

A Survey of Pastureland Birds in the Kingston Region of Eastern Ontario



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BACKGROUND

Conservation of species at risk on private lands is an ever-growing concern in southern Ontario, where a large portion of the land base is privately owned. While some species are adapting well to the presence of humans, others are experiencing rapid population declines, possibly as a result of human activities. Stewardship projects in southern Ontario have been largely focused on woodlots and wetlands, despite the fact that a large portion of the land base is agricultural. The Migration Research Foundation (MRF) aimed to fill this gap in the Kingston region. While provincial and federal governments are working to develop and implement legislation for species at risk, significant benefits can also be achieved by promoting stewardship and education.

OBJECTIVES

The goal of this project, led by MRF, was to provide willing landowners in rural areas an opportunity to contribute to the preservation of pastureland birds at risk in the Kingston region. The project focused especially on the Short-eared Owl (*Asio flammeus*), as it is a species at risk experiencing serious declines over much of its North American range, and is a charismatic bird likely to inspire public interest.

Specifically, the objectives were as follows:

- To educate rural landowners about pastureland birds at risk
- To observe the impact of hay harvesting on pastureland birds at risk
- To observe the impacts of pesticide use on pastureland birds at risk
- To provide recommendations to rural landowners for stewardship of pastureland birds at risk
- To work with rural landowners and local stewardship councils in the creation of stewardship activities for pastureland birds at risk

STUDY AREA

The Kingston area in eastern Ontario was selected as it has historically supported provincially significant populations of Short-eared Owls and other grassland birds (Cadman et al. 1987). Specifically, Amherst Island in Lennox County and Southeast (SE) Prince Edward County (south of Highway 33) were chosen because they are largely composed of pasturelands and were known to support breeding Short-eared Owls as recently as 2003 (Hunt and Gahbauer 2003). In both areas, coverage was largely limited to land visible from public roads, except where landowners offered access to their properties. Maps of the study area are provided in Appendix 1.

METHODS

During spring months (March through May), MRF biologists and volunteers conducted Short-eared Owl courtship surveys, landowner education and volunteer solicitation. During summer months (June and July), MRF biologists and volunteers conducted avian point count surveys, nocturnal bird surveys, and additional volunteer solicitation and landowner education. The goals of the field surveys were to locate birds at risk in pastureland habitat, observe their use of habitat during nesting season, and study the effects of pesticide use and hay harvesting on them.

Public Education and Volunteer Solicitation

MRF staff created information packages regarding pastureland birds at risk such as the Short-eared Owl. MRF obtained land registry data from Loyalist Township, and mailed information packages to individuals owning pastureland habitat on Amherst Island to invite them to participate in the project. Volunteers were solicited through the MRF website, word of mouth, and with the help of the newsletters and or e-mail discussion groups of organizations such as the Ontario Field Ornithologists, Bird Studies Canada and the Ontario Breeding Bird Atlas. Local groups such as the Kingston Field Naturalists and regional Stewardship Councils were also invited to participate in the project.

Short-eared Owl Courtship Surveys

MRF biologists and volunteers conducted surveys for courting Short-eared Owl on Amherst Island and in SE Prince Edward County, for 16 days, between March 19th and May 19th, 2005. These surveys were intended to discover breeding territories, as it is believed that Short-eared Owls will generally nest at the same location where courtship occurs. The surveys were conducted primarily by car and on foot along lightly-traveled sideroads, focusing mainly on areas with historical Short-eared Owl records and/or suitable breeding habitat. The distance and time spent at each site varied depending on the extent of habitat available and the number of volunteers present. Prior to sunset, searching was primarily visual; after sunset the survey continued mostly on an auditory basis.

Avian Point Count Surveys

MRF biologists explored Amherst Island and SE Prince Edward County during spring and selected 82 potential avian point count survey stations in pastureland habitat. Of these, 7 were sites at which Short-eared Owls were subsequently observed. An additional 35 points were randomly chosen to be surveyed during the breeding season.

