

McIntyre Marsh Bird Banding Station Final Report 2014



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The 2014 operation of the McIntyre Marsh Bird Banding Station was made possible due to support and financial contributions from the following organizations.



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Cover Photo: male Myrtle Warbler (Photo: Ben Schonewille)

The McIntyre Marsh Bird Banding Station is a project of the **Society of Yukon Bird Observatories** (SOYBO; PO Box 30056, Whitehorse, YT, Y1A 5M2). SOYBO was established during 2010 to formalize the operation of the Yukon Bird Observatories. The objectives of SOYBO are: (1) contribute to the conservation of migratory birds in western North America, (2) to make the public aware of the avifauna of the Yukon and educate the public, and, (3) to work with other societies, organizations and individuals with similar objectives. For further information, email – teslin.bird.banding@gmail.com or visit <http://yukonbirdobservatories.org>

SUMMARY

The Yukon Bird Observatories are the northernmost member stations within the Canadian Migration Monitoring Network and are the only stations located within the core of Canada's western Boreal Forest. Although the McIntyre Marsh station does not currently follow a formalized monitoring protocol as is done at the other field stations (Teslin Lake and Albert Creek), the station continues to collect data on migratory birds and increased the public's awareness of the Yukon's bird life.

The McIntyre Marsh Bird Banding Station completed its sixth consecutive year of spring migration monitoring in 2014. The field station operated for a total of 26 days between April 26 and June 2 for the most part following the same procedures used at the site since 2009 although there were some changes in the placement of the mist nets.

Crews followed standard methods to mist net, handle, band and record information from captured birds. They banded a total of 1,175 birds of 37 species with 2,691 net hours (43.7 birds/100 net hours). The top 5 species banded included Myrtle Warbler (229), Wilson's Warbler (224), Violet-green Sallow (157), Tree Swallow (134) and Ruby-crowned Kinglet (56); collectively, these species accounted for 68% of all birds banded.

Noteworthy results from 2014 included:

- The number of birds banded was near average and the birds captured per 100 net hours was the lowest since the station began operation during 2009.
- Species banded in particular high numbers included Myrtle Warbler, Wilson's Warbler and Violet-green Swallow whereas White-crowned Sparrow and Slate-colored Junco were banded in numbers which were far below average.
- The banding station continues to be a productive site for capturing swallows. A total of 315 swallows of 3 species (Violet-green, Tree and Bank) were banded and two additional species were observed (Cliff, Barn). Collectively, a total of 1,150 swallows have been banded at the station since 2009.
- No new species were banded at the station although two new species (Common Merganser and American Crow) were added to the list of species observed at the site since 2009.
- Since 2009, a total of 7,904 birds of 62 taxa have been banded at the station and 114 taxa have been observed.
- A total of 18 volunteers spent a total of 471.75 hours at the observatory and a total of 420 individuals (including 12 school groups) visited the observatory totaling 954 visitor hours.

TABLE OF CONTENTS

1.0	INTRODUCTION.....	6
1.1	BACKGROUND	6
1.2	GOALS OF THE MCINTYRE MARSH BIRD BANDING STATION	7
1.3	OBJECTIVES OF THE 2014 SEASON.....	7
1.4	ACKNOWLEDGEMENTS	7
2.0	METHODS	8
2.1	STUDY SITE	8
2.2	GENERAL METHODS	8
2.3	PUBLIC ENGAGEMENT	9
3.0	RESULTS & DISCUSSION.....	10
3.1	STATION OPERATION.....	10
3.2	PATTERNS IN CAPTURES	12
3.3	MIGRATION TIMING	13
3.4	BAND REPEATS, RETURNS & RECOVERIES	15
3.5	VISITORS AND VOLUNTEERS	16
4.0	CONCLUSION	18
4.1	RECOMMENDATIONS	18

LIST OF APPENDICES

APPENDIX A – SPECIES CHECKLIST.....	19
APPENDIX B – DAILY SPECIES TOTAL SUMMARY.....	20

LIST OF FIGURES

Figure 1. Summary of birds banded per day during the spring of 2014.	13
Figure 3. Summary of birds banded during the spring from 2001 to 2014.	13
Figure 3. Generalized migration timing for species groups at McIntyre Marsh during the spring of 2014.....	14

LIST OF TABLES

Table 1. Summary statistics for the 2014 spring season.....	10
Table 2. Birds banded during the 2014 spring season.....	10
Table 3. Summary of weather conditions during the 2014 spring season.	11
Table 4. Comparison of weather conditions during 2014 as compared to previous years.	11
Table 5. The 10 most common bird species banded in 2014 as compared to 2009–2013 totals	12
Table 6. Arrival dates for common species at McIntyre Marsh from 2009 to 2014.	15
Table 7. Band returns at McIntyre Marsh during the spring of 2014.	16
Table 8. Summary of paid, volunteer and visitor hours at McIntyre Marsh during 2014.....	17

1.0 Introduction

This report describes methods and results of work done at the McIntyre Marsh Bird Banding Station from April 18 to June 1, 2014, the sixth consecutive year of spring migration monitoring at the site. Activities during 2014 mirrored that of previous years and no new activities were conducted at the station during 2014.

Previous annual reports and additional information on the station can be found on the Society of Yukon Bird Observatories website: www.yukonbirdobservatories.org

1.1 Background

The station collects information on birds which is shared through an international bird banding database (Canadian Wildlife Service Bird Banding Office and USGS Bird Banding Laboratory), Society of Yukon Bird Observatories annual station reports, and other publications. During 2014, the Yukon Bird Observatories (Teslin Lake and Albert Creek) were granted full membership status to the Canadian Migration Monitoring Network (CMMN). The CMMN is a nationwide network of 26 membership stations for across Canada who collect standardized bird monitoring data and collaborate on research projects. The Yukon Bird Observatories are the northernmost stations in the network and are the only stations located within the core of Canada's western Boreal Forest. Although the station at McIntyre Marsh is not a member station of the CMMN, the activities at the station directly support the standardized operation of Teslin Lake and Albert Creek by providing training opportunities for volunteers and by increasing the public's awareness of the Yukon Bird Observatories.

Many of the birds banded and observed at McIntyre Marsh are highly migratory, spending the winter months as far south as Central and South America. In addition to the potential knowledge gained from band recoveries, the observatory also continues to gather baseline data of birds (and their migration) in the Whitehorse region and the Yukon as a whole. Due to the large landmass of the territory, and the relatively few bird biologists and advanced birders in the Yukon, there is still a great deal to be learned regarding the bird life of the Yukon.

