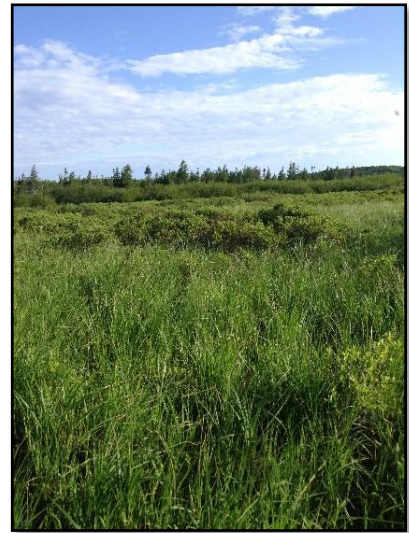


**Avifauna Inventory of Nature Conservancy
Canada's Black River Fen Properties
Inverness County, Nova Scotia**



James Churchill and Sean Blaney

**A report to Nature Conservancy of Canada
by the Atlantic Canada Conservation Data Centre
P.O. Box 6416, Sackville, NB E4L 1C6. www.accdc.com**

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Introduction

The Nature Conservancy of Canada (NCC) contracted the Atlantic Canada Conservation Data Centre (AC CDC) to survey breeding birds on three properties within the Black River Fen complex on the west side of Lake Ainslie, Inverness County, Nova Scotia. The properties include two large parcels west of Blackstone Road along the Black River (property ID numbers 50049139 totalling 40.6 ha, and 50049162 totalling 46.6 ha) and a 6.5 ha collection of three adjacent small parcels near the mouth of the Black River at Lake Ainslie (property ID numbers 50196203, 50196211 and 50196229). The properties are within an area of highly calcareous soils that has long been known to support many provincially rare plant species. These properties are largely wetland and include extensive areas of swamp forest, tall shrub and low shrub swamp and smaller areas of open graminoid marsh and open water. Some of the swamp and marsh communities have accumulated peat and are grading toward fen conditions. Upland forest areas occur primarily at the periphery of parcels and comprise mature and regenerating mixedwood, coniferous and deciduous stands.

AC CDC Data Manager and Avian Surveys Biologist James Churchill conducted the breeding bird inventory work on June 27-28, 2018 and documented 65 bird species in and around the NCC properties: 53 species in and near parcel 50049162, 50 species in and near parcel 50049139 and 27 species in and near the group of three small properties near Lake Ainslie. Our observations documented 115 locations of 19 provincially rare bird species, and eight incidentally observed locations of provincially rare vascular plants and lichens, including the provincially Endangered Hoary Willow (*Salix candida*) and the provincially Vulnerable Black Ash (*Fraxinus nigra*).

Methods

Fieldwork was conducted by AC CDC biologist James Churchill on June 27-28, 2018. Surveys started at dawn and continued into early afternoon each day to maximize opportunity for incidental detections. When in appropriate habitat for provincially-rare (i.e., those species with provincial status ranks [S-ranks], of S1 to S3S4¹) or At Risk species that were not yet detected, playback with a portable speaker was carried out to maximize the likelihood of detection (especially for Black-backed Woodpecker, Canada Warbler, Cape May Warbler, Eastern Wood-pewee, Olive-sided Flycatcher, Rusty Blackbird, Upland Sandpiper).

Parcel 50049139 was surveyed on June 27 between 5:15 am and 1:05 pm with a 1 h diversion to the southwest of the parcel to cross Black River into the north section (at approximately 46.14619, -61.29657). Survey included 5.15 km of walking on site over 7 h. On June 28 parcels 50196203, 50196211, 50196229 were surveyed between 5:00 am and 6:30 am (1.5 h) walking 1.28 km, and parcel 50049162 was surveyed between 6:35 am and 12:05 (5.5 h) and walking 6.26 km.

¹ S-ranks are defined in detail at www.natureserve.org/explorer/ranking.htm#globalstatus, with S1 = critically imperiled, S2 = imperiled, S3 = vulnerable, S4 = Secure with some cause for long term concern, and S5 = Demonstrably secure.

