

Albert Creek Bird Observatory Final Report 2016



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Society of Yukon Bird Observatories
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The 2016 operation of the Albert Creek Bird Observatory was made possible due to support and financial contributions from the following organizations.



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Cover Photo: male Tennessee Warbler (Photo: Jukka Jantunen)

The Albert Creek Bird Observatory 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

During 2014, the Yukon Bird Observatories (Teslin Lake and Albert Creek) were granted full membership status to the Canadian Migration Monitoring Network (CMMN). The Yukon Bird Observatories are the northernmost stations and are the only stations located within the core of Canada's western Boreal Forest.

The Albert Creek Bird Observatory completed its sixteenth consecutive year of spring migration monitoring in 2016 and operated for a total of 35 field days between May 1 and June 7 and standardized mist netting occurred on 25 days during this time period. During 2016, the observatory followed the same protocols used since 2004. Operations between 2001 and 2004 were variable and are considered non-standard due to changes in mist net location and variable sampling effort during site testing

Standard methods to mist net, handle, band and record information from captured birds were followed. A total of 1,260 birds of 45 species were captured during 3,518 net hours (35.8 birds/100 net hours). White-crowned Sparrow, Northern Waterthrush, Myrtle Warbler, Wilson's Warbler and Orange-crowned Warbler were the five most common species banded, accounting for 69% of all individuals banded.

Aside from standardized banding, observations of birds within the count area were also collected. Of particular interest are the species often referred to as 'southeast Yukon specialties'; these species are at the northwestern extent of their breeding range and are not found regularly to the west of the observatory. Such species encountered at the observatory during 2016 included: Magnolia Warbler, Swamp Sparrow, White-throated Sparrow and Western Tanager.

Noteworthy results from 2016 included:

- The number of birds banded was the lowest recorded to date since the observatory began full scale operation.
- Species banded in particularly high numbers included White-crowned Sparrow and Purple Finch whereas Wilson's Warbler and Blackpoll Warbler were banded in notably low numbers.
- No new species were banded or observed at the observatory this year.
- Since 2001, a total of 50,369 birds of 92 species have been banded at the observatory and 173 species have been observed.
- A total of 12 volunteers spent a total of 361.5 hours at the observatory and a total of 23 individuals visited the observatory totaling 58.8 visitor hours.

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1.0 Introduction

This report describes methods and results of work done at the Albert Creek Bird Observatory from May 1 to June 7, 2016, the fifteenth year of spring migration monitoring at the site. Activities during 2016 mirrored those of previous years and no new activities were conducted at the observatory; however, the station began operation 7 to 10 days later than normal due to personnel and financial constraints.

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

1.1 Background

The observatory 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 from across Canada who collect standardized bird monitoring data and collaborate on research projects. The Yukon Bird Observatories are the furthest north CMMN stations and are the only ones located within the core of Canada's western Boreal Forest.

Many of the birds banded and observed at Albert Creek 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 Liard 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. The observatory serves as a highly valuable research and monitoring project to better understand the distribution of the Yukon's bird species, many of which are considered uncommon or rare. Over the long term, the data collected at the observatory will facilitate trend analysis for a number of species. Such information will be valuable for conservation and monitoring of bird populations not only in the Yukon, but North America as a whole. In addition to monitoring bird populations, the observatory collects a substantial amount of data on each bird banded. Information such as age, sex, measurements (wing, tail, etc.) and molt timing continue to add to the knowledge base of such information across North America.

The observatory plays a role in education as a place where the public, volunteers and students can take part in a unique, community based research project. Numerous people visit the observatory on an annual basis and the field station has become a valuable training opportunity for individuals interested in learning about ornithological research and monitoring methods.

1.2 Goals of the Albert Creek Bird Observatory

The goals of the Albert Creek Bird Observatory are to:

- Gather baseline information on birds and bird migration in the Watson Lake area.
- Collect data to facilitate the long term monitoring (*i.e.* trend analysis) of birds in the southeast Yukon.
- Conduct and participate in specific studies such as colour banding and feather collecting for various studies.
- Provide a setting for the public including school groups to learn about birds and bird migration.
- Provide employment and training opportunities for students and volunteers.
- Provide a unique tourist attraction for the community of Watson Lake.