Due to the close proximity to downtown Whitehorse, the banding station also provides a wildlife viewing opportunity where the public, volunteers and students can take part in a unique, community based research project. Across the Yukon (and the world), there are numerous people who have an interest in birds; however, many find it a daunting task to learn the various species. For such people, a visit to the banding station can be extremely rewarding as they often have the opportunity to view a wide variety of bird species up close. Many of these species are very difficult to observe naturally; however, through the use of mist nets, the highly trained individuals working at the station have the ability to identify these species and allow the public to view them up close.

1.2 Goals of the McIntyre Marsh Bird Banding Station

The goals of the McIntyre Marsh Bird Banding Station are to:

- Gather baseline information on birds and bird migration in the Whitehorse area.
- Test the feasibility of operating a full scale bird observatory at the site.
- Conduct and participate in specific studies such as feather collecting for stable isotope analysis and color banding.
- Provide a setting for the public including school groups to learn about birds and bird migration.
- Provide training opportunities for students and volunteers.
- Provide a unique wildlife viewing opportunity in the community of Whitehorse.

1.3 Objectives of the 2014 Season

The objectives of the 2014 field season at the McIntyre Marsh Bird Banding Station were to:

- Continue the spring migration monitoring work using previously established methods,
- Collect an additional year of bird monitoring data,
- Continue to attract the public (including school groups) to the site to learn about birds and bird migration, and,
- Compare 2014 bird migration results to the previous 5 years of similarly collected data.

1.4 Acknowledgements

The 2014 operation of the McIntyre Marsh Bird Banding Station would not have been possible without support and financial contributions from the following organizations/groups: Environment Canada (Canadian Wildlife Service), Yukon Environment (Environmental Awareness Fund), Yukon Energy and EDI Environmental Dynamics Inc. In particular, EDI provided two field ornithologists (including the Bander In Charge) to operation the station on a number of weekday mornings to allow for an increased number of school groups to visit the site. Access to the site was provided by ATCO Electric Yukon and Icy Waters Arctic Charr.

We appreciate the help from the following volunteers:

- Over 20 days – Ben Schonewille
- 10 to 20 days – Nick Guenette and Vesta Mather
- 5 to 10 days – Shanti Morrison, Andrea Sidler and Joe Parker,
- 1 to 5 days – Veronica Huggard, Tracy Allard, Gerry Musungung, Miraya, Max, Wendy Nixon, Dawn Hansen, Anne MacLeod, Cameron Eckert, Jukka Jantunen, Hilary Cooker and Barney Smith

2.0 Methods

2.1 Study Site

The station is located at the area known locally as McIntyre Marsh near the junction of the Copper Haul Road and the Fish Lake Road. McIntyre Creek flows through the marsh which has a wide braided channel with numerous areas of standing water. Vegetation in the area is primarily willow with open areas dominated by various grasses and sedges. Large trees are relatively sparse within the mist netting area and are primarily limited to a thin strip of large white spruce along the margin on the study site. A defining characteristic of the site is the presence of standing dead snags within the marsh; these are likely a result of the beaver dam impoundment of the area in the past. Beginning during the fall of 2013, the marsh was once again flooded by beavers resulting in partial abandonment of some mist net lanes and the subsequent creation of new lanes.

2.2 General Methods

As the banding station is relatively new and the activities have not yet been standardized, a detailed bird monitoring protocol has not yet been prepared. The primary method of monitoring the movement of birds through the study site is the use of mist nets for the purpose of capturing and banding birds. In 2014, the station operated with 26 mist nets, although no more than 20 were used at one time. All of the nets used were constructed of 30 mm mesh and were 12 m or 18 m (2 nets) in length. Although mist netting did not always begin at sunrise (which is standard practice for other stations), efforts were made to open the station as early as possible. The number of nets used on a daily basis was determined by a number of factors including bird activity, weather and availability of qualified personnel to assist with checking the nets. Mist nets were checked for birds every 15 to 30 minutes and all birds captured were extracted by qualified individuals. Individual birds were then placed in breathable cloth bags and transported to the central bird processing area.

Once at the processing area, all birds were identified to species and banded with a uniquely numbered leg band. A wide variety of other information was collected from each bird including; age, sex, wing length, fat score, breeding condition, bird status, banding date/time and the bander's initials. Representative photos were also taken from a portion of the birds processed. The birds are promptly released after all data is collected.

To supplement the banding data collection, incidental observations were also recorded for birds within and/or flying over the site. Using the number of birds banded, recaptured and observed, estimated totals were derived for all species observed on each of the station's operation.

As a primary goal of the study is to provide opportunities for the public to become involved, the public was able to partake where possible. Extracting and handling of birds requires extensive experience doing so and therefore the public was not able to handle the birds. However, small groups of people

were regularly taken on net rounds to allow them to view up close how birds are captured in the mist nets and extracted. The public was also allowed to actively watch the bird processing procedure and frequently asked questions about the birds and the banding process. At times, members of the public also assisted the bander by scribing the data onto the data sheets and collecting bird observations.

2.3 Public Engagement

To attract members of the public to the station, we ran biweekly advertisements in the local newspaper (Yukon News) during the month of May. Social media (Facebook) was also used extensively to attract visitors and school groups which visited the site previously were contacted to encourage revisits to the station.

3.0 Results & Discussion

3.1 Station Operation

The 2014 spring season at McIntyre Marsh included a total of 26 field days between April 18 and June 1. A total of 1,175 birds of 37 species were banded and 79 species were observed (Table 1, Table 2). The all-time total number of birds banded at McIntyre Marsh is now 7,904 birds of 62 taxa and 114 taxa have been observed (Appendix A). No new species were banded at the station during 2014 although two new species were added to the station checklist: Common Merganser and American Crow.

Table 1. Summary statistics for the 2014 spring season.

Week	Date	Days Operated	Birds Banded				Total Species Observed
			#	Species	Net Hours	#/100 Net Hours	
1	18 – 24 Apr	1	0	0	0	0.00	4
2	25 Apr – 1 May	4	58	10	402.4	14.4	37
3	2 – 8 May	4	58	13	431.0	13.5	44
4	9 – 15 May	5	289	17	539.6	53.6	47
5	16 – 22 May	7	497	25	712.0	69.8	57
6	23 – 29 May	3	146	21	407.0	35.9	52
7	30 May – 5 Jun	2	127	22	199.3	63.7	47
ALL		26	1,175	37	2691.3	43.7	79

Table 2. Birds banded during the 2014 spring season.