A GPS unit was kept on while in the field to precisely record area covered (Figure 1). All major habitat types present were visited, with special focus on habitats most likely to support rare species. Locations of all observed birds were plotted with GPS (accurate to 10 m or less) and breeding evidence for birds was documented using Maritimes Breeding Bird Atlas codes. For provincially-rare or At Risk species, information such as numbers, breeding evidence, sex, and habitat were recorded. A few species of lichens and vascular plants of conservation concern were also recorded incidentally. All data is attached with this report in the file “NCC_blackRiverFen_birds_ACCDC_2018.xlsx”, and will be permanently maintained in the Atlantic Canada Conservation Data Centre database for use in response to any future conservation-related data request in the vicinity of the study area.

Results and Discussion

Parcel 50049139

Birds

We detected 50 bird species from within or adjacent to the property (Table 1). Three species that were detected just off site, Black-capped Chickadee, Black-backed Woodpecker and Mourning Warbler, are all likely using habitat on the parcel. Our list represents most species that would be expected to be breeding on the property, but additional surveys, especially work targeting more difficult to detect species (e.g. Northern Saw-whet Owl, Barred Owl, Rusty Blackbird, Chimney Swift, waterfowl), would add a few more species. We recorded 56 observations of 14 species of conservation significance on or near the property, as listed in Table 1. Typical habitat utilized by Canada Warbler, which was especially abundant on this site, is pictured in Figure 2.

Table 1. Bird species detected from within or adjacent to parcel 50049139 at Black River, with legal status under the Nova Scotia Endangered Species Act (NS ESA), federal status as assessed by the Committee on the Status of Wildlife in Canada (COSEWIC), provincial status under the General Status of Wildlife process (S-rank), number of observations recorded (#obs) and maximum breeding evidence recorded (Maritimes Breeding Bird Atlas codes: “FY” indicates “Confirmed Breeding” based on observation of fledged young. “P”, “A” & “D” represent “Probable Breeding” on site based on observation of pair in suitable nesting habitat, agitated behaviour and breeding display. “S” & “H” represent “Possible Breeding” on site based on observation of a singing male or adult in suitable nesting habitat. “X” = observation without direct evidence of breeding on site, typically a fly-over. Legally listed or provincially significant species are shaded and listed first.

Species	NS ESA	COSEWIC	S-rank	#obs	Max. Breeding Evidence
Canada Warbler (<i>Wilsonia canadensis</i>)	Endangered	Threatened	S3B	16	A
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	Threatened	Special Concern	S2B	3	A
Eastern Wood-Pewee (<i>Contopus virens</i>)	Vulnerable	Special Concern	S3S4B	1	S
Evening Grosbeak (<i>Coccothraustes vespertinus</i>)	Vulnerable	Special Concern	S3S4B,S3N	2	H
Cape May Warbler (<i>Dendroica tigrina</i>)			S2B	3	S
Pine Siskin (<i>Carduelis pinus</i>)			S2S3	2	X
Boreal Chickadee (<i>Poecile hudsonica</i>)			S3	7	A
Red-breasted Nuthatch (<i>Sitta canadensis</i>)			S3	2	S
Wilson's Snipe (<i>Gallinago delicata</i>)			S3B	3	D
Black-backed Woodpecker (<i>Picoides arcticus</i>)			S3S4	1	A
Yellow-bellied Flycatcher (<i>Empidonax flaviventris</i>)			S3S4B	7	S
Ruby-crowned Kinglet (<i>Regulus calendula</i>)			S3S4B	7	A
Veery (<i>Catharus fuscescens</i>)			S3S4B	1	S
Swainson's Thrush (<i>Catharus ustulatus</i>)			S3S4B	1	S