Avian point count surveys were conducted by MRF biologists at 23 of the 42 stations on June 1st, 2nd, and 3rd of 2005. Surveys were five minutes in length, and were conducted both during early mornings and late evenings. The purpose of the point count surveys was to identify the bird species present in the area during breeding season, with a particular emphasis on locating species at risk, for which habitat-species associations could be assessed.

Nocturnal Bird Surveys

MRF biologists and volunteers conducted auditory nocturnal bird surveys of Amherst Island and SE Prince Edward County on June 1st, 2nd, 3rd, 17th, July 16th, 17th, and 23rd of 2005. These were primarily directed at locating Short-eared Owls, but all species detected were recorded. Surveys were conducted on foot after dark and generally between 9 pm and midnight.

Incidental Bird Sightings

All bird sightings outside of specific survey periods (e.g. during landowner visits) were recorded to provide additional detail on the species present during the breeding season.

Habitat Use and Effects of Pesticide Use / Hay Harvesting on Birds at Risk

The studies of the effects of human land use practices and pesticides on rare pastureland birds were not completed because no birds at risk were found nesting on Amherst Island or in SE Prince Edward County during the study period at any of the sites where field work occurred. However, a general survey of vegetation was conducted at the two sites where Short-eared Owl were observed courting.

RESULTS

Public Education and Volunteer Solicitation

MRF obtained land registry data for the east half of Amherst Island and mailed information packages to more than thirty landowners in early spring. Another twenty information packages were deposited in mail boxes during late spring and early summer. Response to the information packages was positive, and four landowners and their families actively participated in the avian surveys. Fifteen other volunteers also participated in the project. Local landowners and volunteers were educated by MRF regarding stewardship of pastureland birds at risk.

Short-eared Owl Courtship Surveys

A summary of all field visits can be found in Appendix II. A description of each Short-eared Owl courtship survey is provided in Appendix III. Short-eared Owls were observed on four occasions during courtship surveys.

On March 19th, MRF biologists saw four Short-eared Owls on Amherst Island at the midway point of Lower 40 Foot Road (area A). Two were perched in trees on the west side of the road. The other two were hunting and playing in the air over the field east of the road. It is possible that the observed aerial play was part of a courtship display. After dark, Short-eared Owls were heard barking east of the road.

On March 22nd, MRF biologists again located four Short-eared Owls on Amherst Island. At 4pm, one Short-eared Owl was seen perched in a treetop at the midway point of Lower 40 Foot Road (area A). At 6pm, two Short-eared Owls were seen flying over the field on the west side of the northern portion of Stella Road (area B). One perched atop a tall deciduous tree and the other continued flying. At 6:30pm two Short-eared Owls were seen in area A. They spent their time hunting and perching, mostly on the east side of the road. There were a few brief moments of aerial play, which included barking and mid-air diving. This occurred at a distance of only 50m from the observers. This behaviour continued on and off until dark. More barking was heard after dark.

On April 7th, MRF biologists saw two Short-eared Owls on Amherst Island. At 6:10pm, one Short-eared Owl was observed hunting over the field near the intersection of Marshall Road and South Shore Road (area D). At 7:50pm, one Short-eared Owl was observed hunting over the field south of Front Road just east of the town of Stella (area E).

On April 22nd, MRF staff observed three Short-eared Owls hunting, perching and courting in the fields on both sides of the northern portion of Marshall Rd (area C) on Amherst Island.

Avian Point Count Surveys

Locations of all potential avian point count stations are listed in Appendix IV. Details on each of the 23 point counts surveyed in 2005 are provided in Appendix V. During the point counts in early June, 39 bird species were observed on Amherst Island, and 38 species in SE Prince Edward County (Table 1). No species at risk or other rare birds were recorded at any of the locations. While several of the species recorded were waterbirds due to the proximity of Lake Ontario, most of the frequently encountered birds were typical grassland and/or wetland species such as Eastern Kingbird, Bobolink, Eastern Meadowlark, Red-winged Blackbird, Song Sparrow, and Savannah Sparrow.