Common Name	Latin Name	Individuals Banded	
		#	# / 1,000 Net Hrs
Solitary Sandpiper	<i>Tringa solitaria</i>	6	2.23
Spotted Sandpiper	<i>Actitis macularius</i>	5	1.86
Wilson's Snipe	<i>Gallinago delicata</i>	7	2.60
Western Wood-Pewee	<i>Contopus sordidulus</i>	1	0.37
Alder Flycatcher	<i>Empidonax alnorum</i>	3	1.11
Hammond's Flycatcher	<i>Empidonax hammondi</i>	2	0.74
Say's Phoebe	<i>Sayornis saya</i>	3	1.11
Tree Swallow	<i>Tachycineta bicolor</i>	134	49.79
Violet-green Swallow	<i>Tachycineta thalassina</i>	157	58.34
Bank Swallow	<i>Riparia riparia</i>	24	8.92
Black-capped Chickadee	<i>Poecile atricapillus</i>	4	1.49
Boreal Chickadee	<i>Poecile hudsonicus</i>	3	1.11
Ruby-crowned Kinglet	<i>Regulus calendula</i>	56	20.81
Hermit Thrush	<i>Catharus guttatus</i>	2	0.74
Gray-cheeked Thrush	<i>Catharus minimus</i>	3	1.11
Swainson's Thrush	<i>Catharus ustulatus</i>	12	4.46
American Robin	<i>Turdus migratorius</i>	21	7.80

Common Name	Latin Name	Individuals Banded	
		#	# / 1,000 Net Hrs
Northern Waterthrush	<i>Parkesia noveboracensis</i>	14	5.20
Tennessee Warbler	<i>Oreothlypis peregrina</i>	2	0.74
Orange-crowned Warbler	<i>Oreothlypis celata</i>	52	19.32
Common Yellowthroat	<i>Geothlypis trichas</i>	18	6.69
Yellow Warbler	<i>Setophaga petechia</i>	7	2.60
Blackpoll Warbler	<i>Setophaga striata</i>	15	5.57
Yellow-rumped 'Myrtle' Warbler	<i>Setophaga coronata</i>	229	85.09
Yellow-rumped Warbler (poss. integrade)	<i>Setophaga coronata</i>	1	0.37
Wilson's Warbler	<i>Cardellina pusilla</i>	224	83.23
American Tree Sparrow	<i>Spizella arborea</i>	5	1.86
Chipping Sparrow	<i>Spizella passerina</i>	19	7.06
Savannah Sparrow	<i>Passerculus sandwichensis</i>	18	6.69
Fox Sparrow	<i>Passerella iliaca</i>	3	1.11
Lincoln's Sparrow	<i>Melospiza lincolni</i>	43	15.98
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	21	7.80
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	3	1.11
Dark-eyed 'Slate-colored' Junco	<i>Junco hyemalis</i>	47	17.46
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	3	1.11
Rusty Blackbird	<i>Euphagus carolinus</i>	6	2.23
Common Redpoll	<i>Acanthis flammea</i>	2	0.74
TOTAL		1,175	436.59

Weather conditions can largely influence the activities at the observatory (Table 3); windy conditions and periods of prolonged precipitation reduce the mist netting effort. The spring of 2014 saw mostly favorable weather conditions (temperature, wind and precipitation) that were very similar to previous years (Table 4).

Table 3. Summary of weather conditions during the 2014 spring season.

Weather Parameter	Week						
	1	2	3	4	5	6	7
Average Opening Temperature	2.0	-2.5	-0.8	3.6	4.3	1.0	3.0
Average Closing Temperature	9.0	9.0	12.5	14.2	11.8	14.3	14.5
Average Opening Wind	1.0	1.1	1.0	1.4	0.5	0.3	1.5
Average Closing Wind	3.0	6.1	1.0	1.6	1.3	1.7	2.3
Days with Rain	0	0	0	1	2	0	0
Days with Snow	0	0	0	0	0	0	0

Table 4. Comparison of weather conditions during 2014 as compared to previous years.

Weather Parameter	Annual Average			2010-2014 Average
	2012	2013	2014	
Average Opening Temperature	4.3	2.5	1.7	2.8
Average Closing Temperature	9.0	11.1	12.3	10.8
Average Opening Wind	0.9	1.0	0.9	0.9
Average Closing Wind	1.9	1.4	1.6	1.6
Days with Rain	2	2	3	2.3
Days with Snow	3	1	0	1.3

3.2 Patterns in Captures

Each component of the 2014 data is summarized and presented in the following subsections; however, a summary account of the 2014 estimated total data is shown in Appendix B. Note that the estimated totals are derived on a daily basis by the Bander in Charge and incorporate all data collection components (mist netting captures and all observations) to estimate the number of birds of each species within or passing through the count area.

Among the top 15 species banded during 2014, 8 were captured in above average numbers, 3 were captured in below average numbers and 4 were captured in near average numbers (Table 5). Among the species banded in above average numbers, Myrtle and Wilson’s warbler were the most notable. A total of 229 Myrtle Warblers were banded compared to the 2009–2014 average of 146 and the previous high of 212 in 2010. Wilson’s Warbler banded (224) also surpassed the average banding total of 132 and the previous high of 174 in 2012. Among the species banded in below average numbers was White-crowned Sparrow with 21 banded compared to the average of 235. Capture rates of this species have been highly variable between years and have ranged from a low of 4 during 2011 to a high of 620 in 2012.

Table 5. The 10 most common bird species banded in 2014 as compared to 2009–2013 totals (numbers in brackets indicate the annual ranking in birds banded. The prefix “T” indicates a tied in annual banding totals; data from 2009 excluded due to inadequate duration of data collection for comparisons between years.

Species	2014	2013	2012	2011	2010	2009	2009–2014 Average
Myrtle Warbler	229 (1)	146 (4)	179 (4)	54 (3)	212 (3)	70 (5)	146
Wilson’s Warbler	224 (2)	135 (3)	174 (5)	57 (2)	144 (4)	57 (8)	132
Violet-green Swallow	157 (3)	146 (2)	116 (7)	36 (4)	22 (13)	103 (2)	97
Tree Swallow	134 (4)	35 (12)	235 (3)	18 (8)	1 (31)	89 (3)	85
Ruby-crowned Kinglet	56 (5)	88 (7)	64 (8)	15 (9)	25 (12)	5 (23)	42
Orange-crowned Warbler	52 (6)	98 (6)	25 (14)	20 (7)	16 (14)	9 (15)	37
Slate-colored Junco	47 (7)	18 (16)	490 (2)	9 (13)	247 (2)	77 (4)	148
Lincoln’s Sparrow	43 (8)	59 (8)	55 (9)	12 (11)	75 (7)	25 (12)	45
Bank Swallow	24 (9)	2 (T28)	30 (12)	0 (-)	0 (-)	0 (-)	19
American Robin	21 (T10)	11 (20)	11 (17)	0 (-)	15 (16)	6 (21)	13
White-crowned Sparrow	21 (T10)	310 (1)	620 (1)	4 (17)	342 (1)	113 (1)	235
Chipping Sparrow	19 (12)	1 (T37)	8 (T20)	0 (-)	5 (T23)	0 (-)	8
Common Yellowthroat	18 (T13)	42 (10)	27 (13)	21 (6)	53 (9)	26 (11)	31
Savannah Sparrow	18 (T13)	104 (5)	43 (10)	10 (12)	83 (6)	58 (7)	53
Blackpoll Warbler	15 (15)	30 (13)	10 (18)	14 (10)	5 (23)	0 (-)	15

The peak period for mist netting occurred during week 5 (May 16 to 22) due to high captures of 4 species: Myrtle Warbler, Wilson’s Warbler, Violet-green Swallow and Tree Swallow (Figure 1). During this period, the highest daily banding totals included 136 birds on the May 21 and 125 on May 18. These days coincided with cool temperatures and periods of light rain which appeared to attract large numbers of insectivorous birds to the productive feeding habitats within the marsh.