Species	NS ESA	COSEWIC	S-rank	#obs	Max. Breeding Evidence
Ring-necked Duck (<i>Aythya collaris</i>)			S5B	2	P
Ruffed Grouse (<i>Bonasa umbellus</i>)			S5	1	A
American Woodcock (<i>Scolopax minor</i>)			S5B	3	H
Belted Kingfisher (<i>Megaceryle alcyon</i>)			S5B	1	H
Downy Woodpecker (<i>Picoides pubescens</i>)			S5	1	S
Northern Flicker (<i>Colaptes auratus</i>)			S5B	2	H
Pileated Woodpecker (<i>Dryocopus pileatus</i>)			S5	1	H
Alder Flycatcher (<i>Empidonax alnorum</i>)			S5B	3	S
Blue Jay (<i>Cyanocitta cristata</i>)			S5	1	H
Common Raven (<i>Corvus corax</i>)			S5	1	H
Black-capped Chickadee (<i>Poecile atricapilla</i>)			S5	1	H
Golden-crowned Kinglet (<i>Regulus satrapa</i>)			S5	4	FY
Hermit Thrush (<i>Catharus guttatus</i>)			S5B	1	S
American Robin (<i>Turdus migratorius</i>)			S5B,S3N	6	A
Cedar Waxwing (<i>Bombycilla cedrorum</i>)			S5B	6	H
Blue-headed Vireo (<i>Vireo solitarius</i>)			S5B	5	S
Red-eyed Vireo (<i>Vireo olivaceus</i>)			S5B	2	S
Nashville Warbler (<i>Vermivora ruficapilla</i>)			S4S5B	8	S
Northern Parula (<i>Parula americana</i>)			S5B	5	S
Yellow Warbler (<i>Dendroica petechia</i>)			S5B	2	S
Chestnut-sided Warbler (<i>Dendroica pensylvanica</i>)			S5B	1	S
Magnolia Warbler (<i>Dendroica magnolia</i>)			S5B	7	FY
Yellow-rumped Warbler (<i>Dendroica coronata</i>)			S5B	2	S
Blackburnian Warbler (<i>Dendroica fusca</i>)			S4B	2	S
Black-and-White Warbler (<i>Mniotilta varia</i>)			S5B	6	S
American Redstart (<i>Setophaga ruticilla</i>)			S4S5B	3	S
Common Yellowthroat (<i>Geothlypis trichas</i>)			S5B	4	S
Lincoln's Sparrow (<i>Melospiza lincolnii</i>)			S4B	1	S
Swamp Sparrow (<i>Melospiza georgiana</i>)			S5B	4	S
White-throated Sparrow (<i>Zonotrichia albicollis</i>)			S5B	2	S
Dark-eyed Junco (<i>Junco hyemalis</i>)			S4S5	2	S
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)			S4B	2	S
Common Grackle (<i>Quiscalus quiscula</i>)			S5B	1	X
Purple Finch (<i>Carpodacus purpureus</i>)			S4S5B,S3S4N	4	H
Crossbill species (<i>Loxia</i> sp.)				1	X
American Goldfinch (<i>Carduelis tristis</i>)			S5	3	H

Other Notable Species

Hoary Willow (*Salix candida*, S1, NS ESA Endangered; Figure 3)

This species was observed in two locations on site within, or adjacent to, the patch observed on site by AC CDC (David Mazerolle) on July 21, 2010. It is a calciphilic wetland species widespread in boreal Canada that is known in Nova Scotia only from the Black River area.

Black Ash (*Fraxinus nigra*, S1S2, NESA Threatened, under evaluation by COSEWIC; Figure 3)

We documented two locations of Black Ash, each with a single tree. Both trees, found within the same mixedwood swamp adjacent to the Black River were approximately 12-14 cm dbh (photo interpretation) and exhibited curled leaves and dieback at branch tips. Black Ash is documented from

many locations in the vicinity of Black River, but as with almost all locations for the species in Nova Scotia, larger trees appear to be almost entirely absent, reproductive trees are few, and most individuals appear unhealthy with curled leaves and/or die back at the tips.

Parcel 50049162

Birds

We detected 53 species from within or adjacent to the property (Table 2). American Redstart was detected at the north edge of the parcel and is likely using habitat on site as well. Cape May Warbler was detected from the east side of the Black River, singing in Black Spruce swamp on the west side of the river. It is likely not using the property at the location of detection because habitat there is almost entirely graminoid and shrub floodplain. It could nest in suitable habitat elsewhere on the property. Our list includes most expectable breeding species for the property but additional surveys, especially work targeting more difficult to detect species (e.g. Northern Saw-whet Owl, Barred Owl, Rusty Blackbird, Olive-sided Flycatcher, waterfowl) would add more species. A total of 41 records of 11 species of conservation significance were detected on or near the property, as listed in Table 2. Typical habitat utilized by Canada Warbler, which was especially abundant on this site, is pictured in Figure 2.

