Quarry	9:00	3:00	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	5	30	60	10	N	2522757.7	7353582.8	
378	20-Sep-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	70			2523013.6	7353670.4	Calling from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
379	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	2	500	200			2522560.7	7353098.0	Calling from forest
380	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	300	40			2522924.5	7353797.6	Calling from forest
381	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	250	350			2522688.3	7353814.0	Calling from forest
382	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	3	4000	360	100		2522731.7	7357567.8	Soaring, circling
383	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	150	170	25	E	2522757.7	7353420.1	
384	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	20	220	50	NW	2522718.8	7353552.5	
385	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	1	250	240	10	NW	2522515.2	7353442.8	
386	25-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	6	300	190	15	SW	2522679.6	7353272.4	Perched, then flying
387	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	1000	190	50	SW	2522558.1	7352583.0	
388	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	3	3000	190	200		2522210.8	7350613.4	Soaring, circling
389	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	4	4000	190	300		2522037.1	7349628.6	Soaring, circling
390	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	2	1000	190	50		2522558.1	7352583.0	Soaring, circling
391	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	2	2000	170	75		2523079.0	7351598.2	Soaring, circling
392	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	2	3500	25	150		2524210.9	7356739.9	Soaring, circling
393	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	200	200	10	NW	2522663.3	7353379.9	
394	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		4	30p	50	75	N	#VALUE!	#VALUE!	
395	25-Sep-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	200	160	15		2522800.1	7353379.9	Perched
396	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	AMKE	4	American Kestrel	Falco sparverius	1	10	40	10	SW	2522738.1	7353575.5	Overhead
397	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	30	350	10	NW	2522726.5	7353597.3	
398	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	CAGO	4	Canada Goose	Branta canadensis	2	100	180	30	SE	2522731.7	7353467.8	
399	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	75	200	3	NW	2522706.0	7353497.3	
400	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	210	10		2521981.7	7352268.8	Soaring, circling
401	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull	Larus sp.	2	4000	230	30	S	2519667.5	7350996.6	
402	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	20	150	2	S	2522741.7	7353550.5	Perched, then flying
403	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	2	1500	150	20		2523481.7	7352268.8	Soaring, circling
404	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	3000	340	50		2521705.6	7356386.9	Soaring, circling
405	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	500	60			2523164.7	7353817.8	Calling from forest
406	25-Sep-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	20	4000	130	300		2525795.9	7350996.6	Soaring, circling
407	25-Sep-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	360	150		2522731.7	7357567.8	Soaring, circling

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
408	25-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	250	50			2522923.2	7353728.5	Calling from forest
409	25-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	10	70	1	S	2522741.1	7353571.2	
410	25-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	15	80	1	SW	2522746.5	7353570.4	
411	25-Sep-19	Watch Count	Quarry	9:00	3:00	4	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	200	180			2522731.7	7353367.8	Singing from forest
412	25-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	3	250	160	10		2522817.2	7353332.9	Perched
413	25-Sep-19	Watch Count	Quarry	9:00	3:00	5	AMRO	6	American Robin	Turdus migratorius	5	400	200	10	SW	2522594.9	7353191.9	Perched
414	25-Sep-19	Watch Count	Quarry	9:00	3:00	5	NOFL	7	Northern Flicker	Colaptes auratus	1	30	170	2		2522736.9	7353538.3	Perched
415	25-Sep-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	500	200			2522560.7	7353098.0	Calling from forest
416	25-Sep-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	30	4000	160	300	SW	2524099.8	7349809.0	Over water
417	25-Sep-19	Watch Count	Quarry	9:00	3:00	6	OSPR	4	Osprey	Pandion haliaetus	1	3000	160	200	SW	2523757.8	7350748.7	
418	25-Sep-19	Watch Count	Quarry	9:00	3:00	6	AMKE	4	American Kestrel	Falco sparverius	1	75	20	20	NW	2522757.4	7353638.3	
419	25-Sep-19	Watch Count	Quarry	9:00	3:00	6	NOFL	7	Northern Flicker	Colaptes auratus	1	30	200	3	SE	2522721.4	7353539.6	
420	30-Sep-19	Watch Count	Quarry	9:00	3:00	1	GULL	3	Gull	Larus sp.	2	2500	250	50	N	2520382.5	7352712.7	Over river
421	30-Sep-19	Watch Count	Quarry	9:00	3:00	1	TUVU	4	Turkey Vulture	Cathartes aura	1	750	160	20		2522988.2	7352863.0	Soaring, circling
422	30-Sep-19	Watch Count	Quarry	9:00	3:00	1	NOFL	7	Northern Flicker	Colaptes auratus	2	750	160	15		2522988.2	7352863.0	Flying among trees
423	30-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	100	200	30	NW	2522697.5	7353473.8	
424	30-Sep-19	Watch Count	Quarry	9:00	3:00	1	HOLA	6	Horned Lark	Eremophila alpestris	1	50	360	10	N	2522731.7	7353617.8	Flushed from ground
425	30-Sep-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		3	750	90	50	SE	2523481.7	7353567.8	
426	30-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	4	4000	40	200		2525302.9	7356632.0	Soaring, circling
427	30-Sep-19	Watch Count	Quarry	9:00	3:00	2	AMKE	4	American Kestrel	Falco sparverius	1	30	180	10	NW	2522731.7	7353537.8	Perched
428	30-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	360	150	W	2522731.7	7355567.8	
429	30-Sep-19	Watch Count	Quarry	9:00	3:00	2	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	60	4000	350	200	SSW	2522037.1	7357507.0	
430	30-Sep-19	Watch Count	Quarry	9:00	3:00	2	YRWA	6	Yellow-rumped Warbler	Setophaga coronata	1	200	250	10	NW	2522543.8	7353499.4	Flying, perched
431	30-Sep-19	Watch Count	Quarry	9:00	3:00	2	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	270	30	NW	2521231.7	7353567.8	
432	30-Sep-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	70	20	NW	2523201.5	7353738.8	Flying, perched
433	30-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	500	20	50		2522902.7	7354037.6	Flying, perched
434	30-Sep-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		1	25	100	30	SE	2522756.3	7353563.5	
435	30-Sep-19	Watch Count	Quarry	9:00	3:00	3	SAVS	6	Savannah Sparrow	Passerculus sandwichensis	1	50	80	0		2522780.9	7353576.5	
436	30-Sep-19	Watch Count	Quarry	9:00	3:00	4	PASS	6	Passerine		3	300	300	30	W	2522471.9	7353717.8	

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
437	30-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	25	360	2	NW	2522731.7	7353592.8	Flying, perched
438	30-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	25	360	2	NW	2522731.7	7353592.8	
439	30-Sep-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	2	240	1	S	2522730.0	7353566.8	Flying, perched
440	30-Sep-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		1	300	190	50	NW	2522679.6	7353272.4	
441	30-Sep-19	Watch Count	Quarry	9:00	3:00	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	6	200	170	10		2522766.4	7353370.8	Perched
442	30-Sep-19	Watch Count	Quarry	9:00	3:00	6	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	260	200		2518792.5	7352873.2	Soaring, circling
443	30-Sep-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	7	1500	140	200	NW	2523695.9	7352418.7	Soaring, circling
444	30-Sep-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	500	240			2522298.7	7353317.8	Calling from forest
445	8-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	190			2522662.2	7353173.9	Calling from forest
446	8-Oct-19	Watch Count	Quarry	9:00	3:00	1	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	300	210			2522581.7	7353308.0	Calling from forest
447	8-Oct-19	Watch Count	Quarry	9:00	3:00	1	BHVI	6	Blue-headed Vireo	Vireo solitarius	1	300	230			2522501.9	7353375.0	singing from forest
448	8-Oct-19	Watch Count	Quarry	9:00	3:00	1	WTSP	6	White-throated Sparrow	Zonotrichia albicollis	1	300	190			2522679.6	7353272.4	singing from forest
449	8-Oct-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		1	50	350	30	E	2522723.0	7353617.0	Calling in flight
450	8-Oct-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	300	11:12	50	W	2522734.1	7353867.8	
451	8-Oct-19	Watch Count	Quarry	9:00	3:00	2	BLJA	6	Blue Jay	Cyanocitta cristata	2	300	100			2523027.1	7353515.7	Calling from forest
452	8-Oct-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	50	180	20	E	2522731.7	7353517.8	Calling in flight
453	8-Oct-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	75	100	1		2522805.6	7353554.8	Calling from forest
454	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	340			2522594.9	7353943.7	Calling from forest
455	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull	Larus sp.	5	4000	30	100	E	2524731.7	7357031.9	
456	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	2	3000	170	100	W	2523252.6	7350613.4	
457	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	1500	110	50	SW	2524141.2	7353054.8	
458	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	1500	70	50	S	2524141.2	7354080.8	
459	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	BLJA	6	Blue Jay	Cyanocitta cristata	1	400	60			2523078.1	7353767.8	Calling from forest
460	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull	Larus sp.	8	2500	340	100	SW	2521876.6	7355917.0	
461	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	500	330			2522481.7	7354000.8	Calling from forest
462	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	750	320			2522249.6	7354142.3	Calling from forest
463	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		10	500	330	30	S	2522481.7	7354000.8	
464	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	4000	25	150		2524422.2	7357193.0	Soaring, circling
465	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull	Larus sp.	2	3000	350	25		2522210.8	7356522.2	Soaring, circling

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
466	8-Oct-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	300	180			2522731.7	7353267.8	Calling from forest
467	8-Oct-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	300	220			2522538.9	7353338.0	Calling from forest
468	8-Oct-19	Watch Count	Quarry	9:00	3:00	4	GULL	3	Gull	Larus sp.	3	1500	150	50	SW	2523481.7	7352268.8	
469	8-Oct-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	4000	200	150		2521363.6	7349809.0	Soaring, circling
470	8-Oct-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	2000	20	30	E	2523415.7	7355447.2	
471	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	220	30		2521446.1	7352035.7	Soaring, circling
472	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	200	100		2521705.6	7350748.7	Soaring, circling
473	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	2000	220	30	W	2521446.1	7352035.7	
474	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	PASS	6	Passerine		6	500	230	30	N	2522348.7	7353246.4	
475	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	4000	340	100	W	2521363.6	7357326.6	
476	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	AMKE	4	American Kestrel	Falco sparverius	1	3000	220	150		2520803.3	7351269.7	Soaring, circling
477	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	1	3000	230	150		2520433.6	7351639.4	Soaring, circling
478	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	3000	170	200	E	2523252.6	7350613.4	
479	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	2500	160	150	E	2523586.8	7351218.6	
480	8-Oct-19	Watch Count	Quarry	9:00	3:00	5	BUTEO	4	Buteo		1	2500	60	300	NE	2524896.8	7354817.8	RTHA?
481	8-Oct-19	Watch Count	Quarry	9:00	3:00	6	RAPTOR	4	Raptor		1	2000	200	100	SE	2522047.7	7351688.4	NOHA?
482	8-Oct-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	310	150		2520433.6	7355496.2	Soaring, circling
483	8-Oct-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	10	30		2522861.9	7354306.4	
484	8-Oct-19	Watch Count	Quarry	9:00	3:00	6	YRWA	6	Yellow-rumped Warbler	Setophaga coronata	1	20	160	2	E	2522738.5	7353549.0	Perched, flew off
485	8-Oct-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	2	3000	30	20	W	2524231.7	7356165.9	
486	8-Oct-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	4	1500	190	15		2522471.2	7352090.6	Perched, flew off
487	14-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	360			2522731.7	7354067.8	Calling from forest
488	14-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	30	30	SE	2522931.7	7353914.2	
489	14-Oct-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		2	50	200	40	NW	2522714.6	7353520.8	Calling in flight
490	14-Oct-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	300	130			2522961.5	7353375.0	Calling from forest
491	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		3	30	90	30	NE	2522761.7	7353567.8	
492	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	300	180			2522731.7	7353267.8	Calling from forest
493	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	NOFL	7	Northern Flicker	Colaptes auratus	1	300	120			2522991.5	7353417.8	Calling from forest
494	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	300	280	10		2522436.3	7353619.9	Perched

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
495	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	GULL	3	Gull	Larus sp.	1	4000	220	30	S	2520160.5	7350503.6	Over river
496	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	AMRO	6	American Robin	Turdus migratorius	1	300	190			2522679.6	7353272.4	Calling from forest
497	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	HAWO	7	Hairy Woodpecker	Leuconotopicus villosus	1	150	150			2522806.7	7353437.9	Calling from forest
498	14-Oct-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		1	5	270	30	N	2522726.7	7353567.8	almost overhead
499	14-Oct-19	Watch Count	Quarry	9:00	3:00	3	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	150	100			2522879.4	7353541.8	Calling from forest
500	14-Oct-19	Watch Count	Quarry	9:00	3:00	3	BCCH	6	Black-capped Chickadee	Poecile atricapillus	1	150	260			2522584.0	7353541.8	calling from bushes
501	14-Oct-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	300	90			2523031.7	7353567.8	Calling from forest
502	14-Oct-19	Watch Count	Quarry	9:00	3:00	4	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	500	40			2523053.1	7353950.8	Calling from forest
503	14-Oct-19	Watch Count	Quarry	9:00	3:00	4	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	190			2522644.9	7353075.4	Calling from forest
504	14-Oct-19	Watch Count	Quarry	9:00	3:00	4	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	200	270			2522531.7	7353567.8	Calling from forest
505	14-Oct-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	2000	200	50	S	2522047.7	7351688.4	
506	14-Oct-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	1	300	280	150		2522436.3	7353619.9	Soaring, circling
507	14-Oct-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	500	260			2522239.3	7353481.0	Calling from forest
508	14-Oct-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	3000	200	200		2521705.6	7350748.7	Soaring, circling
509	14-Oct-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	2	2500	90	200		2525231.7	7353567.8	Soaring, circling
510	14-Oct-19	Watch Count	Quarry	9:00	3:00	6	TUVU	4	Turkey Vulture	Cathartes aura	1	1000	10	75		2522905.3	7354552.6	Soaring, circling
511	14-Oct-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	250			2522026.9	7353311.3	Calling from forest
512	14-Oct-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	2	2000	40	30	S	2524017.3	7355099.9	
513	14-Oct-19	Watch Count	Quarry	9:00	3:00	6	CORA	6	Common Raven	Corvus corax	1	1000	80			2523716.5	7353741.4	Calling from forest
514	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	400	170			2522801.2	7353173.9	Calling from forest
515	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	500	30			2522981.7	7354000.8	Calling from forest
516	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	400	240			2522385.3	7353367.8	Calling from forest
517	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	2000	60	25	SW	2524463.8	7354567.8	Flying, then perched
518	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	1	4000	190	200	SW	2522037.1	7349628.6	
519	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	2000	110	150	SW	2524611.1	7352883.8	
520	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	30			2523106.7	7354217.3	Calling from forest
521	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Leuconotopicus villosus	1	300	190			2522679.6	7353272.4	Calling from forest
522	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	150			2522756.7	7353524.5	Calling in flight
523	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	400	290			2522355.8	7353704.6	Calling from forest

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
524	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	300	140			2522924.5	7353338.0	Calling from forest
525	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	CORA	6	Common Raven	Corvus corax	1	500	140			2523053.1	7353184.8	Calling from forest
526	21-Oct-19	Watch Count	Quarry	9:00	3:00	1	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	250	290			2522496.8	7353653.3	Calling from forest
527	21-Oct-19	Watch Count	Quarry	9:00	3:00	2	WWCR	6	White-winged Crossbill	Loxia leucoptera	1	50	300	30	NW	2522688.4	7353592.8	Calling in flight
528	21-Oct-19	Watch Count	Quarry	9:00	3:00	2	PASS	6	Passerine		3	30	100	2	SW	2522761.2	7353562.6	
529	21-Oct-19	Watch Count	Quarry	9:00	3:00	2	BLJA	6	Blue Jay	Cyanocitta cristata	2	400	180			2522731.7	7353167.8	Calling from forest
530	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	DEJU	6	Dark-eyed Junco	Junco hyemalis	6	20	160	1		2522738.5	7353549.0	
531	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	1	200	150			2522831.7	7353394.6	Calling from forest
532	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	120	5000	140	600	SW	2525945.6	7349737.6	Large migrating flock
533	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	AMCR	6	American Crow	Corvus brachyrhynchos	5	30	180	25	SW	2522731.7	7353537.8	Overhead
534	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	HOLA	6	Horned Lark	Eremophila alpestris	3	25	30	0		2522744.2	7353589.5	Flew in, perched
535	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	25	6000	240	600	SW	2517535.5	7350567.8	
536	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	TUVU	4	Turkey Vulture	Cathartes aura	1	1000	20	300	SW	2523073.7	7354507.5	Soaring, circling
537	21-Oct-19	Watch Count	Quarry	9:00	3:00	3	GULL	3	Gull	Larus sp.	3	5000	270	200	NW	2517731.7	7353567.8	
538	21-Oct-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	10	200	E	2522992.2	7355045.0	
539	21-Oct-19	Watch Count	Quarry	9:00	3:00	4	TUVU	4	Turkey Vulture	Cathartes aura	1	1500	110	30	SW	2524141.2	7353054.8	
540	21-Oct-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	2	2500	100	100	NW	2525193.7	7353133.7	
541	21-Oct-19	Watch Count	Quarry	9:00	3:00	4	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	3000	110	300		2525550.8	7352541.7	Soaring, circling
542	21-Oct-19	Watch Count	Quarry	9:00	3:00	4	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	90	6000	90	500	SW	2528731.7	7353567.8	Migrating flock
543	21-Oct-19	Watch Count	Quarry	9:00	3:00	4	CORA	6	Common Raven	Corvus corax	1	500	140			2523053.1	7353184.8	Calling from forest
544	21-Oct-19	Watch Count	Quarry	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	7	200	290	30	SW	2522543.8	7353636.2	Small flock migrating
545	21-Oct-19	Watch Count	Quarry	9:00	3:00	6	PASS	6	Passerine		5	50	110	5	SW	2522778.7	7353550.7	
546	21-Oct-19	Watch Count	Quarry	9:00	3:00	6	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	750	110	50	S	2523436.5	7353311.3	
547	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	160			2522988.2	7352863.0	Calling from forest
548	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	30	130			2522754.7	7353548.5	Calling from forest
549	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	3	500	90			2523231.7	7353567.8	Calling from forest
550	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	200			2522560.7	7353098.0	Calling from forest
551	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	500	190			2522644.9	7353075.4	Calling from forest
552	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	AMGO	6	American Goldfinch	Carduelis tristis	1	50	230			2522693.4	7353535.7	Calling in flight

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
553	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	HOLA	6	Horned Lark	Eremophila alpestris	2	10	50	30	SW	2522739.4	7353574.2	Flew almost overhead
554	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	HAWO	7	Hairy Woodpecker	Leuconotpicus villosus	1	500	20			2522902.7	7354037.6	Calling from forest
555	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	PIWO	7	Pileated Woodpecker	Dyocopus pileatus	1	750	290			2522026.9	7353824.3	Calling from forest
556	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	PASS	6	Passerine		12	1000	200	50	SE	2522389.7	7352628.1	Large flock of robins?
557	27-Oct-19	Watch Count	Quarry	9:00	3:00	1	BLJA	6	Blue Jay	Cyanocitta cristata	1	500	60			2523164.7	7353817.8	Calling from forest
558	27-Oct-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	2	750	250	50	N	2522026.9	7353311.3	
559	27-Oct-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	750	110			2523436.5	7353311.3	Calling from forest
560	27-Oct-19	Watch Count	Quarry	9:00	3:00	2	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	40			2523053.1	7353950.8	Calling from forest
561	27-Oct-19	Watch Count	Quarry	9:00	3:00	2	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	300	110			2523013.6	7353465.2	Calling from forest
562	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	DEJU	6	Dark-eyed Junco	Junco hyemalis	2	40	120	1		2522766.3	7353547.8	
563	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	300	170			2522783.8	7353272.4	Calling from forest
564	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	PASS	6	Passerine		5	60	160	5	SE	2522752.2	7353511.4	
565	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	HAWO	7	Hairy Woodpecker	Leuconotpicus villosus	1	250	260			2522485.5	7353524.4	Calling from forest
566	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	NOFL	7	Northern Flicker	Colaptes auratus	1	500	340			2522560.7	7354037.6	Calling from forest
567	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	750	40			2523213.8	7354142.3	Calling from forest
568	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	CORA	6	Common Raven	Corvus corax	1	500	100	50	NE	2523224.1	7353481.0	
569	27-Oct-19	Watch Count	Quarry	9:00	3:00	3	RBNU	6	Red-breasted Nuthatch	Sitta canadensis	1	300	240			2522471.9	7353417.8	Calling from forest
570	27-Oct-19	Watch Count	Quarry	9:00	3:00	4	AMRO	6	American Robin	Turdus migratorius	1	500	190	30		2522644.9	7353075.4	Perched
571	27-Oct-19	Watch Count	Quarry	9:00	3:00	4	NOFL	7	Northern Flicker	Colaptes auratus	1	300	70			2523013.6	7353670.4	Calling from forest
572	27-Oct-19	Watch Count	Quarry	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	1	750	360			2522731.7	7354317.8	Calling from forest
573	27-Oct-19	Watch Count	Quarry	9:00	3:00	5	GULL	3	Gull	Larus sp.	4	4000	30	200	SE	2524731.7	7357031.9	
574	27-Oct-19	Watch Count	Quarry	9:00	3:00	5	TUVU	4	Turkey Vulture	Cathartes aura	1	3000	35	200		2524452.4	7356025.3	Soaring, circling
575	27-Oct-19	Watch Count	Quarry	9:00	3:00	5	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	1	5000	40	300		2525945.6	7357398.0	Soaring, circling
576	27-Oct-19	Watch Count	Quarry	9:00	3:00	5	AMCR	6	American Crow	Corvus brachyrhynchos	3	2000	20	100	S	2523415.7	7355447.2	
577	27-Oct-19	Watch Count	Quarry	9:00	3:00	6	GULL	3	Gull	Larus sp.	1	4000	30	200	E	2524731.7	7357031.9	
578	4-Nov-19	Watch Count	Quarry	9:00	3:00	1	AMRO	6	American Robin	Turdus migratorius	1	300	230			2522501.9	7353375.0	Calling from forest
579	4-Nov-19	Watch Count	Quarry	9:00	3:00	1	DEJU	6	Dark-eyed Junco	Junco hyemalis	3	75	240	2		2522666.7	7353530.3	Flew past, landed in bushes
580	4-Nov-19	Watch Count	Quarry	9:00	3:00	2	CORA	6	Common Raven	Corvus corax	1	500	40			2523053.1	7353950.8	Calling from forest
581	4-Nov-19	Watch Count	Quarry	9:00	3:00	2	AMGO	6	American Goldfinch	Carduelis tristis	1	50	270	30		2522681.7	7353567.8	Calling in flight

ID	Date	Survey Type	Location	Start	End	Hour	Code	Group	Common Name	Scientific Name	No	Distance	Bearing	Ave Ht	Direction	X coord	Y coord	Notes
582	4-Nov-19	Watch Count	Quarry	9:00	3:00	3	NSHR?	6	Northern Shrike	Lanius borealis	1	300	360	25	W	2522731.7	7353867.8	Distant, brief observation
583	4-Nov-19	Watch Count	Quarry	9:00	3:00	3	AMRO	6	American Robin	Turdus migratorius	1	400	300			2522385.3	7353767.8	Calling from forest
584	4-Nov-19	Watch Count	Quarry	9:00	3:00	5	RTHA	4	Red-tailed Hawk	Buteo jamaicensis	1	2000	80	200	S	2524701.3	7353915.1	Soaring, circling
585	4-Nov-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	750	130			2523306.2	7353085.7	Calling from forest
586	4-Nov-19	Watch Count	Quarry	9:00	3:00	5	CORA	6	Common Raven	Corvus corax	1	1000	280			2521746.9	7353741.4	Calling from forest
587	4-Nov-19	Watch Count	Quarry	9:00	3:00	6	AMCR	6	American Crow	Corvus brachyrhynchos	1	500	160	40	SW	2522902.7	7353098.0	

Spring stop-over transect surveys

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
1	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524239.1	7355486.6	
2	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Calling	2524223.1	7355450.0	
3	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524251.7	7355287.7	
4	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	CAGO	1	Canada Goose	<i>Branta canadensis</i>	1	Calling	2524038.1	7354966.6	
5	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524286.0	7355268.4	
6	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Observed	2524351.1	7355215.8	
7	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Observed	2524363.7	7355135.7	
8	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	CAGO	1	Canada Goose	<i>Branta canadensis</i>	1	Calling	2524449.5	7355003.1	Fly-over 50 m at 90 degrees
9	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	COGR	6	Common grackle	<i>Quiscalus quiscula</i>	1	Calling	2524582.0	7354717.4	
10	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Calling	2524648.5	7354844.4	
11	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Calling	2524631.0	7354752.6	
12	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2524527.5	7354691.4	
13	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524663.8	7354572.6	
14	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Observed	2524703.6	7354465.0	
15	03-Apr-19	1	7:08	8:12	- 2	0 to 1	Sunny/clear	NE	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Calling	2524703.6	7354461.2	
16	03-Apr-19	2	8:21	8:55	- 2	1 to 2	Sunny/clear	NE	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Observed	2524648.0	7354042.1	Foraging
17	03-Apr-19	2	8:21	8:55	- 2	1 to 2	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524514.3	7353958.5	
18	03-Apr-19	2	8:21	8:55	- 2	1 to 2	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524432.7	7353856.4	Perched
19	03-Apr-19	2	8:21	8:55	- 2	1 to 2	Sunny/clear	NE	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2524161.6	7353468.9	
20	03-Apr-19	2	8:21	8:55	- 2	1 to 2	Sunny/clear	NE	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Calling	2523921.2	7353264.1	
21	03-Apr-19	3	9:01	9:27	-1	2 to 3	Sunny/clear	NE	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Calling	2523574.4	7352888.6	
22	03-Apr-19	3	9:01	9:27	-1	2 to 3	Sunny/clear	NE	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2523545.1	7352919.7	
23	03-Apr-19	3	9:01	9:27	-1	2 to 3	Sunny/clear	NE	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Calling	2523589.0	7352842.3	
24	03-Apr-19	3	9:01	9:27	-1	2 to 3	Sunny/clear	NE	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2523268.8	7352529.7	
25	03-Apr-19	3	9:01	9:27	-1	2 to 3	Sunny/clear	NE	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2523175.1	7352567.5	
26	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	4	Calling	2522864.9	7353048.4	Three males and one female
27	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	BOCH	6	Boreal chickadee	<i>Poecile hudsonica</i>	2	Observed	2522825.9	7353166.9	One male and one female
28	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Singing	2522852.1	7353174.6	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
29	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2522806.0	7353140.0	
30	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	BOCH	6	Boreal chickadee	Poecile hudsonica	1	Calling	2522786.5	7353253.0	
31	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	BOCH	6	Boreal chickadee	Poecile hudsonica	1	Calling	2522776.8	7353236.5	
32	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	BOCH	6	Boreal chickadee	Poecile hudsonica	1	Calling	2522776.8	7353287.1	
33	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	AMRO	6	American robin	Turdus migratorius	1	Calling	2522759.4	7353371.7	
34	03-Apr-19	4	9:36	10:07	0	2 to 3	Sunny/clear	NE	DOWO	7	Downy woodpecker	Picoides pubescens	3	Observed	2522781.0	7353365.7	One female. Two males fighting
35	03-Apr-19	5	10:16	10:52	2	3	Sunny/clear	NE	AMRO	6	American robin	Turdus migratorius	1	Calling	2522942.3	7353984.6	
36	03-Apr-19	5	10:16	10:52	2	3	Sunny/clear	NE	AMCR	6	American crow	Corvus brachyrhynchos	1	Calling	2522894.7	7353973.4	
37	03-Apr-19	5	10:16	10:52	2	3	Sunny/clear	NE	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2522929.0	7354271.3	
38	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	COGR	6	Common grackle	Quiscalus quiscula	2	Calling	2522946.8	7354630.1	Fly-over 100 m at 75 degrees
39	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	AMRO	6	American robin	Turdus migratorius	1	Calling	2523011.3	7354553.7	
40	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2522958.7	7354578.8	
41	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	Calling	2523017.2	7354490.4	
42	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	AMRO	6	American robin	Turdus migratorius	1	Observed	2522920.5	7354322.4	
43	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	CORA	6	Common raven	Corvus corax	1	Calling	2522920.5	7354322.4	
44	11-Apr-19	5	7:01	7:33	0	0 to 1	Sunny/clear	NW	CORA	6	Common raven	Corvus corax	1	Calling	2523053.8	7353922.0	
45	11-Apr-19	4	7:42	8:17	1	0	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2522985.3	7353694.0	
46	11-Apr-19	4	7:42	8:17	1	0	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2523067.6	7353563.6	
47	11-Apr-19	4	7:42	8:17	1	0	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522961.2	7353605.7	
48	11-Apr-19	4	7:42	8:17	1	0	Sunny/clear	NW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Observed	2522774.3	7353401.6	Foraging
49	11-Apr-19	3	8:29	8:54	1	0 to 1	Sunny/clear	NW	UNK GULL	3			3	Observed	2523326.8	7352499.2	Fly-over 250 m at 65 degrees
50	11-Apr-19	3	8:29	8:54	1	0 to 1	Sunny/clear	NW	AMRO	6	American robin	Turdus migratorius	1	Calling	2523158.5	7352798.1	
51	11-Apr-19	3	8:29	8:54	1	0 to 1	Sunny/clear	NW	AMRO	6	American robin	Turdus migratorius	1	Observed	2523304.5	7352815.2	Fly-over 100 m at 290 degrees
52	11-Apr-19	3	8:29	8:54	1	0 to 1	Sunny/clear	NW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Drumming	2523506.6	7353071.8	
53	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	HEGU	3	Herring Gull	Larus argentatus	2	Calling	2523815.0	7353541.4	Fly-over 300 m at 15 degrees
54	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524194.0	7353492.9	
55	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Drumming	2524146.6	7353557.3	
56	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	11	Calling	2524309.7	7353731.0	
57	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	HEGU	3	Herring Gull	Larus argentatus	1	Observed	2524361.6	7353756.7	Fly-over 60 m at 315 degrees
58	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	COGR	6	Common grackle	Quiscalus quiscula	1	Calling	2524360.3	7353745.9	Fly-over 50 m at 95 degrees