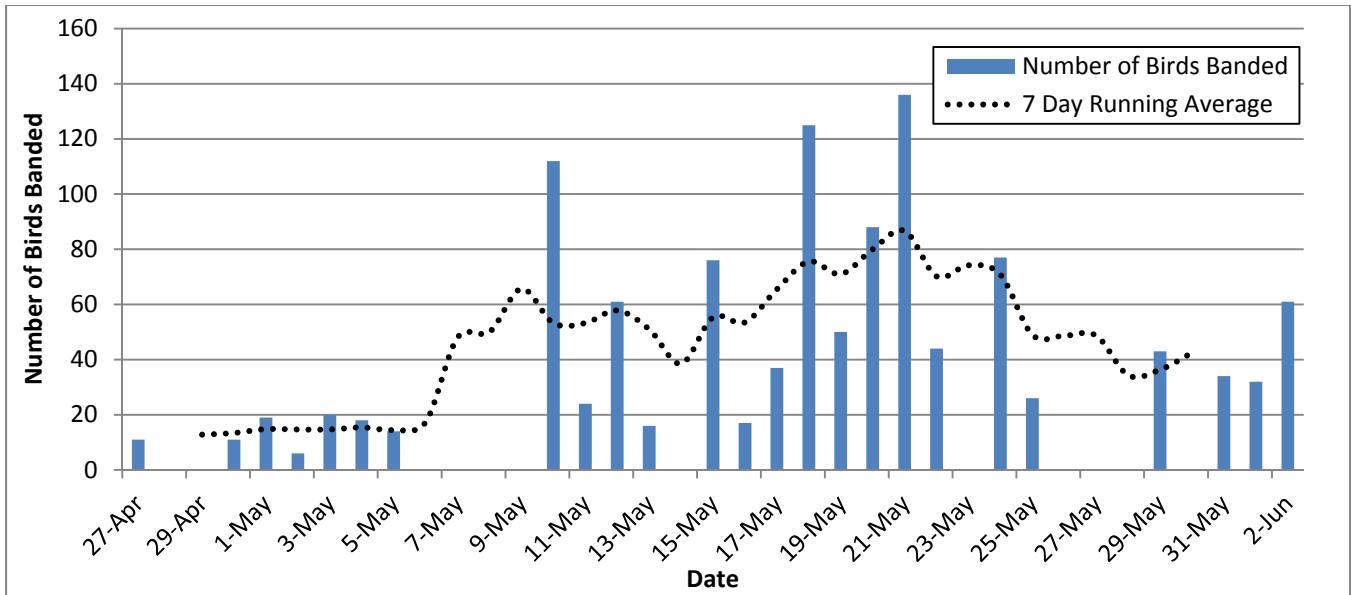


Figure 1. Summary of birds banded per day during the spring of 2014.

The overall number of birds banded during 2014 (1,175) was near average (1,317) compared to previous years. However, when the birds/100 net hours are considered, the 2014 value of 43.7 birds/100 net hours was the lowest since the station began operation during 2009 (Figure 2).

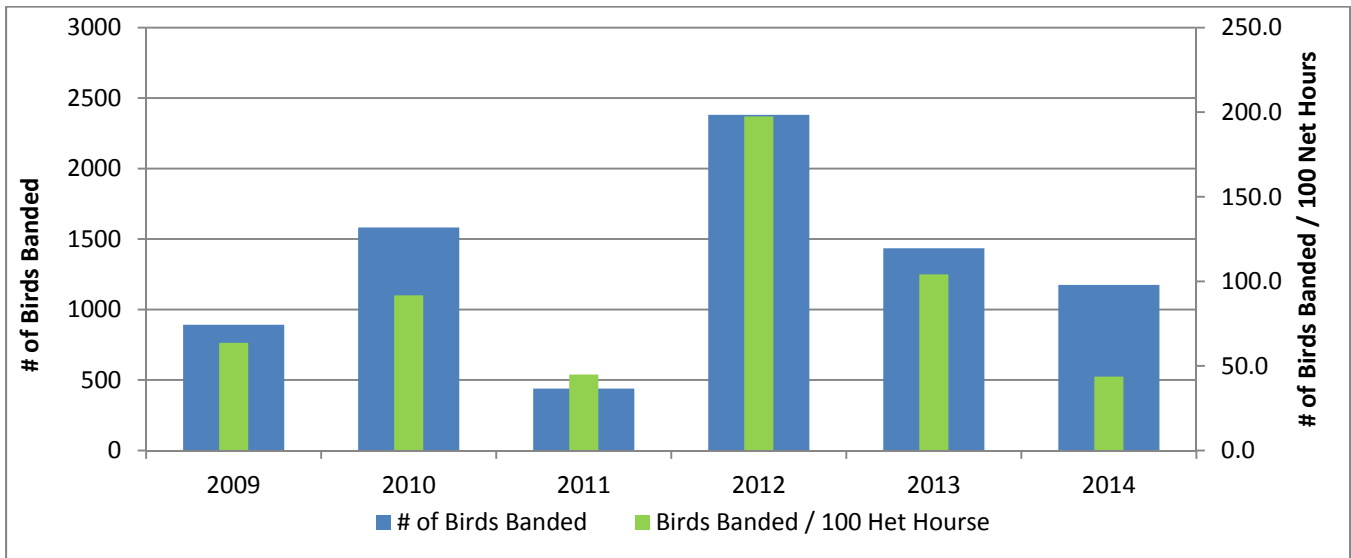


Figure 2. Summary of birds banded during the spring from 2001 to 2014.