Table 2. Bird species detected from within or adjacent to parcel 50049162 at Black River, with legal status under the Nova Scotia Endangered Species Act (NS ESA), federal status as assessed by the Committee on the Status of Wildlife in Canada (COSEWIC), provincial status under the General Status of Wildlife process (S-rank), number of observations recorded (#obs) and maximum breeding evidence recorded (Maritimes Breeding Bird Atlas codes: “A” & “D” represent “Probable Breeding” on site based on observation of agitated behaviour and breeding display. “S”, “H” and “P” represent “Possible Breeding” on site based on observation of a singing male or adult in suitable nesting habitat. “FY” and “NE” represent “Confirmed Breeding” on site based on observation of fledged young and nest with eggs. “X” = observation without direct evidence of breeding on site, typically a fly-over). Legally listed or provincially significant species are shaded and listed first.

Species	NS ESA	COSEWIC	S-rank	#obs	Max. Breeding Evidence
Chimney Swift (<i>Chaetura pelagica</i>)	Endangered	Threatened	S2B,S1M	1	H
Barn Swallow (<i>Hirundo rustica</i>)	Endangered	Threatened	S2S3B	2	X
Canada Warbler (<i>Wilsonia canadensis</i>)	Endangered	Threatened	S3B	14	S
Cape May Warbler (<i>Dendroica tigrina</i>)			S2B	1	S
Pine Siskin (<i>Carduelis pinus</i>)			S2S3	1	H
Rose-breasted Grosbeak (<i>Pheucticus ludovicianus</i>)			S2S3B	1	H
Boreal Chickadee (<i>Poecile hudsonica</i>)			S3	3	S
Red-breasted Nuthatch (<i>Sitta canadensis</i>)			S3	2	S
Wilson's Snipe (<i>Gallinago delicata</i>)			S3B	7	D
Northern Harrier (<i>Circus cyaneus</i>)			S3S4B	1	H
Ruby-crowned Kinglet (<i>Regulus calendula</i>)			S3S4B	8	S
Ring-necked Duck (<i>Aythya collaris</i>)			S5B	1	P
Bald Eagle (<i>Haliaeetus leucocephalus</i>)			S5	1	X
American Woodcock (<i>Scolopax minor</i>)			S5B	2	H
Belted Kingfisher (<i>Megaceryle alcyon</i>)			S5B	1	H
Yellow-bellied Sapsucker (<i>Sphyrapicus varius</i>)			S4S5B	2	S
Hairy Woodpecker (<i>Picoides villosus</i>)			S5	1	S
Northern Flicker (<i>Colaptes auratus</i>)			S5B	1	H
Pileated Woodpecker (<i>Dryocopus pileatus</i>)			S5	1	H
Alder Flycatcher (<i>Empidonax alnorum</i>)			S5B	11	S
Tree Swallow (<i>Tachycineta bicolor</i>)			S4B	1	H