1.3 Objectives of the 2016 Season

The objectives of the 2016 field season at the Albert Creek Bird Observatory were to:

- Continue the spring migration monitoring work using previously established protocols,
- Collect an additional year of bird monitoring data to be used for future trend analysis, and,
- Compare 2016 bird migration results to the previous 6 years of similarly collected data.

1.4 Acknowledgements

The 2016 operation of the Albert Creek Bird Observatory would not have been possible without financial assistance from the following organizations/groups: Environment Canada (Canadian Wildlife Service), Environment Yukon, Yukon Bird Club, EDI Environmental Dynamics Inc. and the Friends of Albert Creek Society.

Jukka Jantunen's excellent bird identification skills ensured high quality data collection, particularly when documenting rare and unusual species. Jukka and Ted Murphy-Kelly shared the Bander in Charge duties at the observatory. Jim Hawkings provided editorial comments on the draft version of this report. Susan and Barry Drury generously provided accommodations for the Bander in Charge and volunteers. Long term volunteer Alex Roberts and intern Tory Hartley-Cox spent much of the spring season at the observatory and contributed significantly to the day-to-day operations.

We appreciate the help of the following volunteers:

- Over 15 days – Tory Hartley-Cox, Alex Roberts
- 10 to 15 days – Julie Bauer
- 1 to 5 days – Hilary Cooke, Cameron Eckert, Susan Drury, Jim Hawkings, Beth Hawkings, Lila Tauzer, Mary Whitley, Gerry Whitley and Boris Dobrowsky.

2.0 Methods

2.1 Study Site

The bird observatory is located along Albert Creek in the Liard River Valley, 15 km west of the community of Watson Lake in the southeast region of the Yukon Territory. The site is located on the Rancheria Loop Road near the Albert Creek Subdivision (Upper Liard) and is 1.4 km north of Alaska Highway. The observatory is located on the margin of a large wetland complex locally known as Moon Lake and is at the southern extent of the Tintina Trench, a prominent geological feature and a known bird migration corridor which bisects the Yukon in a northwest/southeast direction. The site falls within Liard Basin Ecozone (Boreal Cordillera Ecozone. (Smith et al. 2004)¹.

The majority of the site is composed of a regenerating forest with the marsh being the defining feature of the study site. The area is dominated by willow (*Salix* spp.), alder (*Alnus* spp.) and regenerating white birch (*Betula papyrifera*) with some mature white spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*) scattered throughout. The under-story vegetation within the regenerating portion of the study site consists primarily of red clover (*Trifolium pratense*), fireweed (*Epilobium augustifolium*), yarrow (*Achillea millefolium*), red raspberry (*Rubus idaeus*), prickly rose (*Rosa acicularis*) as well as various grass species (*Poa* spp). Within the stands of mature white spruce, the under-story is dominated by various bryophytes and cranberry (*Vaccinium vitis-idaea*) with willow, alder and red osier dogwood (*Cornus stolonifera*) scattered throughout.

2.2 General Methods

The methods for the operation of the bird observatory follow the Albert Creek Bird Observatory Field Protocol and Manual². A brief summary of the field protocol is described in the following sections; however, for a detailed description refer to the publications page of the Society of Yukon Bird Observatories website (www.yukonbirdobservatories.org).

All monitoring activities at the observatory can be separated into standardized and non-standardized methods. To facilitate long term analysis of the observatory's data, the standardized data is collected in the same format year after year. Non-standardized activities may include operating species-specific mist nets within the count area or the collection of banding/observation data outside of the standard count period.

¹ Smith, C.A.S., Meikle, J.C., and Roots, C.F. (editors), 2004. Ecoregions of the Yukon Territory: Biophysical properties of Yukon landscapes. Agriculture and Agri-Food Canada, PARC Technical Bulletin No. 04-01, Summerland, British Columbia, 313 p.