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
59	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	Calling	2524414.5	7353811.6	
60	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	Observed	2524503.7	7353943.2	Pair
61	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524520.4	7353983.0	
62	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Calling	2524629.7	7354081.1	
63	11-Apr-19	2	9:12	9:48	2	1	Sunny/clear	NW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524674.7	7354112.4	
64	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524754.6	7354249.8	Fly-over 20 m at 70 degrees
65	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	SOSP	6	Song sparrow	Melospiza melodia	1	Observed	2524749.3	7354224.0	Foraging
66	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524588.7	7354724.5	
67	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	BCCH	6	Black-capped chickadee	Poecile atricapilla	4	Calling	2524388.6	7355184.5	
68	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	SOSP	6	Song sparrow	Melospiza melodia	1	Observed	2524315.3	7355397.7	
69	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	COGR	6	Common grackle	Quiscalus quiscula	4	Calling	2524091.1	7355466.5	Fly-over 80 m at 350 degrees
70	11-Apr-19	1	10:01	10:46	3	2	Sunny/clear	NW	AMRO	6	American robin	Turdus migratorius	2	Observed	2524221.7	7355444.7	Fly-over 300 m at 85 degrees
71	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	GBHE	3	Great Blue Heron	Ardea herodias	4	Observed	2524575.6	7355276.0	Fly-over 150 m at 40 degrees
72	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524313.9	7355404.7	
73	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	AMRO	6	American robin	Turdus migratorius	1	Singing	2524329.8	7355329.0	
74	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524206.3	7355439.2	
75	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524282.0	7355451.2	
76	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	COGR	6	Common grackle	Quiscalus quiscula	1	Calling	2524211.6	7355461.8	
77	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2524247.5	7355329.0	
78	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	AMRO	6	American robin	Turdus migratorius	1	Singing	2524260.8	7355310.4	
79	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	AMGO	6	American goldfinch	Carduelis tristis	8		2524230.2	7355456.5	Fly-over 60 m at 350 degrees
80	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	DEJU	6	Dark-eyed junco	Junco hyemalis	12		2524372.4	7355285.2	Fly-over 10 m at 10 degrees
81	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524372.4	7355285.2	
82	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524372.4	7355165.6	
83	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524357.7	7355156.0	
84	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524398.9	7355170.9	
85	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	COGR	6	Common grackle	Quiscalus quiscula	1	Calling	2524367.0	7355062.0	Fly-over 50 m at 50 degrees
86	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524371.9	7355075.6	
87	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Singing	2524402.2	7355038.8	
88	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524439.4	7354795.7	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
89	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	CAGO	1	Canada Goose	<i>Branta canadensis</i>	1	Calling	2524508.5	7354774.4	Fly-over
90	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2524519.1	7354843.5	
91	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2524704.4	7354520.0	
92	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	FOSP	6	Fox Sparrow	<i>Passerella iliaca</i>	1	Singing	2524675.2	7354486.8	
93	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Calling	2524735.0	7354496.1	
94	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1		2524685.8	7354454.9	Foraging
95	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Calling	2524723.0	7354474.9	
96	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	Singing	2524727.0	7354362.0	2 males
97	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2524737.2	7354358.4	
98	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	BRCR	6	Brown creeper	<i>Certhia americana</i>	1	Singing	2524733.7	7354318.1	
99	17-Apr-19	1	6:45	7:37	2	1	Mostly cloudy	N	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Singing	2524757.6	7354368.6	
100	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2524643.0	7354081.1	
101	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	3	Calling	2524641.2	7354068.8	
102	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	AMRO	6	American robin	<i>Turdus migratorius</i>	6		2524622.8	7354065.3	Fly-over 40 m at 15 degrees
103	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Calling	2524557.0	7354016.1	
104	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Observed	2524553.4	7353981.9	
105	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1		2524472.7	7353880.9	
106	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2524470.0	7353893.2	
107	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2524446.8	7353907.7	
108	17-Apr-19	2	7:48	8:36	2	1 to 2	Mostly cloudy	N	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Observed	2524457.3	7353887.5	
109	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2523568.5	7352851.6	Agitated
110	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Calling	2523361.6	7352696.9	
111	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	2	Singing	2523384.0	7352701.8	Pair
112	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Calling	2523314.4	7352614.9	
113	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	AMRO	6	American robin	<i>Turdus migratorius</i>	3		2523308.2	7352597.5	
114	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1		2523146.1	7352467.7	
115	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	Observed	2523149.8	7352463.9	Fly-over 250 m at 250 degrees
116	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	RBME	1	Red-breasted Merganser	<i>Mergus serrator</i>	1	Observed	2523101.7	7352589.2	Fly-over 125 m at 230 degrees
117	17-Apr-19	3	8:49	9:08	2	1	Sunny/clear	N	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	Singing	2523097.2	7352616.2	
118	17-Apr-19	4	9:21	9:42	4	1 to 3	Sunny/clear	N	CORA	6	Common raven	<i>Corvus corax</i>	1		2522940.8	7353020.1	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
119	17-Apr-19	4	9:21	9:42	4	1 to 3	Sunny/clear	N	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2522933.8	7353093.3	
120	17-Apr-19	4	9:21	9:42	4	1 to 3	Sunny/clear	N	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing	2522894.3	7353013.1	
121	17-Apr-19	4	9:21	9:42	4	1 to 3	Sunny/clear	N	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	2	Pair CHIP	2522779.8	7353205.6	Pair
122	17-Apr-19	4	9:21	9:42	4	1 to 3	Sunny/clear	N	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1		2522768.1	7353306.7	Foraging
123	17-Apr-19	4	9:21	9:42	4	1 to 3	Sunny/clear	N	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2522776.3	7353380.0	Flushed
124	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	BAEA	4	Bald Eagle	<i>Haliaeetus leucocephalus</i>	1	Observed	2522937.1	7354374.3	Fly-over 150 m at 220 degrees
125	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2522770.6	7354562.0	
126	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	23		2522927.9	7354583.1	Small flock
127	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2522980.7	7354575.2	
128	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing/Observed	2522954.3	7354695.4	
129	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Calling	2522978.1	7354638.6	
130	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Calling	2522983.3	7354687.3	
131	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	SAVS	6	Savannah sparrow	<i>Passerculus sandwichensis</i>	1	Singing	2522988.8	7354725.4	
132	17-Apr-19	5	9:54	10:17	5	1 to 4	Sunny/clear	N	EVGR	6	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	12	Calling	2522970.6	7354661.5	Fly-over 20 m at 340 degrees
133	17-Apr-19	5	6:45	7:37	2	1	Mostly cloudy	N	RBME	1	Red-breasted Merganser	<i>Mergus serrator</i>	1	Observed	2524663.5	7354526.9	Fly-over 70 m at 5 degrees
134	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2522963.9	7354675.8	
135	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	2	Calling	2523039.0	7354684.2	
136	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Observed	2522995.1	7354611.9	Fly-over 40 m at 95 degrees
137	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	Calling	2522973.2	7354560.9	
138	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Calling	2522988.0	7354551.6	
139	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	Singing	2522950.0	7354553.5	
140	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Singing	2522953.7	7354472.8	
141	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Singing	2522920.1	7354214.6	
142	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2522843.7	7354172.2	
143	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Singing	2522886.2	7354277.3	
144	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2522998.7	7354320.8	
145	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	MALL	1	Mallard	<i>Anas platyrhynchos</i>	2	Observed	2522989.1	7354087.3	In pond foraging
146	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2522956.2	7354010.8	
147	22-Apr-19	5	6:33	7:01	5	0	Foggy	NNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2522719.2	7353404.7	
148	22-Apr-19	4	7:10	7:28	6	0	Foggy	NNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2522780.2	7353382.9	

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149	22-Apr-19	4	7:10	7:28	6	0	Foggy	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522730.8	7353359.7	
150	22-Apr-19	4	7:10	7:28	6	0	Foggy	NNW	SOSP	6	Song sparrow	Melospiza melodia	2	Calling	2522769.7	7353347.9	
151	22-Apr-19	4	7:10	7:28	6	0	Foggy	NNW	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	Singing	2522870.4	7353336.0	
152	22-Apr-19	4	7:10	7:28	6	0	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2522780.5	7353237.6	
153	22-Apr-19	4	7:10	7:28	6	0	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2522795.2	7353216.1	
154	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Drumming	2523269.8	7352455.0	
155	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	ALFL	6	Alder flycatcher	Empidonax alnorum	1	Observed	2523177.5	7352394.9	
156	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2523219.0	7352422.7	
157	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523157.4	7352425.7	
158	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2523177.5	7352555.0	
159	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	Observed	2523180.5	7352488.8	
160	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2523231.4	7352634.6	
161	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	Singing	2523213.9	7352549.4	
162	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	SOSP	6	Song sparrow	Melospiza melodia	1	Observed	2523269.9	7352603.1	
163	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523377.2	7352650.7	
164	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	2	Calling	2523353.2	7352689.1	
165	22-Apr-19	3	7:41	8:16	6	0	Foggy	NNW	SOSP	6	Song sparrow	Melospiza melodia	3	Calling	2523539.0	7352838.3	
166	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2523957.2	7353281.8	
167	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2523977.5	7353227.3	
168	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2523896.2	7353333.1	
169	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2523951.8	7353332.1	
170	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	Calling	2524190.1	7353528.7	
171	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524270.8	7353657.4	
172	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2524289.1	7353706.9	
173	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524306.1	7353642.5	
174	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Calling	2524299.9	7353712.3	
175	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524326.7	7353691.7	
176	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	BEKI	3	Belted Kingfisher	Megaceryle alcyon	1	Observed	2524318.6	7353699.7	Kingfisher passage
177	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	WWCR	6	White-winged crossbill	Loxia leucoptera	10	Calling	2524401.8	7353802.3	Small flock could not see in fog fly-over 50 m at 270 drees
178	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524438.7	7353805.4	

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179	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	COGR	6	Common grackle	Quiscalus quiscula	2	Calling	2524360.8	7353772.3	Fly-over 40 m at 100 degrees
180	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524585.1	7354036.0	
181	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2524626.3	7354020.8	
182	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2524614.6	7353987.7	
183	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	MALL	1	Mallard	Anas platyrhynchos	2	Pair	2524658.9	7354049.0	
184	22-Apr-19	2	8:34	9:17	7	0 to 1	Foggy	NNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524674.2	7354166.3	
185	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524812.5	7354305.5	
186	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524810.7	7354316.3	
187	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524722.5	7354375.1	
188	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Singing	2524711.2	7354381.4	
189	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	AMRO	6	American robin	Turdus migratorius	5	Observed	2524724.9	7354425.7	Small flock
190	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524702.4	7354422.8	
191	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524751.4	7354486.8	
192	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524725.0	7354513.2	
193	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524608.3	7354653.7	
194	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524603.5	7354763.7	
195	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524361.6	7355259.0	
196	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	NOFL	7	Northern flicker	Colaptes auratus	1	Observed	2524255.1	7355237.7	
197	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524315.1	7355185.4	
198	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	SAVS	6	Savannah sparrow	Passerculus sandwichensis	1	Singing	2524344.2	7355297.7	
199	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524381.0	7355380.9	
200	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	COGR	6	Common grackle	Quiscalus quiscula	3	Calling	2524237.7	7355435.1	Fly-over 80 m at 245 degrees
201	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	SOSP	6	Song sparrow	Melospiza melodia	1	Calling	2524293.8	7355295.7	
202	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2524247.4	7355421.6	
203	22-Apr-19	1	9:23	10:12	7	0	Foggy	NNW	MALL	1	Mallard	Anas platyrhynchos	2	Pair	2524551.2	7355884.2	Pair in pond next to road
204	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524194.7	7355679.6	
205	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524088.9	7355491.6	
206	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524166.7	7355431.1	
207	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524240.1	7355465.7	
208	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	NOFL	7	Northern flicker	Colaptes auratus	2	Pair	2524216.4	7355416.0	

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209	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	COGR	6	Common grackle	Quiscalus quiscula	2	Observed	2524153.7	7355578.0	Fly-over 80 m at 250 degrees
210	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2524190.4	7355487.3	
211	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	CAGO	1	Canada Goose	Branta canadensis	1	Calling	2523993.8	7355452.7	
212	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524298.5	7355403.0	
213	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	CAGO	1	Canada Goose	Branta canadensis	2	Calling	2524274.7	7355320.9	Landed in treatment pond at back of former landfill
214	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	AMRO	6	American robin	Turdus migratorius	1	Singing	2524289.8	7355476.5	
215	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2524123.4	7355508.9	
216	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524266.1	7355236.6	
217	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524352.5	7355282.0	
218	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	AMRO	6	American robin	Turdus migratorius	1	Calling	2524332.0	7355235.5	
219	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524326.6	7355148.0	
220	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2524328.7	7355078.9	
221	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524368.7	7355101.5	
222	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524379.5	7355051.8	
223	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524429.2	7355067.0	
224	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524418.4	7354987.0	
225	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	HETH	6	Hermit thrush	Catharus guttatus	1	Observed	2524467.0	7354968.6	
226	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	Calling	2524471.7	7354906.5	
227	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524514.9	7354846.5	
228	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524575.1	7354763.3	
229	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	NOFL	7	Northern flicker	Colaptes auratus	1	Singing	2524516.7	7354685.6	
230	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	BRCR	6	Brown creeper	Certhia americana	1	Calling	2524600.9	7354658.5	
231	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Singing	2524620.5	7354780.6	
232	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524646.4	7354605.6	
233	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	BRCR	6	Brown creeper	Certhia americana	1	Singing	2524618.3	7354525.6	
234	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Observed	2524683.5	7354515.4	Foraging
235	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	5	Observed	2524710.7	7354456.0	Fly-over 300 m at 330 degrees
236	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	AMRO	6	American robin	Turdus migratorius	2	Pair	2524738.9	7354359.2	
237	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	NOFL	7	Northern flicker	Colaptes auratus	1	Observed	2524765.2	7354283.6	
238	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524812.8	7354171.2	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
239	28-Apr-19	1	6:27	7:11	2	1	Sunny/clear	WSW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2524646.4	7354270.6	
240	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	PAWA	6	Palm Warbler	<i>Dendroica palmarum</i>	1	Observed	2524671.2	7354096.7	
241	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2524634.5	7353997.3	
242	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	2	Observed	2524636.7	7354040.5	
243	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2524692.9	7354008.1	
244	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524593.4	7354047.0	
245	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Observed	2524513.5	7353947.6	
246	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing	2524537.3	7353908.7	
247	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2524511.3	7353837.4	
248	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Observed	2524459.5	7353873.8	
249	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2524325.5	7353772.5	
250	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	HAWO	7	Hairy woodpecker	<i>Picoides villosus</i>	1	Calling	2524347.1	7353798.5	
251	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Calling	2524370.9	7353750.9	
252	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2524295.2	7353727.2	
253	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	Singing	2524226.1	7353597.5	
254	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524211.0	7353526.2	
255	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	HEGU	3	Herring Gull	<i>Larus argentatus</i>	3	Observed	2524098.9	7353448.8	Fly-over 150 m at 170 degrees
256	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2524139.6	7353418.1	
257	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Calling	2524077.0	7353454.9	Fly-over 50 m at 350 degrees
258	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	BRCR	6	Brown creeper	<i>Certhia americana</i>	1	Singing	2524094.3	7353474.3	
259	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing	2524074.8	7353463.5	
260	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524085.6	7353387.9	
261	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Singing	2523938.7	7353312.2	
262	28-Apr-19	2	7:18	7:51	4	2	Partial cloud	WSW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Calling	2523909.5	7353218.2	
263	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	2	Pair	2523613.4	7352883.3	
264	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2523409.2	7352689.9	
265	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2523352.2	7352701.3	
266	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Singing	2523369.0	7352712.1	
267	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Singing	2523337.4	7352636.2	
268	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	2	Calling	2523158.6	7352450.2	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
269	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2523010.1	7352520.6	
270	28-Apr-19	3	7:59	8:27	4	2 to 3	Overcast	WSW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Calling	2523176.8	7352462.7	
271	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Calling	2522858.2	7353074.1	
272	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2522867.2	7353105.8	
273	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Observed	2522823.4	7353166.2	
274	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	2	Territorial	2522812.1	7353193.4	Two males fighting (territorial)
275	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Calling	2522769.8	7353275.0	
276	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	HAWO	7	Hairy woodpecker	<i>Picoides villosus</i>	2	Pair	2522766.0	7353297.6	
277	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Observed	2522769.1	7353303.7	
278	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	8	Observed	2522776.5	7353299.8	Small flock
279	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2522751.7	7353338.4	
280	28-Apr-19	4	8:41	9:08	5	1	Overcast	WSW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2522755.5	7353367.1	
281	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2523027.9	7353937.4	
282	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2523051.2	7353933.3	
283	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	3	Calling	2523013.6	7353970.9	
284	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	TUVU	4	Turkey Vulture	<i>Cathartes aura</i>	1	Observed	2523018.7	7354154.0	Fly-over 200 m at 5 degrees
285	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Observed	2522986.2	7354075.7	
286	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2522900.3	7354330.4	
287	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2522919.1	7354530.2	
288	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	DEJU	6	Dark-eyed junco	<i>Junco hyemalis</i>	1	Observed	2523009.6	7354641.0	
289	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Observed	2522985.3	7354620.6	
290	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	CORA	6	Common raven	<i>Corvus corax</i>	1	Calling	2522941.4	7354624.7	Fly-over 100 m at 265 degrees
291	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	3	Territorial	2522993.9	7354649.2	Three males fighting
292	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	MERL	4	Merlin	<i>Falco columbarius</i>	1	Observed	2523027.9	7354769.1	Fly-over 80 m at 260 degrees
293	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2523058.4	7354703.0	
294	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2523056.3	7354651.2	
295	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	3	Observed	2523036.6	7354681.5	
296	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	3	Observed	2523008.5	7354674.1	Foraging
297	28-Apr-19	5	9:21	9:52	5	0 to 1	Overcast	WSW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	5	Observed	2522995.9	7354000.4	Small flock
298	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2522988.4	7354726.2	

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299	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2522981.1	7354700.2	
300	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522984.0	7354661.2	
301	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522995.6	7354688.6	
302	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2522963.8	7354716.1	
303	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	NOFL	7	Northern flicker	Colaptes auratus	1	Singing	2522942.1	7354666.9	
304	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2523044.8	7354695.9	
305	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2522971.0	7354623.6	
306	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522926.2	7354505.0	
307	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2522991.3	7354512.2	
308	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2522872.7	7354565.7	
309	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Observed	2522969.6	7354370.5	Flushed
310	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2522920.4	7354292.5	
311	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	Singing	2522973.2	7354199.2	Pair
312	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	ABDU	1	American Black Duck	Anas rubripes	6	Observed	2522997.8	7354067.6	
313	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2522892.2	7353995.4	
314	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522947.2	7353966.4	
315	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	BEKI	3	Belted Kingfisher	Megaceryle alcyon	1	Calling	2522929.8	7354019.9	
316	02-May-19	5	6:23	6:57	4	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2523018.0	7353993.9	
317	02-May-19	4	7:11	7:28	4	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	2	Calling	2522762.1	7353407.0	
318	02-May-19	4	7:11	7:28	4	0	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	Calling	2522816.7	7353388.8	
319	02-May-19	4	7:11	7:28	4	0	Overcast	WNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2522857.8	7353157.8	
320	02-May-19	4	7:11	7:28	4	0	Overcast	WNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2522777.2	7353100.1	
321	02-May-19	4	7:11	7:28	4	0	Overcast	WNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2522885.1	7353132.0	
322	02-May-19	4	7:11	7:28	4	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522803.1	7353116.8	
323	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	SWSP	6	Swamp Sparrow	Melospiza georgiana	1	Singing	2523162.5	7352423.9	
324	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523222.8	7352480.0	
325	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	SOSP	6	Song sparrow	Melospiza melodia	1	Calling	2523136.5	7352499.2	
326	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Observed	2523150.2	7352507.4	
327	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2523110.5	7352397.9	
328	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2523107.8	7352455.4	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
329	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	SOSP	6	Song sparrow	Melospiza melodia	1	Observed	2523192.6	7352537.5	
330	02-May-19	3	7:40	8:11	5	0	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2523252.2	7352617.6	
331	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2523872.2	7353266.1	
332	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2523965.3	7353288.0	
333	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Drumming	2523943.4	7353249.6	
334	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524083.9	7353386.5	
335	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	Observed	2524047.4	7353377.4	
336	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2524014.6	7353428.5	
337	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2524113.1	7353437.7	
338	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524131.4	7353441.3	
339	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	3	Observed	2524100.4	7353424.9	Three males fighting
340	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524080.3	7353477.8	
341	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524069.3	7353390.2	
342	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	PAWA	6	Palm Warbler	Dendroica palmarum	1	Observed	2524080.3	7353424.9	
343	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524451.8	7353902.2	
344	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Observed	2524479.0	7353896.5	Male
345	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524508.4	7353904.1	
346	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524488.3	7353942.4	
347	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524501.6	7353890.6	
348	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	MALL	1	Mallard	Anas platyrhynchos	2	Pair	2524653.3	7354053.6	Pair observed
349	02-May-19	2	8:26	9:01	5	0 to 1	Overcast	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524623.8	7354089.2	
350	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	BRCR	6	Brown creeper	Certhia americana	1	Singing	2524744.4	7354310.9	
351	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524844.7	7354308.4	
352	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524789.1	7354267.1	
353	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	Calling	2524663.7	7354588.6	
354	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524707.6	7354543.5	
355	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	Calling	2524619.1	7354648.2	
356	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524527.6	7354693.3	
357	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524523.2	7354952.3	
358	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2524481.8	7355012.5	

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359	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	CAGO	1	Canada Goose	<i>Branta canadensis</i>	1	Calling	2524496.9	7354964.8	Fly-over 60 m at 120 degrees
360	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	CORA	6	Common raven	<i>Corvus corax</i>	1	Calling	2524431.7	7355011.2	
361	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	Calling	2524427.9	7355102.8	
362	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2524370.2	7355105.3	
363	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524381.9	7355135.4	
364	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	BDOW	5	Barred Owl	<i>Strix varia</i>	1	Singing	2524405.2	7355140.1	Probably same birds at asphalt plant
365	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing	2524340.1	7355102.8	
366	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Calling	2524371.1	7355047.0	
367	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2524380.4	7355209.8	
368	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Calling	2524371.1	7355171.1	Male
369	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	2	Calling	2524293.5	7355256.4	Pair
370	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524276.5	7355284.3	
371	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2524327.7	7355337.0	
372	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	SAVS	6	Savannah sparrow	<i>Passerculus sandwichensis</i>	1	Singing	2524281.1	7355409.9	
373	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2524261.0	7355340.1	
374	02-May-19	1	9:05	10:01	6	0 to 1	Overcast	WNW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	Calling	2524214.4	7355433.2	
375	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2524327.3	7355496.1	
376	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2524258.6	7355454.5	
377	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Singing	2524295.8	7355471.4	
378	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	7	Singing	2524277.2	7355381.8	Small flock
379	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2524204.5	7355265.2	
380	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Calling	2524241.7	7355405.5	Fly-over 30 m at 170 degrees
381	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	TRSW	6	Tree sparrow	<i>Tachycineta bicolor</i>	1	Observed	2523922.2	7354910.2	
382	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2524248.5	7355385.2	Fly-over 50 m at 265 degrees
383	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	SAVS	6	Savannah sparrow	<i>Passerculus sandwichensis</i>	1	Calling	2524250.2	7355361.5	
384	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2524216.4	7355437.6	
385	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	COGR	6	Common grackle	<i>Quiscalus quiscula</i>	1	Singing	2524207.9	7355417.3	
386	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	AMRO	6	American robin	<i>Turdus migratorius</i>	2	Calling	2524211.3	7355485.0	Fly-over 80 m at 75 degrees
387	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	CAGO	1	Canada Goose	<i>Branta canadensis</i>	1	Calling	2524349.9	7355295.6	
388	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524201.1	7355168.8	

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389	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	COGR	6	Common grackle	Quiscalus quiscula	1	Calling	2524331.3	7355170.5	
390	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Calling	2524377.0	7355124.9	Fly-over 100 m at 210 degrees
391	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524360.9	7355053.0	
392	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524428.5	7355151.1	
393	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524426.8	7355046.3	
394	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524514.7	7354971.9	
395	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524484.3	7354858.6	
396	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524512.2	7354864.5	
397	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524578.1	7354749.6	
398	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	CORA	6	Common raven	Corvus corax	1	Singing	2524529.1	7354749.6	
399	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524539.3	7354829.0	Fly-over 50 m at 350 degrees
400	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524574.8	7354732.6	
401	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Singing	2524662.7	7354467.2	
402	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Calling	2524672.8	7354404.7	
403	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	CORA	6	Common raven	Corvus corax	1	Singing	2524864.7	7354177.3	
404	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Calling	2524783.8	7354302.5	Fly-over 30 m at 310 degrees
405	07-May-19	1	6:11	6:53	2	1	Sunny/clear	SW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524722.7	7354304.1	
406	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	COGR	6	Common grackle	Quiscalus quiscula	1	Singing	2524670.3	7354015.0	
407	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	SWSP	6	Swamp Sparrow	Melospiza georgiana	7	Calling	2524668.7	7354082.1	Fly-over 80 m at 115 degrees
408	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Singing	2524616.2	7354072.5	
409	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524622.9	7353976.1	
410	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	BHVI	6	Blue-headed vireo	Vireo solitarius	2	Singing	2524602.7	7354025.1	Pair
411	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	WWCR	6	White-winged crossbill	Loxia leucoptera	1	Observed	2524613.9	7354028.2	
412	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	WTSP	6	White throated sparrow	Zonotrichia albicollis	12	Calling	2524582.4	7354035.3	Fly-over 20 m at 120 degrees
413	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2524579.0	7354006.5	
414	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2524510.5	7353939.8	
415	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	CAGO	1	Canada Goose	Branta canadensis	1	Observed	2524510.5	7353899.2	
416	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Calling	2524463.2	7353899.2	Fly-over 100 m at 190 degrees
417	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524389.6	7353832.4	
418	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524359.2	7353692.1	

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419	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Singing	2524406.5	7353778.3	
420	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Singing	2524261.2	7353683.6	
421	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2524274.7	7353690.4	
422	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	Calling	2524155.5	7353493.4	Foraging
423	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2524179.2	7353468.1	
424	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	HAWO	7	Hairy woodpecker	<i>Picoides villosus</i>	1	Singing	2524153.8	7353468.1	
425	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Calling	2523862.2	7353294.8	
426	07-May-19	2	7:04	7:39	5	1 to 2	Sunny/clear	SW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2523836.8	7353239.0	
427	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	2	Observed	2523558.7	7352846.0	
428	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	3	Observed	2523550.3	7352840.9	
429	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Calling	2523432.6	7352731.8	Fly-over 50 m at 125 degrees
430	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2523165.7	7352417.4	
431	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Calling	2523175.8	7352478.2	
432	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Singing	2523179.2	7352559.4	
433	07-May-19	3	7:53	8:24	8	2 to 4	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Singing	2523142.0	7352481.6	
434	07-May-19	4	8:37	9:06	10	2 to 3	Sunny/clear	SW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2522891.5	7352907.6	
435	07-May-19	4	8:37	9:06	10	2 to 3	Sunny/clear	SW	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2522885.9	7353125.3	
436	07-May-19	4	8:37	9:06	10	2 to 3	Sunny/clear	SW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2522801.4	7353119.3	
437	07-May-19	4	8:37	9:06	10	2 to 3	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Calling	2522853.1	7353147.7	
438	07-May-19	4	8:37	9:06	10	2 to 3	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Singing	2522866.7	7353367.6	
439	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2522945.2	7353991.8	
440	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2522967.1	7353955.5	
441	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Singing	2523016.7	7354121.4	
442	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Calling	2522895.1	7354302.9	
443	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Singing	2522919.9	7354377.3	
444	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2522975.7	7354431.1	Flushed
445	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Singing	2522937.5	7354543.6	
446	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Observed	2523006.2	7354655.1	Fly-over 50 m at 230 degrees
447	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2523071.0	7354659.9	
448	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2523044.3	7354722.8	

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449	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Calling	2523053.8	7354666.5	
450	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Singing	2522977.9	7354350.4	
451	07-May-19	5	9:16	10:03	11	3 to 4	Sunny/clear	SW	MERL	4	Merlin	<i>Falco columbarius</i>	1	Calling	2522987.3	7354291.2	
452	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	HAWO	7	Hairy woodpecker	<i>Picoides villosus</i>	1	Calling	2523047.3	7354688.3	
453	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing	2523047.3	7354695.3	
454	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2522988.0	7354693.2	
455	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Singing	2522902.8	7354712.7	
456	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Singing	2522969.8	7354679.2	
457	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2522969.2	7354664.5	
458	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2522982.1	7354633.0	
459	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2523047.4	7354627.2	
460	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	RBNU	6	Redbreasted nuthatch	<i>Sitta canadensis</i>	1	Singing	2523022.9	7354477.9	
461	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Calling	2522927.2	7354536.2	
462	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Observed	2522950.6	7354487.3	
463	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Observed	2522980.9	7354461.6	
464	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2522889.4	7354201.0	
465	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Observed	2522895.2	7354217.3	Fly-over 80 m at 355 degrees
466	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Singing	2522944.7	7354057.0	
467	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2522996.1	7354095.5	
468	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	CAGO	1	Canada Goose	<i>Branta canadensis</i>	2	Pair	2522992.6	7354061.6	Pair in pond
469	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2523004.2	7354043.0	
470	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	KILL	2	Killdeer	<i>Charadrius vociferus</i>	1	Calling	2522990.2	7354016.2	Fly-over could not see direction or bearing
471	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	Calling	2522905.1	7354072.1	
472	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Observed	2522945.3	7354045.9	
473	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Observed	2522945.3	7354042.4	
474	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	1	Drumming	2522915.0	7354079.7	
475	11-May-19	5	6:05	6:43	1	0	Sunny/clear	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	2	Calling	2522996.6	7353999.3	
476	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	DOWO	7	Downy woodpecker	<i>Picoides pubescens</i>	2	Pair	2522816.8	7353415.1	
477	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	PUFI	6	Purple finch	<i>Carpodacus purpureus</i>	1	Singing	2522863.6	7353429.2	
478	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Singing	2522773.7	7353392.7	

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479	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522760.6	7353381.4	
480	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	1	Singing	2522851.4	7353381.4	
481	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2522799.0	7353357.1	
482	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2522765.3	7353352.4	Fly-over 30 m at 80 degrees
483	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	Calling	2522744.7	7353345.9	
484	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522811.6	7353263.0	
485	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	1	Calling	2522806.0	7353181.6	
486	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	1	Calling	2522829.4	7353214.4	
487	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522764.8	7353171.8	
488	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522826.3	7353101.6	
489	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	12	Observed	2522835.8	7353106.5	Fly-over 150 m at 50 degrees
490	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522812.1	7353084.5	
491	11-May-19	4	6:54	7:27	3	0	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	1	Observed	2522922.3	7353007.9	
492	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	GRJA	6	Gray Jay	Perisoreus canadensis	2	Pair	2523136.0	7352475.6	
493	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2523168.2	7352451.8	
494	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	SOSP	6	Song sparrow	Melospiza melodia	2	Territorial	2523157.0	7352486.8	Two males fighting (territorial)
495	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Singing	2523151.4	7352356.8	
496	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523178.0	7352376.3	
497	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	AMGO	6	American goldfinch	Carduelis tristis	3	Calling	2523159.0	7352468.6	
498	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523147.9	7352421.8	
499	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	2	Observed	2523222.0	7352550.4	Pair
500	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523241.6	7352493.1	
501	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2523233.2	7352582.5	
502	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2523229.0	7352602.1	
503	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2523251.4	7352607.7	
504	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2523272.3	7352623.1	
505	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	1	Calling	2523301.7	7352648.2	
506	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523308.7	7352660.8	
507	11-May-19	3	7:37	8:02	6	1 to 3	Sunny/clear	W	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2523482.0	7352810.4	
508	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	HETH	6	Hermit thrush	Catharus guttatus	1	Observed	2524048.4	7353414.8	

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509	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524103.0	7353485.7	
510	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524156.4	7353548.3	
511	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	AMCR	6	American crow	Corvus brachyrhynchos	1	Calling	2524305.6	7353687.1	Fly-over could not see direction or bearing
512	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2524314.9	7353731.2	
513	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524397.3	7353790.4	
514	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	Pair	2524392.2	7353802.2	Pair
515	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524435.6	7353826.3	
516	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524433.5	7353789.7	
517	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	3	Observed	2524432.6	7353830.2	Foraging
518	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524544.3	7353920.0	
519	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	GWTE	1	Green-winged Teal	Anas crecca	2	Pair	2524657.8	7354053.6	Change from mallard other trans
520	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2524670.7	7354088.1	
521	11-May-19	2	8:10	8:39	6	1 to 4	Sunny/clear	W	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524662.9	7354137.1	
522	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524774.5	7354285.3	
523	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524770.3	7354306.0	
524	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524745.5	7354330.8	
525	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	AMRO	6	American robin	Turdus migratorius	1	Observed	2524798.7	7354303.6	
526	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524791.6	7354333.1	
527	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524769.1	7354354.4	
528	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	DOWO	7	Downy woodpecker	Picoides pubescens	2	Pair	2524706.6	7354454.7	Pair agitated
529	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Observed	2524592.0	7354463.0	
530	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2524516.2	7354813.8	
531	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	SOSP	6	Song sparrow	Melospiza melodia	1	Calling	2524510.3	7354863.1	Fly-over could not see direction or bearing
532	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Calling	2524449.7	7354995.4	
533	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524379.5	7355067.1	
534	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524431.0	7355030.4	
535	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	OVEN	6	Ovenbird	Seiurus aurocapilla	2	Pair	2524443.7	7355008.8	Pair obs
536	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524298.8	7355100.0	
537	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2524440.8	7355071.6	
538	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	SOSP	6	Song sparrow	Melospiza melodia	1	Calling	2524364.5	7355086.5	

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539	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	SOSP	6	Song sparrow	Melospiza melodia	1	Observed	2524323.7	7355266.8	
540	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	TUVU	4	Turkey Vulture	Cathartes aura	1	Singing	2524316.0	7355453.5	
541	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	BEKI	3	Belted Kingfisher	Megaceryle alcyon	1	Observed	2524339.4	7355606.3	Fly-over 30 m at 20 degrees
542	11-May-19	1	8:45	9:38	8	1 to 4	Sunny/clear	W	NOHA	4	Northern Harrier	Circus cyaneus	2	Pair	2524474.3	7355822.0	Fly-over 60 m at 245 degrees
543	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524247.3	7355548.5	
544	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	3	Calling	2524235.3	7355445.0	
545	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524264.2	7355529.3	
546	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	COGR	6	Common grackle	Quiscalus quiscula	7	Observed	2524230.7	7355437.8	Fly-over 80 m at 60 degrees
547	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524284.7	7355381.2	
548	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524320.8	7355345.1	
549	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2524246.1	7355323.5	
550	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524272.6	7355193.5	
551	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2524261.8	7355235.6	
552	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	SOSP	6	Song sparrow	Melospiza melodia	1	Singing	2524307.5	7355226.0	
553	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524454.4	7355079.1	
554	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524370.1	7355079.1	
555	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Drumming	2524396.6	7354970.8	
556	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524624.1	7354637.4	
557	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524672.2	7354514.6	
558	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524742.0	7354403.9	
559	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2524766.1	7354466.5	
560	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524763.7	7354394.3	
561	16-May-19	1	5:56	6:40	3	0	Overcast	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2524693.9	7354353.3	
562	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	COGR	6	Common grackle	Quiscalus quiscula	1	Calling	2524663.5	7354041.7	
563	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	BLJA	6	Bluejay	Cyanocitta cristata	2	Pair	2524653.3	7354044.6	
564	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2524623.2	7354093.6	
565	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524638.6	7354111.9	
566	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2524661.3	7354022.6	
567	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524660.6	7354090.0	
568	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2524684.7	7354048.2	