Species	NS ESA	COSEWIC	S-rank	#obs	Max. Breeding Evidence
Blue Jay (<i>Cyanocitta cristata</i>)			S5	2	H
Common Raven (<i>Corvus corax</i>)			S5	1	H
Black-capped Chickadee (<i>Poecile atricapilla</i>)			S5	2	H
Golden-crowned Kinglet (<i>Regulus satrapa</i>)			S5	1	H
Hermit Thrush (<i>Catharus guttatus</i>)			S5B	2	S
American Robin (<i>Turdus migratorius</i>)			S5B,S3N	7	S
Cedar Waxwing (<i>Bombycilla cedrorum</i>)			S5B	4	H
European Starling (<i>Sturnus vulgaris</i>)			SNA	1	X
Blue-headed Vireo (<i>Vireo solitarius</i>)			S5B	4	S
Red-eyed Vireo (<i>Vireo olivaceus</i>)			S5B	4	S
Nashville Warbler (<i>Vermivora ruficapilla</i>)			S4S5B	5	S
Northern Parula (<i>Parula americana</i>)			S5B	8	S
Yellow Warbler (<i>Dendroica petechia</i>)			S5B	6	A
Magnolia Warbler (<i>Dendroica magnolia</i>)			S5B	8	S
Yellow-rumped Warbler (<i>Dendroica coronata</i>)			S5B	1	S
Blackburnian Warbler (<i>Dendroica fusca</i>)			S4B	2	S
Palm Warbler (<i>Dendroica palmarum</i>)			S5B	2	A
Black-and-White Warbler (<i>Mniotilta varia</i>)			S5B	5	S
American Redstart (<i>Setophaga ruticilla</i>)			S4S5B	1	S
Ovenbird (<i>Seiurus aurocapilla</i>)			S5B	4	S
Northern Waterthrush (<i>Seiurus noveboracensis</i>)			S4B	3	S
Common Yellowthroat (<i>Geothlypis trichas</i>)			S5B	5	A
Lincoln's Sparrow (<i>Melospiza lincolnii</i>)			S4B	1	S
Swamp Sparrow (<i>Melospiza georgiana</i>)			S5B	11	NE
White-throated Sparrow (<i>Zonotrichia albicollis</i>)			S5B	4	S
Dark-eyed Junco (<i>Junco hyemalis</i>)			S4S5	1	S
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)			S4B	2	S
Common Grackle (<i>Quiscalus quiscula</i>)			S5B	1	FY
Purple Finch (<i>Carpodacus purpureus</i>)			S4S5B,S3S4N	2	H
American Goldfinch (<i>Carduelis tristis</i>)			S5	2	S

Other Notable Species

Showy Lady's-Slipper (*Cypripedium reginae*, S2; Figure 3)

We documented one plant in open mixed forest swamp. The species is known to be scattered widely in suitable calcareous swamp and fen habitats in the Black River area. It is widespread in calcareous habitats in the northern half of Nova Scotia but is quite uncommon away from southern Cape Breton.

Appressed Jellyskin Lichen (*Leptogium subtile*, S3; Figure 3)

We collected one specimen of jellyskin lichen (*Leptogium* species) from bark, among moss at the base of a mature Tembling Aspen (*Populus tremuloides*) tree adjacent to a shrub and graminoid floodplain. Morphological characteristics (i.e., globose apothecia with pale ring between the apothecial disk and the thalline apothecial margin; stellate, terete lobes radiating from below the apothecia) suggest it is Appressed Jellyskin Lichen (*L. subtile*), however this species can not always be conclusively distinguished from Birdnest Jellyskin Lichen (*L. tenuissimum*; S-rank: S2S3) using morphological characters (Frances Anderson, pers. comm.).

Parcels 50196203, 50196211, 50196229

Birds

We detected 27 species on or near the property, including eight records of four species of conservation significance (Table 3). This list represents most species that would be expected to be breeding on the property but additional surveys, especially work targeting more difficult to detect species (e.g. waterfowl) would add more species.

Table 3. Bird species detected from within or adjacent to parcels 50196203, 50196211, 50196229 at Black River, with legal status under the Nova Scotia Endangered Species Act (NS ESA), federal status as assessed by the Committee on the Status of Wildlife in Canada (COSEWIC), provincial status under the General Status of Wildlife process (S-rank), number of observations recorded (#obs) and maximum breeding evidence recorded (Maritimes Breeding Bird Atlas codes: “A” & “D” represent “Probable Breeding” on site based on observation of agitated behaviour and breeding display. “S”, “H” and “P” represent “Possible Breeding” on site based on observation of a singing male or adult in suitable nesting habitat. “FY” and “NE” represent “Confirmed Breeding” on site based on observation of fledged young and nest with eggs. “X” = observation without direct evidence of breeding on site, typically a fly-over). Legally listed or provincially significant species are shaded and listed first.