Table 1: Bird Species Observed During Point Counts

COMMON NAME	SCIENTIFIC NAME	CODE	# sites observed (Amherst Island / Prince Edward County)	
			Amherst Island	Prince Edward County
Common Loon	<i>Gavia immer</i>	COLO	3	1
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	DCCO	3	
Great Blue Heron	<i>Ardea herodias</i>	GBHE		1
American Bittern	<i>Botaurus lentiginosus</i>	AMBI	2	
Canada Goose	<i>Branta canadensis</i>	CAGO	5	3
Mallard	<i>Anas platyrhynchos</i>	MALL	1	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	RTHA		1
Northern Harrier	<i>Circus cyaneus</i>	NOHA	3	3
Killdeer	<i>Charadrius montanus</i>	KILL	3	
Upland Sandpiper	<i>Bartramia longicauda</i>	UPSA	6	1
American Woodcock	<i>Scolopax minor</i>	AMWO	1	1
Wilson's Snipe	<i>Gallinago gallinago</i>	WISN	4	1
Ring-billed Gull	<i>Larus delawarensis</i>	RBGU	4	
Herring Gull	<i>Larus argentatus</i>	HERG	1	
Rock Pigeon	<i>Columba livia</i>	ROPI	1	
Mourning Dove	<i>Zenaida macroura</i>	MODO	1	4
Willow Flycatcher	<i>Empidonax traillii</i>	WIFL	1	2
Great-crested Flycatcher	<i>Myiarchus crinitus</i>	GCFL		1
Eastern Kingbird	<i>Tyrannus tyrannus</i>	EAKI	10	3
Blue Jay	<i>Cyanocitta cristata</i>	BLJA		3
American Crow	<i>Corvus brachyrhynchos</i>	AMCR	4	6
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	NRWS	3	
Tree Swallow	<i>Tachycineta bicolor</i>	TRES	7	1
Barn Swallow	<i>Hirundo rustica</i>	BARS	6	4
Warbling vireo	<i>Vireo gilvus</i>	WAVI		2
Black-capped Chickadee	<i>Poecile atricapilla</i>	BCCH	1	1
Golden-crowned Kinglet	<i>Regulus satrapa</i>	GCKI		1
American Robin	<i>Turdus migratorius</i>	AMRO	7	8
Wood Thrush	<i>Hylocichla mustelina</i>	WOTH		1
Gray Catbird	<i>Dumetella carolinensis</i>	GRCA	2	1
Brown Thrasher	<i>Toxostoma rufum</i>	BRTH	2	5
European Starling	<i>Sturnus vulgaris</i>	EUST	3	1
Yellow Warbler	<i>Dendroica petechia</i>	YWAR	3	1
Ovenbird	<i>Seiurus aurocapillus</i>	OVEN	1	
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE	1	1
Field Sparrow	<i>Spizella pusilla</i>	FISP	1	3
Chipping Sparrow	<i>Spizella passerina</i>	CHSP	1	4
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	GRSP	1	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	SAVS	6	3
Song Sparrow	<i>Melospiza melodia</i>	SOSP	5	5
White-throated Sparrow	<i>Zonotrichia albicollis</i>	WTSP		4
Eastern Meadowlark	<i>Sturnella magna</i>	EAME	11	7
Bobolink	<i>Dolichonix oryzivorus</i>	BOBO	15	8
Brown-headed Cowbird	<i>Molothrus ater</i>	BHCO	1	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	RWBL	14	6
Common Grackle	<i>Quiscalus quiscula</i>	COGR	1	2
American Goldfinch	<i>Carduelis tristis</i>	AMGO	1	3

Nocturnal Bird Surveys

A total of seven bird species were observed during nocturnal bird surveys (see Table 2) on Amherst Island and in SE Prince Edward County. No rare birds or birds at risk were observed during the nocturnal bird surveys in either area, though one possible Short-eared Owl was observed briefly at Lower 40 Foot Road, Amherst Island, on June 2nd.