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569	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524697.2	7353991.1	
570	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2524518.4	7353891.2	
571	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524590.9	7353940.6	
572	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524503.7	7353895.0	
573	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524393.7	7353830.6	
574	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling			
575	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524406.5	7353794.7	
576	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524413.6	7353762.6	
577	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Observed	2524289.6	7353568.5	
578	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524242.5	7353607.1	
579	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524080.9	7353464.7	
580	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524089.5	7353532.1	
581	16-May-19	2	6:48	7:27	4	1 to 2	Mostly cloudy	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2524086.8	7353379.7	
582	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2523561.1	7352773.3	
583	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Calling	2523374.4	7352700.5	
584	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2523332.6	7352691.9	
585	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2523313.2	7352591.7	
586	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	AMRO	6	American robin	Turdus migratorius	1	Observed	2523300.2	7352578.7	
587	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	Observed	2523225.2	7352565.7	
588	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	COLO	3	Common loon	Gavia immer	1	Calling	2523241.1	7352584.5	
589	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	GRJA	6	Gray Jay	Perisoreus canadensis	1	Observed	2523171.9	7352381.2	Same as last trans
590	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	HETH	6	Hermit thrush	Catharus guttatus	1	Observed	2523146.0	7352485.0	
591	16-May-19	3	7:41	8:06	4	1	Mostly cloudy	WNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2523143.1	7352473.5	
592	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2522781.4	7353112.5	
593	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522799.1	7353113.9	
594	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2522773.7	7353202.0	
595	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522830.6	7353207.8	
596	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2522759.4	7353288.3	
597	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	HAWO	7	Hairy woodpecker	Picoides villosus	2	Pair	2522768.7	7353339.4	
598	16-May-19	4	8:16	8:33	4	1 to 2	Overcast	WNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2522763.7	7353379.7	

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599	16-May-19	5	8:47	9:22	4	1 to 2	Overcast	WNW	GWTE	1	Green-winged Teal	Anas crecca	2	Pair	2523013.1	7353947.3	Greenwinged teal possible nest
600	16-May-19	5	8:47	9:22	4	1 to 2	Overcast	WNW	AMGO	6	American goldfinch	Carduelis tristis	2	Observed	2523011.5	7354069.4	Fly-over 50 m at 250 degrees
601	16-May-19	5	8:47	9:22	4	1 to 2	Overcast	WNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2522964.7	7354231.2	
602	16-May-19	5	8:47	9:22	4	1 to 2	Overcast	WNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Calling	2522935.0	7354434.8	
603	16-May-19	5	8:47	9:22	4	1 to 2	Overcast	WNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522991.6	7354498.4	
604	16-May-19	5	8:47	9:22	4	1 to 2	Overcast	WNW	PIWO	7	Pileated Woodpecker	Dryocopus pileatus	1	Calling	2522951.3	7354682.9	
605	19-May-19	5	5:57	6:52	2	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522956.2	7354685.4	
606	19-May-19	5	5:57	6:52	2	0	Overcast	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2522979.9	7354720.4	
607	19-May-19	5	5:57	6:52	2	0	Overcast	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	C	2522996.8	7354666.3	
608	19-May-19	5	5:57	6:52	2	0	Overcast	W	HAWO	7	Hairy woodpecker	Picoides villosus	1		2522960.7	7354665.1	
609	19-May-19	5	5:57	6:52	2	0	Overcast	W	AMRO	6	American robin	Turdus migratorius	1	Singing	2522966.3	7354711.4	
610	19-May-19	5	5:57	6:52	2	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523057.8	7354668.5	
611	19-May-19	5	5:57	6:52	2	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2522937.0	7354718.2	
612	19-May-19	5	5:57	6:52	2	0	Overcast	W	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522963.0	7354608.7	
613	19-May-19	5	5:57	6:52	2	0	Overcast	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	C	2522947.2	7354629.0	
614	19-May-19	5	5:57	6:52	2	0	Overcast	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2522934.7	7354520.7	
615	19-May-19	5	5:57	6:52	2	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522934.7	7354443.9	
616	19-May-19	5	5:57	6:52	2	0	Overcast	W	HEGU	3	Herring Gull	Larus argentatus	3	Observed	2522962.0	7354451.0	Fly-over 60 m at 60 degrees
617	19-May-19	5	5:57	6:52	2	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	Calling	2522962.0	7354451.0	
618	19-May-19	5	5:57	6:52	2	0	Overcast	W	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2522941.5	7354446.2	
620	19-May-19	5	5:57	6:52	2	0	Overcast	W	SWSP	6	Swamp Sparrow	Melospiza georgiana	1	Singing	2522929.7	7354209.8	
621	19-May-19	5	5:57	6:52	2	0	Overcast	W	HEGU	3	Herring Gull	Larus argentatus	3	Observed	2522881.1	7354253.8	Fly-over 100 m at 90 degrees
622	19-May-19	5	5:57	6:52	2	0	Overcast	W	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2522941.8	7354201.9	
623	19-May-19	5	5:57	6:52	2	0	Overcast	W	COGR	6	Common grackle	Quiscalus quiscula	1	Calling	2522954.5	7354182.7	
624	19-May-19	5	5:57	6:52	2	0	Overcast	W	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2522942.8	7354197.5	
625	19-May-19	5	5:57	6:52	2	0	Overcast	W	HEGU	3	Herring Gull	Larus argentatus	1	Observed	2522910.5	7354145.5	Fly-over 100 m at 280 degrees
626	19-May-19	5	5:57	6:52	2	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	Calling	2522972.0	7354067.0	
627	19-May-19	5	5:57	6:52	2	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522972.0	7354067.0	
628	19-May-19	5	5:57	6:52	2	0	Overcast	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523015.4	7354057.4	
629	19-May-19	5	5:57	6:52	2	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522997.4	7354093.5	

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630	19-May-19	5	5:57	6:52	2	0	Overcast	W	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522941.0	7354004.4	
631	19-May-19	5	5:57	6:52	2	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522943.2	7354001.0	
632	19-May-19	5	5:57	6:52	2	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522951.1	7353996.5	
633	19-May-19	5	5:57	6:52	2	0	Overcast	W	HEGU	3	Herring Gull	Larus argentatus	2	Observed	2522917.3	7354021.3	Fly-over 150 m at 60 degrees
634	19-May-19	5	5:57	6:52	2	0	Overcast	W	AMCR	6	American crow	Corvus brachyrhynchos	2	Calling	2522934.2	7353982.9	
635	19-May-19	5	5:57	6:52	2	0	Overcast	W	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522971.4	7354038.2	
636	19-May-19	5	5:57	6:52	2	0	Overcast	W	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522893.6	7353985.2	
637	19-May-19	5	5:57	6:52	2	0	Overcast	W	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	35	Observed	2522965.8	7353972.8	Fly-over 200 m at 25 degrees
638	19-May-19	5	5:57	6:52	2	0	Overcast	W	GRCA	6	Gray Catbird	Dumetella carolinensis	1	Singing	2523008.7	7353988.6	
639	19-May-19	4	7:08	7:42	3	0	Overcast	W	NOPA	6	Northern parula	Parula americana	1	Singing	2522861.7	7353441.7	
640	19-May-19	4	7:08	7:42	3	0	Overcast	W	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2522775.8	7353371.2	
641	19-May-19	4	7:08	7:42	3	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522790.8	7353374.9	
642	19-May-19	4	7:08	7:42	3	0	Overcast	W	NOPA	6	Northern parula	Parula americana	1	Singing	2522842.6	7353379.3	
643	19-May-19	4	7:08	7:42	3	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522835.6	7353370.2	
644	19-May-19	4	7:08	7:42	3	0	Overcast	W	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522821.4	7353343.9	
645	19-May-19	4	7:08	7:42	3	0	Overcast	W	NOPA	6	Northern parula	Parula americana	1	Singing	2522757.6	7353277.1	
646	19-May-19	4	7:08	7:42	3	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522816.3	7353275.1	
647	19-May-19	4	7:08	7:42	3	0	Overcast	W	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2522759.2	7353262.0	Foraging
648	19-May-19	4	7:08	7:42	3	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522750.9	7353353.8	
649	19-May-19	4	7:08	7:42	3	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522778.7	7353224.8	
650	19-May-19	4	7:08	7:42	3	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522771.0	7353167.4	
651	19-May-19	4	7:08	7:42	3	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522886.7	7353078.9	
652	19-May-19	4	7:08	7:42	3	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522869.5	7353094.3	
653	19-May-19	4	7:08	7:42	3	0	Overcast	W	SOSP	6	Song sparrow	Melospiza melodia	3	Singing	2522829.9	7353016.8	
654	19-May-19	4	7:08	7:42	3	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2522809.2	7353099.0	
655	19-May-19	3	8:01	8:38	5	0	Overcast	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523138.3	7352525.8	
656	19-May-19	3	8:01	8:38	5	0	Overcast	W	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	4	Observed	2523127.5	7352502.2	Fly-over 150 m at 60 degrees
657	19-May-19	3	8:01	8:38	5	0	Overcast	W	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523155.1	7352515.9	
658	19-May-19	3	8:01	8:38	5	0	Overcast	W	COYE	6	Common yellow throat	Geothlypis trichas	1	Observed	2523315.9	7352619.4	
659	19-May-19	3	8:01	8:38	5	0	Overcast	W	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2523163.2	7352430.0	

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660	19-May-19	3	8:01	8:38	5	0	Overcast	W	AMRO	6	American robin	Turdus migratorius	1	Singing	2523148.7	7352456.6	
661	19-May-19	3	8:01	8:38	5	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523108.8	7352454.7	
662	19-May-19	3	8:01	8:38	5	0	Overcast	W	AMRO	6	American robin	Turdus migratorius	1	Calling	2523182.9	7352495.3	
663	19-May-19	3	8:01	8:38	5	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2523136.0	7352473.7	
664	19-May-19	3	8:01	8:38	5	0	Overcast	W	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523246.8	7352526.3	
665	19-May-19	3	8:01	8:38	5	0	Overcast	W	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2523205.7	7352560.5	
666	19-May-19	3	8:01	8:38	5	0	Overcast	W	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2523321.0	7352586.5	
667	19-May-19	3	8:01	8:38	5	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2523386.5	7352729.0	
668	19-May-19	3	8:01	8:38	5	0	Overcast	W	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523414.9	7352694.6	
669	19-May-19	3	8:01	8:38	5	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523383.5	7352655.3	
670	19-May-19	3	8:01	8:38	5	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523463.0	7352795.7	
671	19-May-19	3	8:01	8:38	5	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523520.0	7352751.5	
672	19-May-19	3	8:01	8:38	5	0	Overcast	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2523448.3	7352789.8	
673	19-May-19	3	8:01	8:38	5	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2523437.5	7352785.9	
674	19-May-19	3	8:01	8:38	5	0	Overcast	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2523545.5	7352869.3	
675	19-May-19	3	8:01	8:38	5	0	Overcast	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523515.1	7352875.2	
676	19-May-19	3	8:01	8:38	5	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523590.6	7352841.8	
677	19-May-19	3	8:01	8:38	5	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523574.0	7352912.5	
678	19-May-19	3	8:01	8:38	5	0	Overcast	W	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2523631.9	7352873.3	
679	19-May-19	2	8:50	9:41	7	0	Overcast	W	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2523933.6	7353230.9	
680	19-May-19	2	8:50	9:41	7	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523965.0	7353262.3	
681	19-May-19	2	8:50	9:41	7	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2523965.0	7353262.3	
682	19-May-19	2	8:50	9:41	7	0	Overcast	W	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523911.0	7353319.2	
683	19-May-19	2	8:50	9:41	7	0	Overcast	W	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523909.5	7353300.2	
684	19-May-19	2	8:50	9:41	7	0	Overcast	W	HETH	6	Hermit thrush	Catharus guttatus	3	Singing	2523941.7	7353342.6	
685	19-May-19	2	8:50	9:41	7	0	Overcast	W	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524013.2	7353330.9	
686	19-May-19	2	8:50	9:41	7	0	Overcast	W	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2524050.5	7353346.3	
687	19-May-19	2	8:50	9:41	7	0	Overcast	W	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2524015.8	7353383.6	
688	19-May-19	2	8:50	9:41	7	0	Overcast	W	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524024.4	7353380.7	
689	19-May-19	2	8:50	9:41	7	0	Overcast	W	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524105.1	7353482.6	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
690	19-May-19	2	8:50	9:41	7	0	Overcast	W	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524200.4	7353477.7	
691	19-May-19	2	8:50	9:41	7	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Singing	2524200.4	7353510.3	
692	19-May-19	2	8:50	9:41	7	0	Overcast	W	RBNU	6	Redbreasted nuthatch	<i>Sitta canadensis</i>	1	Singing	2524286.9	7353716.3	
693	19-May-19	2	8:50	9:41	7	0	Overcast	W	BAWW	6	Black and white warbler	<i>Mniotilta varia</i>	1	Singing	2524262.8	7353673.4	
694	19-May-19	2	8:50	9:41	7	0	Overcast	W	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Singing	2524337.5	7353646.0	
695	19-May-19	2	8:50	9:41	7	0	Overcast	W	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	2	Calling	2524262.8	7353736.1	
696	19-May-19	2	8:50	9:41	7	0	Overcast	W	HAWO	7	Hairy woodpecker	<i>Picoides villosus</i>	1	Observed	2524258.5	7353658.8	Foraging
697	19-May-19	2	8:50	9:41	7	0	Overcast	W	YBFL	6	Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	1	Observed	2524316.0	7353628.8	
698	19-May-19	2	8:50	9:41	7	0	Overcast	W	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	3	Calling	2524316.9	7353685.7	
699	19-May-19	2	8:50	9:41	7	0	Overcast	W	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Observed	2524302.3	7353687.2	
700	19-May-19	2	8:50	9:41	7	0	Overcast	W	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Calling	2524350.0	7353742.4	
701	19-May-19	2	8:50	9:41	7	0	Overcast	W	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2524328.9	7353751.5	
702	19-May-19	2	8:50	9:41	7	0	Overcast	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2524341.8	7353767.8	
703	19-May-19	2	8:50	9:41	7	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Singing	2524368.4	7353724.1	
704	19-May-19	2	8:50	9:41	7	0	Overcast	W	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	Singing	2524334.9	7353799.6	
705	19-May-19	2	8:50	9:41	7	0	Overcast	W	BAWW	6	Black and white warbler	<i>Mniotilta varia</i>	1	Singing	2524379.6	7353795.3	
706	19-May-19	2	8:50	9:41	7	0	Overcast	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	2	Pair	2524431.9	7353783.3	
707	19-May-19	2	8:50	9:41	7	0	Overcast	W	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2524395.0	7353822.8	
708	19-May-19	2	8:50	9:41	7	0	Overcast	W	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2524489.0	7353858.4	
709	19-May-19	2	8:50	9:41	7	0	Overcast	W	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524605.7	7353990.5	
710	19-May-19	2	8:50	9:41	7	0	Overcast	W	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524636.6	7353992.2	
711	19-May-19	2	8:50	9:41	7	0	Overcast	W	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2524699.7	7354045.0	
712	19-May-19	1	9:46	10:22	8	0	Overcast	W	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Calling	2524719.2	7354343.2	
713	19-May-19	1	9:46	10:22	8	0	Overcast	W	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	Singing	2524819.9	7354334.0	
714	19-May-19	1	9:46	10:22	8	0	Overcast	W	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Observed	2524795.1	7354285.7	
715	19-May-19	1	9:46	10:22	8	0	Overcast	W	BAWW	6	Black and white warbler	<i>Mniotilta varia</i>	1	Singing	2524769.6	7354342.5	
716	19-May-19	1	9:46	10:22	8	0	Overcast	W	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524781.4	7354381.8	
717	19-May-19	1	9:46	10:22	8	0	Overcast	W	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Calling	2524747.9	7354368.2	
718	19-May-19	1	9:46	10:22	8	0	Overcast	W	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2524650.6	7354592.3	
719	19-May-19	1	9:46	10:22	8	0	Overcast	W	BAWW	6	Black and white warbler	<i>Mniotilta varia</i>	1	Singing	2524625.7	7354571.4	

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720	19-May-19	1	9:46	10:22	8	0	Overcast	W	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524520.5	7354708.1	
721	19-May-19	1	9:46	10:22	8	0	Overcast	W	BLJA	6	Bluejay	<i>Cyanocitta cristata</i>	1	Calling	2524393.0	7354958.6	
722	19-May-19	1	9:46	10:22	8	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Singing	2524495.8	7354991.7	
723	19-May-19	1	9:46	10:22	8	0	Overcast	W	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2524459.2	7354859.2	
724	19-May-19	1	9:46	10:22	8	0	Overcast	W	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524325.0	7354932.4	
725	19-May-19	1	9:46	10:22	8	0	Overcast	W	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2524384.2	7354925.4	
726	19-May-19	1	9:46	10:22	8	0	Overcast	W	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	Singing	2524441.8	7354876.6	
727	19-May-19	1	9:46	10:22	8	0	Overcast	W	OVEN	6	Ovenbird	<i>Seiurus aurocapilla</i>	1	Singing	2524434.8	7354979.5	
728	19-May-19	1	9:46	10:22	8	0	Overcast	W	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Calling	2524365.1	7355056.2	
729	19-May-19	1	9:46	10:22	8	0	Overcast	W	RCKI	6	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	Singing	2524433.1	7355126.0	
730	19-May-19	1	9:46	10:22	8	0	Overcast	W	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2524411.3	7355155.4	
731	19-May-19	1	9:46	10:22	8	0	Overcast	W	AMRO	6	American robin	<i>Turdus migratorius</i>	2	Observed	2524317.4	7355216.2	Pair
732	19-May-19	1	9:46	10:22	8	0	Overcast	W	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2524372.2	7355214.7	
733	19-May-19	1	9:46	10:22	8	0	Overcast	W	YBFL	6	Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	1	Observed	2524255.2	7355343.6	
734	19-May-19	1	9:46	10:22	8	0	Overcast	W	BWHA	4	Broad-winged Hawk	<i>Buteo platyterus</i>	2	Calling	2524221.1	7355451.7	NOHA chasing BRHA
735	19-May-19	1	9:46	10:22	8	0	Overcast	W	NOHA	4	Northern Harrier	<i>Circus cyaneus</i>	1	Observed	2524281.8	7355457.6	See BRHA
736	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	AMRO	6	American robin	<i>Turdus migratorius</i>	1	Singing	2524266.3	7355485.7	
737	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	OVEN	6	Ovenbird	<i>Seiurus aurocapilla</i>	1	Singing	2524078.2	7355503.2	
738	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	Singing	2524244.5	7355472.5	
739	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2524310.1	7355389.4	
740	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	Singing	2524294.8	7355422.2	
741	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	CAGO	1	Canada Goose	<i>Branta canadensis</i>	2	Calling	2524264.1	7355391.6	Fly-over 20 m at 200 degree
742	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	Calling	2524139.5	7355531.6	
743	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	Singing	2524275.1	7355236.3	
744	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	Calling	2524347.2	7355249.5	
745	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	AMCR	6	American crow	<i>Corvus brachyrhynchos</i>	1	Calling	2524323.2	7355234.1	
746	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	Observed	2524242.3	7355448.5	
747	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	WIWR	6	Winter wren	<i>Troglodytes hiemalis</i>	1	Singing	2524398.6	7355147.8	
748	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	Singing	2524385.5	7355038.4	
749	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	RUGR	7	Ruffed grouse	<i>Bonasa umbellus</i>	1	Drumming	2524341.8	7355097.5	

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750	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524494.9	7355031.8	
751	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524444.6	7355012.2	
752	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524459.9	7354865.6	
753	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2524486.1	7354863.4	
754	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524435.8	7354824.1	
755	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2524514.6	7354926.9	
756	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524545.2	7354832.8	
757	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BRCR	6	Brown creeper	Certhia americana	1	Singing	2524543.0	7354758.5	
758	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2524516.7	7354791.3	
759	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	MAWA	6	Magnolia warbler	Dendroica magnolia	1	Singing	2524569.2	7354804.4	
760	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2524603.1	7354707.1	
761	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524587.8	7354770.5	
762	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524585.6	7354604.3	
763	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524677.5	7354608.7	
764	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2524747.5	7354510.2	
765	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524716.9	7354490.6	
766	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524681.9	7354573.7	
767	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Calling	2524730.0	7354433.7	
768	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524754.0	7354370.3	
769	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524793.4	7354376.8	
770	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524791.2	7354278.4	
771	23-May-19	1	5:53	7:01	2	1 to 2	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	2	Observed	2524773.7	7354304.7	Two males fighting (territorial)
772	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524677.5	7354022.5	
773	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	HEGU	3	Herring Gull	Larus argentatus	1	Observed	2524658.5	7354067.7	Fly-over 100 m at 230 degrees
774	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524636.2	7354007.7	
775	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2524607.3	7354045.8	
776	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Calling	2524554.1	7353966.7	
777	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524456.7	7353920.3	
778	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524510.3	7353866.7	
779	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Calling	2524467.0	7353904.7	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
780	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	SOSP	6	Song sparrow	Melospiza melodia	1	Observed	2524457.9	7353849.9	
781	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Observed	2524418.3	7353822.6	
782	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Calling	2524383.3	7353773.9	
783	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2524370.8	7353790.2	
784	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524413.8	7353751.1	
785	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524356.0	7353676.5	
786	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524370.4	7353713.8	
787	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524300.4	7353625.6	
788	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2524274.8	7353566.8	
789	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524239.6	7353532.9	
790	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2524097.2	7353467.3	
791	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524151.8	7353450.7	
792	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2524026.1	7353319.5	
793	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2523943.9	7353345.7	
794	23-May-19	2	7:11	7:48	5	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523881.7	7353282.2	
795	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	YBFL	6	Yellow-bellied Flycatcher	Empidonax flaviventris	1	Observed	2523538.0	7352835.2	
796	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2523538.0	7352844.0	
797	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2523575.1	7352821.1	
798	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523506.3	7352871.7	
799	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523486.7	7352746.2	
800	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2523490.7	7352710.5	
801	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523429.7	7352666.3	
802	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2523377.8	7352716.2	
803	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Calling	2523390.6	7352645.4	
804	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	SOSP	6	Song sparrow	Melospiza melodia	1	Calling	2523335.3	7352666.3	
805	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Observed	2523268.5	7352618.4	
806	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523274.6	7352642.7	
807	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	YBFL	6	Yellow-bellied Flycatcher	Empidonax flaviventris	1	Calling	2523286.7	7352585.4	
808	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2523323.2	7352575.3	
809	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2523242.2	7352533.4	

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810	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2523217.6	7352576.3	
811	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523262.8	7352519.6	
812	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2523237.8	7352585.0	
813	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523275.6	7352533.1	
814	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	HAWO	7	Hairy woodpecker	Picoides villosus	2	Pair	2523196.7	7352485.9	Pair
815	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	GRJA	6	Gray Jay	Perisoreus canadensis	2	Pair	2523140.1	7352457.6	Pair
816	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523066.2	7352439.7	
817	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2523153.2	7352441.0	
818	23-May-19	3	8:04	8:49	7	0	Overcast	NNW	GRCA	6	Gray Catbird	Dumetella carolinensis	1	Singing	2523144.4	7352480.2	
819	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2522894.2	7352918.6	
820	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522911.9	7352924.9	
821	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522873.1	7352935.6	
822	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Observed	2522924.5	7353003.0	
823	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Observed	2522923.9	7353019.1	
824	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522899.2	7353004.4	
825	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Calling	2522892.5	7353017.1	
826	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522865.1	7353090.5	
827	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	CORA	6	Common raven	Corvus corax	1	Food carry	2522816.1	7353196.3	Fly-over 30 m at 270 degrees
828	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522784.0	7353176.3	
829	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522769.3	7353151.6	
830	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522866.1	7353228.3	
831	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522804.4	7353326.8	
832	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522724.9	7353319.5	
833	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522747.0	7353338.8	
834	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	GRCA	6	Gray Catbird	Dumetella carolinensis	1	Calling	2522764.3	7353347.5	
835	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	HAWO	7	Hairy woodpecker	Picoides villosus	1	Calling	2522765.0	7353361.5	
836	23-May-19	4	9:01	9:37	8	0	Overcast	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Singing	2522780.4	7353402.9	
837	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2522955.0	7353954.0	
838	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	MAWA	6	Magnolia warbler	Dendroica magnolia	1	Singing	2522973.4	7353963.2	
839	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2522949.6	7353973.2	

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840	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523026.9	7353976.2	
841	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	GWTE	1	Green-winged Teal	Anas crecca	1	Observed	2523007.8	7354061.9	
842	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2523039.9	7354066.5	
843	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2522937.4	7354071.1	
844	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522980.2	7354225.6	
845	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522912.1	7354226.4	
846	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2522982.9	7354259.7	
847	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	NAWA	6	Nashville warbler	Vermivora ruficapilla	1	Singing	2522912.5	7354268.1	
848	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Singing	2523001.3	7354334.7	
849	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BWHA	4	Broad-winged Hawk	Buteo platyterus	1	Calling	2522879.6	7354316.3	
850	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522926.3	7354307.9	
851	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2522980.6	7354302.5	
852	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522989.8	7354436.4	
853	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Singing	2522983.7	7354438.7	
854	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2522932.8	7354545.4	
855	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	YBFL	6	Yellow-bellied Flycatcher	Empidonax flaviventris	1	Calling	2522953.5	7354504.1	
856	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2522948.1	7354537.0	
857	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2523018.5	7354643.4	Juvenile
858	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522958.0	7354631.1	
859	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522960.3	7354654.9	
860	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523042.2	7354622.0	
861	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2523033.0	7354661.0	
862	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523053.7	7354745.9	
863	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	MAWA	6	Magnolia warbler	Dendroica magnolia	1	Singing	2522998.6	7354709.2	
864	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2522984.1	7354730.6	
865	23-May-19	5	9:52	10:30	10	0	Partial sun	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2523043.0	7354679.3	
866	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2523052.1	7354707.5	
867	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522984.8	7354724.8	
868	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2522959.8	7354694.1	
869	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2522988.6	7354759.4	

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870	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522975.2	7354672.9	
871	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Calling	2522994.4	7354701.8	
872	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	NAWA	6	Nashville warbler	Vermivora ruficapilla	1	Singing	2522971.3	7354663.3	
873	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2522950.2	7354647.9	
874	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	RTHU	7	Ruby-throated Hummingbird	Archilochus colubris	1	Observed	2523002.1	7354661.4	
875	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523044.4	7354653.7	
876	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Singing			
877	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2523004.0	7354486.5	
878	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522990.6	7354521.1	
879	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2522977.1	7354386.5	
880	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523105.0	7354381.1	
881	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523054.2	7354384.1	
882	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2522921.9	7354408.5	
883	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2523024.4	7354271.5	
884	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522915.1	7354180.6	
885	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	3	Calling	2522889.0	7354226.1	
886	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522941.2	7354206.7	
887	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2522998.3	7354173.9	
888	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	GWTE	1	Green-winged Teal	Anas crecca	2	Pair	2522991.5	7354130.4	Always in same spot on pond Nest likely
889	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	ALFL	6	Alder flycatcher	Empidonax alnorum	1	Singing	2523016.6	7354063.7	
890	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	NOFL	7	Northern flicker	Colaptes auratus	1	Calling	2523061.1	7354088.8	
891	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2523024.9	7354009.1	
892	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	MAWA	6	Magnolia warbler	Dendroica magnolia	1	Singing	2522945.6	7354006.2	
893	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2522950.4	7353991.7	
894	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522956.2	7353930.8	
895	28-May-19	5	5:58	6:42	1	0	Sunny/clear	NNW	NOPA	6	Northern parula	Parula americana	1	Singing	2522941.7	7353992.6	
896	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	Singing	2522807.8	7353409.9	
897	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2522746.8	7353406.7	
898	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522860.7	7353376.2	
899	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2522872.8	7353389.0	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
900	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522848.7	7353407.5	
901	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2522839.9	7353347.3	
902	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522828.6	7353307.2	
903	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2522688.2	7353337.7	
904	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	CORA	6	Common raven	Corvus corax	1	Calling	2522661.7	7353307.2	Fly-over could not see direction or bearing
905	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Singing	2522853.5	7353243.0	
906	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522831.0	7353292.7	
907	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522834.2	7353211.7	
908	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522845.5	7353193.2	
909	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522785.3	7353200.4	
910	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Singing	2522843.1	7353215.7	
911	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Calling	2522814.2	7353165.9	
912	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522811.8	7353150.7	
913	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2522735.5	7353133.0	
914	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	2	Calling	2522867.1	7353142.7	On roadside
915	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2522861.9	7353044.3	
916	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	2	Pair	2522887.6	7352980.9	Pair on roadside
917	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2522904.2	7353000.9	
918	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	NOPA	6	Northern parula	Parula americana	1	Singing	2522865.8	7352990.4	
919	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2522968.3	7352914.7	
920	28-May-19	4	6:51	7:18	2	0	Sunny/clear	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2522849.0	7352901.1	
921	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2523087.7	7352403.7	
922	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	1	Calling	2523108.4	7352412.8	
923	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	MAWA	6	Magnolia warbler	Dendroica magnolia	1	Singing	2523179.6	7352377.3	
924	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Singing	2523071.7	7352490.9	
925	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	Singing	2523233.5	7352505.8	
926	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523114.1	7352486.3	
927	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2523191.0	7352385.3	
928	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2523157.7	7352531.1	
929	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523134.8	7352574.7	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
930	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2523246.1	7352627.5	
931	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2523225.5	7352601.1	Fly-over 30 m at 170 degrees
932	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	1	Calling	2523269.0	7352592.8	
933	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2523321.3	7352675.1	
934	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523370.7	7352638.4	
935	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2523418.3	7352675.7	
936	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2523356.3	7352665.4	
937	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	2	Observed	2523371.2	7352719.3	Fly-over 100 m at 280 degrees
938	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523573.3	7352891.5	
939	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523506.7	7352721.6	
940	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2523549.2	7352765.2	
941	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	PUFI	6	Purple finch	Carpodacus purpureus	1	Singing	2523525.1	7352789.3	
942	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2523510.1	7352843.3	
943	28-May-19	3	7:31	8:05	5	0	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523445.9	7352822.6	
944	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523983.3	7353315.7	
945	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2523998.7	7353248.1	
946	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2524089.4	7353318.8	
947	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524018.7	7353428.0	
948	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524004.8	7353398.8	
949	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	NAWA	6	Nashville warbler	Vermivora ruficapilla	1	Singing	2523955.6	7353400.3	
950	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2523959.4	7353473.4	
951	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524128.6	7353587.2	
952	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	2	Calling	2524230.1	7353677.9	Pair
953	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524322.4	7353682.5	
954	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2524360.9	7353684.1	
955	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Calling	2524280.9	7353714.8	Fly-over 30 m at 40 degrees
956	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524374.7	7353814.8	
957	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	Singing	2524457.7	7353745.6	
958	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	Singing	2524470.0	7353797.9	
959	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524409.3	7353887.9	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
960	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524472.4	7353952.5	
961	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524561.6	7353857.1	
962	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	Singing	2524616.9	7353961.7	
963	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524707.7	7354023.2	
964	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524655.4	7353995.5	
965	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	SWSP	6	Swamp Sparrow	Melospiza georgiana	1	Singing	2524666.1	7354023.2	
966	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	HETH	6	Hermit thrush	Catharus guttatus	2	Pair	2524573.9	7354046.3	Nest probable
967	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	DCCO	3	Double-crested Cormorant	Phalacrocorax auritus	25	Observed	2524684.6	7354118.6	Fly-over 100 m at 30 degrees
968	28-May-19	2	8:18	9:13	8	1	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524447.7	7354129.3	
969	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524773.8	7354360.0	
970	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2524726.1	7354344.6	
971	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524713.8	7354395.4	
972	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524688.4	7354543.8	
973	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	DOWO	7	Downy woodpecker	Picoides pubescens	1	Observed	2524645.4	7354517.7	
974	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Calling	2524703.8	7354520.7	
975	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524706.9	7354536.1	
976	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524680.7	7354586.9	
977	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	DEJU	6	Dark-eyed junco	Junco hyemalis	1	Singing	2524602.3	7354513.0	
978	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BAWW	6	Black and white warbler	Mniotilta varia	1	Singing	2524547.7	7354801.4	
979	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	Singing	2524464.7	7354766.0	
980	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2524513.9	7354953.7	
981	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BHVI	6	Blue-headed vireo	Vireo solitarius	1	Singing	2524361.6	7354938.3	
982	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BTNW	6	Black throated green warbler	Dendroica virens	1	Singing	2524396.2	7354980.6	
983	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	WIWR	6	Winter wren	Troglodytes hiemalis	1	Singing	2524496.2	7355025.2	
984	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	Singing	2524467.0	7355059.0	Fly-over 125 m at 350 degrees
985	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	AMRO	6	American robin	Turdus migratorius	1	Singing	2524402.6	7355093.6	
986	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	OVEN	6	Ovenbird	Seiurus aurocapilla	1	Singing	2524393.1	7355139.0	
987	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	RUGR	7	Ruffed grouse	Bonasa umbellus	1	Drumming	2524350.1	7355082.1	
988	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	AMRE	6	American redstart	Setophaga ruticilla	1	Singing	2524333.9	7355044.4	
989	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	AMGO	6	American goldfinch	Carduelis tristis	1	Singing	2524257.0	7355207.4	