Species	NS ESA	COSEWIC	S-rank	#obs	Max. Breeding Evidence
Chimney Swift (<i>Chaetura pelagica</i>)	Endangered	Threatened	S2B,S1M	1	H
Ruby-crowned Kinglet (<i>Regulus calendula</i>)			S3S4B	1	S
Veery (<i>Catharus fuscescens</i>)			S3S4B	5	S
Swainson's Thrush (<i>Catharus ustulatus</i>)			S3S4B	1	S
Ring-necked Duck (<i>Aythya collaris</i>)			S5B	1	P
Sora (<i>Porzana carolina</i>)			S5B	2	S
Yellow-bellied Sapsucker (<i>Sphyrapicus varius</i>)			S4S5B	1	S
Alder Flycatcher (<i>Empidonax alnorum</i>)			S5B	3	S
Tree Swallow (<i>Tachycineta bicolor</i>)			S4B	2	H
American Crow (<i>Corvus brachyrhynchos</i>)			S5	1	H
Common Raven (<i>Corvus corax</i>)			S5	1	FY
Black-capped Chickadee (<i>Poecile atricapilla</i>)			S5	2	H
Golden-crowned Kinglet (<i>Regulus satrapa</i>)			S5	1	S
American Robin (<i>Turdus migratorius</i>)			S5B,S3N	3	S
European Starling (<i>Sturnus vulgaris</i>)			SNA	1	X
Red-eyed Vireo (<i>Vireo olivaceus</i>)			S5B	2	S
Northern Parula (<i>Parula americana</i>)			S5B	1	S
Yellow Warbler (<i>Dendroica petechia</i>)			S5B	3	S
Blackburnian Warbler (<i>Dendroica fusca</i>)			S4B	3	S
Black-and-White Warbler (<i>Mniotilta varia</i>)			S5B	1	S
American Redstart (<i>Setophaga ruticilla</i>)			S4S5B	1	S
Northern Waterthrush (<i>Seiurus noveboracensis</i>)			S4B	1	S
Common Yellowthroat (<i>Geothlypis trichas</i>)			S5B	1	S
Swamp Sparrow (<i>Melospiza georgiana</i>)			S5B	2	S
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)			S4B	2	S
Common Grackle (<i>Quiscalus quiscula</i>)			S5B	2	FY
American Goldfinch (<i>Carduelis tristis</i>)			S5	1	S

Other Notable Species

Black Ash (*Fraxinus nigra*, S1S2, NSESA Threatened, under evaluation by COSEWIC; Figure 3)

We documented a single Black Ash tree of approximately 10-12 cm dbh (photo interpretation) within tall shrub swamp. The tree appeared to be healthier than that documented on parcel 50049139, with minimal leaf curling and greater leaf cover, but also with many dead branches. Black Ash is

documented from many locations in the vicinity of Black River, but as with almost all locations for the species in Nova Scotia, larger trees appear to be almost entirely absent, reproductive trees are few, and most individuals appear unhealthy with curled leaves and/or die back at the tips.

Additional Species, All Sites

Through incidental observations made during bird fieldwork at all sites, we documented two amphibian, one reptile, three mammal, three insect, one fungus, 14 lichen and 21 vascular plant species, including Northern Poison Ivy, *Toxicodendron rydbergii* (Figure 3). The five confirmed or possible provincially significant species among these observations are described above under the individual properties of occurrence.

Table 3. Non-bird species observed incidentally during fieldwork at the NCC Black River properties, with status under the Nova Scotia Endangered Species Act (NS ESA) and provincial status (S-rank). Property ID numbers are 50049139 = “139”, 50049162 = “162”, 50196203+50196211+50196229 = “229”.