Table 2: Bird Species Observed During Nocturnal Bird Surveys 2005

COMMON NAME	SCIENTIFIC NAME
Killdeer	<i>Charadrius montanus</i>
Wilson's Snipe	<i>Gallinago gallinago</i>
Whip-poor-will	<i>Caprimulgus vociferous</i>
Willow Flycatcher	<i>Empidonax traillii</i>
American Robin	<i>Turdus migratorius</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Eastern Meadowlark	<i>Sturnella magna</i>

Incidental Bird Sightings

A total of 38 bird species were observed outside of formal surveys on Amherst Island and in SE Prince Edward County. For the most part these were species also recorded during point counts. The only additional species observed were Turkey Vulture (*Cathartes aura*), Osprey (*Pandion haliaetus*), Long-eared Owl (*Asio otus*), Northern Flicker (*Colaptes auratus*), Horned Lark (*Eremophila alpestris*), and Baltimore Oriole (*Icterus galbula*).

Habitat Use and Effects of Pesticide Use / Hay Harvesting on Birds at Risk

Because no rare birds were observed during breeding season, a description of nesting habitat was not possible. However, as it is believed that Short-eared Owl courtship takes place in suitable breeding habitat, a brief vegetation survey was conducted at each of the two locations (areas A and C) where Short-eared Owl courtship was observed.

Area A is dominated by Reed canary grass (*Phalaris arundinacea*), Timothy (*Phleum pratense*), and Kentucky blue grass (*Poa pratensis*). Other common vegetation present includes Quack grass (*Agropyron repens*), Fowl meadow grass (*Poa palustris*), Fox sedge (*Carex vulpinoidea*), Red clover (*Trifolium pratense*), Creeping bent grass (*Agrostis stolonifera*), Canada goldenrod (*Solidago canadensis*), fescue species (*Festuca spp*), and Carex sedge species (*Carex spp*).



Photo 1: Area A facing east (April 2005)

Area C is dominated by Reed canary grass (*Phalaris arundinacea*), Creeping bent grass (*Agrostis stolonifera*), and Timothy (*Phleum pratense*). Other common vegetation present includes Fox sedge (*Carex vulpinoidea*), Kentucky blue grass (*Poa pratensis*), Fowl meadow grass (*Poa palustris*), Chickory (*Cichorium intybus*), and Common ragweed (*Ambrosia artemisiifolia*).



Photo 2: Area C facing east (April 2005)

CONCLUSIONS

In total, 48 bird species were observed on Amherst Island and in SE Prince Edward County during the summer of 2005. Although Short-eared Owls were observed courting on Amherst Island during the spring, neither they nor any other rare birds were observed within the study areas during the breeding season, and therefore more detailed studies of habitat and land use were not pursued. However, throughout the course of the project, landowners and other volunteers were educated regarding pastureland birds at risk, and the response was positive overall. At least some property owners are expected to modify their land use practices in favour of providing habitat for breeding birds as a result of this program, which may encourage the presence of species at risk in the future.

While the results from the spring Short-eared Owl courtship surveys were promising, repeated subsequent visits to these sites in June and July indicated that none of the owls had remained in the area to breed. This suggests that, at least in southern Ontario, early season courtship activity is not necessarily a reliable indicator of an active breeding territory. Rather, courtship during March and April may simply represent early attempts at pair formation during migration, and should not be treated as evidence of breeding unless sightings continue into May or beyond.

The lack of fidelity to early season courtship sites is likely a function of the Short-eared Owl's nomadic nature, and highlights the need to pursue satellite telemetry studies as a means of accurately documenting the habitat needs of this species throughout the year, as well as permitting active breeding territories to be discovered and described.