ID	Date	Transect	Start	End	Temp	Beaufort	Weather	Wind Dir	Code	Group	Common Name	Scientific Name	No	Breeding Code	X coord	Y coord	Notes
990	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	COYE	6	Common yellow throat	Geothlypis trichas	1	Singing	2524275.5	7355436.6	
991	28-May-19	1	9:18	10:02	10	1 to 2	Sunny/clear	NNW	CSWA	6	Chestnut-sided Warbler	Dendroica pensylvanica	1	Singing	2524221.7	7355450.4	

Fall stop-over transect surveys

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
1	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522985.7	7354645.1	
2	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2522981.9	7354595.2	
3	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522962.2	7354583.9	
4	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2523048.4	7354520.4	
5	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	DEJU	6	Dark-eyed junco	Junco hyemalis	1	2522930.9	7354303.8	
6	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	COYE	6	Common yellow throat	Geothlypis trichas	2	2522916.1	7354216.5	
7	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	COYE	6	Common yellow throat	Geothlypis trichas	1	2522963.0	7354148.5	
8	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522975.1	7354134.1	
9	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	BAWW	6	Black and white warbler	Mniotilta varia	1	2522931.9	7354062.1	
10	25-Aug-19	6:20	6:51	8	0-1	Sunny/clear	NE	5	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523015.1	7353975.2	
11	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	AMGO	6	American goldfinch	Carduelis tristis	1	2522753.0	7353354.3	
12	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	COYE	6	Common yellow throat	Geothlypis trichas	1	2522850.2	7353313.9	
13	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	COYE	6	Common yellow throat	Geothlypis trichas	1	2522811.5	7353116.1	
14	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2522884.0	7353118.6	
15	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522823.2	7353106.9	Female
16	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2522830.7	7353062.8	
17	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	BTNW	6	Black throated green warbler	Dendroica virens	2	2522849.8	7353047.0	
18	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2522812.3	7353043.6	
19	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	COYE	6	Common yellow throat	Geothlypis trichas	1	2523150.0	7352530.3	
20	25-Aug-19	7:13	7:42	9	2	Sunny/clear	NE	4	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	2523174.6	7352524.2	
21	25-Aug-19	8:02	8:36	11	2	Sunny/clear	NE	3	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	2522883.6	7353075.7	
22	25-Aug-19	8:02	8:36	11	2	Sunny/clear	NE	3	AMGO	6	American goldfinch	Carduelis tristis	1	2523262.7	7352563.5	Fly-over 30 m at 240 deg
23	25-Aug-19	8:02	8:36	11	2	Sunny/clear	NE	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2523394.6	7352649.9	
24	25-Aug-19	8:02	8:36	11	2	Sunny/clear	NE	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2523416.1	7352740.4	
25	25-Aug-19	8:02	8:36	11	2	Sunny/clear	NE	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523444.7	7352766.5	
26	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	2523904.2	7353268.8	Soaring at 300 m generally moving south
27	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	DEJU	6	Dark-eyed junco	Junco hyemalis	2	2523963.9	7353311.0	
28	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2523930.3	7353359.0	
29	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	SOSP	6	Song sparrow	Melospiza melodia	1	2523984.7	7353335.8	
30	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523958.3	7353358.2	
31	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	BAEA	4	Bald Eagle	Haliaeetus leucocephalus	2	2524023.2	7353371.3	Adults soaring 250 m generally moving south

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
32	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524010.3	7353420.5	
33	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	2524180.2	7353580.1	
34	25-Aug-19	8:50	9:37	12	2	Sunny/clear	NE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524546.2	7353901.7	
35	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	2524806.2	7354352.5	
36	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	2524724.1	7354267.1	Possible broadwing Saw in forest
37	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	DEJU	6	Dark-eyed junco	Junco hyemalis	1	2524740.9	7354456.4	
38	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	3	2524611.9	7354560.3	
39	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	HETH	6	Hermit thrush	Catharus guttatus	1	2524570.0	7354567.0	
40	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524605.0	7354801.8	
41	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	3	2524453.2	7354999.0	
42	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524407.8	7355111.0	
43	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	RUGR	7	Ruffed grouse	Bonasa umbellus	6	2524381.2	7355126.1	Hen and fledglings
44	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	TUVU	4	Turkey Vulture	Cathartes aura	1	2524099.5	7355469.5	Fly-over 200m at 40 deg
45	25-Aug-19	9:49	10:31	15	2-3	Sunny/clear	NE	1	SOSP	6	Song sparrow	Melospiza melodia	2	2524230.2	7355488.3	
46	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	CSWA	6	Chestnut-sided Warbler	Dendroica pensylvanica	1	2524184.1	7355403.1	
47	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BLJA	6	Bluejay	Cyanocitta cristata	1	2524111.1	7355488.5	
48	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	2524254.0	7355515.0	
49	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	COYE	6	Common yellow throat	Geothlypis trichas	1	2524249.4	7355466.8	
50	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524179.4	7355448.1	
51	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524184.1	7355418.6	
52	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	COYE	6	Common yellow throat	Geothlypis trichas	1	2524348.8	7355372.0	
53	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524420.3	7355372.0	
54	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	DOWO	7	Downy woodpecker	Picoides pubescens	1	2524230.7	7355300.5	
55	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	SOSP	6	Song sparrow	Melospiza melodia	2	2524282.0	7355308.3	
56	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	COYE	6	Common yellow throat	Geothlypis trichas	3	2524283.6	7355250.8	M/F/U pair with 1 fledgling
57	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524376.8	7355252.4	
58	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	AMGO	6	American goldfinch	Carduelis tristis	3	2524350.4	7355089.2	
59	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2524555.6	7355024.3	
60	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524415.9	7355027.3	
61	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524458.5	7355081.7	
62	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524578.1	7354878.8	
63	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524467.5	7354841.4	
64	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524623.6	7354728.1	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
65	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	AMGO	6	American goldfinch	Carduelis tristis	1	2524595.9	7354642.5	Fly-over 30 m at 250 deg
66	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	3	2524706.5	7354497.1	
67	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	HETH	6	Hermit thrush	Catharus guttatus	1	2524688.7	7354531.0	
68	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524660.2	7354522.1	Female
69	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524678.0	7354461.5	
70	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	BAWW	6	Black and white warbler	Mniotilta varia	1	2524701.2	7354472.2	Fledgling
71	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	NOPA	6	Northern parula	Parula americana	1	2524679.8	7354495.4	Male
72	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524694.1	7354513.2	fledgling
73	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	HETH	6	Hermit thrush	Catharus guttatus	1	2524704.8	7354454.3	Fledgling
74	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	MIXED FLOCK	6			6	2524665.5	7354495.4	mixed flock of warblers
75	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	3	2524731.5	7354320.6	
76	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	COYE	6	Common yellow throat	Geothlypis trichas	1	2524752.8	7354232.5	Female
77	28-Aug-19	6:27	7:45	10	0	Sunny/clear	S	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524752.9	7354283.1	
78	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	NOFL	7	Northern flicker	Colaptes auratus	1	2524705.6	7353938.0	
79	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	AMGO	6	American goldfinch	Carduelis tristis	1	2524627.2	7354030.8	
80	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	DOWO	7	Downy woodpecker	Picoides pubescens	1	2524613.3	7353994.5	Fly-over 30m at 350 deg
81	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	WWCR	6	White-winged crossbill	Loxia leucoptera	2	2524599.5	7354024.7	Fly-over 30m at 90 deg
82	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2524457.9	7353879.8	Fledgling
83	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	BTNW	6	Black throated green warbler	Dendroica virens	1	2524457.1	7353856.2	Female
84	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	2524435.1	7353877.4	
85	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524409.8	7353848.0	
86	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	NOPA	6	Northern parula	Parula americana	2	2524417.9	7353818.6	1 F, 1 fledgling
87	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524371.4	7353850.5	
88	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	2524359.6	7353725.2	
89	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	BTNW	6	Black throated green warbler	Dendroica virens	4	2524247.4	7353627.5	Pair plus 2 fledglings
90	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	MIXED FLOCK	6			10	2524122.6	7353480.9	Mixed flock warblers BTNW, nopa, revi, baww
91	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2524147.3	7353462.2	
92	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	COYE	6	Common yellow throat	Geothlypis trichas	1	2524025.2	7353401.2	Male
93	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524038.0	7353363.8	
94	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	4	2523997.6	7353363.8	PR plus 2 fledglings
95	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	NOPA	6	Northern parula	Parula americana	1	2524003.5	7353368.7	
96	28-Aug-19	7:51	8:38	13	1	Sunny/clear	S	2	NOPA	6	Northern parula	Parula americana	1	2523982.8	7353380.5	
97	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	AMGO	6	American goldfinch	Carduelis tristis	1	2523543.3	7352867.8	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
98	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	2523517.2	7352775.0	
99	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2523494.9	7352763.0	
100	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	2523408.7	7352717.9	Fly-over 30m at 200 deg
101	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	2	2523242.7	7352585.1	
102	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	2	2523256.4	7352562.3	
103	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	2523255.9	7352528.6	
104	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	2523152.4	7352539.2	Female
105	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	NOPA	6	Northern parula	<i>Parula americana</i>	1	2523109.7	7352496.6	Fledgling practicing songs
106	28-Aug-19	8:43	9:31	15	1-2	Sunny/clear	S	3	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	6	2523123.1	7352550.1	Mixed sex and fledglings
107	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	2522915.0	7352923.2	Fly-over 20m at 140 deg
108	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	RBNU	6	Redbreasted nuthatch	<i>Sitta canadensis</i>	1	2522883.2	7352900.2	
109	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	1	2522868.9	7353025.2	
110	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	AMRO	6	American robin	<i>Turdus migratorius</i>	2	2522786.1	7353325.5	Fly-over 20 m at 30 deg
111	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	2	2522773.1	7353297.8	
112	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	2522826.7	7353254.8	
113	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522817.3	7353286.6	
114	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522764.8	7353285.4	
115	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	1	2522770.2	7353266.0	
116	28-Aug-19	9:43	10:21	17	1	Sunny/clear	S	4	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522760.4	7353348.8	
117	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	BAWW	6	Black and white warbler	<i>Mniotilta varia</i>	1	2522916.9	7353966.0	
118	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	3	2522920.5	7354015.5	Fly-over 40 m at 180 deg
119	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522963.5	7354004.9	
120	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	2	2522951.4	7354256.9	
121	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522964.1	7354299.6	
122	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	3	2522937.9	7354475.5	
123	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	AMRE	6	American redstart	<i>Setophaga ruticilla</i>	1	2522952.7	7354468.1	Male
124	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	2522957.4	7354495.0	
125	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	RBNU	6	Redbreasted nuthatch	<i>Sitta canadensis</i>	1	2523027.9	7354498.7	
126	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522954.6	7354489.4	Female
127	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	NOPA	6	Northern parula	<i>Parula americana</i>	1	2522988.9	7354617.5	Female
128	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	1	2522994.5	7354657.5	
129	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522979.7	7354685.3	
130	28-Aug-19	10:30	11:16	18	1	Sunny/clear	S	5	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	2523003.3	7354735.0	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
131	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522956.9	7354687.6	
132	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	CEDW	6	Cedar Waxwing	Bombicilla cedrorum	1	2522985.5	7354491.5	
133	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522913.2	7354485.6	
134	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	Unk Warblers	6			16	2522901.9	7354276.8	Mixed flock of warblers
135	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522957.3	7354263.3	
136	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	ALFL	6	Alder flycatcher	Empidonax alnorum	3	2522906.9	7354208.7	
137	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	3	2522910.3	7354218.0	1 fledgling
138	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	BTNW	6	Black throated green warbler	Dendroica virens	3	2522895.1	7354229.7	1 fledgling
139	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522974.1	7354168.4	
140	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	COYE	6	Common yellow throat	Geothlypis trichas	4	2522959.0	7354175.1	
141	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	AMGO	6	American goldfinch	Carduelis tristis	3	2522950.6	7354189.4	
142	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	MAWA	6	Magnolia warbler	Dendroica magnolia	1	2522960.7	7354148.2	
143	03-Sep-19	7:55	8:32	14	1	Overcast	NE	5	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2523127.5	7353996.5	
144	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	CEDW	6	Cedar Waxwing	Bombicilla cedrorum	1	2522831.9	7353396.9	
145	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	CEDW	6	Cedar Waxwing	Bombicilla cedrorum	3	2522784.8	7353361.3	Fly-over 30m at 350 deg
146	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522763.0	7353327.3	
147	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	BTNW	6	Black throated green warbler	Dendroica virens	1	2522770.2	7353316.4	
148	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	COYE	6	Common yellow throat	Geothlypis trichas	3	2522760.8	7353339.6	1 fledgling M/F
149	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2522765.9	7353355.5	
150	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522800.0	7353337.4	
151	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	YBFL	6	Yellow-bellied Flycatcher	Empidonax flaviventris	1	2522753.6	7353357.0	
152	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	PAWA	6	Palm Warbler	Dendroica palmarum	2	2522970.4	7354215.9	
153	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	PAWA	6	Palm Warbler	Dendroica palmarum	1	2522773.4	7353310.6	
154	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2522921.5	7353233.6	
155	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	CEDW	6	Cedar Waxwing	Bombicilla cedrorum	2	2522787.8	7353213.2	
156	03-Sep-19	8:43	9:22	16	1	Overcast	NE	4	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522932.3	7353035.9	
157	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	YRWA	6	Yellow-rumped warbler	Dendroica coronata	4	2523133.8	7352493.2	2 fledglings
158	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	WWCR	6	White-winged crossbill	Loxia leucoptera	4	2523057.4	7352475.2	
159	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	BAWW	6	Black and white warbler	Mniotilta varia	1	2523130.4	7352485.3	
160	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	DEJU	6	Dark-eyed junco	Junco hyemalis	3	2523129.3	7352477.5	1 fledgling
161	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523358.9	7352645.3	
162	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2523549.1	7352821.5	
163	03-Sep-19	9:41	10:17	17	0	Partial cloud	NE	3	DEJU	6	Dark-eyed junco	Junco hyemalis	2	2523591.4	7352853.3	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
164	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	BAWW	6	Black and white warbler	Mniotilta varia	1	2524017.7	7353390.2	Male
165	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	CEDW	6	Cedar Waxwing	Bombicilla cedrorum	4	2524049.8	7353442.9	Foraging for insects
166	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	AMGO	6	American goldfinch	Carduelis tristis	2	2524074.5	7353441.3	
167	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	AMRE	6	American redstart	Setophaga ruticilla	1	2524050.6	7353459.4	
168	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	COYE	6	Common yellow throat	Geothlypis trichas	2	2524082.7	7353456.1	Male/Female
169	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524107.4	7353475.0	Female
170	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	DOWO	7	Downy woodpecker	Picoides pubescens	1	2524121.8	7353487.8	
171	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524113.6	7353515.8	
172	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	MERL	4	Merlin	Falco columbarius	1	2524137.5	7353482.0	
173	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	COYE	6	Common yellow throat	Geothlypis trichas	1	2524302.6	7353699.8	Female
174	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524278.7	7353691.6	
175	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2524304.2	7353717.9	Female
176	03-Sep-19	10:22	11:02	18	0	Partial cloud	NE	2	SPSA	2	Spotted Sandpiper	Actitis macularius	1	2524680.5	7354105.7	
177	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524704.4	7354546.3	
178	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	AMGO	6	American goldfinch	Carduelis tristis	1	2524697.6	7354507.3	Fly-over 30 m at 300 deg
179	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524673.1	7354543.0	
180	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	BTNW	6	Black throated green warbler	Dendroica virens	3	2524682.1	7354533.1	
181	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	AMGO	6	American goldfinch	Carduelis tristis	1	2524591.7	7354725.0	
182	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	3	2524434.5	7354994.5	
183	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524406.8	7355107.5	
184	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	TUVU	4	Turkey Vulture	Cathartes aura	2	2524048.9	7355439.6	Local movement at 100 m
185	03-Sep-19	11:06	11:47	19	0	Overcast	NE	1	NOFL	7	Northern flicker	Colaptes auratus	1	2524122.3	7355588.3	
186	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	COYE	6	Common yellow throat	Geothlypis trichas	1	2524119.0	7355535.5	
187	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524126.5	7355435.6	
188	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	AMGO	6	American goldfinch	Carduelis tristis	1	2524193.9	7355485.5	
189	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524326.2	7355428.1	
190	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BTNW	6	Black throated green warbler	Dendroica virens	8	2524238.9	7355368.2	
191	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	CEDW	6	Cedar Waxwing	Bombicilla cedrorum	1	2524266.3	7355425.6	
192	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	COYE	6	Common yellow throat	Geothlypis trichas	3	2524256.3	7355410.6	
193	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	ALFL	6	Alder flycatcher	Empidonax alnorum	1	2524268.8	7355310.8	
194	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	SOSP	6	Song sparrow	Melospiza melodia	1	2524318.8	7355255.9	
195	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524266.3	7355243.4	
196	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524356.2	7355310.8	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
197	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	AMGO	6	American goldfinch	Carduelis tristis	1	2524303.8	7355385.7	Fly-over 20 m at 290 deg
198	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BTNW	6	Black throated green warbler	Dendroica virens	8	2524323.7	7355166.0	Hawking mixed with bhvi
199	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BAWW	6	Black and white warbler	Mniotilta varia	1	2524338.7	7355161.0	Male
200	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524358.7	7355151.0	
201	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	4	2524351.2	7355191.0	Hawking
202	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524418.6	7355068.6	
203	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524376.2	7355008.7	
204	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524492.3	7354830.2	
205	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BLJA	6	Bluejay	Cyanocitta cristata	1	2524602.1	7354842.7	
206	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	4	2524609.6	7354603.0	
207	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	AMRO	6	American robin	Turdus migratorius	1	2524662.0	7354588.0	
208	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BTNW	6	Black throated green warbler	Dendroica virens	4	2524672.0	7354555.6	
209	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524662.0	7354555.6	Hawking
210	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	4	2524694.5	7354513.1	
211	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BAWW	6	Black and white warbler	Mniotilta varia	1	2524674.5	7354495.7	Juvenile
212	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	BTNW	6	Black throated green warbler	Dendroica virens	2	2524679.5	7354513.1	
213	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	NOPA	6	Northern parula	Parula americana	1	2524684.5	7354508.1	
214	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	AMRO	6	American robin	Turdus migratorius	1	2524634.6	7354643.0	Fly-over 50m at 240 deg
215	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	RUGR	7	Ruffed grouse	Bonasa umbellus	5	2524725.0	7354354.8	4 fledglings 1 adult
216	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	AMRO	6	American robin	Turdus migratorius	1	2524806.8	7354300.9	
217	09-Sep-19	7:02	8:14	8	0	Sunny/clear	SW	1	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524765.3	7354312.3	
218	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524685.6	7354105.1	
219	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	COYE	6	Common yellow throat	Geothlypis trichas	1	2524630.8	7354045.5	
220	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	WWCR	6	White-winged crossbill	Loxia leucoptera	2	2524441.5	7353846.9	Fly-over 30m at 90 deg
221	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	CORA	6	Common raven	Corvus corax	2	2524418.0	7353822.8	Fly-over 25 m at 270 deg
222	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	BTNW	6	Black throated green warbler	Dendroica virens	6	2524206.5	7353566.0	
223	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	BAWW	6	Black and white warbler	Mniotilta varia	1	2524135.3	7353532.0	
224	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	4	2524122.8	7353434.6	
225	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	ALFL	6	Alder flycatcher	Empidonax alnorum	1	2524105.3	7353487.1	
226	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524065.4	7353479.6	
227	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	BTNW	6	Black throated green warbler	Dendroica virens	1	2524055.4	7353447.1	
228	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	NOPA	6	Northern parula	Parula americana	1	2524010.4	7353469.6	
229	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524024.2	7353410.9	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
230	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	RBNU	6	Redbreasted nuthatch	<i>Sitta canadensis</i>	1	2524066.6	7353303.6	
231	09-Sep-19	8:20	9:05	10	0	Sunny/clear	SW	2	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	2523951.8	7353346.0	
232	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2523615.1	7352921.1	
233	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	1	2523622.4	7352935.8	
234	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	2523324.2	7352677.9	
235	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	2	2523281.4	7352615.5	Foraging
236	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	2	2523272.9	7352611.9	Foraging
237	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	2523277.8	7352636.3	
238	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2523125.6	7352470.7	
239	09-Sep-19	9:16	9:48	13	0-1	Sunny/clear	SW	3	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	2523148.8	7352490.3	
240	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	4	2522900.3	7353015.9	
241	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	2	2522914.5	7353023.0	
242	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	2522873.7	7353024.8	
243	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522842.6	7353068.2	
244	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	2522842.6	7353074.5	
245	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522775.6	7353355.3	
246	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522781.8	7353361.5	
247	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	2	2522773.8	7353375.7	
248	09-Sep-19	10:11	10:29	16	1-2	Sunny/clear	SW	4	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	2522781.8	7353403.2	
249	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522921.0	7354164.2	
250	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	2522933.4	7354220.2	
251	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2522923.8	7354205.9	
252	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	2522902.9	7354187.8	
253	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	3	2522972.5	7354629.3	3 one is fledgling
254	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522980.9	7354636.3	
255	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	4	2523018.5	7354627.9	
256	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	4	2522986.5	7354658.6	
257	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522994.8	7354655.8	
258	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522995.3	7354669.9	1 fledgling
259	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2523027.0	7354700.0	
260	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	2523032.0	7354696.0	
261	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	HETH	6	Hermit thrush	<i>Catharus guttatus</i>	1	2523003.4	7354703.0	
262	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	BAWW	6	Black and white warbler	<i>Mniotilta varia</i>	1	2523009.4	7354697.0	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
263	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	2523014.4	7354714.0	
264	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	AMRE	6	American redstart	<i>Setophaga ruticilla</i>	1	2523017.4	7354719.6	Juvenile
265	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	2523028.3	7354689.2	
266	09-Sep-19	10:42	11:18	16	1	Sunny/clear	SW	5	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	2523033.1	7354696.3	
267	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	2522973.3	7354682.7	
268	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	4	2522964.7	7354546.3	
269	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	2522981.9	7354525.2	
270	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	3	2522981.0	7354526.2	
271	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522948.8	7354232.7	
272	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522908.5	7354236.6	
273	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522910.4	7354223.1	
274	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522919.5	7354145.8	
275	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	2522928.2	7354096.8	
276	13-Sep-19	7:11	7:43	6	0	Sunny/clear	NNE	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	1	2522945.4	7354059.4	
277	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	REVI	6	Red-eyed Vireo	<i>Vireo olivaceus</i>	6	2522814.4	7353422.4	
278	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	WWCR	6	White-winged crossbill	<i>Loxia leucoptera</i>	12	2522790.5	7353425.2	Fly-over 25 m at 190 deg
279	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	3	2522795.1	7353416.0	
280	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	2	2522809.8	7353400.3	
281	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	4	2522791.4	7353412.3	
282	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	2	2522780.4	7353400.3	
283	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	2522843.0	7353393.9	
284	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	REVI	6	Red-eyed Vireo	<i>Vireo olivaceus</i>	1	2522834.7	7353394.8	
285	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	2	2522830.1	7353398.5	
286	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	NOPA	6	Northern parula	<i>Parula americana</i>	1	2522757.3	7353383.7	
287	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	AMRO	6	American robin	<i>Turdus migratorius</i>	1	2522872.5	7353374.5	
288	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	PIWO	7	Pileated Woodpecker	<i>Dryocopus pileatus</i>	1	2522870.6	7353301.8	
289	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	WTSP	6	White throated sparrow	<i>Zonotrichia albicollis</i>	1	2522816.3	7353369.9	
290	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BLJA	6	Bluejay	<i>Cyanocitta cristata</i>	1	2522865.1	7353404.9	
291	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	2	2522813.5	7353387.4	
292	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	4	2522818.1	7353387.4	
293	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	2522798.8	7353279.7	
294	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	4	2522804.3	7353315.6	
295	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BHVI	6	Blue-headed vireo	<i>Vireo solitarius</i>	1	2522836.6	7353250.2	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
296	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	NOPA	6	Northern parula	Parula americana	1	2522791.0	7353294.9	
297	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	COYE	6	Common yellow throat	Geothlypis trichas	2	2522799.2	7353262.6	
298	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	4	2522798.4	7353229.4	
299	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	AMRO	6	American robin	Turdus migratorius	1	2522814.0	7353227.6	
300	13-Sep-19	8:01	8:47	7	1	Sunny/clear	NNE	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2522821.8	7353101.0	
301	13-Sep-19	9:08	9:40	10	1	Sunny/clear	NNE	3	CORA	6	Common raven	Corvus corax	1	2523194.6	7352559.1	
302	13-Sep-19	9:08	9:40	10	1	Sunny/clear	NNE	3	COYE	6	Common yellow throat	Geothlypis trichas	2	2523161.2	7352500.9	
303	13-Sep-19	9:08	9:40	10	1	Sunny/clear	NNE	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523231.4	7352585.5	
304	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523952.3	7353338.9	
305	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524100.4	7353468.4	
306	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	MAWA	6	Magnolia warbler	Dendroica magnolia	2	2524164.6	7353529.3	
307	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BTNW	6	Black throated green warbler	Dendroica virens	4	2524163.5	7353539.2	
308	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524152.5	7353532.6	
309	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524160.2	7353527.1	Juvenile
310	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BTNW	6	Black throated green warbler	Dendroica virens	4	2524219.5	7353580.9	
311	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BTNW	6	Black throated green warbler	Dendroica virens	3	2524280.9	7353665.3	
312	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524373.6	7353808.5	
313	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524410.9	7353798.7	
314	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BWHA	4	Broad-winged Hawk	Buteo platypterus	1	2524524.0	7353927.1	
315	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	NOFL	7	Northern flicker	Colaptes auratus	1	2524530.5	7353952.3	
316	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524575.0	7354005.5	
317	13-Sep-19	9:50	10:32	10	1-2	Sunny/clear	NNE	2	BEKI	3	Belted Kingfisher	Megaceryle alcyon	1	2524650.7	7354041.7	Perched on snag in pond
318	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	REVI	6	Red-eyed Vireo	Vireo olivaceus	4	2524775.3	7354318.8	
319	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524776.4	7354316.6	
320	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	BAWW	6	Black and white warbler	Mniotilta varia	1	2524776.4	7354323.2	
321	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	NOPA	6	Northern parula	Parula americana	1	2524777.4	7354319.9	
322	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	CSWA	6	Chestnut-sided Warbler	Dendroica pensylvanica	1	2524777.4	7354318.8	
323	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524779.6	7354329.8	
324	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	SOSP	6	Song sparrow	Melospiza melodia	1	2524688.6	7354443.9	
325	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524676.5	7354471.3	
326	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	NOPA	6	Northern parula	Parula americana	1	2524673.2	7354498.8	
327	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524672.1	7354519.6	Female
328	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524693.0	7354519.6	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
329	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	BTNW	6	Black throated green warbler	<i>Dendroica virens</i>	1	2524646.3	7354572.8	
330	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2524603.5	7354733.1	
331	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	NOFL	7	Northern flicker	<i>Colaptes auratus</i>	1	2524589.3	7354782.4	
332	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	2	2524396.1	7355154.4	
333	13-Sep-19	10:35	11:20	12	1-2	Sunny/clear	NNE	1	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	2524354.4	7355209.3	
334	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	3	2524296.4	7355281.9	Fledgling
335	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	2	2524417.3	7355091.1	
336	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	HAWA	7	Hairy woodpecker	<i>Picoides villosus</i>	2	2524410.8	7355106.5	Male/Female
337	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	2	2524428.7	7355076.4	
338	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	4	2524491.6	7354861.1	
339	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	AMGO	6	American goldfinch	<i>Carduelis tristis</i>	1	2524538.2	7354811.5	
340	16-Sep-19	7:21	8:18	8	0-2	Partial cloud	NNE	1	BEKI	3	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	2524516.2	7354789.5	Fly-over 50 m at 180 deg did not see
341	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	BEKI	3	Belted Kingfisher	<i>Megaceryle alcyon</i>	1	2524652.0	7354066.1	Adult male in pond
342	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	2524540.7	7353969.9	
343	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2524408.8	7353837.2	
344	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	NOPA	6	Northern parula	<i>Parula americana</i>	1	2524289.3	7353682.9	Fly-over 30m at 160 deg
345	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2524299.2	7353672.2	
346	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	Unk Passerine	6			1	2524250.9	7353598.8	Quick Fly-over
347	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	SOSP	6	Song sparrow	<i>Melospiza melodia</i>	1	2524152.0	7353509.8	
348	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	AMRO	6	American robin	<i>Turdus migratorius</i>	1	2524027.2	7353397.5	
349	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	YRWA	6	Yellow-rumped warbler	<i>Dendroica coronata</i>	8	2524016.4	7353387.6	at least 2 fledglings, 6 adults
350	16-Sep-19	8:24	8:56	11	0-2	Partial cloud	NNE	2	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	2524015.5	7353381.4	
351	16-Sep-19	9:08	9:42	12	0-2	Partial cloud	NNE	3	BLJA	6	Bluejay	<i>Cyanocitta cristata</i>	1	2523258.2	7352555.5	
352	16-Sep-19	9:08	9:42	12	0-2	Partial cloud	NNE	3	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	2523245.0	7352566.0	
353	16-Sep-19	9:08	9:42	12	0-2	Partial cloud	NNE	3	GCKI	6	Golden-crowned kinglet	<i>Regulus satrapa</i>	4	2523182.7	7352479.1	
354	16-Sep-19	9:08	9:42	12	0-2	Partial cloud	NNE	3	CORA	6	Common raven	<i>Corvus corax</i>	2	2523149.9	7352454.7	Fly-over 30m at 220 deg
355	16-Sep-19	10:01	10:26	13	2	Overcast	NNE	4	DCCO	3	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	1	2522867.3	7353135.0	Fly-over 200 m at 90 deg
356	16-Sep-19	10:01	10:26	13	2	Overcast	NNE	4	BLJA	6	Bluejay	<i>Cyanocitta cristata</i>	2	2522832.8	7353277.8	
357	16-Sep-19	10:37	11:03	13	2	Overcast	NNE	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	2522987.5	7354475.2	
358	16-Sep-19	10:37	11:03	13	2	Overcast	NNE	5	CEDW	6	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	2522978.0	7354598.7	
359	16-Sep-19	10:37	11:03	13	2	Overcast	NNE	5	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	2	2522980.5	7354582.4	
360	16-Sep-19	10:37	11:03	13	2	Overcast	NNE	5	COYE	6	Common yellow throat	<i>Geothlypis trichas</i>	2	2522986.4	7354595.3	
361	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	BCCH	6	Black-capped chickadee	<i>Poecile atricapilla</i>	1	2522926.3	7354500.8	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
362	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2522985.9	7354502.0	
363	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	COYE	6	Common yellow throat	Geothlypis trichas	1	2522903.8	7354185.3	
364	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	BLJA	6	Bluejay	Cyanocitta cristata	1	2522889.3	7354140.4	
365	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	2522970.7	7354180.5	
366	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	COYE	6	Common yellow throat	Geothlypis trichas	1	2522967.1	7354153.7	
367	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2522918.4	7354128.2	
368	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	9	2522976.8	7354113.6	Perched in snag at pond
369	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	4	2522963.2	7354104.8	
370	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	NOFL	7	Northern flicker	Colaptes auratus	2	2522924.5	7354033.4	
371	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	COYE	6	Common yellow throat	Geothlypis trichas	1	2522942.7	7354082.0	
372	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2522939.1	7354061.3	
373	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	OVEN	6	Ovenbird	Seiurus aurocapilla	1	2522951.3	7354027.3	Perched
374	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	Unk Warblers	6			2	2522952.5	7354028.5	
375	19-Sep-19	7:25	7:56	4	0	Sunny/clear	WSW	5	COYE	6	Common yellow throat	Geothlypis trichas	2	2522974.4	7354048.0	Juv M/F
376	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	2522858.4	7353374.9	
377	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	AMRO	6	American robin	Turdus migratorius	1	2522859.3	7353401.9	
378	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522864.0	7353402.9	
379	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	COYE	6	Common yellow throat	Geothlypis trichas	1	2522829.5	7353385.2	
380	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2522809.9	7353352.6	
381	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	NOPA	6	Northern parula	Parula americana	1	2522809.9	7353322.7	
382	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2522816.4	7353341.4	
383	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522815.5	7353295.7	
384	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	NOFL	7	Northern flicker	Colaptes auratus	4	2522782.9	7353273.4	
385	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	6	2522767.1	7353292.0	
386	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	PUFI	6	Purple finch	Carpodacus purpureus	1	2522789.4	7353317.2	
387	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	7	2522774.1	7353281.3	3 juv
388	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	AMRO	6	American robin	Turdus migratorius	1	2522788.0	7353237.5	
389	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	AMGO	6	American goldfinch	Carduelis tristis	2	2522808.5	7353243.1	
390	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522822.5	7353237.5	
391	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BAWW	6	Black and white warbler	Mniotilta varia	1	2522816.9	7353257.1	
392	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	WWCR	6	White-winged crossbill	Loxia leucoptera	4	2522830.9	7353164.8	
393	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	4	2522823.4	7353152.7	1 juv
394	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2522834.6	7353143.4	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
395	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	MODO	7	Mourning Dove	Zenaida macroura	1	2522835.5	7353101.5	
396	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522836.5	7353061.4	
397	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2522837.4	7353061.4	
398	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	REVI	6	Red-eyed Vireo	Vireo olivaceus	2	2522837.4	7353066.1	
399	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	4	2522832.7	7353068.9	
400	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	BLJA	6	Bluejay	Cyanocitta cristata	1	2522864.0	7353015.3	
401	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	AMCR	6	American crow	Corvus brachyrhynchos	1	2522912.4	7353013.4	
402	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	WWCR	6	White-winged crossbill	Loxia leucoptera	7			FO50m at 110 deg
403	19-Sep-19	8:06	8:49	6	0	Sunny/clear	WSW	4	RBNU	6	Redbreasted nuthatch	Sitta canadensis	2	2522881.7	7352933.3	
404	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	HAWA	7	Hairy woodpecker	Picoides villosus	1	2522889.1	7352945.4	
405	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	SOSP	6	Song sparrow	Melospiza melodia	1	2523155.8	7352489.4	
406	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523160.4	7352472.4	
407	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2523237.8	7352563.7	
408	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2523420.0	7352673.9	
409	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2523438.6	7352755.2	
410	19-Sep-19	9:02	9:37	9	0	Sunny/clear	WSW	3	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2523505.9	7352791.5	
411	19-Sep-19	9:44	10:21	12	0	Sunny/clear	WSW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	3	2523603.0	7352899.5	
412	19-Sep-19	9:44	10:21	12	0	Sunny/clear	WSW	2	SOSP	6	Song sparrow	Melospiza melodia	1	2523926.0	7353296.7	
413	19-Sep-19	9:44	10:21	12	0	Sunny/clear	WSW	2	BLJA	6	Bluejay	Cyanocitta cristata	2	2524139.4	7353490.6	
414	19-Sep-19	9:44	10:21	12	0	Sunny/clear	WSW	2	WWCR	6	White-winged crossbill	Loxia leucoptera	4	2524216.9	7353585.4	
415	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2524414.5	7353854.6	
416	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	AMGO	6	American goldfinch	Carduelis tristis	1	2524696.2	7354409.2	Quick Fly-over
417	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	CSWA	6	Chestnut-sided Warbler	Dendroica pensylvanica	1	2524752.5	7354433.1	Male
418	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	BTNW	6	Black throated green warbler	Dendroica virens	4	2524696.2	7354433.1	
419	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2524687.5	7354441.7	
420	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524696.6	7354412.5	
421	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	MAWA	6	Magnolia warbler	Dendroica magnolia	2	2524683.2	7354451.5	Male/Female
422	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	HAWA	7	Hairy woodpecker	Picoides villosus	2	2524635.0	7354616.7	Pair
423	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524631.7	7354618.8	
424	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	CORA	6	Common raven	Corvus corax	2	2524591.7	7354777.0	Fly-over 50m at 300 deg
425	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	NOFL	7	Northern flicker	Colaptes auratus	1	2524551.0	7354898.8	
426	19-Sep-19	10:28	11:17	15	1	Sunny/clear	WSW	1	AMKE	4	American Kestrel	Falco sparverius	1	2524418.3	7355081.4	Perched
427	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	SOSP	6	Song sparrow	Melospiza melodia	1	2524309.8	7355289.7	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
428	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524327.1	7355180.7	
429	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	COYE	6	Common yellow throat	Geothlypis trichas	1	2524352.8	7355200.8	Female
430	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	NOFL	7	Northern flicker	Colaptes auratus	1	2524323.1	7355137.6	
431	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	HETH	6	Hermit thrush	Catharus guttatus	1	2524439.9	7354984.7	
432	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524453.3	7354992.7	
433	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	AMRO	6	American robin	Turdus migratorius	1	2524475.5	7354908.0	
434	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	NOFL	7	Northern flicker	Colaptes auratus	1	2524523.6	7354812.0	
435	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524560.0	7354712.5	
436	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	NOFL	7	Northern flicker	Colaptes auratus	1	2524702.4	7354497.1	
437	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524770.9	7354266.5	
438	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2524742.5	7354273.2	
439	23-Sep-19	7:20	8:18	14	2-3	Overcast	SSW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524752.6	7354273.2	
440	23-Sep-19	8:24	9:01	15	2-3	Partial cloud	SSW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524507.0	7353892.2	
441	23-Sep-19	8:24	9:01	15	2-3	Partial cloud	SSW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524242.8	7353631.1	
442	23-Sep-19	8:24	9:01	15	2-3	Partial cloud	SSW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523992.9	7353331.3	
443	23-Sep-19	8:24	9:01	15	2-3	Partial cloud	SSW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523922.3	7353264.0	
444	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	BLJA	6	Bluejay	Cyanocitta cristata	1	2523632.3	7352866.5	
445	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	NOFL	7	Northern flicker	Colaptes auratus	2	2523340.6	7352657.5	
446	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2523307.1	7352589.7	
447	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2523274.4	7352615.1	
448	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	LEFL	6	Least Flycatcher	Empidonax minimus	1	2523146.3	7352478.6	
449	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2523144.3	7352484.9	
450	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2523144.8	7352482.5	
451	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523138.0	7352488.3	
452	23-Sep-19	9:12	9:40	17	3	Sunny/clear	SSW	3	WWCR	6	White-winged crossbill	Loxia leucoptera	4	2523140.9	7352471.9	at least 4
453	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	WWCR	6	White-winged crossbill	Loxia leucoptera	1	2522890.7	7352908.7	
454	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2522897.8	7352929.9	
455	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	AMRO	6	American robin	Turdus migratorius	1	2522908.1	7353043.7	
456	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	MAWA	6	Magnolia warbler	Dendroica magnolia	1	2522829.1	7353158.0	Male
457	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2522829.1	7353160.5	
458	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2522806.4	7353174.1	
459	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	DEJU	6	Dark-eyed junco	Junco hyemalis	4	2522816.0	7353202.4	
460	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	COYE	6	Common yellow throat	Geothlypis trichas	1	2522821.6	7353200.4	Female