Species	NS ESA	S-rank	Property		
			139	162	229
Spring Peeper (<i>Pseudacris crucifer</i>)		S5	S		
Green Frog (<i>Lithobates clamitans</i>)		S5	x		
Red Squirrel (<i>Tamiasciurus hudsonicus</i>)		S5	x		
Eastern Coyote (<i>Canis latrans</i>)		S5		x	
Moose (Cape Breton pop.) (<i>Alces americanus</i> pop. 1)		S5	x		
Maritime Garter Snake (<i>Thamnophis sirtalis pallidulus</i>)		S5	x		
a Leaf Beetle (<i>Calligrapha confluens</i>)		S5		x	
a Ladybird Beetle (<i>Anatis mali</i>)		S5		x	
Canadian Tiger Swallowtail (<i>Papilio canadensis</i>)		S5	x		
a Fungus (<i>Inonotus obliquus</i>)			x		
Lungwort Lichen (<i>Lobaria pulmonaria</i>)		S5	x	x	x
Smooth Lung Lichen (<i>Lobaria quercizans</i>)		S5	x	x	x
Textured Lungwort Lichen (<i>Lobaria scrobiculata</i>)		S5	x	x	x
Giant Cladonia Lichen (<i>Cladonia maxima</i>)		S5	x		
Tree Tarpaper Lichen (<i>Collema subflaccidum</i>)		S5		x	
Monk's Hood Lichen (<i>Hypogymnia physodes</i>)		S5	x	x	
Blue Jellyskin Lichen (<i>Leptogium cyanescens</i>)		S5	x	x	x
Appressed Jellyskin Lichen (<i>Leptogium subtile</i>)		S3		x	
Black-bordered Shingles Lichen (<i>Parmeliella triptophylla</i>)		S5	x		
Brown-gray Moss-shingle Lichen (<i>Protopannaria pezizoides</i>)		S5	x		
Concentric Pelt Lichen (<i>Peltigera elisabethae</i>)		S4S5	x		x
Powdered Sunshine Lichen (<i>Vulpicida pinastri</i>)		S5		x	
Varied Rag Lichen (<i>Platismatia glauca</i>)		S5	x		
Red Maple (<i>Acer rubrum</i>)		S5	x		
Northern Poison Ivy (<i>Toxicodendron rydbergii</i>)		S5	x		
Northern Wild Raisin (<i>Viburnum nudum</i> var. <i>cassinoides</i>)		S5			x
White Ash (<i>Fraxinus americana</i>)		S5	x		
Black Ash (<i>Fraxinus nigra</i>)	Threatened	S1S2	x		x
American Mountain Ash (<i>Sorbus americana</i>)		S5	x		
Shrubby Cinquefoil (<i>Dasiphora fruticosa</i>)		S4	x	x	
Trembling Aspen (<i>Populus tremuloides</i>)		S5		x	
Hoary Willow (<i>Salix candida</i>)	Endangered	S1	x		
Northern Pitcher Plant (<i>Sarracenia purpurea</i>)		S5		x	
Balsam Fir (<i>Abies balsamea</i>)		S5	x		

Species	NS ESA	S-rank	Property		
			139	162	229
White Spruce (<i>Picea glauca</i>)		S5	x	x	x
Alpine Clubrush (<i>Trichophorum alpinum</i>)		S4		x	
Marsh Arrowgrass (<i>Triglochin palustris</i>)		S4		x	
Starry False Solomon's Seal (<i>Maianthemum stellatum</i>)		S4	x		
Nodding Trillium (<i>Trillium cernuum</i>)		S4	x		
Arethusa (<i>Arethusa bulbosa</i>)		S4		x	
Pink Lady's-Slipper (<i>Cypripedium acaule</i>)		S5	x		
Showy Lady's-Slipper (<i>Cypripedium reginae</i>)		S2		x	
White Bog Orchid (<i>Platanthera dilatata</i>)		S4S5	x		
Royal Fern (<i>Osmunda regalis</i> var. <i>spectabilis</i>)		S5	x	x	x

Conclusions

The NCC properties at Black River were already known from previous AC CDC and NCC surveys to support significant flora associated with calcareous fen and swamp habitats. The fieldwork documented in this report shows that collectively the NCC properties at Black River also support a diverse assemblage of forest, swamp and open wetland breeding birds representative of southern Cape Breton and including a broad suite of provincial and national species of concern. The species present include a numerous species of boreal affinity such as Gray Jay, Boreal Chickadee, Black-backed Woodpecker, Pine Siskin, Evening Grosbeak and Yellow-bellied Flycatcher. These species are of concern in Nova Scotia because of declines associated with loss of mature coniferous forest. As northern species near their southern breeding range limits, they may also be especially susceptible to effects of climate change. Efforts to develop large, contiguous protected areas, as is being undertaken with the provincial Nature Reserves and NCC protected areas at Black River, offer the best hope for long-term maintenance of local populations of these boreal bird species.