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APPENDIX I

Maps of the study areas

APPENDIX II

Avian Survey Summary 2005

Date	Location	Short-eared Owl courtship survey	Point count surveys	Nocturnal bird survey	Incidental sightings (daytime)
March 19	Amherst	✓			
March 22	Amherst	✓			✓
April 6	Amherst	✓			
April 7	Amherst	✓			✓
April 8	Amherst	✓			✓
April 9	Amherst	✓			
April 20	Amherst	✓			
April 21	Amherst	✓			✓
April 22	Amherst	✓			
April 28	PE County	✓			
April 29	Amherst	✓			
May 4	Amherst	✓			✓
May 5	Amherst	✓			
May 6	PE County	✓			✓
May 7	Amherst	✓			✓
May 17	Amherst	✓			
May 18	Amherst	✓			
May 19	Amherst	✓			✓
June 1	PE County		✓	✓	✓
June 2	PE County		✓	✓	✓
June 3	Amherst		✓	✓	✓
June 17	PE County			✓	✓
July 16	Amherst			✓	
July 17	PE County			✓	
July 23	Amherst			✓	

APPENDIX III

Short-eared Owl Courtship Survey Details 2005

Date	Location	Roads or areas covered	Time	Weather conditions	Time dark	Short-eared Owl courtship survey results
March 19	Amherst	Stella, Front, Lower 40ft	6-8pm	Wind: 1-2 Clear	7pm	3 SHORT-EARED OWL hunting, perching and courting in areas 2, 3
March 22	Amherst	Entire island	3-8pm	Wind: 2-3 Clear	7pm	2 SHORT-EARED OWL courting in area 2, 3 2 SHORT-EARED OWL flying in area 33, 34
April 6	Amherst	Stella, Front, Lower 40ft, South Shore	6-8pm	Cloudy, drizzling	7:30pm	
April 7	Amherst	Entire island	2-8pm	Cloudy, clear at sunset	7:30pm	1 SHORT-EARED OWL hunting in areas 14, 15 1 SHORT-EARED OWL hunting in area 28m
April 8	Amherst	Entire island	2-8pm	Clear	7:30pm	
April 20	Amherst	Stella, Front, Lower 40ft	6-9pm	Wind: 4-5 Raining, overcast at sunset	8:30pm	
April 21	Amherst	Entire island	3-9pm	Wind: 3-4 Cloudy	8:30pm	
April 22	Amherst	Front, Marshall, Lower 40ft	7-9pm	Wind: 1-2 Cloudy	8:30pm	3 SHORT-EARED OWL hunting, perching and courting in area 14
April 28	PE County	Entire area	5-9pm	Wind: 3 Clear	8:30pm	
April 29	Amherst	East half of island	6-9pm	Wind: 1-2 Cloudy	8:30pm	
May 4	Amherst	Entire island	5-9pm	Wind: 1-2 Clear but wet	9pm	
May 5	Amherst	East half of island	7-10pm	Wind: 2 Clear	9pm	
May 6	PE County	Entire area	3-10pm	N/a	9pm	
May 7	Amherst	Emerald, Front, 2 nd Concession	1-3pm	N/a	N/a	
May 18	Amherst	Front, Emerald, 2 nd Concession	6-9pm	Wind: 1-2 Clear	9:20pm	
May 19	Amherst	Entire island	3-10pm	Wind: 1-2 Clear	9:20pm	

APPENDIX IV

All Potential Point Count Stations on Amherst Island 2005

Station	Road	UTM easting	UTM northing
1	Front	364998	4892699
2	Front	365667	4893060
3	Front	365771	4893060
4	Front	366832	4893412
5	Marshall	367179	4893185
6	Front	367522	4893765
7	Front	367814	4893907
8	Front	369000	4894010
9	Lower 40 Foot	369319	4893706
10	Lower 40 Foot	369571	4893280
11	Lower 40 Foot	369874	4892804
12	Lower 40 Foot	369997	4892620
13	South Shore	369986	4892405
14	South Shore	369858	4892274
15	South Shore	369129	4891821
16	South Shore	368771	4891574
17	Marshall	368086	4891808
18	South Shore	368166	4891265
19	South Shore	367440	4890541
20	South Shore	367093	4890049
21	South Shore	366811	4889789
22	South Shore	366086	4889306
23	South Shore	365300	4888400
24	South Shore	364972	4887015
25	Stella	365748	4889293
26	Stella	365597	4889523
27	Stella	365383	4889854
28	Stella	365296	4889980
29	Stella	365044	4890371
30	Stella	364730	4890881
31	Stella	364556	4891193
32	Stella	364418	4891422
33	Stella	364139	4891931
34	Front	363124	4891896