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
461	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	3	2522818.5	7353193.8	
462	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	NOFL	7	Northern flicker	Colaptes auratus	1	2522783.2	7353190.3	
463	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2522837.2	7353404.2	
464	23-Sep-19	9:58	10:28	17	3	Sunny/clear	SSW	4	AMGO	6	American goldfinch	Carduelis tristis	4	2522791.8	7353419.6	
465	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522991.9	7353998.2	
466	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	NOFL	7	Northern flicker	Colaptes auratus	1	2522958.9	7354023.1	
467	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	HAWA	7	Hairy woodpecker	Picoides villosus	1	2522974.1	7353985.5	
468	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	LEFL	6	Least Flycatcher	Empidonax minimus	1	2522974.7	7354025.1	
469	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522956.4	7354034.2	
470	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BTNW	6	Black throated green warbler	Dendroica virens	1	2522966.5	7354029.1	Male
471	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2522967.6	7354028.1	
472	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BAWW	6	Black and white warbler	Mniotilta varia	1	2522967.0	7354023.1	
473	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	PAWA	6	Palm Warbler	Dendroica palmarum	1	2522981.2	7354028.6	
474	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	2522972.1	7354027.1	
475	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BTNW	6	Black throated green warbler	Dendroica virens	1	2522969.6	7354029.1	Male
476	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	AMGO	6	American goldfinch	Carduelis tristis	1	2522972.6	7354048.9	
477	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2522982.8	7354050.9	
478	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	COYE	6	Common yellow throat	Geothlypis trichas	2	2522984.3	7354047.4	
479	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2523017.2	7354017.5	
480	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2522962.5	7354066.2	
481	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	2522951.3	7354059.1	
482	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	COYE	6	Common yellow throat	Geothlypis trichas	2	2522969.1	7354070.7	
483	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522948.3	7354268.6	
484	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2522949.2	7354589.8	
485	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	2522968.7	7354578.6	
486	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523016.3	7354598.5	
487	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522984.5	7354612.9	
488	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	NOFL	7	Northern flicker	Colaptes auratus	2	2523001.2	7354729.8	
489	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	2523056.9	7354702.7	
490	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	2522990.9	7354718.5	
491	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2523009.4	7354715.0	
492	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	6	2523038.5	7354708.8	
493	23-Sep-19	10:32	11:03	19	1-2	Sunny/clear	SSW	5	GRCA	6	Gray Catbird	Dumetella carolinensis	1	2523003.7	7354616.7	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
494	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	6	2522968.3	7354553.9	
495	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	DOWO	7	Downy woodpecker	Picoides pubescens	1	2522981.5	7354661.9	
496	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522984.8	7354675.9	
497	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2522920.1	7354276.5	
498	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522923.4	7354283.9	Male
499	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522925.4	7354173.0	
500	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	3	2522945.2	7354126.0	
501	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2522939.4	7354112.8	
502	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2522940.3	7354102.9	
503	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	COYE	6	Common yellow throat	Geothlypis trichas	1	2522942.7	7354126.0	Female
504	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	REVI	6	Red-eyed Vireo	Vireo olivaceus	1	2522939.4	7354126.9	
505	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	HAWA	7	Hairy woodpecker	Picoides villosus	1	2522964.2	7354120.3	
506	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	PAWA	6	Palm Warbler	Dendroica palmarum	2	2522979.0	7354105.4	
507	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	4	2522982.3	7354097.2	
508	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	COYE	6	Common yellow throat	Geothlypis trichas	2	2522978.2	7354098.0	
509	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2522965.0	7354049.4	
510	30-Sep-19	7:36	8:04	2	1	Sunny/clear	NNW	5	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	2	2522991.4	7354077.4	
511	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	MODO	7	Mourning Dove	Zenaida macroura	1	2522832.4	7353424.6	
512	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522831.7	7353394.1	
513	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	NOFL	7	Northern flicker	Colaptes auratus	1	2522815.7	7353375.2	
514	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	CEDW	6	Cedar Waxwing	Bombycilla cedrorum	1	2522804.1	7353421.0	
515	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	2	2522794.7	7353355.6	
516	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522744.5	7353335.2	
517	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	HETH	6	Hermit thrush	Catharus guttatus	2	2522751.1	7353330.2	
518	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	AMRO	6	American robin	Turdus migratorius	2	2522816.8	7353217.2	
519	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522792.9	7353188.1	
520	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522814.6	7353112.5	
521	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	BLJA	6	Bluejay	Cyanocitta cristata	1	2522827.0	7353114.7	
522	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	BLJA	6	Bluejay	Cyanocitta cristata	1	2522917.7	7352933.0	
523	30-Sep-19	8:15	8:39	3	1	Sunny/clear	NNW	4	COGR	6	Common grackle	Quiscalus quiscula	1	2522911.3	7352939.6	Fly-over 50 m at 180 deg
524	30-Sep-19	8:53	9:28	4	2	Sunny/clear	NNW	3	BEKI	3	Belted Kingfisher	Megasceryle alcyon	1	2523157.1	7352469.5	Fly-over 40 m at 180 deg
525	30-Sep-19	8:53	9:28	4	2	Sunny/clear	NNW	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2523312.3	7352634.7	
526	30-Sep-19	8:53	9:28	4	2	Sunny/clear	NNW	3	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2523467.6	7352762.9	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
527	30-Sep-19	8:53	9:28	4	2	Sunny/clear	NNW	3	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2523526.8	7352824.2	
528	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2523986.6	7353313.8	
529	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2523972.3	7353342.5	
530	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523962.9	7353339.4	
531	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524169.1	7353538.9	
532	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524226.0	7353610.5	
533	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524371.4	7353768.2	
534	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	3	2524517.2	7353938.5	
535	30-Sep-19	9:39	10:15	6	1-2	Sunny/clear	NNW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524700.6	7354110.5	
536	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524694.0	7354510.1	
537	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2524708.0	7354554.8	
538	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524660.8	7354508.9	
539	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	BTNW	6	Black throated green warbler	Dendroica virens	1	2524693.5	7354543.0	
540	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524652.9	7354550.8	
541	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524654.2	7354621.7	
542	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2524546.7	7354889.9	
543	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524488.4	7354869.4	
544	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2524560.9	7354853.6	
545	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524382.8	7355064.8	
546	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524414.3	7355110.6	
547	30-Sep-19	10:21	11:14	8	1-2	Sunny/clear	NNW	1	AMRO	6	American robin	Turdus migratorius	1	2524330.8	7355209.9	
548	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2524198.5	7355444.6	
549	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524206.4	7355436.1	
550	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	CEDW	6	Cedar Waxwing	Bombcilla cedrorum	2	2524186.6	7355435.5	
551	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	DOWO	7	Downy woodpecker	Picoides pubescens	2	2524201.3	7355430.4	
552	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	AMCR	6	American crow	Corvus brachyrhynchos	1	2524298.5	7355436.6	
553	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	SOSP	6	Song sparrow	Melospiza melodia	1	2524226.3	7355407.7	
554	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	RCKI	6	Ruby-crowned kinglet	Regulus calendula	1	2524198.5	7355450.8	
555	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	AMRO	6	American robin	Turdus migratorius	1	2524289.4	7355381.5	
556	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	CORA	6	Common raven	Corvus corax	1	2524342.0	7355624.6	
557	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524290.7	7355320.7	
558	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	HETH	6	Hermit thrush	Catharus guttatus	1	2524328.3	7355194.5	
559	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	RUGR	7	Ruffed grouse	Bonasa umbellus	1	2524359.3	7355125.1	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
560	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	DOWO	7	Downy woodpecker	Picoides pubescens	1	2524331.2	7355122.9	
561	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	DOWO	7	Downy woodpecker	Picoides pubescens	1	2524378.5	7355085.3	Female
562	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2524419.1	7355112.6	
563	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	AMCR	6	American crow	Corvus brachyrhynchos	1	2524585.6	7354971.0	
564	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	BCCH	6	Black-capped chickadee	Poecile atricapilla	1	2524658.0	7354617.0	
565	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	GRJA	6	Gray Jay	Perisoreus canadensis	1	2524643.7	7354601.1	
566	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524660.3	7354478.8	
567	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2524681.7	7354080.0	
568	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524430.3	7353881.8	
569	06-Oct-19	7:42	8:48	1	0	Sunny/clear	SSW	1	BLJA	6	Bluejay	Cyanocitta cristata	1	2524250.9	7355496.6	
570	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	RUGR	7	Ruffed grouse	Bonasa umbellus	1	2524446.4	7353842.3	
571	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524424.1	7353866.7	
572	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524387.8	7353822.1	
573	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	GRJA	6	Gray Jay	Perisoreus canadensis	1	2524422.7	7353753.1	
574	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	AMRO	6	American robin	Turdus migratorius	1	2524119.3	7353455.6	
575	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524140.2	7353471.2	
576	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2524094.6	7353461.8	
577	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	AMRO	6	American robin	Turdus migratorius	1	2524090.5	7353405.9	
578	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	SOSP	6	Song sparrow	Melospiza melodia	1	2524105.3	7353444.7	
579	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	BLJA	6	Bluejay	Cyanocitta cristata	1	2524071.3	7353391.3	
580	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524038.5	7353359.1	
581	06-Oct-19	8:54	9:43	3	0	Sunny/clear	SSW	2	NOFL	7	Northern flicker	Colaptes auratus	1	2524045.2	7353356.7	
582	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	GRJA	6	Gray Jay	Perisoreus canadensis	1	2523598.0	7352850.3	
583	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	LEFL	6	Least Flycatcher	Empidonax minimus	1	2523531.9	7352821.1	
584	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2523527.6	7352811.4	
585	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2523465.3	7352740.8	
586	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523428.3	7352687.9	
587	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	DOWO	7	Downy woodpecker	Picoides pubescens	1	2523389.9	7352708.8	Female
588	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	RUGR	7	Ruffed grouse	Bonasa umbellus	1	2523257.7	7352537.6	
589	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2523233.4	7352537.0	
590	06-Oct-19	9:52	10:16	6	1	Sunny/clear	SSW	3	Unk Finches	6			20	2523313.3	7352630.0	Fly-over 10 m at 220 deg
591	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	BHVI	6	Blue-headed vireo	Vireo solitarius	1	2522902.9	7352905.2	
592	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	3	2522904.9	7352913.5	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
593	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2522843.9	7353036.2	
594	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2522906.3	7353104.4	
595	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	DEJU	6	Dark-eyed junco	Junco hyemalis	1	2522847.4	7353050.9	
596	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2522821.8	7353031.4	
597	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522833.9	7353171.1	
598	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	NOFL	7	Northern flicker	Colaptes auratus	1	2522834.7	7353199.2	
599	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2522790.2	7353405.1	
600	06-Oct-19	10:28	10:59	8	1	Sunny/clear	SSW	4	CORA	6	Common raven	Corvus corax	1	2522872.5	7353383.7	
601	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	LISP	6	Lincoln's Sparrow	Melospiza lincolnii	1	2522964.9	7354044.7	
602	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	NOFL	7	Northern flicker	Colaptes auratus	1	2522957.4	7354004.8	
603	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2523030.3	7354003.6	
604	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	CORA	6	Common raven	Corvus corax	3	2523027.8	7354083.9	Fly-over 30 m at 320 deg chasing small hawk
605	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	MERL	4	Merlin	Falco columbarius	1	2523027.8	7354080.8	Mobbed by CORAs tried take NOFL
606	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	3	2522949.9	7354502.8	
607	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	3	2522957.7	7354523.8	
608	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	BHVI	6	Blue-headed vireo	Vireo solitarius	2	2522943.5	7354519.4	
609	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	2	2522984.1	7354542.9	
610	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2523013.2	7354656.7	
611	06-Oct-19	11:07	11:51	10	1	Sunny/clear	SSW	5	MERL	4	Merlin	Falco columbarius	2	2523016.6	7354742.8	Fly-over 50m at 270 deg
612	14-Oct-19	7:42	8:21	7	0	Cloudy	SSE	5	AMGO	6	American goldfinch	Carduelis tristis	1	2522926.2	7354263.0	
613	14-Oct-19	7:42	8:21	7	0	Cloudy	SSE	5	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2522964.3	7354189.8	
614	14-Oct-19	7:42	8:21	7	0	Cloudy	SSE	5	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2522967.2	7354179.5	
615	14-Oct-19	7:42	8:21	7	0	Cloudy	SSE	5	HAWA	7	Hairy woodpecker	Picoides villosus	1	2523019.5	7353992.3	
616	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522809.3	7353312.8	
617	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	SOSP	6	Song sparrow	Melospiza melodia	1	2522797.0	7353322.2	
618	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	NOFL	7	Northern flicker	Colaptes auratus	1	2522871.7	7353201.9	
619	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	BCCH	6	Black-capped chickadee	Poecile atricapilla	6	2522795.3	7353180.8	
620	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	1	2522802.0	7353188.8	
621	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	WTSP	6	White throated sparrow	Zonotrichia albicollis	1	2522885.2	7353011.1	
622	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	YRWA	6	Yellow-rumped warbler	Dendroica coronata	3	2522900.5	7352948.4	
623	14-Oct-19	8:33	9:10	8	0	Cloudy	SSE	4	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2522949.6	7352923.4	
624	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2523124.6	7352495.3	
625	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2523152.0	7352520.4	

ID	Date	Start	End	Temp	Beaufort	Weather	Wind Dir	Transect	Code	Group	Common Name	Scientific Name	Number	X coord	Y coord	Notes
626	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	AMRO	6	American robin	Turdus migratorius	1	2523154.3	7352543.2	
627	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	AMGO	6	American goldfinch	Carduelis tristis	1	2523117.8	7352462.2	
628	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	AMCR	6	American crow	Corvus brachyrhynchos	1	2523225.5	7352435.4	
629	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	RUGR	7	Ruffed grouse	Bonasa umbellus	1	2523230.1	7352589.3	
630	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	DOWO	7	Downy woodpecker	Picoides pubescens	1	2523381.7	7352656.6	
631	14-Oct-19	9:24	9:52	10	1	Cloudy	SSE	3	NOFL	7	Northern flicker	Colaptes auratus	1	2523627.4	7352870.4	
632	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	AMRO	6	American robin	Turdus migratorius	2	2523876.0	7353292.2	
633	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	GRJA	6	Gray Jay	Perisoreus canadensis	1	2523858.9	7353300.2	
634	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2523868.0	7353264.9	
635	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	RBNU	6	Redbreasted nuthatch	Sitta canadensis	2	2523903.3	7353309.3	
636	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	AMRO	6	American robin	Turdus migratorius	2	2524084.6	7353402.8	
637	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524190.1	7353541.4	
638	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	RBNU	6	Redbreasted nuthatch	Sitta canadensis	1	2524381.1	7353841.8	
639	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	GCKI	6	Golden-crowned kinglet	Regulus satrapa	1	2524531.6	7353898.8	
640	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	DEJU	6	Dark-eyed junco	Junco hyemalis	1	2524648.4	7354084.1	Fly-over 20 m at 90 deg
641	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	HAWA	7	Hairy woodpecker	Picoides villosus	1	2524651.8	7354024.8	
642	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	RUGR	7	Ruffed grouse	Bonasa umbellus	1	2524632.5	7354006.5	
643	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	AMGO	6	American goldfinch	Carduelis tristis	2	2524675.8	7354054.4	Fly-over 25 m at 180 deg
644	14-Oct-19	10:01	10:39	11	1	Cloudy	SSE	2	BCCH	6	Black-capped chickadee	Poecile atricapilla	2	2524691.7	7354077.2	
645	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	AMRO	6	American robin	Turdus migratorius	1	2524817.7	7354288.7	
646	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	WWCR	6	White-winged crossbill	Loxia leucoptera	4	2524680.3	7354486.5	Fly-over 50m at 160 deg
647	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	GCKI	6	Golden-crowned kinglet	Regulus satrapa	2	2524533.3	7354857.1	
648	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	AMCR	6	American crow	Corvus brachyrhynchos	1	2524551.5	7354897.0	
649	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	AMGO	6	American goldfinch	Carduelis tristis	30	2524340.0	7355235.0	Fly-over 50 m at 220 deg
650	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	SOSP	6	Song sparrow	Melospiza melodia	1	2524365.1	7355274.9	
651	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	SOSP	6	Song sparrow	Melospiza melodia	1	2524291.0	7355259.0	
652	14-Oct-19	10:43	11:32	11	1	Cloudy	SSE	1	RUGR	7	Ruffed grouse	Bonasa umbellus	1	2524277.9	7355485.3	