3.3 Migration Timing

Generalized migration timing for temperate, neotropical and irruptive migrants/residents during the spring of 2014 is presented in Figure 3¹. In spring, there is a notable difference in migration timing

¹ Temperate migrants are species which primarily overwinter in the temperate zone of North America (i.e., north of Mexico). Neotropical migrants include species which overwinter in the tropics (i.e., south of the USA). Irruptive migrants/residents are those species which migrate irregularly or may be year round residents in the Yukon.

between temperate and neotropical migrants, with the latter typically arriving later in the season. This is presumably due to a number of factors including diet (most neotropical migrants are insect eaters as compared to seed eaters) and distance required for migration (temperate migrants winter closer). The generalized migration timing indicates that the peak of neotropical migrants occurred during mid to late May which is typical for this group of species. The number of temperate migrants banded were very low during 2014 and this was reflected by the lack of a peak in the timing of this group of species

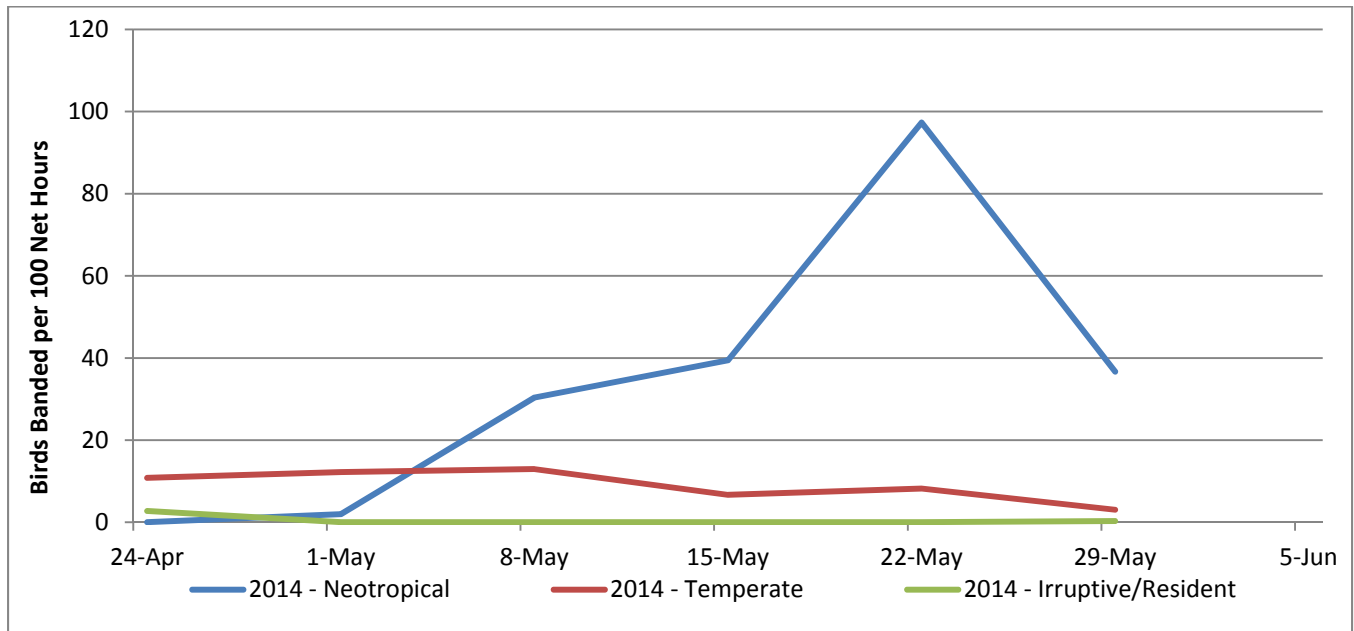


Figure 3. Generalized migration timing for species groups at McIntyre Marsh during the spring of 2014.

For species which are encountered regularly during spring migration, it is possible to investigate arrival dates between years through a combination of available banding and general observation data (Table 5). Most species show a high degree of consistency in arrival dates between years; however, there is a small degree of variation which is likely a result of varying weather conditions between years. With McIntyre Marsh not operating daily during the migration period, it is difficult to make comparisons in arrival dates between years. However, there is still some utility in making such comparisons; for example, Yellow-rumped Warbler arrived 4 days earlier than average during 2014.

Table 6. Arrival dates for common species at McIntyre Marsh from 2009 to 2014.

Species	Spring Arrival Dates						
	2014	2013	2012	2011	2010	2009	2009 – 2014 AVG
Station Opening Date		27 April	20 April	22 April	18 April	18 April	
Solitary Sandpiper	10 May	8 May	4 May	14 May	10 May	9 May	9 May
Lesser Yellowlegs	4 May	4 May	5 May	5 May	28 April	3 May	3 May
Hammond’s Flycatcher	3 May	6 May	6 May	5 May	24 April	2 May	2 May
Swainson’s Thrush	20 May	22 May	26 May	24 May	21 May	27 May	23 May
Orange-crowned Warbler	12 May	11 May	2 May	14 May	1 May	12 May	8 May
Yellow Warbler	22 May	23 May	26 May	22 May	18 May	24 May	22 May
Yellow-rumped Warbler	27 Apr	5 May	20 Apr	30 Apr	24 April	2 May	28 Apr
Blackpoll Warbler	17 May	22 May	20 May	22 May	20 May	27 May	21 May
Northern Waterthrush	17 May	22 May	15 May	15 May	18 May	13 May	16 May
Common Yellowthroat	21 May	23 May	26 May	22 May	18 May	23 May	22 May
Wilson’s Warbler	4 May	7 May	14 May	14 May	8 May	3 May	8 May
Savannah Sparrow	27 Apr	6 May	4 May	14 May	28 April	2 May	3 May
Fox Sparrow	26 Apr	8 May	20 Apr	15 May	23 April	3 May	30 Apr
Lincoln’s Sparrow	26 Apr	6 May	20 Apr	1 May	24 April	2 May	28 Apr
White-crowned Sparrow	26 Apr	5 May	20 Apr	2 May	23 April	2 May	28 apr
Golden-crowned Sparrow	26 Apr	5 May	28 Apr	14 May	24 April	2 May	1 May
Lapland Longspur	-	8 May	28 Apr	14 May	1 May	18 April	1 May
Red-winged Blackbird	10 May	8 May	12 May	1 May	2 May	2 May	5 May
Rusty Blackbird	1 May	8 May	24 Apr	1 May	23 April	2 May	29 Apr

3.4 Band Repeats, Returns & Recoveries

Band returns (individuals banded at the site in previous years) typically represent individuals which breed within the study site as the likelihood of re-trapping migrants is relatively low. During 2014, the station had 25 band returns representing 12 species (Table 7). Species very well represented in the band returns provide an indication of the breeding birds at McIntyre Marsh; Common Yellowthroat, and Myrtle Warbler are among the most common breeding bird species within and adjacent to the study site and this is reflected by the number of band returns for these species. The oldest band return during 2014 was a Common Yellowthroat recaptured on June 1 which was originally banded as an after second year male on June 1, 2009; this individual was born in 2007 or earlier making it at least 7 years old during 2014.