All Potential Point Count Stations on Amherst Island 2005 (continued)

Station	Road	UTM easting	UTM northing
35	Front	361286	4891395
36	Front	360225	4890809
37	Front	359616	4890549
38	Front	358592	4890150
39	Emerald	358154	4889493
40	Emerald	358564	4888838
41	Concession 2	358806	4888316
42	Concession 2	358580	4888063
43	Concession 2	358357	4887886
44	Concession 2	357604	4887384
45	Concession 2	357276	4887060
46	Art McGinnis	358386	4887116
47	Art McGinnis	358279	4886063
48	Emerald	359146	4887892
49	Emerald	360281	4886019
50	Concession 3	360541	4885857
51	Concession 3	362137	4886928
52	Concession 3	362553	4887384
53	Concession 3	363775	4889013
54	Concession 3	364053	4889331
55	Concession 3	363990	4889668
56	Concession 3	364647	4890224
57	Concession 2	364365	4891165
58	Concession 2	364077	4891033
59	Concession 2	362922	4890483
60	Concession 2	361890	4889949
61	Concession 2	361038	4889520
62	Concession 2	360305	4889156
63	Concession 2	359901	4888922
64	Concession 2	359582	4888824
65	Concession 2	359221	4888651

All Potential Point Count Stations in SE Prince Edward County 2005

Station	Road	UTM easting	UTM northing
66	Hwy 7	339080	4877789
67	Hwy 7	342207	4878966
68	Hwy 7	344163	4879619
69	Rock Xrd	347045	4878645
70	Chuckery Hill Rd	333490	4877666
71	Chuckery + Rosseau	332184	4876762
72	Rosseau Rd	332184	4876762
73	Hwy 17	331741	4873845
74	Salmon Point Rd	321694	4860546
75	Wellbanks	323306	4861407
76	Kelly Rd	325128	4862413
77	Kelly Rd	327006	4863679
78	Hilltop Rd	333269	4861811
79	Long point Rd	348335	4867249
80	Babylon Rd	340580	4864825
81	Babylon Rd	341782	4865558
82	Whattams Rd	341021	4865808