² Schonewille, B., T. Murphy-Kelly and J. Jantunen. 2014. Albert Creek Bird Observatory (ACBO) Field Protocol (version 3). Society of Yukon Bird Observatories.

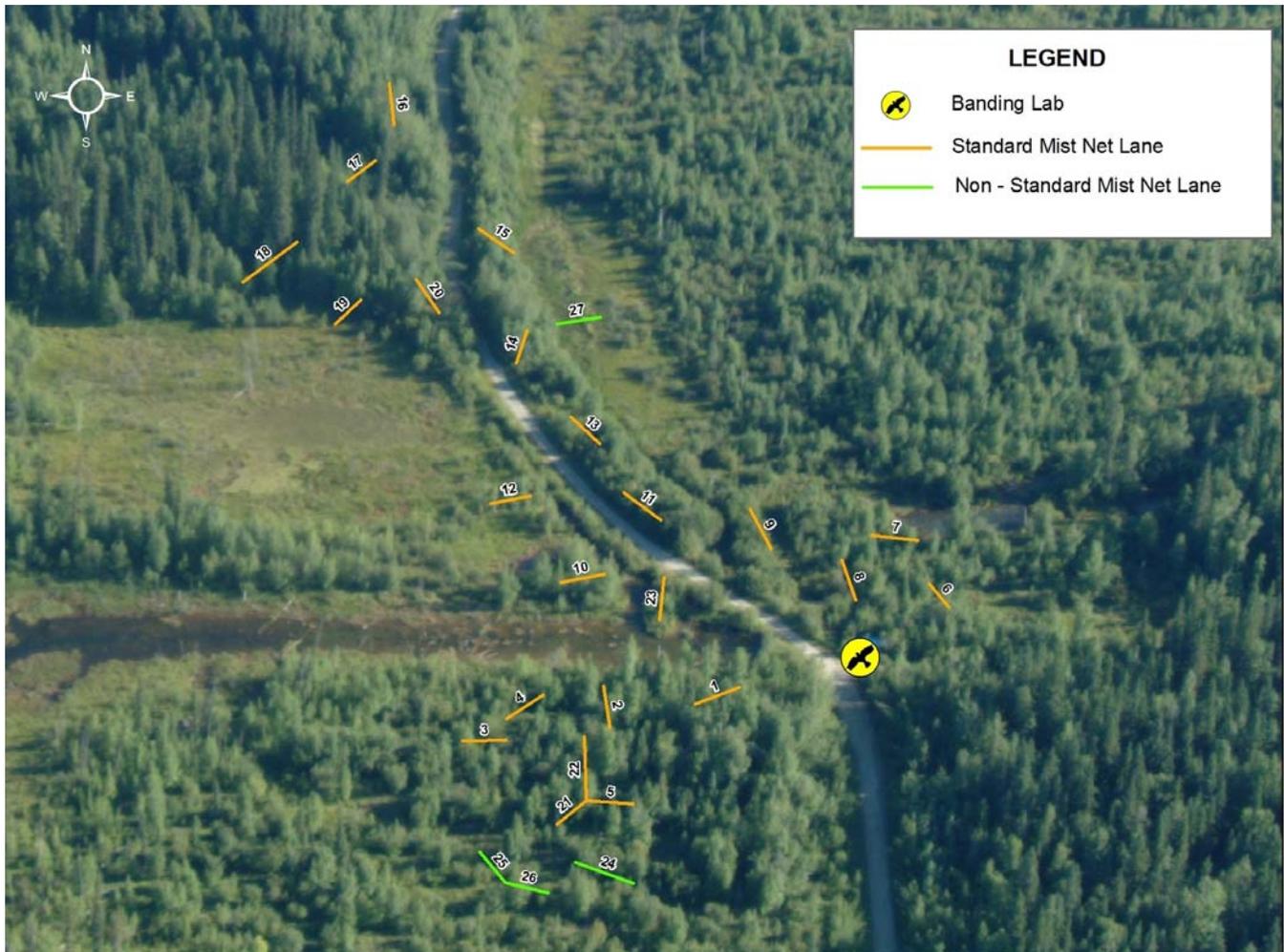


Figure 1. Overview of the Albert Creek Bird Observatory (60.06181 °N, -128.91653 °W). The numbered lines are mist nets, each 12 m long with the exception of nets 18 and 22 which were 18 m in length. The road passing through the image is the Rancheria Loop Road.