Table 7. Band returns at McIntyre Marsh during the spring of 2014.

Species	Band Number	Banded		Recaptured
		Date	Age – Sex	Date
Solitary Sandpiper	1981-06406	31 May 2012	AHY – U	18 May 2014
Wilson’s Snipe	1063-59516	9 May 2013	AHY – U	13 May 2014
Wilson’s Snipe	1063-59535	27 May 2013	AHY – U	19 May 2014
Tree Swallow	2511-90123	15 May 2012	AHY – M	2 May 2014
Violet-green Swallow	2560-33160	11 May 2013	AHY – M	22 May 2014
Black-capped Chickadee	2560-33238	14 May 2013	SY – U	10 May 2014
Ruby-crowned Kinglet	2570-10787	29 Apr 2012	ASY – M	20 May 2013
American Robin	1212-58366	14 May 2012	SY - M	11 May 2014
American Robin	1232-58815	25 May 2013	SY – M	13 May 2014
American Robin	1232-58817	25 May 2013	SY – F	13 May 2014
Myrtle Warbler	2610-63328	18 May 2012	AHY – M	11 May 2014
Myrtle Warbler	2610-63361	26 May 2012	AHY – M	2 May 2014
Myrtle Warbler	2610-63373	28 May 2012	AHY – F	24 May 2014
Myrtle Warbler	2560-33543	27 May 2013	ASY – M	18 May 2014
Common Yellowthroat	2560-32157	1 Jun 2009	ASY – M	1 Jun 2014
Common Yellowthroat	2610-63353	26 May 2012	ASY – M	31 May 2014
Common Yellowthroat	2610-63367	27 May 2012	AHY – M	29 May 2014
Common Yellowthroat	2560-33454	25 May 2013	ASY – M	21 May 2014
Common Yellowthroat	2560-33545	27 May 2013	ASY – F	2 Jun 2014
Northern Waterthrush	2560-33576	2 Jun 2013	SY – U	22 May 2014
Lincoln’s Sparrow	2511-90690	22 May 2013	SY – U	19 May 2014
Lincoln’s Sparrow	2511-90729	27 May 2013	AHY – M	18 May 2014
Slate-colored Junco	2511-90315	29 May 2012	SY – M	25 May 2014
Slate-colored Junco	2511-90669	22 May 2013	AHY – F	4 May 2014
Slate-colored Junco	2511-90670	22 May 2013	SY – M	2 May 2014

Long distance (foreign) band recoveries those where a bird banding at the station is recaptured or recovered in another location or vice versa; to date, there have been three such recoveries of birds banded at McIntyre Marsh as outlined below.

- A Yellow-rumped “Myrtle” Warbler banded in Portland, Oregon in March 2008 was recaptured at McIntyre Marsh on May 4, 2009.
- An American Green-winged Teal banded at McIntyre Marsh on May 14, 2009 was shot by a hunter near Los Banos, California on October 28, 2009.
- A Yellow-rumped “Myrtle” Warbler banded at the Teslin Lake Bird Observatory near Teslin, YT on September 7, 2010 was recaptured at McIntyre Marsh on May 25, 2013.

3.5 Visitors and Volunteers

The banding station was very successful in attracting visitors during 2014, in total 420 different individuals visited the site and totaled nearly 1,000 visitor hours (Table 8). Included in the visitor totals were 12 school groups from the Whitehorse area and a group from Copper Ridge Place who visited the site. These visitor numbers are slightly higher than during 2012 and 2013 due to the increased advertising of the project and the increased number of school groups hosted at the station. Overall,

these visitor rates are very high as compared to the Teslin Lake and Albert Creek bird observatories which typically total 100 to 150 visitor hours each per year.

Table 8. Summary of paid, volunteer and visitor hours at McIntyre Marsh during 2014.

Paid		Volunteers		Visitors	
# of Individuals	Hours	# of Individuals	Hours	# of Individuals	Hours
12	99.25	18	471.75	420	954

During 2013 and 2014, the operation of the demonstration site was completed primarily by volunteers. Aside from providing visitor opportunities, the station also provides an opportunity for volunteer involvement. Individuals willing to attend the station on a number of occasions have the opportunity to receive training in the techniques used to capture and band birds (under the supervision of permitted/qualified individuals). Note that the paid individuals who operated the station were a result of a partnership with EDI Environmental Dynamics Inc. who provided two staff biologists (including the Bander In Charge) to operate the station on 8 weekday mornings to host local school groups.

The Society of Yukon Bird Observatories has begun to use social media to promote the field stations (including McIntyre Marsh) by providing regular station updates and photos of birds banded and observed. A Facebook group page (Yukon Bird Observatories) now has 243 members and the society's website (www.yukonbirdobservatories.org) had 298 page views by 126 unique visitors during May 2014 including 78 page views on the McIntyre Marsh project page.

4.0 Conclusion

The bird monitoring data collected at the demonstration site have continued to reinforce that McIntyre Marsh is an important stopover and breeding habitat for migratory birds within the City of Whitehorse. The productive marsh habitat and diversity of nearby habitats provide suitable habitat for a high diversity of birds. Although the total number of birds banded is less than that of the Teslin Lake and Albert Creek bird observatories, these results are not directly comparable. McIntyre Marsh does not operate on daily basis and if the protocols from the other observatories were to be implemented at McIntyre Marsh, the number and diversity of birds banded would likely increase substantially and the utility of the data increased.

The number of visitors and total visit hours totaled at the site in 2014 are representative of the value of the banding station as a public education and training opportunity. Individuals who visit the site leave with an increased understanding of the Yukon's bird life and a level of environmental stewardship which has a positive effect well beyond the conservation of birds. For children who visit the site, having the opportunity to see songbirds "up close and personal" often has a lasting effect and may lead to a future appreciation of not only birds, but our natural surroundings as a whole. In recent years, the station has been successful in attracting a small number of interested teenagers who have developed as capable volunteers at the station.

For 2015, it is hoped that adequate personnel and resources can once again be made available for the operation of the banding station during the spring migration season. If possible, it would be advantageous to operate the station on more days during the migration period to boost the number of visitors and school groups which may visit the site. More extensive coverage would also increase the utility of the bird monitoring data collected. Efforts should also be made to include some sort of standardized monitoring protocol for the station. This may include the collection of observations outside of the immediate mist netting area through methods such as a fixed duration census route or point count locations.

4.1 Recommendations

The following list summarizes a number of recommendations for the future operation of the McIntyre Marsh Bird Banding Station.