APPENDIX V
Point Count Survey Details, Amherst Island 2005

Station	Date	Time	Temp (°C)	Cloud cover (%)	Wind speed (Beaufort)	# species	Species observed
1	June 3	6:15	15	100	1	10	EAME, AMRO, RWBL, BOBO, CAGO, SOSP, BARS, TRES, COLO, NRWS
5	June 3	6:50	14	100	1	12	BOBO, SAVS, RBGU, RWBL, KILL, EAME, WIFL, YWAR, DCCO, EAKI, AMGO, GRSP
10	June 3	20:40	18	50	0	12	WISN, BOBO, TRES, EAKI, EAME, AMCR, RWBL, CAGO, AMRO, NOHA, BHCO, UPSA
15	June 3	9:10	18	30	0-1	9	RWBL, RBGU, TRES, EAKI, EAME, COLO, DCCO, NRWS, BOBO
20	June 3	9:25	18	20	2-3	11	RWBL, BARS, COGR, EAKI, HERG, AMGO, DCCO, EAME, SOSP, EUST, NRWS
32	June 3	6:25	15	100	1-2	6	CAGO, UPSA, RWBL, BOBO, AMWO, COLO
35	June 2	19:15	24	10	0	7	BOBO, RWBL, SAVS, BRTH, BARS, EAME, AMRO
37	June 2	19:25	23	10	0	8	COYE, RWBL, SAVS, EAME, AMRO, BARS, EAKI, RBGU
37	June 3	19:45	17	90	2-3	8	RWBL, TRES, AMRO, COYE, UPSA, BOBO, KILL, EAKI
42	June 3	7:15		100	1	11	AMRO, EUST, YWAR, GRCA, CHSP, AMCR, EAME, UPSA, GRSP, RWBL, BOBO
42	June 2	19:40	23	20	0	8	EAME, BOBO, FISP, AMRO, RWBL, BCCH, UPSA, EAKI
44	June 3	7:25	16	90	1	6	WISN, RWBL, BOBO, SOSP, AMBI, EAKI
44	June 2	19:55		20	0		AMBI, CAGO, EAKI, RWBL, BOBO, EAME, AMCR, YWAR, UPSA, OVEN, TRES
48	June 2	20:20	19	20	0	7	RWBL, BOBO, EAME, EAKI, UPSA, SAVS, WISN
48	June 3	7:05	16	100	1	6	RWBL, BOBO, EAME, TRES, WISN, GRSP
51	June 3	18:50	16	100	1	9	MALL, RWBL, AMRO, RODO, BARS, MODO, WISN, TRES, SOSP
51	June 2	20:40		20	0	8	AMBI, RWBL, KILL, BARS, NOHA, AMRO, GRCA, SOSP
54	June 3	6:35	16	100	2-3	10	BOBO, CAGO, RWBL, SAVS, DCCO, EUST, AMRO, EAKI, BARS, RBGU
54	June 2	21:00	16	60	1	7	EAME, RWBL, SAVS, AMRO, SOSP, CAGO, BRTH
60	June 3	8:10	16	80	1-2	6	AMCR, BOBO, RWBL, EAKI, SAVS, NOHA

Point Count Survey Details, SE Prince Edward County 2005

Station	Date	Time	Temp (°C)	Cloud cover (%)	Wind speed (Beaufort)	# species	Species observed
66	June 2	6:55	15	0	0	9	RWBL, EAME, BOBO, AMCR, SOSP, CHSP, COGR, AMRO, AMGO
66	June 1	20:45	17	0	0	7	SOSP, BOBO, RWBL, EAME, AMRO, CHSP, GCFL
68	June 2	6:35	12	0	0	11	AMRO, RWBL, BOBO, COGR, BARS, WIFL, AMCR, EUST, MODO, EAME, SOSP
69	June 2	6:15	12	0	0	10	RWBL, FISP, AMRO, SOSP, CHSP, BCCH, AMCR, BLJA, NOHA, CAGO
69	June 1	21:10	15	0	0	3	CAGO, AMRO, MODO
70	June 2	7:15	7	0	0	15	EAME, WTSP, AMCR, COLO, EAKE, CHSP, SOSP, BOBO, CAGO, LCSP, BARS, NOHA, COYE, AMGO, GBHE
70	June 1	20:25	20	10	0	6	AMRO, EAME, BOBO, WTSP, BRTH, AMWO
71	June 2	7:40	16	0	1	10	RWBL, BOBO, EAME, AMCR, SAVS, BRTH, AMGO, FISP, WTSP, YWAR
72	June 2	7:55		0	1	11	BOBO, EAME, AMRO, BRTH, EAKI, GRCA, CHSP, LCSP, WTSP, SOSP, BLJA
72	June 1	20:00	20	10	0	7	BOBO, EAME, BLJA, EAKI, WTSP, AMRO, WOTH
80	June 2	8:45	19	0	1	17	WISN, BOBO, RWBL, SAVS, AMRO, WTSP, EAME, MODO, BARS, BRTH, NOHA, WIFL, FISP, UPSA, GCKI, WAVI, BLJA
81	June 2	9:15	20	0	1	6	AMCR, BOBO, BRTH, AMRO, TRES, WAVI
82	June 2	9:40	21	0	0	10	SAVS, BOBO, RWBL, EAME, BARS, CAGO, EAKI, MODO, AMRO, RTHA