For every species observed, estimated totals are calculated for every day of operation using the following categories;

- Band: new birds banded
- Recaptures: previously banded birds, not included if recaptured on the day they were banded.
- Other Visual Migrants: birds in obvious migration flight observed incidentally
- Census: birds observed while on census only
- Observed: all other bird observations including incidental observations.

Using the categories outlined above, the Bander-In-Charge estimates the total number of birds observed within/passing through the count area within the standard count period on a daily basis. Using only the standard count period data, this number represents the “Daily Estimated Total – DET” and when the non-standard data is included, this number represents the “Daily Species Total – DST”.

2.3 Mist Netting

The primary method of monitoring the movement of birds at the study site is the use of mist nets for the purpose of capturing and banding birds. The observatory operates with 23 standard mist nets and one non-standard mist net (Figure 1). Non-standard nets used in 2016 were limited to net 27 which was used to target Rusty Blackbirds and other marsh-oriented birds (shorebirds, ducks) not typically captured in the standard nets. All nets are 30 mm mesh and 12 m in length, with the exception of nets 18 and 22 which are 18 m in length. The standard mist netting effort begins at official sunrise and continues for 6 hours. The full mist netting effort is achieved only on days when adequate personnel are present onsite and weather conditions are favorable. If this is not possible, the number of nets operated is reduced rather than the duration of effort.

2.4 Census

To supplement the banding data, five short census “legs” are surveyed on a daily basis as personnel allow. Many other observatories operate a longer (1 hour) census through the count area; however, this is not possible at Albert Creek due to inconsistent numbers of qualified observers on site. Census legs are predefined routes which are followed by a single observer to record bird observations independent from the mist netting captures and incidental observations. The short census legs allow for a single observer to census birds without committing a full hour to this activity. On days when bird captures are relatively low and/or adequate personnel are onsite, these census legs can be surveyed in combination with the mist net checks.

2.5 Incidental Observations

Incidental observations are collected on a continuous basis at the observatory. For example, birds observed while conducting mist net checks would be considered incidental observations. Any birds in obvious migration flight (flying over the site) are recorded as ‘other visual migrants’ on the daily log sheets.

2.6 Public Engagement

To attract members of the public to the observatory, we put up posters at the Watson Lake Visitor Centre and the community library. We also advertised the observatory through digital media including the Yukon Bird Observatories blog, Facebook page, and website.

3.0 Results & Discussion

3.1 Station Operation

The 2016 spring season included a total of 35 field days between May 1 and June 7 and standardized mist netting occurred on 25 days during this time period. A total of 1,260 birds of 45 species were banded and 105 species were observed (Table 1, Table 2). The all-time total number of birds banded at Albert Creek Bird Observatory is now 50,369 birds of 92 species, and 173 species have been observed (Appendix A); no new species were banded or observed during 2016.

Table 1. Summary statistics for the 2016 spring season.

Week	Date	Days Operated ^A	Birds Banded				Total Species Observed
			#	Species	Net Hours	#/100 Net Hours	
1	May 1 - 7	7	629	22	480.75	130.84	58
2	May 8 – 14	6	301	28	732.00	41.12	69
3	May 15 – 21	7	121	22	1,050.00	11.52	82
4	May 22 - 28	6	109	18	649.25	16.79	71
5	May 29 – June 4	6	91	15	420.00	21.67	74
6	June 5 - 11	3	9	5	186.00	4.84	66
ALL		35	1,260	45	3,518.00	35.82	105

^A Requires a minimum of 3 hours onsite with full estimated totals recorded (does not require mist netting if weather conditions are adverse).

Table 2. Birds banded during the 2016 spring season.