Breeding Bird point count surveys

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
1	1	05-Jun-19	PT1	6	0	Overcast	HETH	5:31	5:41	Hermit thrush	Catharus guttatus	1	150	185	2524390.4	7355636.4	Singing	Possible	
2	1	05-Jun-19	PT1	6	0	Overcast	BTNW	5:31	5:41	Black throated green warbler	Dendroica virens	1	75	180	2524403.5	7355710.8	Singing	Possible	
3	1	05-Jun-19	PT1	6	0	Overcast	BHVI	5:31	5:41	Blue-headed vireo	Vireo solitarius	1	100	160	2524437.7	7355691.9	Singing	Possible	
4	1	05-Jun-19	PT1	6	0	Overcast	MAWA	5:31	5:41	Magnolia warbler	Dendroica magnolia	1	75	355	2524396.9	7355860.6	Singing	Possible	
5	1	05-Jun-19	PT1	6	0	Overcast	AMGO	5:31	5:41	American goldfinch	Carduelis tristis	1	50	90	2524453.5	7355785.8	Singing	Possible	
6	1	05-Jun-19	PT1	6	0	Overcast	BHVI	5:31	5:41	Blue-headed vireo	Vireo solitarius	1	50	350	2524394.8	7355835.1	Observed/calling	Observed	
7	1	05-Jun-19	PT1	6	0	Overcast	WTSP	5:31	5:41	White throated sparrow	Zonotrichia albicollis	1	125	60	2524511.7	7355848.3	Singing	Possible	
8	1	05-Jun-19	PT1	6	0	Overcast	AMRO	5:31	5:41	American robin	Turdus migratorius	1	100	80	2524501.9	7355803.2	Singing	Possible	
9	1	05-Jun-19	PT1	6	0	Overcast	COYE	5:31	5:41	Common yellow throat	Geothlypis trichas	1	75	140	2524451.7	7355728.4	Singing	Possible	
10	1	05-Jun-19	PT1	6	0	Overcast	NAWA	5:31	5:41	Nashville warbler	Vermivora ruficapilla	1	150	135	2524509.5	7355679.8	Singing	Possible	
11	1	05-Jun-19	PT2	6	1	Overcast	AMRE	5:54	6:04	American redstart	Setophaga ruticilla	1	50	45	2524163.8	7355125.6	Singing	Possible	
12	1	05-Jun-19	PT2	6	1	Overcast	SASP	5:54	6:04	Savannah sparrow	Passerculus sandwichensis	1	75	250	2524058.0	7355064.6	Singing	Possible	
13	1	05-Jun-19	PT2	6	1	Overcast	COYE	5:54	6:04	Common yellow throat	Geothlypis trichas	1	125	220	2524048.1	7354994.5	Singing	Possible	
14	1	05-Jun-19	PT2	6	1	Overcast	HETH	5:54	6:04	Hermit thrush	Catharus guttatus	12	150	200	2524077.2	7354949.3	Observed/ calling	Observed	Small flock observed
15	1	05-Jun-19	PT2	6	1	Overcast	BHVI	5:54	6:04	Blue-headed vireo	Vireo solitarius	1	125	105	2524249.2	7355057.9	Singing	Possible	
16	1	05-Jun-19	PT2	6	1	Overcast	SOSP	5:54	6:04	Song sparrow	Melospiza melodia	2	75	340	2524102.8	7355160.7	Calling	Possible	Fly-over 325 deg at 60 m
17	1	05-Jun-19	PT2	6	1	Overcast	AMRE	5:54	6:04	American redstart	Setophaga ruticilla	1	100	100	2524226.9	7355072.9	Singing	Possible	
18	1	05-Jun-19	PT2	6	1	Overcast	AMGO	5:54	6:04	American goldfinch	Carduelis tristis	1	75	270	2524053.5	7355090.3	Singing	Possible	
19	1	05-Jun-19	PT2	6	1	Overcast	WTSP	5:54	6:04	White throated sparrow	Zonotrichia albicollis	1	100	45	2524199.2	7355161.0	Singing	Possible	
20	1	05-Jun-19	PT2	6	1	Overcast	NOPA	5:54	6:04	Northern parula	Parula americana	1	100	130	2524205.1	7355026.0	Singing	Possible	
21	1	05-Jun-19	PT2	6	1	Overcast	SOSP	5:54	6:04	Song sparrow	Melospiza melodia	1	100	60	2524215.1	7355140.3	Singing	Possible	
22	1	05-Jun-19	PT3	8	0	Overcast	NOPA	6:37	6:47	Northern parula	Parula americana	1	200	225	2523655.5	7354772.9	Singing	Possible	
23	1	05-Jun-19	PT3	8	0	Overcast	LISP	6:37	6:47	Lincoln's sparrow	Melospiza lincolni	1	50	270	2523746.9	7354914.4	Singing	Possible	
24	1	05-Jun-19	PT3	8	0	Overcast	SASP	6:37	6:47	Savannah sparrow	Passerculus sandwichensis	1	75	130	2523854.3	7354866.2	Singing	Possible	
25	1	05-Jun-19	PT3	8	0	Overcast	WTSP	6:37	6:47	White throated sparrow	Zonotrichia albicollis	1	50	355	2523792.5	7354964.2	Singing	Possible	
26	1	05-Jun-19	PT3	8	0	Overcast	ALFL	6:37	6:47	Alder flycatcher	Empidonax alnorum	1	50	40	2523829.0	7354952.7	Singing	Possible	
27	1	05-Jun-19	PT3	8	0	Overcast	LISP	6:37	6:47	Lincoln's sparrow	Melospiza lincolni	1	50	135	2523832.2	7354879.0	Singing	Possible	
28	1	05-Jun-19	PT3	8	0	Overcast	WIWR	6:37	6:47	Winter wren	Troglodytes troglodytes	1	225	235	2523612.6	7354785.3	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
29	1	05-Jun-19	PT3	8	0	Overcast	AMGO	6:37	6:47	American goldfinch	Carduelis tristis	1	25	360	2523796.9	7354939.4	Singing	Possible	
30	1	05-Jun-19	PT3	8	0	Overcast	COYE	6:37	6:47	Common yellow throat	Geothlypis trichas	1	50	355	2523792.5	7354964.2	Singing	Possible	
31	1	05-Jun-19	PT3	8	0	Overcast	YEWA	6:37	6:47	Yellow warbler	Dendroica petechia	1	25	360	2523796.9	7354939.4	Singing	Possible	
32	1	05-Jun-19	PT3	8	0	Overcast	SOSP	6:37	6:47	Song sparrow	Melospiza melodia	1	30	55	2523821.5	7354931.6	Singing	Possible	
33	1	05-Jun-19	PT3	8	0	Overcast	AMRE	6:37	6:47	American redstart	Setophaga ruticilla	1	100	160	2523831.1	7354820.4	Singing	Possible	
34	1	05-Jun-19	PT4	8	0	Overcast	BTNW	7:11	7:21	Black throated green warbler	Dendroica virens	1	75	5	2523585.6	7354942.1	Singing/observed	Possible	
35	1	05-Jun-19	PT4	8	0	Overcast	AMRE	7:11	7:21	American redstart	Setophaga ruticilla	2	20	140	2523591.9	7354852.1	Singing	Possible	
36	1	05-Jun-19	PT4	8	0	Overcast	YRWA	7:11	7:21	Yellow-rumped warbler	Dendroica coronata	1	50	45	2523614.4	7354902.8	Singing	Possible	
37	1	05-Jun-19	PT4	8	0	Overcast	GCKI	7:11	7:21	Golden-crowned kinglet	Regulus satrapa	1	25	150	2523591.5	7354845.8	Singing	Possible	
38	1	05-Jun-19	PT4	8	0	Overcast	RUGR	7:11	7:21	Ruffed grouse	Bonasa umbellus	1	100	320	2523514.7	7354944.0	Singing	Possible	
39	1	05-Jun-19	PT4	8	0	Overcast	WTSP	7:11	7:21	White throated sparrow	Zonotrichia albicollis	1	125	60	2523687.3	7354929.9	Singing	Possible	
40	1	05-Jun-19	PT4	8	0	Overcast	BTNW	7:11	7:21	Black throated green warbler	Dendroica virens	1	50	320	2523546.9	7354905.7	Singing	Possible	
41	1	05-Jun-19	PT4	8	0	Overcast	BAWW	7:11	7:21	Black and white warbler	Mniotilta varia	1	30	170	2523584.2	7354837.9	Observed agitated female	Observed	
42	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	BTNW	7:36	7:46	Black throated green warbler	Dendroica virens	1	50	5	2523396.9	7354827.6	Singing	Possible	
43	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	OVEN	7:36	7:46	Ovenbird	Seiurus aurocapilla	1	75	360	2523392.5	7354852.8	Singing	Possible	
44	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	MAWA	7:36	7:46	Magnolia warbler	Dendroica magnolia	1	50	270	2523342.5	7354777.8	Singing	Possible	
45	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	HETH	7:36	7:46	Hermit thrush	Catharus guttatus	1	75	360	2523392.5	7354852.8	Singing	Possible	
46	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	OVEN	7:36	7:46	Ovenbird	Seiurus aurocapilla	1	150	310	2523277.6	7354874.2	Singing	Possible	
47	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	AMRO	7:36	7:46	American robin	Turdus migratorius	1	200	305	2523228.7	7354892.5	Singing	Possible	
48	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	BCCH	7:36	7:46	Black-capped chickadee	Poecile atricapilla	1	100	65	2523483.1	7354820.0	Singing	Possible	
49	1	05-Jun-19	PT5	8	0	Overcast/Sunny breaks	PUFI	7:36	7:46	Purple finch	Carpodacus purpureus	1	125	270	2523267.5	7354777.8	Singing/observed	Possible	
50	1	05-Jun-19	PT6	9	1	Partial cloud	BTNW	7:59	8:09	Black throated green warbler	Dendroica virens	1	25	360	2523132.9	7354649.1	Singing	Possible	
51	1	05-Jun-19	PT6	9	1	Partial cloud	NOWT	7:59	8:09	Northern waterthrush	Seiurus noveboracensis	1	75	5	2523139.5	7354698.8	Singing	Possible	
52	1	05-Jun-19	PT6	9	1	Partial cloud	AMRO	7:59	8:09	American robin	Turdus migratorius	1	100	320	2523068.6	7354700.7	Singing	Possible	
53	1	05-Jun-19	PT6	9	1	Partial cloud	GCKI	7:59	8:09	Golden-crowned kinglet	Regulus satrapa	1	25	85	2523157.8	7354626.3	Fly-over/calling	Observed	
54	1	05-Jun-19	PT6	9	1	Partial cloud	NOWT	7:59	8:09	Northern waterthrush	Seiurus noveboracensis	1	100	80	2523231.4	7354641.5	Singing	Possible	
55	1	05-Jun-19	PT6	9	1	Partial cloud	OVEN	7:59	8:09	Ovenbird	Seiurus aurocapilla	1	150	350	2523106.9	7354771.8	Singing	Possible	
56	1	05-Jun-19	PT6	9	1	Partial cloud	MAWA	7:59	8:09	Magnolia warbler	Dendroica magnolia	1	50	180	2523132.9	7354574.1	Singing	Possible	
57	1	05-Jun-19	PT6	9	1	Partial cloud	BTNW	7:59	8:09	Black throated green warbler	Dendroica virens	1	100	220	2523068.6	7354547.5	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
58	1	05-Jun-19	PT6	9	1	Partial cloud	AMGO	7:59	8:09	American goldfinch	Carduelis tristis	1	75	340	2523107.3	7354694.6	Singing	Possible	
59	1	05-Jun-19	PT6	9	1	Partial cloud	BHVI	7:59	8:09	Blue-headed vireo	Vireo solitarius	1	50	100	2523182.2	7354615.4	Singing	Possible	
60	1	05-Jun-19	PT6	9	1	Partial cloud	GCKI	7:59	8:09	Golden-crowned kinglet	Regulus satrapa	1	25	160	2523141.5	7354600.6	Singing	Possible	
61	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	OVEN	8:30	8:40	Ovenbird	Seiurus aurocapilla	1	100	180	2523119.9	7353922.8	Singing	Possible	
62	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	BTNW	8:30	8:40	Black throated green warbler	Dendroica virens	1	50	135	2523155.2	7353987.5	Singing	Possible	
63	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	DEJU	8:30	8:40	Dark-eyed junco	Junco hyemalis	1	125	85	2523244.4	7354033.7	Singing	Possible	
64	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	MAWA	8:30	8:40	Magnolia warbler	Dendroica magnolia	1	50	170	2523128.6	7353973.6	Singing	Possible	
65	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	AMRE	8:30	8:40	American redstart	Setophaga ruticilla	1	50	270	2523069.9	7354022.8	Singing	Possible	
66	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	BHVI	8:30	8:40	Blue-headed vireo	Vireo solitarius	1	100	195	2523094.0	7353926.2	Singing	Possible	
67	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	RUGR	8:30	8:40	Ruffed grouse	Bonasa umbellus	1	150	190	2523093.8	7353875.1	Singing	Possible	
68	1	05-Jun-19	PT7	11	1 to 2	Partial cloud	BCCH	8:30	8:40	Black-capped chickadee	Poecile atricapilla	1	125	5	2523130.8	7354147.3	Observed	Observed	
69	1	05-Jun-19	PT8	11	2	Partial cloud	BTNW	9:03	9:13	Black throated green warbler	Dendroica virens	1	50	60	2523183.0	7353603.0	Singing	Possible	
70	1	05-Jun-19	PT8	11	2	Partial cloud	YRWA	9:03	9:13	Yellow-rumped warbler	Dendroica coronata	1	75	280	2523065.9	7353591.0	Singing	Possible	
71	1	05-Jun-19	PT8	11	2	Partial cloud	BTNW	9:03	9:13	Black throated green warbler	Dendroica virens	1	100	350	2523122.4	7353676.4	Observed	Observed	
72	1	05-Jun-19	PT8	11	2	Partial cloud	GCKI	9:03	9:13	Golden-crowned kinglet	Regulus satrapa	1	30	180	2523139.7	7353548.0	Singing	Possible	
73	1	05-Jun-19	PT8	11	2	Partial cloud	MAWA	9:03	9:13	Magnolia warbler	Dendroica magnolia	1	10	360	2523139.7	7353588.0	Singing	Possible	
74	1	05-Jun-19	PT8	11	2	Partial cloud	WTSP	9:03	9:13	White throated sparrow	Zonotrichia albicollis	1	10	50	2523147.4	7353584.4	Singing	Possible	
75	1	05-Jun-19	PT8	11	2	Partial cloud	BHVI	9:03	9:13	Blue-headed vireo	Vireo solitarius	1	50	200	2523122.6	7353531.0	Singing	Possible	
76	1	05-Jun-19	PT8	11	2	Partial cloud	BRCR	9:03	9:13	Brown creeper	Certhia americana	1	30	200	2523129.5	7353549.8	Singing	Possible	
77	1	05-Jun-19	PT8	11	2	Partial cloud	AMGO	9:03	9:13	American goldfinch	Carduelis tristis	1	25	90	2523164.7	7353578.0	Singing	Possible	
78	1	05-Jun-19	PT8	11	2	Partial cloud	PUFI	9:03	9:13	Purple finch	Carpodacus purpureus	1	50	300	2523096.4	7353603.0	Singing	Possible	
79	1	05-Jun-19	PT8	11	2	Partial cloud	MAWA	9:03	9:13	Magnolia warbler	Dendroica magnolia	1	100	160	2523173.9	7353484.0	Singing	Possible	
80	1	07-Jun-19	PT9	7	0	Sunny clear	ALFL	5:32	5:42	Alder flycatcher	Empidonax alnorum	1	25	50	2522899.3	7353315.6	Singing	Possible	
81	1	07-Jun-19	PT9	7	0	Sunny clear	ALFL	5:32	5:42	Alder flycatcher	Empidonax alnorum	1	25	355	2522877.9	7353324.5	Singing	Possible	
82	1	07-Jun-19	PT9	7	0	Sunny clear	AMRE	5:32	5:42	American redstart	Setophaga ruticilla	1	50	110	2522927.1	7353282.5	Singing	Possible	
83	1	07-Jun-19	PT9	7	0	Sunny clear	DOWO	5:32	5:42	Downy woodpecker	Picoides pubescens	1	100	340	2522845.9	7353393.5	Singing	Possible	
84	1	07-Jun-19	PT9	7	0	Sunny clear	PUFI	5:32	5:42	Purple finch	Carpodacus purpureus	1	50	70	2522927.1	7353316.7	Singing	Possible	
85	1	07-Jun-19	PT9	7	0	Sunny clear	YRWA	5:32	5:42	Yellow-rumped warbler	Dendroica coronata	1	100	10	2522897.5	7353398.1	Singing	Possible	
86	1	07-Jun-19	PT9	7	0	Sunny clear	AMRE	5:32	5:42	American redstart	Setophaga ruticilla	1	30	240	2522854.1	7353284.6	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
87	1	07-Jun-19	PT9	7	0	Sunny clear	BHVI	5:32	5:42	Blue-headed vireo	Vireo solitarius	1	75	295	2522812.1	7353331.3	Singing	Possible	
88	1	07-Jun-19	PT9	7	0	Sunny clear	AMGO	5:32	5:42	American goldfinch	Carduelis tristis	1	25	170	2522884.4	7353275.0	Singing	Possible	
89	1	07-Jun-19	PT9	7	0	Sunny clear	AMRO	5:32	5:42	American robin	Turdus migratorius	1	20	320	2522867.2	7353314.9	Singing	Possible	
90	1	07-Jun-19	PT9	7	0	Sunny clear	WTSP	5:32	5:42	White throated sparrow	Zonotrichia albicollis	1	50	300	2522836.8	7353324.6	Singing	Possible	
91	1	07-Jun-19	PT9	7	0	Sunny clear	RUGR	5:32	5:42	Ruffed grouse	Bonasa umbellus	1	75	190	2522867.1	7353225.7	Singing	Possible	
92	1	07-Jun-19	PT9	7	0	Sunny clear	BTNW	5:32	5:42	Black throated green warbler	Dendroica virens	1	100	55	2522962.0	7353356.9	Singing	Possible	
93	1	07-Jun-19	PT9	7	0	Sunny clear	AMGO	5:32	5:42	American goldfinch	Carduelis tristis	1	25	270	2522855.1	7353299.6	Singing	Possible	
94	1	07-Jun-19	PT9	7	0	Sunny clear	NOPA	5:32	5:42	Northern parula	Parula americana	1	75	300	2522815.2	7353337.1	Singing	Possible	
95	1	07-Jun-19	PT10	8	0	Sunny clear	YBFL	5:51	6:01	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	240	2523018.3	7352934.5	Singing	Possible	
96	1	07-Jun-19	PT10	8	0	Sunny clear	BTNW	5:51	6:01	Black throated green warbler	Dendroica virens	1	75	150	2523099.1	7352894.6	Singing	Possible	
97	1	07-Jun-19	PT10	8	0	Sunny clear	WIWR	5:51	6:01	Winter wren	Troglodytes troglodytes	1	200	350	2523026.9	7353156.5	Calling	Possible	
98	1	07-Jun-19	PT10	8	0	Sunny clear	YRWA	5:51	6:01	Yellow-rumped warbler	Dendroica coronata	1	125	75	2523182.4	7352991.9	Singing	Possible	
99	1	07-Jun-19	PT10	8	0	Sunny clear	HETH	5:51	6:01	Hermit thrush	Catharus guttatus	1	50	125	2523102.6	7352930.8	Singing	Possible	
100	1	07-Jun-19	PT10	8	0	Sunny clear	BCCH	5:51	6:01	Black-capped chickadee	Poecile atricapilla	1	50	100	2523110.9	7352950.8	Singing	Possible	
101	1	07-Jun-19	PT10	8	0	Sunny clear	BTNW	5:51	6:01	Black throated green warbler	Dendroica virens	1	75	340	2523036.0	7353030.0	Singing	Possible	
102	1	07-Jun-19	PT10	8	0	Sunny clear	BHVI	5:51	6:01	Blue-headed vireo	Vireo solitarius	1	50	170	2523070.3	7352910.3	Singing	Possible	
103	1	07-Jun-19	PT10	8	0	Sunny clear	BAWW	5:51	6:01	Black and white warbler	Mniotilta varia	1	25	270	2523036.6	7352959.5	Singing	Possible	
104	1	07-Jun-19	PT11	8	0	Sunny clear	HETH	6:15	6:25	Hermit thrush	Catharus guttatus	1	100	280	2523079.0	7352738.0	Singing	Possible	
105	1	07-Jun-19	PT11	8	0	Sunny clear	YBFL	6:15	6:25	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	145	2523206.1	7352679.7	Calling	Possible	
106	1	07-Jun-19	PT11	8	0	Sunny clear	BTNW	6:15	6:25	Black throated green warbler	Dendroica virens	1	100	45	2523248.2	7352791.3	Singing	Possible	
107	1	07-Jun-19	PT11	8	0	Sunny clear	BHVI	6:15	6:25	Blue-headed vireo	Vireo solitarius	1	50	170	2523186.1	7352671.4	Singing	Possible	
108	1	07-Jun-19	PT11	8	0	Sunny clear	BCCH	6:15	6:25	Black-capped chickadee	Poecile atricapilla	1	50	60	2523220.7	7352745.6	Singing	Possible	
109	1	07-Jun-19	PT11	8	0	Sunny clear	GCKI	6:15	6:25	Golden-crowned kinglet	Regulus satrapa	1	50	70	2523224.4	7352737.7	Singing	Possible	
110	1	07-Jun-19	PT11	8	0	Sunny clear	BOCH	6:15	6:25	Boreal chickadee	Poecile hudsonica	1	30	30	2523192.4	7352746.6	Fly-over	Observed	
111	1	07-Jun-19	PT11	8	0	Sunny clear	OVEN	6:15	6:25	Ovenbird	Seiurus aurocapilla	1	75	160	2523203.1	7352650.2	Singing	Possible	
112	1	07-Jun-19	PT12	9	0	Sunny clear	OVEN	6:47	6:57	Ovenbird	Seiurus aurocapilla	1	100	65	2523023.2	7352157.9	Singing	Possible	
113	1	07-Jun-19	PT12	9	0	Sunny clear	BTNW	6:47	6:57	Black throated green warbler	Dendroica virens	1	50	245	2522887.2	7352094.5	Singing	Possible	
114	1	07-Jun-19	PT12	9	0	Sunny clear	WIWR	6:47	6:57	Winter wren	Troglodytes troglodytes	1	50	15	2522945.5	7352163.9	Singing	Possible	
115	1	07-Jun-19	PT12	9	0	Sunny clear	GCKI	6:47	6:57	Golden-crowned kinglet	Regulus satrapa	1	25	220	2522916.5	7352096.5	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
116	1	07-Jun-19	PT12	9	0	Sunny clear	AMCR	6:47	6:57	American crow	Corvus brachyrhynchos	1	100	110	2523026.5	7352081.4	Singing	Possible	
117	1	07-Jun-19	PT12	9	0	Sunny clear	AMRO	6:47	6:57	American robin	Turdus migratorius	1	150	315	2522826.5	7352221.7	Singing	Possible	
118	1	07-Jun-19	PT12	9	0	Sunny clear	PUFI	6:47	6:57	Purple finch	Carpodacus purpureus	1	30	155	2522945.2	7352088.4	Singing	Possible	
119	1	07-Jun-19	PT12	9	0	Sunny clear	RBNU	6:47	6:57	Redbreasted nuthatch	Sitta canadensis	1	100	200	2522898.3	7352021.7	Singing	Possible	
120	1	07-Jun-19	PT12	9	0	Sunny clear	RBNU	6:47	6:57	Redbreasted nuthatch	Sitta canadensis	1	150	75	2523077.4	7352154.5	Singing	Possible	
121	1	07-Jun-19	PT13	10	0	Sunny clear	NAWA	7:11	7:21	Nashville warbler	Vermivora ruficapilla	1	50	215	2523008.3	7351795.8	Singing	Possible	
122	1	07-Jun-19	PT13	10	0	Sunny clear	BTNW	7:11	7:21	Black throated green warbler	Dendroica virens	1	100	110	2523131.0	7351802.6	Calling	Possible	
123	1	07-Jun-19	PT13	10	0	Sunny clear	AMRE	7:11	7:21	American redstart	Setophaga ruticilla	1	50	210	2523012.0	7351793.5	Singing	Possible	
124	1	07-Jun-19	PT13	10	0	Sunny clear	GCKI	7:11	7:21	Golden-crowned kinglet	Regulus satrapa	1	50	235	2522996.0	7351808.1	Fly-over	Observed	
125	1	07-Jun-19	PT13	10	0	Sunny clear	MODO	7:11	7:21	Mourning dove	Zenaidura macroura	1	100	200	2523002.8	7351742.8	Singing	Possible	
126	1	07-Jun-19	PT13	10	0	Sunny clear	DEJU	7:11	7:21	Dark-eyed junco	Junco hyemalis	1	100	305	2522955.1	7351894.2	Singing	Possible	
127	1	07-Jun-19	PT13	10	0	Sunny clear	MAWA	7:11	7:21	Magnolia warbler	Dendroica magnolia	1	50	310	2522998.7	7351868.9	Singing	Possible	
128	1	07-Jun-19	PT13	10	0	Sunny clear	BHVI	7:11	7:21	Blue-headed vireo	Vireo solitarius	1	75	65	2523105.0	7351868.5	Singing	Possible	
129	1	07-Jun-19	PT14	11	0	Sunny clear	RUGR	7:30	7:40	Ruffed grouse	Bonasa umbellus	1	100	340	2523247.7	7351933.2	Singing	Possible	
130	1	07-Jun-19	PT14	11	0	Sunny clear	BTNW	7:30	7:40	Black throated green warbler	Dendroica virens	1	50	90	2523331.9	7351839.3	Singing	Possible	
131	1	07-Jun-19	PT14	11	0	Sunny clear	BCCH	7:30	7:40	Black-capped chickadee	Poecile atricapilla	1	75	40	2523330.1	7351896.7	Singing	Possible	
132	1	07-Jun-19	PT14	11	0	Sunny clear	WIWR	7:30	7:40	Winter wren	Troglodytes troglodytes	1	75	75	2523354.4	7351858.7	Calling	Possible	Fly-over at 350 deg did not see
133	1	07-Jun-19	PT14	11	0	Sunny clear	BHVI	7:30	7:40	Blue-headed vireo	Vireo solitarius	1	25	55	2523302.4	7351853.6	Fly-over	Observed	
134	1	07-Jun-19	PT14	11	0	Sunny clear	BHVI	7:30	7:40	Blue-headed vireo	Vireo solitarius	1	75	240	2523217.0	7351801.8	Singing	Possible	
135	1	07-Jun-19	PT14	11	0	Sunny clear	HAWO	7:30	7:40	Hairy woodpecker	Picoides villosus	1	50	30	2523306.9	7351882.6	Singing	Possible	
136	1	07-Jun-19	PT14	11	0	Sunny clear	DEJU	7:30	7:40	Dark-eyed junco	Junco hyemalis	1	50	340	2523264.8	7351886.3	Singing	Possible	
137	1	07-Jun-19	PT14	11	0	Sunny clear	BAWW	7:30	7:40	Black and white warbler	Mniotilta varia	1	50	20	2523299.0	7351886.3	Singing	Possible	
138	1	07-Jun-19	PT14	11	0	Sunny clear	BHVI	7:30	7:40	Blue-headed vireo	Vireo solitarius	1	50	95	2523331.7	7351834.9	Singing	Possible	
139	1	07-Jun-19	PT14	11	0	Sunny clear	AMCR	7:30	7:40	American crow	Corvus brachyrhynchos	1	75	30	2523319.4	7351904.2	Singing	Possible	
140	1	07-Jun-19	PT14	11	0	Sunny clear	BLJA	7:30	7:40	Bluejay	Cyanocitta cristata	1	200	25	2523366.5	7352020.5	Singing	Possible	
141	1	07-Jun-19	PT15	12	0	Sunny clear	HAWO	7:54	8:04	Hairy woodpecker	Picoides villosus	1	10	120	2523643.6	7351824.6	Singing	Possible	
142	1	07-Jun-19	PT15	12	0	Sunny clear	DEJU	7:54	8:04	Dark-eyed junco	Junco hyemalis	1	150	200	2523583.7	7351688.6	Singing	Possible	
143	1	07-Jun-19	PT15	12	0	Sunny clear	OVEN	7:54	8:04	Ovenbird	Seiurus aurocapilla	1	30	185	2523632.3	7351799.7	Singing	Possible	
144	1	07-Jun-19	PT15	12	0	Sunny clear	BTNW	7:54	8:04	Black throated green warbler	Dendroica virens	1	50	170	2523643.6	7351780.4	Singing	Possible	

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145	1	07-Jun-19	PT15	12	0	Sunny clear	RBNU	7:54	8:04	Redbreasted nuthatch	<i>Sitta canadensis</i>	1	30	205	2523622.3	7351802.4	Singing	Possible	
146	1	07-Jun-19	PT15	12	0	Sunny clear	BTNW	7:54	8:04	Black throated green warbler	<i>Dendroica virens</i>	1	75	65	2523702.9	7351861.3	Singing	Possible	
147	1	07-Jun-19	PT15	12	0	Sunny clear	PUFI	7:54	8:04	Purple finch	<i>Carpodacus purpureus</i>	1	30	75	2523663.9	7351837.4	Singing	Possible	
148	1	07-Jun-19	PT15	12	0	Sunny clear	AMCR	7:54	8:04	American crow	<i>Corvus brachyrhynchos</i>	1	200	50	2523788.2	7351958.2	Singing	Possible	
149	1	07-Jun-19	PT15	12	0	Sunny clear	YRWA	7:54	8:04	Yellow-rumped warbler	<i>Dendroica coronata</i>	1	125	70	2523752.4	7351872.4	Singing	Possible	
150	1	07-Jun-19	PT16	12	0	Sunny clear	DEJU	8:12	8:22	Dark-eyed junco	<i>Junco hyemalis</i>	1	50	60	2523843.7	7351768.7	Singing	Possible	
151	1	07-Jun-19	PT16	12	0	Sunny clear	OVEN	8:12	8:22	Ovenbird	<i>Seiurus aurocapilla</i>	1	100	330	2523750.4	7351830.3	Singing	Possible	
152	1	07-Jun-19	PT16	12	0	Sunny clear	AMRO	8:12	8:22	American robin	<i>Turdus migratorius</i>	1	100	75	2523897.0	7351769.6	Singing	Possible	
153	1	07-Jun-19	PT16	12	0	Sunny clear	AMCR	8:12	8:22	American crow	<i>Corvus brachyrhynchos</i>	1	250	125	2524005.2	7351600.3	Singing	Possible	
154	1	07-Jun-19	PT16	12	0	Sunny clear	BTNW	8:12	8:22	Black throated green warbler	<i>Dendroica virens</i>	1	75	360	2523800.4	7351818.7	Singing	Possible	
155	1	07-Jun-19	PT16	12	0	Sunny clear	NOPA	8:12	8:22	Northern parula	<i>Parula americana</i>	1	50	340	2523783.3	7351790.7	Singing	Possible	
156	1	07-Jun-19	PT16	12	0	Sunny clear	BHVI	8:12	8:22	Blue-headed vireo	<i>Vireo solitarius</i>	1	10	95	2523810.3	7351742.9	Singing	Possible	
157	1	07-Jun-19	PT16	12	0	Sunny clear	BAWW	8:12	8:22	Black and white warbler	<i>Mniotilta varia</i>	1	25	5	2523802.6	7351768.6	Singing	Possible	
158	1	07-Jun-19	PT16	12	0	Sunny clear	BTNW	8:12	8:22	Black throated green warbler	<i>Dendroica virens</i>	1	30	140	2523819.7	7351720.8	Singing	Possible	
159	1	07-Jun-19	PT17	14	1	Sunny clear	BTNW	8:37	8:47	Black throated green warbler	<i>Dendroica virens</i>	1	50	285	2523470.6	7352381.4	Singing	Possible	
160	1	07-Jun-19	PT17	14	1	Sunny clear	BHVI	8:37	8:47	Blue-headed vireo	<i>Vireo solitarius</i>	1	75	70	2523589.3	7352394.1	Singing	Possible	
161	1	07-Jun-19	PT17	14	1	Sunny clear	BTNW	8:37	8:47	Black throated green warbler	<i>Dendroica virens</i>	1	75	5	2523525.4	7352443.1	Singing	Possible	
162	1	07-Jun-19	PT17	14	1	Sunny clear	OVEN	8:37	8:47	Ovenbird	<i>Seiurus aurocapilla</i>	1	100	15	2523544.7	7352465.0	Singing	Possible	
163	1	07-Jun-19	PT17	14	1	Sunny clear	PUFI	8:37	8:47	Purple finch	<i>Carpodacus purpureus</i>	1	75	180	2523518.9	7352293.4	Singing	Possible	
164	1	07-Jun-19	PT17	14	1	Sunny clear	DEJU	8:37	8:47	Dark-eyed junco	<i>Junco hyemalis</i>	2	125	120	2523627.1	7352305.9	Singing/2 males territory	Possible	
165	1	07-Jun-19	PT18	14	1	Sunny clear	BTNW	8:56	9:06	Black throated green warbler	<i>Dendroica virens</i>	1	30	125	2523783.0	7352528.1	Singing	Possible	
166	1	07-Jun-19	PT18	14	1	Sunny clear	BHVI	8:56	9:06	Blue-headed vireo	<i>Vireo solitarius</i>	1	75	185	2523751.9	7352470.6	Observed	Observed	
167	1	07-Jun-19	PT18	14	1	Sunny clear	DEJU	8:56	9:06	Dark-eyed junco	<i>Junco hyemalis</i>	1	50	20	2523775.5	7352592.3	Singing	Possible	
168	1	07-Jun-19	PT18	14	1	Sunny clear	BTNW	8:56	9:06	Black throated green warbler	<i>Dendroica virens</i>	1	125	330	2523695.9	7352653.6	Singing	Possible	
169	1	07-Jun-19	PT18	14	1	Sunny clear	BLJA	8:56	9:06	Bluejay	<i>Cyanocitta cristata</i>	1	200	160	2523826.8	7352357.4	Singing	Possible	
170	1	07-Jun-19	PT19	15	1	Sunny clear	GCKI	9:12	9:22	Golden-crowned kinglet	<i>Regulus satrapa</i>	1	20	330	2523821.2	7352792.1	Singing	Possible	
171	1	07-Jun-19	PT19	15	1	Sunny clear	RCKI	9:12	9:22	Ruby-crowned kinglet	<i>Regulus calendula</i>	1	50	130	2523869.5	7352742.6	Singing	Possible	
172	1	07-Jun-19	PT19	15	1	Sunny clear	YBFL	9:12	9:22	Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	1	30	125	2523855.8	7352757.6	Observed	Observed	
173	1	07-Jun-19	PT19	15	1	Sunny clear	BTNW	9:12	9:22	Black throated green warbler	<i>Dendroica virens</i>	1	30	40	2523850.5	7352797.8	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
174	1	07-Jun-19	PT19	15	1	Sunny clear	NOFL	9:12	9:22	Northern flicker	Colaptes auratus	1	10	360	2523831.2	7352784.8	Singing	Possible	
175	1	07-Jun-19	PT19	15	1	Sunny clear	YRWA	9:12	9:22	Yellow-rumped warbler	Dendroica coronata	1	50	35	2523859.9	7352815.7	Singing	Possible	
176	1	07-Jun-19	PT19	15	1	Sunny clear	COYE	9:12	9:22	Common yellow throat	Geothlypis trichas	1	75	10	2523844.2	7352848.6	Singing	Possible	
177	1	07-Jun-19	PT19	15	1	Sunny clear	DEJU	9:12	9:22	Dark-eyed junco	Junco hyemalis	1	50	30	2523856.2	7352818.1	Singing	Possible	
178	1	07-Jun-19	PT20	15	1	Sunny clear	CORA	9:27	9:37	Common raven	Corvus corax	1	300	130	2524217.2	7352780.2	Singing	Possible	
179	1	07-Jun-19	PT20	15	1	Sunny clear	REVI	9:27	9:37	Red-eyed vireo	Vireo olivaceus	1	100	290	2523893.4	7353007.3	Singing	Possible	
180	1	07-Jun-19	PT20	15	1	Sunny clear	GCKI	9:27	9:37	Golden-crowned kinglet	Regulus satrapa	1	30	80	2524016.9	7352978.3	Singing	Possible	
181	1	07-Jun-19	PT20	15	1	Sunny clear	NAWA	9:27	9:37	Nashville warbler	Vermivora ruficapilla	1	50	180	2523987.4	7352923.1	Singing	Possible	
182	1	07-Jun-19	PT20	15	1	Sunny clear	BTNW	9:27	9:37	Black throated green warbler	Dendroica virens	1	30	295	2523960.2	7352985.8	Calling	Possible	
183	1	07-Jun-19	PT20	15	1	Sunny clear	DEJU	9:27	9:37	Dark-eyed junco	Junco hyemalis	1	30	305	2523962.8	7352990.3	Singing	Possible	
184	1	07-Jun-19	PT20	15	1	Sunny clear	PUFI	9:27	9:37	Purple finch	Carpodacus purpureus	1	30	190	2523982.1	7352943.5	Singing	Possible	
185	1	07-Jun-19	PT20	15	1	Sunny clear	DEJU	9:27	9:37	Dark-eyed junco	Junco hyemalis	1	20	315	2523973.2	7352987.2	Singing	Possible	
186	1	08-Jun-19	PT21	10	0	Sunny clear	BTNW	5:46	5:56	Black throated green warbler	Dendroica virens	1	50	285	2523959.7	7353143.2	Singing	Possible	
187	1	08-Jun-19	PT21	10	0	Sunny clear	COYE	5:46	5:56	Common yellow throat	Geothlypis trichas	1	50	155	2524029.1	7353085.0	Singing	Possible	
188	1	08-Jun-19	PT21	10	0	Sunny clear	OVEN	5:46	5:56	Ovenbird	Seiurus aurocapilla	1	50	120	2524051.3	7353105.3	Singing	Possible	
189	1	08-Jun-19	PT21	10	0	Sunny clear	NAWA	5:46	5:56	Nashville warbler	Vermivora ruficapilla	1	75	55	2524069.4	7353173.3	Singing	Possible	
190	1	08-Jun-19	PT21	10	0	Sunny clear	HETH	5:46	5:56	Hermit thrush	Catharus guttatus	1	125	305	2523905.6	7353202.0	Singing	Possible	
191	1	08-Jun-19	PT21	10	0	Sunny clear	BHVI	5:46	5:56	Blue-headed vireo	Vireo solitarius	1	50	50	2524046.3	7353162.4	Singing	Possible	
192	1	08-Jun-19	PT21	10	0	Sunny clear	AMGO	5:46	5:56	American goldfinch	Carduelis tristis	1	100	180	2524008.0	7353030.3	Singing	Possible	
193	1	08-Jun-19	PT21	10	0	Sunny clear	OVEN	5:46	5:56	Ovenbird	Seiurus aurocapilla	1	200	80	2524204.9	7353165.0	Singing	Possible	
194	1	08-Jun-19	PT21	10	0	Sunny clear	BTNW	5:46	5:56	Black throated green warbler	Dendroica virens	1	125	215	2523936.3	7353027.9	Singing	Possible	
195	1	08-Jun-19	PT21	10	0	Sunny clear	RBNU	5:46	5:56	Redbreasted nuthatch	Sitta canadensis	1	250	5	2524029.7	7353379.3	Singing	Possible	
196	1	08-Jun-19	PT21	10	0	Sunny clear	BAWW	5:46	5:56	Black and white warbler	Mniotilta varia	1	25	130	2524027.1	7353114.2	Singing	Possible	
197	1	08-Jun-19	PT21	10	0	Sunny clear	HETH	5:46	5:56	Hermit thrush	Catharus guttatus	1	10	120	2524016.6	7353125.3	Singing	Possible	
198	1	08-Jun-19	PT22	11	0	Sunny clear	WIWR	6:12	6:26	Winter wren	Troglodytes troglodytes	1	250	50	2524559.0	7353122.8	Singing	Possible	
199	1	08-Jun-19	PT22	11	0	Sunny clear	BHVI	6:12	6:26	Blue-headed vireo	Vireo solitarius	1	50	100	2524416.7	7352953.4	Singing	Possible	
200	1	08-Jun-19	PT22	11	0	Sunny clear	NOPA	6:12	6:26	Northern parula	Parula americana	1	50	80	2524416.7	7352970.8	Singing	Possible	
201	1	08-Jun-19	PT22	11	0	Sunny clear	BTNW	6:12	6:26	Black throated green warbler	Dendroica virens	1	75	310	2524310.0	7353010.3	Singing	Possible	
202	1	08-Jun-19	PT22	11	0	Sunny clear	YRWA	6:12	6:26	Yellow-rumped warbler	Dendroica coronata	1	50	320	2524335.3	7353000.4	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
203	1	08-Jun-19	PT22	11	0	Sunny clear	BTNW	6:12	6:26	Black throated green warbler	Dendroica virens	1	100	30	2524417.5	7353048.7	Singing	Possible	
204	1	08-Jun-19	PT22	11	0	Sunny clear	GCKI	6:12	6:26	Golden-crowned kinglet	Regulus satrapa	1	25	330	2524355.0	7352983.8	Observed	Observed	Male observed foraging
205	1	08-Jun-19	PT23	11	1	Sunny clear	WIWR	6:37	6:47	Winter wren	Troglodytes troglodytes	1	30	130	2524568.1	7353157.8	Singing	Possible	
206	1	08-Jun-19	PT23	11	1	Sunny clear	AMRO	6:37	6:47	American robin	Turdus migratorius	1	30	35	2524562.3	7353201.7	Singing	Possible	
207	1	08-Jun-19	PT23	11	1	Sunny clear	AMRE	6:37	6:47	American redstart	Setophaga ruticilla	1	50	210	2524520.1	7353133.8	Singing	Possible	
208	1	08-Jun-19	PT23	11	1	Sunny clear	OVEN	6:37	6:47	Ovenbird	Seiurus aurocapilla	1	100	25	2524587.3	7353267.7	Singing	Possible	
209	1	08-Jun-19	PT23	11	1	Sunny clear	YBFL	6:37	6:47	Yellow-bellied flycatcher	Empidonax flaviventris	1	30	170	2524550.3	7353147.5	Singing	Possible	
210	1	08-Jun-19	PT23	11	1	Sunny clear	BTNW	6:37	6:47	Black throated green warbler	Dendroica virens	1	30	175	2524547.7	7353147.2	Singing	Possible	
211	1	08-Jun-19	PT23	11	1	Sunny clear	GCKI	6:37	6:47	Golden-crowned kinglet	Regulus satrapa	1	50	325	2524516.4	7353218.0	Singing	Possible	
212	1	08-Jun-19	PT23	11	1	Sunny clear	BHVI	6:37	6:47	Blue-headed vireo	Vireo solitarius	1	50	275	2524495.3	7353181.4	Singing	Possible	
213	1	08-Jun-19	PT23	11	1	Sunny clear	AMCR	6:37	6:47	American crow	Corvus brachyrhynchos	1	250	355	2524523.3	7353426.1	Singing	Possible	
214	1	08-Jun-19	PT23	11	1	Sunny clear	YRWA	6:37	6:47	Yellow-rumped warbler	Dendroica coronata	1	100	180	2524545.1	7353077.1	Singing	Possible	
215	1	08-Jun-19	PT23	11	1	Sunny clear	NOPA	6:37	6:47	Northern parula	Parula americana	1	30	210	2524530.1	7353151.1	Singing	Possible	
216	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	BRCR	6:58	7:08	Brown creeper	Certhia americana	2	50	140	2524627.0	7353330.7	Pair observed/Singing	Probable	
217	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	BTNW	6:58	7:08	Black throated green warbler	Dendroica virens	1	100	195	2524568.9	7353272.4	Singing	Possible	
218	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	NAWA	6:58	7:08	Nashville warbler	Vermivora ruficapilla	1	75	10	2524607.8	7353442.8	Singing	Possible	
219	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	PUFI	6:58	7:08	Purple finch	Carpodacus purpureus	1	50	70	2524641.8	7353386.1	Singing	Possible	
220	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	OVEN	6:58	7:08	Ovenbird	Seiurus aurocapilla	1	50	150	2524619.8	7353325.7	Singing	Possible	
221	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	WWCR	6:58	7:08	White-winged crossbill	Loxia leucoptera	1	30	300	2524568.8	7353384.0	Singing	Possible	
222	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	BCCH	6:58	7:08	Black-capped chickadee	Poecile atricapilla	1	50	130	2524633.1	7353336.8	Calling	Possible	
223	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	RCKI	6:58	7:08	Ruby-crowned kinglet	Regulus calendula	1	200	80	2524791.8	7353403.7	Singing	Possible	
224	1	08-Jun-19	PT24	12	1 to 2	Sunny clear	BBWA	6:58	7:08	Bay-breasted warbler	Dendroica castanea	1	5	360	2524594.8	7353374.0	Singing	Possible	
225	1	08-Jun-19	PT25	12	2	Sunny clear	BTNW	7:17	7:27	Black throated green warbler	Dendroica virens	1	50	330	2524623.7	7353659.0	Singing	Possible	
226	1	08-Jun-19	PT25	12	2	Sunny clear	PUFI	7:17	7:27	Purple finch	Carpodacus purpureus	1	75	110	2524719.2	7353590.1	Singing	Possible	
227	1	08-Jun-19	PT25	12	2	Sunny clear	GCKI	7:17	7:27	Golden-crowned kinglet	Regulus satrapa	1	25	315	2524631.0	7353633.4	Singing	Possible	
228	1	08-Jun-19	PT25	12	2	Sunny clear	BTNW	7:17	7:27	Black throated green warbler	Dendroica virens	1	75	120	2524713.7	7353578.2	Singing	Possible	
229	1	08-Jun-19	PT25	12	2	Sunny clear	WIWR	7:17	7:27	Winter wren	Troglodytes troglodytes	1	150	190	2524622.7	7353468.0	Singing	Possible	
230	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	PUFI	7:36	7:46	Purple finch	Carpodacus purpureus	1	50	120	2524856.5	7353803.4	Singing	Possible	
231	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	BTNW	7:36	7:46	Black throated green warbler	Dendroica virens	1	75	195	2524793.8	7353756.0	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
232	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	BLJA	7:36	7:46	Bluejay	Cyanocitta cristata	1	200	340	2524744.8	7354016.4	Singing	Possible	
233	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	BBWA	7:36	7:46	Bay-breasted warbler	Dendroica castanea	1	75	345	2524793.8	7353900.9	Singing	Possible	
234	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	BTNW	7:36	7:46	Black throated green warbler	Dendroica virens	1	50	265	2524763.4	7353824.1	Singing	Possible	
235	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	GCKI	7:36	7:46	Golden-crowned kinglet	Regulus satrapa	1	30	200	2524803.0	7353800.3	Singing	Possible	
236	1	08-Jun-19	PT26	13	1 to 2	Sunny clear	MAWA	7:36	7:46	Magnolia warbler	Dendroica magnolia	1	100	350	2524795.8	7353926.9	Singing	Possible	
237	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	BTNW	7:57	8:07	Black throated green warbler	Dendroica virens	1	75	15	2524853.9	7354186.9	Singing	Possible	
238	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	BBWA	7:57	8:07	Bay-breasted warbler	Dendroica castanea	1	50	350	2524825.8	7354163.7	Singing	Possible	
239	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	BCCH	7:57	8:07	Black-capped chickadee	Poecile atricapilla	1	25	315	2524816.8	7354132.1	Singing	Possible	
240	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	BHVI	7:57	8:07	Blue-headed vireo	Vireo solitarius	1	50	350	2524825.8	7354163.7	Singing	Possible	
241	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	BAWW	7:57	8:07	Black and white warbler	Mniotilta varia	1	50	80	2524883.7	7354123.1	Singing	Possible	
242	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	MOD0	7:57	8:07	Mourning dove	Zenaidia macroura	1	75	270	2524759.5	7354114.5	Singing	Possible	
243	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	YRWA	7:57	8:07	Yellow-rumped warbler	Dendroica coronata	1	100	250	2524740.5	7354080.3	Singing	Possible	
244	1	08-Jun-19	PT27	13	1 to 2	Sunny clear	MAWA	7:57	8:07	Magnolia warbler	Dendroica magnolia	1	75	210	2524797.0	7354049.5	Singing	Possible	
245	1	08-Jun-19	PT28	14	1	Sunny clear	HETH	8:19	8:29	Hermit thrush	Catharus guttatus	1	50	85	2524679.1	7354377.1	Singing	Possible	
246	1	08-Jun-19	PT28	14	1	Sunny clear	BHVI	8:19	8:29	Blue-headed vireo	Vireo solitarius	1	50	95	2524679.1	7354368.4	Singing	Possible	
247	1	08-Jun-19	PT28	14	1	Sunny clear	BTNW	8:19	8:29	Black throated green warbler	Dendroica virens	1	20	80	2524649.0	7354376.2	Calling	Possible	
248	1	08-Jun-19	PT28	14	1	Sunny clear	BTNW	8:19	8:29	Black throated green warbler	Dendroica virens	1	125	310	2524533.5	7354453.1	Singing	Possible	
249	1	08-Jun-19	PT28	14	1	Sunny clear	NOPA	8:19	8:29	Northern parula	Parula americana	1	75	5	2524635.8	7354447.5	Singing	Possible	
250	1	08-Jun-19	PT28	14	1	Sunny clear	BRCR	8:19	8:29	Brown creeper	Certhia americana	1	75	355	2524622.7	7354447.5	Singing	Possible	
251	1	08-Jun-19	PT29	15	1 to 2	Sunny clear	NAWA	8:44	8:54	Nashville warbler	Vermivora ruficapilla	1	30	350	2524538.6	7354831.0	Singing	Possible	
252	1	08-Jun-19	PT29	15	1 to 2	Sunny clear	HETH	8:44	8:54	Hermit thrush	Catharus guttatus	1	100	285	2524447.2	7354827.3	Singing	Possible	
253	1	08-Jun-19	PT29	15	1 to 2	Sunny clear	BTNW	8:44	8:54	Black throated green warbler	Dendroica virens	1	50	160	2524560.9	7354754.5	Singing	Possible	
254	1	08-Jun-19	PT29	15	1 to 2	Sunny clear	GCKI	8:44	8:54	Golden-crowned kinglet	Regulus satrapa	1	50	55	2524584.8	7354830.1	Singing	Possible	
255	1	08-Jun-19	PT29	15	1 to 2	Sunny clear	NOPA	8:44	8:54	Northern parula	Parula americana	1	50	65	2524589.2	7354822.6	Singing	Possible	
256	1	08-Jun-19	PT29	15	1 to 2	Sunny clear	MAWA	8:44	8:54	Magnolia warbler	Dendroica magnolia	1	75	10	2524556.9	7354875.3	Singing	Possible	
257	1	08-Jun-19	PT30	15	1	Sunny clear	BAWW	9:05	9:15	Black and white warbler	Mniotilta varia	1	25	250	2524343.9	7355106.9	Singing	Possible	
258	1	08-Jun-19	PT30	15	1	Sunny clear	MAWA	9:05	9:15	Magnolia warbler	Dendroica magnolia	1	50	245	2524322.1	7355094.3	Singing	Possible	
259	1	08-Jun-19	PT30	15	1	Sunny clear	ALFL	9:05	9:15	Alder flycatcher	Empidonax alnorum	1	200	350	2524332.7	7355312.4	Singing	Possible	
260	1	08-Jun-19	PT30	15	1	Sunny clear	BTNW	9:05	9:15	Black throated green warbler	Dendroica virens	1	100	230	2524290.8	7355051.2	Singing	Possible	