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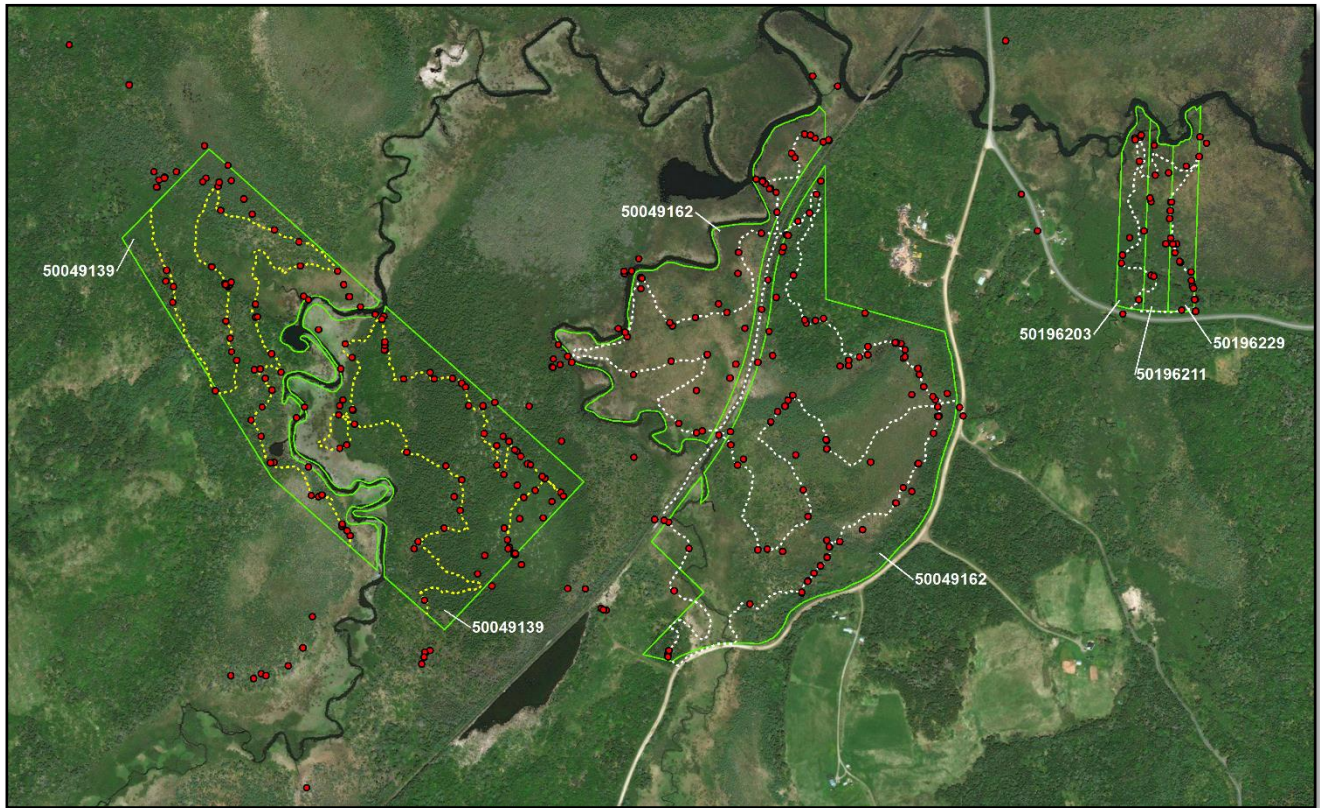


Figure 1. Property boundaries (green lines), observation locations (red points) and route travelled during bird surveys on 27 June (yellow GPS tracks), and 28 June (white GPS tracks) 2018.



Figure 2. Typical Canada Warbler habitat on parcels **50049162** and **50049139** showing moss/sphagnum ground cover, dense understory shrubs (including *Viburnum nudum*, *Ilex* spp., *Kalmia angustifolia*) and emergent Black Spruce (*Picea mariana*) canopy.



Figure 3. Other notable species observed on site: A - Hoary Willow (*Salix candida*, S1, NS ESA Endangered), B - Black Ash (*Fraxinus nigra*, S1S2), C - Showy Ladyslipper (*Cypripedium reginae*, S2), D - Northern Poison Oak (*Toxicodendron rydbergii*, S5), and E – Appressed Jellyskin Lichen (*Leptogium subtile*, S3).