- Continue operation the banding station during the spring of 2015 and maximize the number of days operated and the subsequent number of visitors.
- Make efforts to attract additional volunteers for training purposes with the goal of increasing the base of qualified volunteers in the Yukon who can assist with operations at the Teslin Lake and Albert Creek bird observatories.

Appendix A – Species Checklist

Table A1. Summary of birds banded and observed at McIntyre Marsh from 2009 to 2014.

Species	Banded / Observed						TOTAL BANDED (2009 - 2014)
	2009	2010	2011	2012	2013	2014	
Horned Grebe		✓					
Common Loon				✓			
Greater White-fronted Goose	✓			✓	✓	✓	
Canada Goose	✓	✓	✓	✓	✓	✓	
Trumpeter Swan	✓		✓	✓	✓	✓	
Tundra Swan	✓		✓	✓	✓	✓	
American Wigeon	✓	✓	✓	✓	✓	✓	
Mallard	✓	1	✓	✓	✓	✓	1
Gadwall	✓						
Northern Shoveler		✓	✓	✓	✓	✓	
Northern Pintail	✓	✓		✓	✓		
American Green-winged Teal	4	✓	✓	✓	✓	✓	4
Blue-winged Teal			✓	✓		✓	
Lesser Scaup				✓			
Bufflehead	✓		✓	✓		✓	
Common Goldeneye	✓	✓					
Barrow's Goldeneye	✓	✓	✓	✓	✓	✓	
Common Merganser						✓	
Osprey	✓			✓			
Bald Eagle	✓	✓	✓	✓	✓	✓	
Northern Harrier	✓	✓	✓	1	✓	✓	1
Sharp-shinned Hawk	1	3	✓	1	✓	✓	5
Northern Goshawk	✓		✓		✓		
Red-tailed Hawk	✓	✓	✓	✓	✓	✓	
Rough-legged Hawk	✓		✓				
Golden Eagle			✓			✓	
American Kestrel		✓		✓	✓	✓	
Merlin	✓		✓	✓	✓		
Peregrine Falcon				✓			
Ruffed Grouse		✓		✓		✓	
Semi-palmated Plover	✓		✓				
Greater Yellowlegs					✓		
Lesser Yellowlegs	1	✓	✓	✓	✓	✓	1
Solitary Sandpiper	7	7	6	7	1	6	34
Spotted Sandpiper		1	✓		✓	5	6
Semi-palmated Sandpiper	✓						
Long-billed Dowitcher				✓	✓		
Least Sandpiper					1		1
Pectoral Sandpiper	✓		✓	✓	2		2
Upland Sandpiper				✓			

Species	Banded / Observed						TOTAL BANDED (2009 - 2014)
	2009	2010	2011	2012	2013	2014	
Wilson's Snipe	5	8	2	5	15	7	42
Bonaparte's Gull	✓		✓	✓	✓	✓	
Mew Gull	✓	✓	✓	✓	✓	✓	
Herring Gull	✓	✓	✓	✓	✓	✓	
Arctic Tern					✓		
Great Horned Owl	✓			✓	✓	✓	
Boreal Owl			✓				
Belted Kingfisher	1	1	1	✓	✓	✓	3
Yellow-bellied Sapsucker				✓	✓		
Hairy Woodpecker	✓	✓					
American Three-toed Woodpecker		✓	✓				
Northern Flicker	✓	✓	✓	✓	1	✓	1
Olive-sided Flycatcher	✓	1	2	✓	2	✓	5
Western Wood-Pewee	✓			✓	2	1	3
Alder Flycatcher		✓	3	8	1	3	14
Yellow-bellied Flycatcher				✓			
Hammond's Flycatcher	✓	6	✓	3	7	2	18
Say's Phoebe	✓		✓	1	✓	3	4
Northern Shrike	1						1
Warbling Vireo					1	✓	1
Gray Jay	✓	✓	✓	✓	4	✓	4
Black-billed Magpie	✓	✓	✓	✓	✓	✓	
American Crow						✓	
Common Raven	✓	✓	✓	✓	✓	✓	
Tree Swallow	89	1	18	235	35	134	512
Violet-green Swallow	103	22	36	116	146	157	580
Bank Swallow	✓	✓	✓	30	2	24	56
Cliff Swallow	✓	✓	✓		✓	✓	
Barn Swallow	✓	✓		1	1	✓	2
Black-capped Chickadee	8	4	2	7	3	4	28
Mountain Chickadee	2						2
Boreal Chickadee	9	1	9	1	✓	3	23
Red-breasted Nuthatch			✓		✓	✓	
Golden-crowned Kinglet		✓	✓	✓			
Ruby-crowned Kinglet	5	25	15	64	88	56	253
Townsend's Solitaire							
Gray-cheeked Thrush		✓	1	1	1	3	6
Swainson's Thrush	1	3		3	5	12	24
Hermit Thrush				1	1	2	4
American Robin	6	15	✓	11	11	21	64
Varied Thrush	✓	2	✓	15	14	✓	31

Species	Banded / Observed						TOTAL BANDED (2009 - 2014)
	2009	2010	2011	2012	2013	2014	
American Pipit	4	6	✓	10	3	✓	23
Bohemian Waxwing	✓	✓	✓	✓	✓	✓	
Tennessee Warbler		2	✓	1	2	2	7
Orange-crowned Warbler	9	16	20	25	98	52	220
Yellow Warbler	3	8	27	23	19	7	87
Yellow-rumped 'Myrtle' Warbler	70	212	54	179	133	229	877
Yellow -rumper 'Integrade' Warbler	2			1		1	4
Townsend's Warbler			✓	✓	2	✓	2
Blackpoll Warbler		5	14	10	30	15	74
Northern Waterthrush	8	16	7	6	23	14	74
American Redstart				✓			
Common Yellowthroat	26	53	21	27	42	18	187
Wilson's Warbler	57	144	57	174	135	224	791
Song Sparrow			1				1
Lapland Longspur	39	1	✓	✓	2		42
American Tree Sparrow	63	75	3	151	45	5	342
Chipping Sparrow		5	✓	8	1	19	33
Savannah Sparrow	58	83	10	43	104	18	316
Fox Sparrow	6	109	✓	7	4	3	129
Lincoln's Sparrow	25	75	12	55	59	43	269
White-crowned Sparrow	113	342	4	620	310	21	1,410
Golden-crowned Sparrow	18	34	1	33	37	3	126
Dark-eyed 'Slate-colored' Junco	77	247	9	490	18	47	888
Dark-eyed 'Oregon' Junco				1			1
Rusty Blackbird	25	11	2	1	4	6	49
Red-winged Blackbird	5	3	2	1	2	3	16
Brown-headed Cowbird			✓		✓		
Purple Finch	1			3	✓	2	6
Red Crossbill	✓		✓			✓	
White-winged Crossbill	✓		4		✓	✓	4
Common Redpoll	31	33	97	1	17	✓	79
Hoary Redpoll		1					1
Pine Siskin	3	✓	✓	✓	✓		3
TOTAL BIRDS BANDED	886	1,582	440	2,381	1,434	1,175	7,904
TOTAL SPECIES BANDED	36	38	29	42	44	37	62

Appendix B – Daily Species Total Summary

Table B1. Summary of McIntyre Marsh daily species total (DST) data during the spring of 2014.