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261	1	08-Jun-19	PT30	15	1	Sunny clear	BWHA	9:05	9:15	Broad-winged hawk	Buteo platypterus	1	0	0	2524367.4	7355115.5	Singing	Possible	Soaring at 100 m local movement
262	1	08-Jun-19	PT30	15	1	Sunny clear	OVEN	9:05	9:15	Ovenbird	Seiurus aurocapilla	1	50	205	2524346.3	7355070.2	Singing	Possible	
263	1	08-Jun-19	PT30	15	1	Sunny clear	BHVI	9:05	9:15	Blue-headed vireo	Vireo solitarius	1	50	185	2524363.0	7355065.7	Singing	Possible	
264	1	08-Jun-19	PT30	15	1	Sunny clear	REVI	9:05	9:15	Red-eyed vireo	Vireo olivaceus	1	50	310	2524329.1	7355147.6	Singing	Possible	
265	1	08-Jun-19	PT30	15	1	Sunny clear	YEWA	9:05	9:15	Yellow warbler	Dendroica petechia	1	30	315	2524346.2	7355136.7	Calling	Possible	
266	1	08-Jun-19	PT30	15	1	Sunny clear	AMGO	9:05	9:15	American goldfinch	Carduelis tristis	1	0	0	2524367.4	7355115.5	Singing	Possible	Fly-over at 270 deg at 30 m
267	1	08-Jun-19	PT30	15	1	Sunny clear	WTSP	9:05	9:15	White throated sparrow	Zonotrichia albicollis	1	200	30	2524467.4	7355288.7	Singing	Possible	
268	1	08-Jun-19	PT31	16	0 to 1	Sunny clear	BHVI	9:18	9:28	Blue-headed vireo	Vireo solitarius	1	50	315	2524590.6	7355678.4	Singing	Possible	
269	1	08-Jun-19	PT31	16	0 to 1	Sunny clear	HAWO	9:18	9:28	Hairy woodpecker	Picoides villosus	1	5	360	2524625.9	7355648.1	Singing	Possible	
270	1	08-Jun-19	PT31	16	0 to 1	Sunny clear	BTNW	9:18	9:28	Black throated green warbler	Dendroica virens	1	50	285	2524577.6	7355656.0	Singing	Possible	
271	1	08-Jun-19	PT31	16	0 to 1	Sunny clear	NAWA	9:18	9:28	Nashville warbler	Vermivora ruficapilla	1	50	240	2524582.6	7355618.1	Singing	Possible	
272	1	08-Jun-19	PT31	16	0 to 1	Sunny clear	AMGO	9:18	9:28	American goldfinch	Carduelis tristis	1	75	90	2524700.9	7355643.1	Singing	Possible	
273	1	08-Jun-19	PT31	16	0 to 1	Sunny clear	AMRO	9:18	9:28	American robin	Turdus migratorius	1	100	270	2524525.9	7355643.1	Singing	Possible	
274	2	19-Jun-19	PT31	10	0	Foggy	BHVI	5:45	5:55	Blue-headed vireo	Vireo solitarius	1	100	270	2524525.9	7355643.1	Singing	Possible	
275	2	19-Jun-19	PT31	10	0	Foggy	NAWA	5:45	5:55	Nashville warbler	Vermivora ruficapilla	1	75	25	2524657.6	7355711.0	Singing	Possible	
276	2	19-Jun-19	PT31	10	0	Foggy	MODO	5:45	5:55	Mourning dove	Zenaida macroura	1	125	210	2524563.4	7355534.8	Singing	Possible	
277	2	19-Jun-19	PT31	10	0	Foggy	BTNW	5:45	5:55	Black throated green warbler	Dendroica virens	1	75	280	2524552.1	7355656.1	Singing	Possible	
278	2	19-Jun-19	PT30	10	0	Foggy	BTNW	6:17	6:27	Black throated green warbler	Dendroica virens	1	75	140	2524415.6	7355058.0	Singing	Possible	
279	2	19-Jun-19	PT30	10	0	Foggy	HAWO	6:17	6:27	Hairy woodpecker	Picoides villosus	1	50	195	2524354.4	7355067.2	Singing	Possible	
280	2	19-Jun-19	PT30	10	0	Foggy	HETH	6:17	6:27	Hermit thrush	Catharus guttatus	1	125	125	2524469.8	7355043.8	Singing	Possible	
281	2	19-Jun-19	PT30	10	0	Foggy	BTNW	6:17	6:27	Black throated green warbler	Dendroica virens	1	125	310	2524271.6	7355195.8	Singing	Possible	
282	2	19-Jun-19	PT30	10	0	Foggy	GCKI	6:17	6:27	Golden-crowned kinglet	Regulus satrapa	1	75	105	2524439.8	7355096.1	Singing	Possible	
283	2	19-Jun-19	PT30	10	0	Foggy	MODO	6:17	6:27	Mourning dove	Zenaida macroura	1	75	90	2524442.4	7355115.5	Singing	Possible	
284	2	19-Jun-19	PT30	10	0	Foggy	OVEN	6:17	6:27	Ovenbird	Seiurus aurocapilla	1	50	165	2524380.3	7355067.2	Singing	Possible	
285	2	19-Jun-19	PT30	10	0	Foggy	HETH	6:17	6:27	Hermit thrush	Catharus guttatus	1	200	50	2524520.6	7355244.0	Singing	Possible	
286	2	19-Jun-19	PT30	10	0	Foggy	AMRE	6:17	6:27	American redstart	Setophaga ruticilla	1	50	340	2524350.3	7355162.5	Singing	Possible	
287	2	19-Jun-19	PT30	10	0	Foggy	WIWR	6:17	6:27	Winter wren	Troglodytes troglodytes	1	150	300	2524237.5	7355190.5	Singing	Possible	
288	2	19-Jun-19	PT29	11	0	Foggy	YBFL	6:36	6:46	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	150	2524568.8	7354758.2	Singing	Possible	
289	2	19-Jun-19	PT29	11	0	Foggy	HETH	6:36	6:46	Hermit thrush	Catharus guttatus	1	125	105	2524664.6	7354769.1	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
290	2	19-Jun-19	PT29	11	0	Foggy	HETH	6:36	6:46	Hermit thrush	Catharus guttatus	1	100	220	2524479.6	7354724.8	Singing	Possible	
291	2	19-Jun-19	PT29	11	0	Foggy	BTNW	6:36	6:46	Black throated green warbler	Dendroica virens	1	50	20	2524560.9	7354848.4	Singing	Possible	
292	2	19-Jun-19	PT29	11	0	Foggy	GCKI	6:36	6:46	Golden-crowned kinglet	Regulus satrapa	1	30	290	2524515.6	7354811.7	Singing	Possible	
293	2	19-Jun-19	PT29	11	0	Foggy	WWCR	6:36	6:46	White-winged crossbill	Loxia leucoptera	1	50	350	2524535.2	7354850.7	Singing	Possible	
294	2	19-Jun-19	PT29	11	0	Foggy	GCKI	6:36	6:46	Golden-crowned kinglet	Regulus satrapa	1	50	170	2524552.5	7354752.2	Singing	Possible	
295	2	19-Jun-19	PT29	11	0	Foggy	BTNW	6:36	6:46	Black throated green warbler	Dendroica virens	1	75	165	2524563.3	7354729.0	Singing	Possible	
296	2	19-Jun-19	PT28	11	1	Foggy	OVEN	7:02	7:12	Ovenbird	Seiurus aurocapilla	1	50	85	2524679.1	7354377.1	Singing	Possible	
297	2	19-Jun-19	PT28	11	1	Foggy	BTNW	7:02	7:12	Black throated green warbler	Dendroica virens	1	50	305	2524588.3	7354401.4	Singing	Possible	
298	2	19-Jun-19	PT28	11	1	Foggy	BAWW	7:02	7:12	Black and white warbler	Mniotilta varia	1	30	320	2524610.0	7354395.7	Singing	Possible	
299	2	19-Jun-19	PT28	11	1	Foggy	NOPA	7:02	7:12	Northern parula	Parula americana	1	75	30	2524666.8	7354437.7	Singing	Possible	
300	2	19-Jun-19	PT27	11	0	Foggy	MAWA	7:24	7:34	Magnolia warbler	Dendroica magnolia	1	50	195	2524821.6	7354066.2	Singing	Possible	
301	2	19-Jun-19	PT27	11	0	Foggy	GCKI	7:24	7:34	Golden-crowned kinglet	Regulus satrapa	1	30	190	2524829.3	7354084.9	Singing	Possible	
302	2	19-Jun-19	PT27	11	0	Foggy	HETH	7:24	7:34	Hermit thrush	Catharus guttatus	1	100	300	2524747.9	7354164.5	Singing	Possible	
303	2	19-Jun-19	PT27	11	0	Foggy	NAWA	7:24	7:34	Nashville warbler	Vermivora ruficapilla	1	30	165	2524842.3	7354085.5	Singing	Possible	
304	2	19-Jun-19	PT26	12	0	Foggy	BTNW	7:52	8:02	Black throated green warbler	Dendroica virens	1	75	190	2524800.2	7353754.6	Singing	Possible	
305	2	19-Jun-19	PT26	12	0	Foggy	BTNW	7:52	8:02	Black throated green warbler	Dendroica virens	1	75	115	2524881.2	7353796.8	Singing	Possible	
306	2	19-Jun-19	PT26	12	0	Foggy	GCKI	7:52	8:02	Golden-crowned kinglet	Regulus satrapa	1	30	215	2524796.0	7353803.9	Singing	Possible	
307	2	19-Jun-19	PT25	13	0	Foggy/Sunny	LEFL	8:16	8:26	Least flycatcher	Empidonax minimus	1	25	325	2524634.4	7353636.2	Singing	Possible	
308	2	19-Jun-19	PT25	13	0	Foggy/Sunny	BTNW	8:16	8:26	Black throated green warbler	Dendroica virens	1	75	350	2524635.7	7353689.6	Singing	Possible	
309	2	19-Jun-19	PT25	13	0	Foggy/Sunny	GCKI	8:16	8:26	Golden-crowned kinglet	Regulus satrapa	2	25	90	2524673.7	7353615.7	Pair observed	Probable	
310	2	19-Jun-19	PT25	13	0	Foggy/Sunny	WIWR	8:16	8:26	Winter wren	Troglodytes troglodytes	1	75	80	2524722.6	7353628.8	Observed	Observed	Fly-over at 15 deg at 30 m
311	2	19-Jun-19	PT25	13	0	Foggy/Sunny	BTNW	8:16	8:26	Black throated green warbler	Dendroica virens	1	150	270	2524498.7	7353615.7	Singing	Possible	
312	2	19-Jun-19	PT25	13	0	Foggy/Sunny	BAWW	8:16	8:26	Black and white warbler	Mniotilta varia	1	75	100	2524722.6	7353602.7	Singing	Possible	
313	2	19-Jun-19	PT24	12	0	Foggy	BHVI	8:41	8:51	Blue-headed vireo	Vireo solitarius	1	50	245	2524549.5	7353347.8	Singing	Possible	
314	2	19-Jun-19	PT24	12	0	Foggy	MAWA	8:41	8:51	Magnolia warbler	Dendroica magnolia	1	50	305	2524553.9	7353397.6	Singing	Possible	
315	2	19-Jun-19	PT24	12	0	Foggy	BTNW	8:41	8:51	Black throated green warbler	Dendroica virens	1	100	170	2524612.2	7353270.5	Singing	Possible	
316	2	19-Jun-19	PT24	12	0	Foggy	BBWA	8:41	8:51	Bay-breasted warbler	Dendroica castanea	1	50	340	2524577.7	7353415.9	Singing	Possible	
317	2	19-Jun-19	PT24	12	0	Foggy	AMRO	8:41	8:51	American robin	Turdus migratorius	1	100	210	2524544.8	7353282.4	Singing	Possible	
318	2	19-Jun-19	PT24	12	0	Foggy	BTNW	8:41	8:51	Black throated green warbler	Dendroica virens	1	50	110	2524641.8	7353351.9	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
319	2	19-Jun-19	PT24	12	0	Foggy	BTNW	8:41	8:51	Black throated green warbler	Dendroica virens	1	75	270	2524519.8	7353369.0	Singing	Possible	
320	2	19-Jun-19	PT24	12	0	Foggy	NAWA	8:41	8:51	Nashville warbler	Vermivora ruficapilla	1	50	200	2524577.7	7353322.0	Singing	Possible	
321	2	19-Jun-19	PT23	13	1	Foggy/Sunny	AMRE	9:10	9:20	American redstart	Setophaga ruticilla	1	50	230	2524506.8	7353144.9	Singing	Possible	
322	2	19-Jun-19	PT23	13	1	Foggy/Sunny	BTNW	9:10	9:20	Black throated green warbler	Dendroica virens	1	75	290	2524474.6	7353202.7	Singing	Possible	
323	2	19-Jun-19	PT23	13	1	Foggy/Sunny	AMRO	9:10	9:20	American robin	Turdus migratorius	1	125	215	2524473.4	7353074.7	Singing	Possible	
324	2	19-Jun-19	PT23	13	1	Foggy/Sunny	AMRE	9:10	9:20	American redstart	Setophaga ruticilla	1	50	340	2524528.0	7353224.1	Singing	Possible	
325	2	19-Jun-19	PT23	13	1	Foggy/Sunny	BHVI	9:10	9:20	Blue-headed vireo	Vireo solitarius	1	75	285	2524472.6	7353196.5	Singing	Possible	
326	2	20-Jun-19	PT22	11	0	Overcast	BBWA	5:47	5:57	Bay-breasted warbler	Dendroica castanea	1	5	170	2524368.3	7352957.2	Singing	Possible	
327	2	20-Jun-19	PT22	11	0	Overcast	NAWA	5:47	5:57	Nashville warbler	Vermivora ruficapilla	1	50	185	2524363.1	7352912.3	Singing	Possible	
328	2	20-Jun-19	PT22	11	0	Overcast	BTNW	5:47	5:57	Black throated green warbler	Dendroica virens	1	50	45	2524402.8	7352997.5	Singing	Possible	
329	2	20-Jun-19	PT22	11	0	Overcast	GCKI	5:47	5:57	Golden-crowned kinglet	Regulus satrapa	1	30	40	2524386.8	7352985.1	Singing	Possible	
330	2	20-Jun-19	PT22	11	0	Overcast	BTNW	5:47	5:57	Black throated green warbler	Dendroica virens	1	125	30	2524430.0	7353070.4	Singing	Possible	
331	2	20-Jun-19	PT22	11	0	Overcast	HETH	5:47	5:57	Hermit thrush	Catharus guttatus	1	150	325	2524281.4	7353085.0	Singing	Possible	
332	2	20-Jun-19	PT22	11	0	Overcast	WIWR	5:47	5:57	Winter wren	Troglodytes troglodytes	1	150	100	2524515.2	7352936.1	Singing	Possible	
333	2	20-Jun-19	PT22	11	0	Overcast	BHVI	5:47	5:57	Blue-headed vireo	Vireo solitarius	1	50	195	2524354.5	7352913.8	Singing	Possible	
334	2	20-Jun-19	PT22	11	0	Overcast	CORA	5:47	5:57	Common raven	Corvus corax	1	400	180	2524367.5	7352562.1	Singing	Possible	
335	2	20-Jun-19	PT21	11	0	Overcast	HETH	6:17	6:27	Hermit thrush	Catharus guttatus	1	100	165	2524033.8	7353033.7	Singing	Possible	
336	2	20-Jun-19	PT21	11	0	Overcast	OVEN	6:17	6:27	Ovenbird	Seiurus aurocapilla	1	25	305	2523987.5	7353144.6	Singing	Possible	
337	2	20-Jun-19	PT21	11	0	Overcast	BTNW	6:17	6:27	Black throated green warbler	Dendroica virens	1	50	210	2523983.0	7353087.0	Singing	Possible	
338	2	20-Jun-19	PT21	11	0	Overcast	RBNU	6:17	6:27	Redbreasted nuthatch	Sitta canadensis	1	150	105	2524152.8	7353091.5	Singing	Possible	
339	2	20-Jun-19	PT21	11	0	Overcast	NAWA	6:17	6:27	Nashville warbler	Vermivora ruficapilla	1	150	195	2523969.1	7352985.4	Singing	Possible	
340	2	20-Jun-19	PT21	11	0	Overcast	BTNW	6:17	6:27	Black throated green warbler	Dendroica virens	1	125	130	2524103.7	7353049.9	Singing	Possible	
341	2	20-Jun-19	PT20	12	0	Overcast	NAWA	6:36	6:46	Nashville warbler	Vermivora ruficapilla	1	50	90	2524037.4	7352973.1	Singing	Possible	
342	2	20-Jun-19	PT20	12	0	Overcast	COYE	6:36	6:46	Common yellow throat	Geothlypis trichas	1	75	195	2523967.9	7352900.6	Singing	Possible	
343	2	20-Jun-19	PT20	12	0	Overcast	HETH	6:36	6:46	Hermit thrush	Catharus guttatus	1	100	35	2524044.7	7353055.0	Singing	Possible	
344	2	20-Jun-19	PT20	12	0	Overcast	COYE	6:36	6:46	Common yellow throat	Geothlypis trichas	1	125	250	2523869.9	7352930.3	Singing	Possible	
345	2	20-Jun-19	PT20	12	0	Overcast	BHVI	6:36	6:46	Blue-headed vireo	Vireo solitarius	1	50	20	2524004.5	7353020.1	Singing	Possible	
346	2	20-Jun-19	PT20	12	0	Overcast	MODO	6:36	6:46	Mourning dove	Zenaidura macroura	1	150	190	2523961.3	7352825.4	Singing	Possible	
347	2	20-Jun-19	PT20	12	0	Overcast	HETH	6:36	6:46	Hermit thrush	Catharus guttatus	1	100	210	2523937.4	7352886.5	Singing/observed	Possible	

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348	2	20-Jun-19	PT20	12	0	Overcast	YBFL	6:36	6:46	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	300	2523944.1	7352998.1	Singing	Possible	
349	2	20-Jun-19	PT20	12	0	Overcast	BTNW	6:36	6:46	Black throated green warbler	Dendroica virens	1	75	115	2524055.3	7352941.4	Singing	Possible	
350	2	20-Jun-19	PT19	12	0	Foggy	YBFL	6:56	7:06	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	50	2523869.5	7352806.9	Singing	Possible	
351	2	20-Jun-19	PT19	12	0	Foggy	NOWT	6:56	7:06	Northern waterthrush	Seiurus noveboracensis	1	30	70	2523859.4	7352785.0	Singing	Possible	
352	2	20-Jun-19	PT19	12	0	Foggy	HETH	6:56	7:06	Hermit thrush	Catharus guttatus	1	150	60	2523961.1	7352849.8	Singing	Possible	
353	2	20-Jun-19	PT19	12	0	Foggy	BHVI	6:56	7:06	Blue-headed vireo	Vireo solitarius	1	100	210	2523781.2	7352688.2	Singing	Possible	
354	2	20-Jun-19	PT19	12	0	Foggy	WIWR	6:56	7:06	Winter wren	Troglodytes troglodytes	1	150	280	2523683.5	7352800.8	Singing	Possible	
355	2	20-Jun-19	PT19	12	0	Foggy	GCKI	6:56	7:06	Golden-crowned kinglet	Regulus satrapa	1	50	300	2523787.9	7352799.8	Singing	Possible	
356	2	20-Jun-19	PT19	12	0	Foggy	BTNW	6:56	7:06	Black throated green warbler	Dendroica virens	1	75	210	2523793.7	7352709.8	Singing	Possible	
357	2	20-Jun-19	PT19	12	0	Foggy	DEJU	6:56	7:06	Dark-eyed junco	Junco hyemalis	1	100	120	2523917.8	7352724.8	Singing	Possible	
358	2	20-Jun-19	PT18	12	0	Foggy	BHVI	7:12	7:22	Blue-headed vireo	Vireo solitarius	1	75	230	2523701.0	7352497.1	Singing	Possible	
359	2	20-Jun-19	PT18	12	0	Foggy	NAWA	7:12	7:22	Nashville warbler	Vermivora ruficapilla	1	75	180	2523758.4	7352470.3	Singing	Possible	
360	2	20-Jun-19	PT18	12	0	Foggy	YBFL	7:12	7:22	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	85	2523808.3	7352549.7	Singing	Possible	
361	2	20-Jun-19	PT18	12	0	Foggy	BTNW	7:12	7:22	Black throated green warbler	Dendroica virens	1	125	355	2523747.5	7352669.8	Singing	Possible	
362	2	20-Jun-19	PT18	12	0	Foggy	GCKI	7:12	7:22	Golden-crowned kinglet	Regulus satrapa	1	50	35	2523787.1	7352586.3	Singing	Possible	
363	2	20-Jun-19	PT18	12	0	Foggy	YRWA	7:12	7:22	Yellow-rumped warbler	Dendroica coronata	1	75	190	2523745.4	7352471.5	Singing	Possible	
364	2	20-Jun-19	PT17	13	0	Foggy	BBWA	7:33	7:43	Bay-breasted warbler	Dendroica castanea	1	50	90	2523568.9	7352368.4	Singing	Possible	
365	2	20-Jun-19	PT17	13	0	Foggy	HETH	7:33	7:43	Hermit thrush	Catharus guttatus	1	100	65	2523609.5	7352410.7	Singing	Possible	
366	2	20-Jun-19	PT17	13	0	Foggy	BTNW	7:33	7:43	Black throated green warbler	Dendroica virens	1	50	70	2523565.8	7352385.5	Calling	Possible	
367	2	20-Jun-19	PT17	13	0	Foggy	OVEN	7:33	7:43	Ovenbird	Seiurus aurocapilla	1	5	35	2523521.7	7352372.5	Singing	Possible	
368	2	20-Jun-19	PT17	13	0	Foggy	BTNW	7:33	7:43	Black throated green warbler	Dendroica virens	1	50	150	2523543.9	7352325.1	Singing	Possible	
369	2	20-Jun-19	PT16	13	0	Foggy	BHVI	8:09	8:19	Blue-headed vireo	Vireo solitarius	1	50	280	2523751.1	7351752.4	Singing	Possible	
370	2	20-Jun-19	PT16	13	0	Foggy	BTNW	8:09	8:19	Black throated green warbler	Dendroica virens	1	30	45	2523821.6	7351765.0	Singing	Possible	
371	2	20-Jun-19	PT16	13	0	Foggy	BTNW	8:09	8:19	Black throated green warbler	Dendroica virens	1	125	155	2523853.2	7351630.4	Singing	Possible	
372	2	20-Jun-19	PT16	13	0	Foggy	DEJU	8:09	8:19	Dark-eyed junco	Junco hyemalis	1	75	75	2523872.8	7351763.1	Singing	Possible	
373	2	20-Jun-19	PT16	13	0	Foggy	GCKI	8:09	8:19	Golden-crowned kinglet	Regulus satrapa	1	50	25	2523821.5	7351789.1	Singing	Possible	
374	2	20-Jun-19	PT16	13	0	Foggy	BAWW	8:09	8:19	Black and white warbler	Mniotilta varia	1	75	270	2523725.4	7351743.7	Calling	Possible	
375	2	20-Jun-19	PT15	13	0	Foggy	HETH	8:27	8:37	Hermit thrush	Catharus guttatus	1	150	205	2523571.6	7351693.7	Singing	Possible	
376	2	20-Jun-19	PT15	13	0	Foggy	DEJU	8:27	8:37	Dark-eyed junco	Junco hyemalis	1	75	240	2523570.0	7351792.1	Singing	Possible	

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377	2	20-Jun-19	PT15	13	0	Foggy	BTNW	8:27	8:37	Black throated green warbler	Dendroica virens	1	50	260	2523585.7	7351820.9	Singing	Possible	
378	2	20-Jun-19	PT15	13	0	Foggy	AMRO	8:27	8:37	American robin	Turdus migratorius	1	125	360	2523635.0	7351954.6	Singing	Possible	
379	2	20-Jun-19	PT15	13	0	Foggy	BTNW	8:27	8:37	Black throated green warbler	Dendroica virens	1	125	350	2523613.3	7351952.7	Singing	Possible	
380	2	20-Jun-19	PT15	13	0	Foggy	BAWW	8:27	8:37	Black and white warbler	Mniotilta varia	1	50	170	2523643.6	7351780.4	Singing	Possible	
381	2	20-Jun-19	PT15	13	0	Foggy	BTNW	8:27	8:37	Black throated green warbler	Dendroica virens	1	125	80	2523758.1	7351851.3	Singing	Possible	
382	2	20-Jun-19	PT15	13	0	Foggy	GCKI	8:27	8:37	Golden-crowned kinglet	Regulus satrapa	1	50	30	2523660.0	7351872.9	Singing	Possible	
383	2	20-Jun-19	PT15	13	0	Foggy	WIWR	8:27	8:37	Winter wren	Troglodytes troglodytes	1	250	270	2523385.0	7351829.6	Singing	Possible	
384	2	20-Jun-19	PT15	13	0	Foggy	PUFI	8:27	8:37	Purple finch	Carpodacus purpureus	1	50	50	2523673.3	7351861.7	Singing	Possible	
385	2	20-Jun-19	PT14	13	0	Foggy	BTNW	8:51	9:01	Black throated green warbler	Dendroica virens	1	30	90	2523311.9	7351839.3	Singing	Possible	
386	2	20-Jun-19	PT14	13	0	Foggy	DEJU	8:51	9:01	Dark-eyed junco	Junco hyemalis	1	75	330	2523244.4	7351904.2	Singing	Possible	
387	2	20-Jun-19	PT14	13	0	Foggy	BHVI	8:51	9:01	Blue-headed vireo	Vireo solitarius	1	50	65	2523327.2	7351860.4	Singing	Possible	
388	2	20-Jun-19	PT14	13	0	Foggy	RBNU	8:51	9:01	Redbreasted nuthatch	Sitta canadensis	1	150	30	2523356.9	7351969.2	Singing	Possible	
389	2	20-Jun-19	PT14	13	0	Foggy	WIWR	8:51	9:01	Winter wren	Troglodytes troglodytes	3	100	110	2523375.9	7351805.1	Calling/Observed	Observed	
390	2	20-Jun-19	PT14	13	0	Foggy	NAWA	8:51	9:01	Nashville warbler	Vermivora ruficapilla	1	100	150	2523331.9	7351752.7	Singing	Possible	
391	2	20-Jun-19	PT13	13	0	Foggy	HETH	9:08	9:18	Hermit thrush	Catharus guttatus	1	150	335	2522973.6	7351972.8	Singing	Possible	
392	2	20-Jun-19	PT13	13	0	Foggy	BTNW	9:08	9:18	Black throated green warbler	Dendroica virens	1	125	125	2523139.4	7351765.1	Observed/Singing	Observed	
393	2	20-Jun-19	PT13	13	0	Foggy	MAWA	9:08	9:18	Magnolia warbler	Dendroica magnolia	1	50	130	2523075.3	7351804.7	Singing	Possible	
394	2	20-Jun-19	PT13	13	0	Foggy	AMRE	9:08	9:18	American redstart	Setophaga ruticilla	1	50	315	2523001.6	7351872.2	Singing	Possible	
395	2	20-Jun-19	PT13	13	0	Foggy	YRWA	9:08	9:18	Yellow-rumped warbler	Dendroica coronata	1	50	170	2523045.7	7351787.6	Singing	Possible	
396	2	20-Jun-19	PT12	13	0	Foggy	BTNW	9:25	9:35	Black throated green warbler	Dendroica virens	1	30	360	2522932.5	7352145.6	Singing	Possible	
397	2	20-Jun-19	PT12	13	0	Foggy	BTNW	9:25	9:35	Black throated green warbler	Dendroica virens	1	75	210	2522895.0	7352050.7	Singing	Possible	
398	2	20-Jun-19	PT12	13	0	Foggy	BTNW	9:25	9:35	Black throated green warbler	Dendroica virens	1	50	160	2522949.6	7352068.6	Singing	Possible	
399	2	20-Jun-19	PT12	13	0	Foggy	HETH	9:25	9:35	Hermit thrush	Catharus guttatus	1	200	215	2522817.8	7351951.8	Singing	Possible	
400	2	20-Jun-19	PT12	13	0	Foggy	OVEN	9:25	9:35	Ovenbird	Seiurus aurocapilla	1	100	115	2523023.2	7352073.4	Singing	Possible	
401	2	20-Jun-19	PT12	13	0	Foggy	AMRO	9:25	9:35	American robin	Turdus migratorius	1	150	340	2522881.2	7352256.6	Singing	Possible	
402	2	23-Jun-19	PT11	5	0	Sunny clear	PUFI	5:50	6:00	Purple finch	Carpodacus purpureus	1	50	105	2523225.7	7352707.7	Singing	Possible	
403	2	23-Jun-19	PT11	5	0	Sunny clear	BBWA	5:50	6:00	Bay-breasted warbler	Dendroica castanea	1	5	50	2523181.3	7352723.9	Singing	Possible	
404	2	23-Jun-19	PT11	5	0	Sunny clear	AMRE	5:50	6:00	American redstart	Setophaga ruticilla	1	50	230	2523139.1	7352688.5	Singing	Possible	
405	2	23-Jun-19	PT11	5	0	Sunny clear	YRWA	5:50	6:00	Yellow-rumped warbler	Dendroica coronata	1	100	105	2523274.0	7352694.8	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
406	2	23-Jun-19	PT11	5	0	Sunny clear	AMRE	5:50	6:00	American redstart	Setophaga ruticilla	1	100	130	2523254.0	7352656.4	Singing	Possible	
407	2	23-Jun-19	PT11	5	0	Sunny clear	HETH	5:50	6:00	Hermit thrush	Catharus guttatus	1	125	295	2523064.2	7352773.5	Singing	Possible	
408	2	23-Jun-19	PT11	5	0	Sunny clear	NAWA	5:50	6:00	Nashville warbler	Vermivora ruficapilla	1	50	330	2523152.4	7352763.9	Singing	Possible	
409	2	23-Jun-19	PT11	5	0	Sunny clear	BTNW	5:50	6:00	Black throated green warbler	Dendroica virens	1	30	125	2523202.0	7352703.4	Singing	Possible	
410	2	23-Jun-19	PT11	5	0	Sunny clear	CORA	5:50	6:00	Common raven	Corvus corax	1	250	15	2523242.1	7352962.1	Singing	Possible	
411	2	23-Jun-19	PT10	6	0	Sunny clear	GCKI	6:08	6:18	Golden-crowned kinglet	Regulus satrapa	1	30	140	2523080.9	7352936.5	Singing	Possible	
412	2	23-Jun-19	PT10	6	0	Sunny clear	RUKI	6:08	6:18	Ruby-crowned kinglet	Regulus calendula	1	150	310	2522946.7	7353055.9	Singing	Possible	
413	2	23-Jun-19	PT10	6	0	Sunny clear	BTNW	6:08	6:18	Black throated green warbler	Dendroica virens	1	50	180	2523061.6	7352909.5	Singing	Possible	
414	2	23-Jun-19	PT10	6	0	Sunny clear	HETH	6:08	6:18	Hermit thrush	Catharus guttatus	1	200	200	2522993.2	7352771.6	Singing	Possible	
415	2	23-Jun-19	PT10	6	0	Sunny clear	BRCR	6:08	6:18	Brown creeper	Certhia americana	1	30	230	2523038.7	7352940.2	Singing	Possible	
416	2	23-Jun-19	PT10	6	0	Sunny clear	HETH	6:08	6:18	Hermit thrush	Catharus guttatus	1	50	345	2523048.7	7353007.8	Singing	Possible	
417	2	23-Jun-19	PT10	6	0	Sunny clear	BHVI	6:08	6:18	Blue-headed vireo	Vireo solitarius	1	50	320	2523029.5	7352997.8	Singing	Possible	
418	2	23-Jun-19	PT10	6	0	Sunny clear	WTSP	6:08	6:18	White throated sparrow	Zonotrichia albicollis	1	200	5	2523079.1	7353158.8	Singing	Possible	
419	2	23-Jun-19	PT10	6	0	Sunny clear	YBFL	6:08	6:18	Yellow-bellied flycatcher	Empidonax flaviventris	1	50	90	2523111.6	7352959.5	Calling	Possible	
420	2	23-Jun-19	PT9	9	0	Sunny clear	NAWA	6:31	6:41	Nashville warbler	Vermivora ruficapilla	1	30	35	2522897.3	7353324.1	Singing	Possible	
421	2	23-Jun-19	PT9	9	0	Sunny clear	RBNU	6:31	6:41	Redbreasted nuthatch	Sitta canadensis	1	250	255	2522638.6	7353234.9	Singing	Possible	
422	2	23-Jun-19	PT9	9	0	Sunny clear	HETH	6:31	6:41	Hermit thrush	Catharus guttatus	1	100	175	2522888.8	7353200.0	Singing	Possible	
423	2	23-Jun-19	PT9	9	0	Sunny clear	AMRO	6:31	6:41	American robin	Turdus migratorius	1	150	325	2522794.1	7353422.4	Singing	Possible	
424	2	23-Jun-19	PT9	9	0	Sunny clear	BTNW	6:31	6:41	Black throated green warbler	Dendroica virens	1	50	170	2522888.8	7353250.3	Singing	Possible	
425	2	23-Jun-19	PT9	9	0	Sunny clear	BCCH	6:31	6:41	Black-capped chickadee	Poecile atricapilla	1	75	180	2522880.1	7353224.6	Singing	Possible	
426	2	23-Jun-19	PT9	9	0	Sunny clear	HETH	6:31	6:41	Hermit thrush	Catharus guttatus	1	100	30	2522930.1	7353386.2	Singing	Possible	
427	2	23-Jun-19	PT9	9	0	Sunny clear	AMRE	6:31	6:41	American redstart	Setophaga ruticilla	1	50	20	2522897.2	7353346.6	Calling	Possible	
428	2	23-Jun-19	PT9	9	0	Sunny clear	ALFL	6:31	6:41	Alder flycatcher	Empidonax alnorum	1	50	260	2522830.9	7353290.9	Singing	Possible	
429	2	23-Jun-19	PT9	9	0	Sunny clear	COYE	6:31	6:41	Common yellow throat	Geothlypis trichas	1	30	335	2522867.4	7353326.8	Singing	Possible	
430	2	23-Jun-19	PT9	9	0	Sunny clear	WTSP	6:31	6:41	White throated sparrow	Zonotrichia albicollis	1	75	230	2522822.7	7353251.4	Singing	Possible	
431	2	23-Jun-19	PT9	9	0	Sunny clear	BHVI	6:31	6:41	Blue-headed vireo	Vireo solitarius	1	75	195	2522860.7	7353227.1	Singing	Possible	
432	2	23-Jun-19	PT9	9	0	Sunny clear	ALFL	6:31	6:41	Alder flycatcher	Empidonax alnorum	1	100	355	2522871.4	7353399.2	Singing	Possible	
433	2	23-Jun-19	PT9	9	0	Sunny clear	AMRE	6:31	6:41	American redstart	Setophaga ruticilla	1	75	290	2522809.6	7353325.2	Singing	Possible	
434	2	23-Jun-19	PT8	8	0	Sunny clear	AMGO	6:52	7:02	American goldfinch	Carduelis tristis	1	50	315	2523104.4	7353613.3	Singing	Possible	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
435	2	23-Jun-19	PT8	8	0	Sunny clear	NAWA	6:52	7:02	Nashville warbler	Vermivora ruficapilla	1	50	330	2523114.7	7353621.3	Singing	Possible	
436	2	23-Jun-19	PT8	8	0	Sunny clear	NAWA	6:52	7:02	Nashville warbler	Vermivora ruficapilla	1	100	170	2523157.1	7353479.5	Singing	Possible	
437	2	23-Jun-19	PT8	8	0	Sunny clear	BTNW	6:52	7:02	Black throated green warbler	Dendroica virens	1	125	40	2523220.1	7353673.7	Singing	Possible	
438	2	23-Jun-19	PT8	8	0	Sunny clear	WWCR	6:52	7:02	White-winged crossbill	Loxia leucoptera	1	0	0	2523139.7	7353578.0	Singing	Possible	Fly-over 60 m at 355 deg
439	2	23-Jun-19	PT8	8	0	Sunny clear	DEJU	6:52	7:02	Dark-eyed junco	Junco hyemalis	1	200	110	2523327.7	7353509.5	Singing	Possible	
440	2	23-Jun-19	PT8	8	0	Sunny clear	BTNW	6:52	7:02	Black throated green warbler	Dendroica virens	1	100	140	2523204.0	7353501.3	Singing	Possible	
441	2	23-Jun-19	PT8	8	0	Sunny clear	HETH	6:52	7:02	Hermit thrush	Catharus guttatus	1	75	255	2523067.3	7353558.5	Singing	Possible	
442	2	23-Jun-19	PT7	9	1	Sunny clear	BTNW	7:18	7:28	Black throated green warbler	Dendroica virens	1	100	155	2523162.1	7353932.2	Singing	Possible	
443	2	23-Jun-19	PT7	9	1	Sunny clear	OVEN	7:18	7:28	Ovenbird	Seiurus aurocapilla	1	50	25	2523141.0	7354068.1	Singing	Possible	
444	2	23-Jun-19	PT7	9	1	Sunny clear	WTSP	7:18	7:28	White throated sparrow	Zonotrichia albicollis	1	100	5	2523128.6	7354122.4	Singing	Possible	
445	2	23-Jun-19	PT7	9	1	Sunny clear	ALFL	7:18	7:28	Alder flycatcher	Empidonax alnorum	1	100	300	2523033.3	7354072.8	Singing	Possible	
446	2	23-Jun-19	PT7	9	1	Sunny clear	HETH	7:18	7:28	Hermit thrush	Catharus guttatus	1	100	75	2523216.5	7354048.7	Singing	Possible	
447	2	23-Jun-19	PT7	9	1	Sunny clear	AMGO	7:18	7:28	American goldfinch	Carduelis tristis	1	75	135	2523172.9	7353969.8	Singing	Possible	
448	2	23-Jun-19	PT7	9	1	Sunny clear	AMRE	7:18	7:28	American redstart	Setophaga ruticilla	1	75	305	2523058.4	7354065.8	Singing	Possible	
449	2	23-Jun-19	PT6	11	1	Sunny clear	HETH	7:47	7:57	Hermit thrush	Catharus guttatus	1	150	25	2523196.3	7354760.1	Singing	Possible	
450	2	23-Jun-19	PT6	11	1	Sunny clear	AMRE	7:47	7:57	American redstart	Setophaga ruticilla	1	50	170	2523141.6	7354574.9	Singing	Possible	
451	2	23-Jun-19	PT6	11	1	Sunny clear	BCCH	7:47	7:57	Black-capped chickadee	Poecile atricapilla	1	30	165	2523140.7	7354595.1	Singing	Possible	
452	2	23-Jun-19	PT6	11	1	Sunny clear	PUFI	7:47	7:57	Purple finch	Carpodacus purpureus	1	75	70	2523203.4	7354649.8	Singing	Possible	
453	2	23-Jun-19	PT6	11	1	Sunny clear	NOWT	7:47	7:57	Northern waterthrush	Seiurus noveboracensis	1	100	100	2523231.4	7354606.8	Singing	Possible	
454	2	23-Jun-19	PT6	11	1	Sunny clear	BTNW	7:47	7:57	Black throated green warbler	Dendroica virens	1	50	330	2523107.9	7354667.4	Singing	Possible	
455	2	23-Jun-19	PT6	11	1	Sunny clear	GCKI	7:47	7:57	Golden-crowned kinglet	Regulus satrapa	1	30	35	2523150.1	7354648.7	Singing	Possible	
456	2	23-Jun-19	PT6	11	1	Sunny clear	BHVI	7:47	7:57	Blue-headed vireo	Vireo solitarius	1	50	175	2523137.3	7354574.3	Singing	Possible	
457	2	23-Jun-19	PT6	11	1	Sunny clear	DEJU	7:47	7:57	Dark-eyed junco	Junco hyemalis	1	100	70	2523226.9	7354658.3	Singing	Possible	
458	2	23-Jun-19	PT5	12	2	Sunny clear	OVEN	8:06	8:16	Ovenbird	Seiurus aurocapilla	1	75	330	2523355.0	7354842.7	Singing	Possible	
459	2	23-Jun-19	PT5	12	2	Sunny clear	HETH	8:06	8:16	Hermit thrush	Catharus guttatus	1	125	250	2523275.0	7354735.0	Singing	Possible	
460	2	23-Jun-19	PT5	12	2	Sunny clear	NAWA	8:06	8:16	Nashville warbler	Vermivora ruficapilla	1	75	285	2523320.1	7354797.2	Singing	Possible	
461	2	23-Jun-19	PT5	12	2	Sunny clear	BTNW	8:06	8:16	Black throated green warbler	Dendroica virens	1	75	150	2523430.0	7354712.8	Singing	Possible	
462	2	23-Jun-19	PT5	12	2	Sunny clear	BTNW	8:06	8:16	Black throated green warbler	Dendroica virens	1	50	320	2523360.4	7354816.1	Singing	Possible	
463	2	23-Jun-19	PT4	13	1	Sunny clear	BBWA	8:24	8:34	Bay-breasted warbler	Dendroica castanea	1	50	95	2523628.8	7354863.0	Observed male	Observed	

ID	Round	Date	Point	Temp	Beaufort	Weather	Code	Start	End	Common Name	Scientific Name	No	Dist	Bearing	X coord	Y coord	Breeding Evidence	Breeding code	Notes
464	2	23-Jun-19	PT4	13	1	Sunny clear	AMRO	8:24	8:34	American robin	Turdus migratorius	1	50	40	2523611.2	7354905.7	Singing	Possible	
465	2	23-Jun-19	PT4	13	1	Sunny clear	GCKI	8:24	8:34	Golden-crowned kinglet	Regulus satrapa	1	50	245	2523533.7	7354846.3	Singing	Possible	
466	2	23-Jun-19	PT4	13	1	Sunny clear	WWCR	8:24	8:34	White-winged crossbill	Loxia leucoptera	1	0	0	2523579.0	7354867.4	Singing	Possible	Fly-over 60 m at 350 deg
467	2	23-Jun-19	PT3	14	2	Sunny clear	COYE	8:52	9:02	Common yellow throat	Geothlypis trichas	1	30	10	2523802.1	7354943.9	Singing	Possible	
468	2	23-Jun-19	PT3	14	2	Sunny clear	SOSP	8:52	9:02	Song sparrow	Melospiza melodia	1	100	280	2523698.4	7354931.7	Singing	Possible	
469	2	23-Jun-19	PT3	14	2	Sunny clear	ALFL	8:52	9:02	Alder flycatcher	Empidonax alnorum	1	50	340	2523779.8	7354961.4	Singing	Possible	
470	2	23-Jun-19	PT3	14	2	Sunny clear	NOPA	8:52	9:02	Northern parula	Parula americana	1	125	255	2523676.2	7354882.0	Singing	Possible	
471	2	23-Jun-19	PT3	14	2	Sunny clear	TRSW	8:52	9:02	Tree sparrow	Tachycineta bicolor	1	0	0	2523796.9	7354914.4	Singing	Possible	Fly-over 30 m at 15 deg
472	2	23-Jun-19	PT3	14	2	Sunny clear	AMGO	8:52	9:02	American goldfinch	Carduelis tristis	1	30	355	2523794.3	7354944.3	Singing	Possible	
473	2	23-Jun-19	PT3	14	2	Sunny clear	RUKI	8:52	9:02	Ruby-crowned kinglet	Regulus calendula	1	200	305	2523633.1	7355029.1	Singing	Possible	
474	2	23-Jun-19	PT3	14	2	Sunny clear	SOSP	8:52	9:02	Song sparrow	Melospiza melodia	1	100	20	2523831.1	7355008.3	Singing	Possible	
475	2	23-Jun-19	PT3	14	2	Sunny clear	CEDW	8:52	9:02	Cedar waxwing	Bombcilla cedrorum	1	10	155	2523801.1	7354905.3	Singing	Possible	
476	2	23-Jun-19	PT3	14	2	Sunny clear	SOSP	8:52	9:02	Song sparrow	Melospiza melodia	1	100	190	2523779.5	7354815.9	Singing	Possible	
477	2	23-Jun-19	PT3	14	2	Sunny clear	COGR	8:52	9:02	Common grackle	Quiscalus quiscula	1	50	50	2523835.2	7354946.5	Singing	Possible	
478	2	23-Jun-19	PT3	14	2	Sunny clear	COYE	8:52	9:02	Common yellow throat	Geothlypis trichas	1	75	305	2523735.5	7354957.4	Agitated	Probable	
479	2	23-Jun-19	PT3	14	2	Sunny clear	NOFL	8:52	9:02	Northern flicker	Colaptes auratus	1	200	330	2523696.9	7355087.6	Agitated	Probable	
480	2	23-Jun-19	PT2	14	2	Sunny clear	AMGO	9:13	9:23	American goldfinch	Carduelis tristis	1	20	195	2524123.3	7355070.9	Singing	Possible	
481	2	23-Jun-19	PT2	14	2	Sunny clear	REVI	9:13	9:23	Red-eyed vireo	Vireo olivaceus	1	75	315	2524075.4	7355143.3	Singing	Possible	
482	2	23-Jun-19	PT2	14	2	Sunny clear	AMRE	9:13	9:23	American redstart	Setophaga ruticilla	1	100	25	2524170.7	7355180.9	Singing	Possible	
483	2	23-Jun-19	PT2	14	2	Sunny clear	SASP	9:13	9:23	Savannah sparrow	Passerculus sandwichensis	1	75	245	2524060.5	7355058.6	Singing	Possible	
484	2	23-Jun-19	PT2	14	2	Sunny clear	WTSP	9:13	9:23	White throated sparrow	Zonotrichia albicollis	1	150	235	2524005.6	7355004.2	Singing	Possible	
485	2	23-Jun-19	PT2	14	2	Sunny clear	BTNW	9:13	9:23	Black throated green warbler	Dendroica virens	1	50	350	2524119.8	7355139.5	Calling	Possible	
486	2	23-Jun-19	PT2	14	2	Sunny clear	AMRO	9:13	9:23	American robin	Turdus migratorius	1	100	330	2524078.5	7355176.9	Singing	Possible	
487	2	23-Jun-19	PT2	14	2	Sunny clear	SOSP	9:13	9:23	Song sparrow	Melospiza melodia	1	100	240	2524041.9	7355040.3	Singing	Possible	
488	2	23-Jun-19	PT2	14	2	Sunny clear	COYE	9:13	9:23	Common yellow throat	Geothlypis trichas	1	75	10	2524141.5	7355164.1	Singing	Possible	
489	2	23-Jun-19	PT2	14	2	Sunny clear	AMGO	9:13	9:23	American goldfinch	Carduelis tristis	1	50	360	2524128.5	7355140.3	Singing	Possible	
490	2	23-Jun-19	PT1	15	1	Sunny clear	PUFI	9:34	9:44	Purple finch	Carpodacus purpureus	1	50	230	2524365.2	7355753.7	Singing	Possible	
491	2	23-Jun-19	PT1	15	1	Sunny clear	BTNW	9:34	9:44	Black throated green warbler	Dendroica virens	1	50	160	2524420.6	7355738.9	Singing	Possible	
492	2	23-Jun-19	PT1	15	1	Sunny clear	WTSP	9:34	9:44	White throated sparrow	Zonotrichia albicollis	1	125	115	2524516.8	7355733.0	Singing	Possible	

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493	2	23-Jun-19	PT1	15	1	Sunny clear	ALFL	9:34	9:44	Alder flycatcher	Empidonax alnorum	1	50	95	2524453.3	7355781.5	Singing	Possible	
494	2	23-Jun-19	PT1	15	1	Sunny clear	BTNW	9:34	9:44	Black throated green warbler	Dendroica virens	1	75	260	2524329.6	7355772.8	Singing	Possible	
495	2	23-Jun-19	PT1	15	1	Sunny clear	BTNW	9:34	9:44	Black throated green warbler	Dendroica virens	1	50	50	2524441.8	7355818.0	Singing	Possible	
496	2	23-Jun-19	PT1	15	1	Sunny clear	AMRE	9:34	9:44	American redstart	Setophaga ruticilla	1	30	70	2524431.7	7355796.1	Singing	Possible	
497	2	23-Jun-19	PT1	15	1	Sunny clear	WTSP	9:34	9:44	White throated sparrow	Zonotrichia albicollis	1	150	235	2524280.6	7355699.8	Singing	Possible	
498	2	23-Jun-19	PT1	15	1	Sunny clear	BHVI	9:34	9:44	Blue-headed vireo	Vireo solitarius	1	200	140	2524532.0	7355632.6	Singing	Possible	

Incidental surveys

ID	Code	Common Name	Scientific Name	No	X coord	Y coord	Notes
1	WIWR	Winter wren	Troglodytes troglodytes	6	2524754.2	7354392.2	Pair observed agitated/Fledglings 4
2	BAWW	Black and white warbler	Mniotilta varia	2	2524613.6	7354114.9	Pair observed
3	MAKE	American kestrel	Falco sparverius	2	2523904.9	7355204.8	Two observed local movement
4	HETH	Hermit thrush	Catharus guttatus	2	2523109.4	7354683.1	Observed 2 fledglings
5	RTHU	Ruby-throated hummingbird	Archilochus colubris	1	2523041.3	7354784.2	Female observed
6	BOCH	Boreal chickadee	Poecile hudsonica	1	2523057.3	7353973.0	Observed and heard
7	WIWR	Winter wren	Troglodytes troglodytes	1	2523459.8	7353766.9	Observed fledgling
8	GRYE	Greater yellowlegs	Tringa melanoleuca	1	2524376.2	7355504.9	Observed migrating
9	TUVU	Turkey vulture	Cathartes aura	1	2522969.4	7354013.1	Fly-over 75 m at 230 degrees
10	CONI	Common nighthawk	Chordeiles minor	1	2523009.5	7353984.2	Fly-over 40 m at 90 degrees
11	OSFL	Olive-sided flycatcher	Contopus cooperi	1	2523484.8	7352920.3	Likely migrating
12	SPSA	Spotted sandpiper	Actitis macularius	1	2523722.8	7353064.0	Puddle on pipeline road fall

Owl surveys

Date	Point	Time	Temp	Weather	Precip	Beaufort	Snow cover	Snow max depth	Snow min depth	Lunar cycle	Easting	Northing	Notes
19-Mar-19	PT1	8:05	-1	Clear	NA	0	10	20	5	Waxing Gibbous	2525073.6	7354775.2	No response
19-Mar-19	PT2	8:36	-2	Clear	NA	0	10	20	5	Waxing Gibbous	2524163.8	7353520.1	No response
19-Mar-19	PT3	9:01	-3	Clear	NA	0	10	20	5	Waxing Gibbous	2523381.4	7352078.5	No response
19-Mar-19	PT5	9:50	-3	Clear	NA	0	10	20	5	Waxing Gibbous	2522998.6	7354626.2	No response
27-Mar-19	PT6	8:58	1	Clear	NA	1	5	10	0	Third quarter	2522822.3	7353128.9	No response
27-Mar-19	PT5	9:15	1	Clear	NA	1	5	10	0	Third quarter	2522998.6	7354626.2	No response
27-Mar-19	PT3	9:54	1	Clear	NA	1	5	10	0	Third quarter	2523381.4	7352078.5	No response
27-Mar-19	PT2	10:16	1	Clear	NA	1	5	10	0	Third quarter	2524163.8	7353520.1	No response
27-Mar-19	PT1	10:40	1	Clear	NA	1	5	10	0	Third quarter	2525073.6	7354775.2	No response
07-Apr-19	PT1	8:37	7	Clear	NA	1	0	0	0	Waxing Crescent	2525073.6	7354775.2	No response
07-Apr-19	PT2	9:05	6	Clear	NA	1	0	0	0	Waxing Crescent	2524163.8	7353520.1	No response

Date	Point	Time	Temp	Weather	Precip	Beaufort	Snow cover	Snow max depth	Snow min depth	Lunar cycle	Easting	Northing	Notes
07-Apr-19	PT3	9:32	5	Clear	NA	1 to 3	0	0	0	Waxing Crescent	2523381.4	7352078.5	No response
07-Apr-19	PT5	9:46	4	Clear	NA	1	0	0	0	Waxing Crescent	2522998.6	7354626.2	No response
07-Apr-19	PT6	10:11	4	Clear	NA	2 to 4	0	0	0	Waxing Crescent	2522822.3	7353128.9	No response
28-Apr-19	PT6	9:31	3	Clear	NA	0	0	0	0	Third quarter	2522822.3	7353128.9	No response
28-Apr-19	PT5	9:12	3	Clear	NA	0	0	0	0	Third quarter	2522998.6	7354626.2	American woodcock 250 deg at 75 m
28-Apr-19	PT3	9:53	3	Clear	NA	0	0	0	0	Third quarter	2523381.4	7352078.5	No response
28-Apr-19	PT2	10:17	3	Partial cloud	NA	0	0	0	0	Third quarter	2524163.8	7353520.1	No response
28-Apr-19	PT1	10:35	3	Partial cloud	NA	0	0	0	0	Third quarter	2525073.6	7354775.2	Barred owl pair at minute of playback. Aggressive response. Pair perched 230 deg at 75 m
24-May-19	PT1	10:17	9	Clear	NA	0	0	0	0	Third quarter	2525073.6	7354775.2	No response
24-May-19	PT2	10:49	8	Clear	NA	0	0	0	0	Third quarter	2524163.8	7353520.1	Observed unknown owl fly-over at minute 8 of playback. Did not vocalize. Possible barred owl judging from size.
24-May-19	PT3	11:12	6	Clear	NA	1	0	0	0	Third quarter	2523381.4	7352078.5	No response
24-May-19	PT5	11:44	5	Clear	NA	0	0	0	0	Third quarter	2522998.6	7354626.2	No response

Common nighthawk surveys

Date	Point	Time	Start	End	Temp	Weather	Beaufort	Precip	Dist	Bearing	Height	Easting	Northing	Notes
22-Jun-19	PT1	9:13	9:13	9:25	19	Partially cloudy	2	NA	250	135	100	2524013.9	7355312.7	Two common nighthawk calling and foraging local movement at an average of 100 m. Likely pair.
22-Jun-19	PT2	9:25	9:25	9:37	19	Partially cloudy	2	NA	-	-	-	2523547.9	7351934.7	No observations
22-Jun-19	PT3	9:47	9:47	9:59	18	Partially cloudy	1	NA	-	-	-	2524073.4	7353415.2	No observations
22-Jun-19	PT4	10:03	10:03	10:15	17	Partially cloudy	1	NA	-	-	-	2523019.1	7353643.7	No observations