Species	# of Days	# of Bird Days	First Date	Last Date	High Count	
Greater White-fronted Goose	1	7	2-May	-	7	2-May
Canada Goose	1	1	4-May	-	1	4-May
Trumpeter Swan	4	74	27-Apr	16-May	38	27-Apr
Tundra Swan	3	125	27-Apr	2-May	81	1-May
American Wigeon	8	16	27-Apr	31-May	4	24-May
Mallard	25	397	26-Apr	1-Jun	39	27-Apr
Northern Shoveler	3	13	12-May	29-May	6	12-May
American Green-winged Teal	24	208	26-Apr	1-Jun	20	16-May
Blue-winged Teal	1	2	31-May	-	2	31-May
Bufflehead	1	2	27-Apr	-	2	27-Apr
Barrow's Goldeneye	25	137	26-Apr	1-Jun	18	5-May
Common Merganser	1	2	4-May	-	2	4-May
Bald Eagle	25	84	26-Apr	1-Jun	6	10-May
Northern Harrier	4	4	1-May	18-May	1	all days
Sharp-shinned Hawk	3	3	1-May	4-May	1	all days
Red-tailed Hawk	1	1	30-Apr	-	1	30-Apr
Golden Eagle	1	1	3-May	-	1	3-May
American Kestrel	1	1	5-May	-	1	5-May
Ruffed Grouse	18	18	27-Apr	29-May	1	all days
Lesser Yellowlegs	15	25	4-May	1-Jun	4	16/17 May
Solitary Sandpiper	16	28	10-May	1-Jun	4	25-May
Spotted Sandpiper	7	16	19-May	1-Jun	4	31-May
Unidentified Peep	1	65	24-May	-	65	24-May
Wilson's Snipe	21	119	1-May	1-Jun	10	19-May
Mew Gull	15	56	1-May	1-Jun	8	16-May
Herring Gull	25	151	26-Apr	1-Jun	11	12-May
Bonaparte's Gull	1	1	4-May	-	1	4-May
Great Horned Owl	1	1	17-May	-	1	17-May
Belted Kingfisher	14	24	3-May	1-Jun	3	19-May
Northern Flicker	18	26	4-May	31-May	2	many days
Integrade Flicker	1	1	1-May	-	1	1-May
Unidentified Woodpecker	2	2	3-May	24-May	1	both days
Olive-sided Flycatcher	2	3	17-May	20-May	2	17-May
Western Wood-Pewee	6	6	10-May	1-Jun	1	all days
Alder Flycatcher	2	4	29-May	31-May	3	29-May
Hammond's Flycatcher	14	20	3-May	1-Jun	3	5/13 May
Say's Phoebe	3	3	11-May	22-May	1	all days
Warbling Vireo	5	6	19-May	1-Jun	2	29-May
Gray Jay	10	13	5-May	1-Jun	3	1-Jun
Black-billed Magpie	2	2	29-May	1-Jun	1	both days

Species	# of Days	# of Bird Days	First Date	Last Date	High Count	
American Crow	1	1	24-May	-	1	24-May
Common Raven	25	59	26-Apr	1-Jun	6	2-May
Tree Swallow	19	621	27-Apr	1-Jun	150	21-May
Violet-green Swallow	25	1268	26-Apr	1-Jun	350	20-May
Bank Swallow	7	73	19-May	1-Jun	35	31-May
Cliff Swallow	6	33	10-May	1-Jun	18	31-May
Barn Swallow	8	11	10-May	31-May	3	21-May
Black-capped Chickadee	25	56	26-Apr	1-Jun	4	many days
Boreal Chickadee	8	11	27-Apr	1-Jun	2	many days
Red-breasted Nuthatch	1	1	2-May	-	1	2-May
Ruby-crowned Kinglet	25	130	26-Apr	1-Jun	14	26-Apr
Gray-cheeked Thrush	4	5	12-May	1-Jun	2	24-May
Swainson's Thrush	7	22	20-May	1-Jun	5	1-Jun
Hermit Thrush	3	4	13-May	19-May	2	18-May
American Robin	24	160	26-Apr	1-Jun	10	5-May
Varied Thrush	19	25	26-Apr	31-May	3	10-May
American Pipit	14	65	27-Apr	21-May	14	10-May
Bohemian Waxwing	7	19	26-Apr	19-May	5	10-May
Tennessee Warbler	3	5	29-May	1-Jun	3	1-Jun
Orange-crowned Warbler	14	79	12-May	1-Jun	17	18-May
Yellow Warbler	6	20	22-May	1-Jun	8	29-May
Myrtle Warbler	24	438	27-Apr	1-Jun	75	18-May
Unidentified Yellow-rumped Warbler	1	1	18-May	-	1	18-May
Townsend's Warbler	7	7	12-May	1-Jun	1	all days
Blackpoll Warbler	10	33	17-May	1-Jun	5	24/29 May
Northern Waterthrush	11	41	17-May	1-Jun	8	24-May
Common Yellowthroat	7	64	21-May	1-Jun	18	1-Jun
Wilson's Warbler	19	362	4-May	1-Jun	37	18-May
American Tree Sparrow	6	7	26-Apr	11-May	2	10-May
Chipping Sparrow	12	48	16-May	1-Jun	9	29-May
Savannah Sparrow	15	28	27-Apr	24-May	6	24-May
Lincoln's Sparrow	19	107	26-Apr	1-Jun	11	24/29 May
Fox Sparrow	9	15	26-Apr	19-May	3	10/16 May
White-crowned Sparrow	17	48	26-Apr	21-May	7	30-Apr
Golden-crowned Sparrow	7	9	26-Apr	19-May	2	26/27 Apr
Slate-colored Junco	25	145	26-Apr	1-Jun	20	1-May
Red-winged Blackbird	16	35	10-May	1-Jun	3	18-May
Rusty Blackbird	18	71	1-May	31-May	9	3-May
Purple Finch	6	7	1-May	24-May	2	1-May
Red Crossbill	1	1	15-May	-	1	15-May
White-winged Crossbill	4	16	26-Apr	18-May	5	26/27 Apr
Common Redpoll	1	2	3-May	-	2	3-May