Common Name	Scientific Name	# Banded	# Banded / 1000 Net Hours
Sharp-shinned Hawk	<i>Accipiter striatus</i>	2	0.57
Solitary Sandpiper	<i>Tringa solitaria</i>	2	0.57
Wilson's Snipe	<i>Gallinago delicata</i>	1	0.28
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	11	3.13
Hairy Woodpecker	<i>Picoides villosus</i>	1	0.28
Downy Woodpecker	<i>Picoides pubescens</i>	1	0.28
Alder Flycatcher	<i>Empidonax alnorum</i>	9	2.56
Least Flycatcher	<i>Empidonax minimus</i>	1	0.28
Hammond's Flycatcher	<i>Empidonax hammondii</i>	2	0.57
Warbling Vireo	<i>Vireo gilvus</i>	4	1.14
Gray Jay	<i>Perisoreus canadensis</i>	2	0.57
Tree Swallow	<i>Tachycineta bicolor</i>	2	0.57
Black-capped Chickadee	<i>Poecile atricapillus</i>	4	1.14
Boreal Chickadee	<i>Poecile hudsonicus</i>	2	0.57
Ruby-crowned Kinglet	<i>Regulus calendula</i>	3	0.85
Gray-cheeked Thrush	<i>Catharus minimus</i>	9	2.56
Swainson's Thrush	<i>Catharus ustulatus</i>	24	6.82
Hermit Thrush	<i>Catharus guttatus</i>	1	0.28
American Robin	<i>Turdus migratorius</i>	11	3.13
Varied Thrush	<i>Ixoreus naevius</i>	2	0.57
Bohemian Waxwing	<i>Bombycilla garrulus</i>	1	0.28
Lapland Longspur	<i>Calcarius lapponicus</i>	1	0.28
Northern Waterthrush	<i>Parkesia noveboracensis</i>	107	30.42
Tennessee Warbler	<i>Oreothlypis peregrina</i>	47	13.36
Orange-crowned Warbler	<i>Oreothlypis celata</i>	65	18.48

Common Name	Scientific Name	# Banded	# Banded / 1000 Net Hours
Common Yellowthroat	<i>Geothlypis trichas</i>	13	3.70
American Redstart	<i>Setophaga ruticilla</i>	4	1.14
Yellow Warbler	<i>Setophaga petechia</i>	21	5.97
Blackpoll Warbler	<i>Setophaga striata</i>	6	1.71
Myrtle Warbler	<i>Setophaga coronata</i>	101	28.71
Wilson’s Warbler	<i>Cardellina pusilla</i>	88	25.01
American Tree Sparrow	<i>Spizelloides arborea</i>	32	9.10
Savannah Sparrow	<i>Passerculus sandwichensis</i>	20	5.69
Fox Sparrow	<i>Passerella iliaca</i>	7	1.99
Lincoln’s Sparrow	<i>Melospiza lincolnii</i>	31	8.81
Swamp Sparrow	<i>Melospiza georgiana</i>	4	1.14
White-throated Sparrow	<i>Zonotrichia albicollis</i>	12	3.41
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	512	145.54
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	2	0.57
Slate-colored Junco	<i>Junco hyemalis</i>	44	12.51
Western Tanager	<i>Piranga ludoviciana</i>	2	0.57
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	3	0.85
Rusty Blackbird	<i>Euphagus carolinus</i>	1	0.28
Purple Finch	<i>Carpodacus purpureus</i>	29	8.24
Common Redpoll	<i>Acanthis flammea</i>	12	3.41
TOTAL		1,260	358.16

Weather conditions largely influence the activities at the observatory (Table 3). Windy conditions and periods of prolonged precipitation reduce the mist netting effort. The spring of 2016 saw less wind and precipitations compared to previous years (Table 4). Air temperatures were also warmer than normal; however, this was likely biased by the later station opening date during 2016 compared to previous years.

Table 3. Summary of weather conditions during the 2016 spring season.

Weather Parameter	Week					
	1	2	3	4	5	6
Average Opening Temperature	6.3	1.3	1.6	6.4	4.5	4.3
Average Closing Temperature	12.9	15.7	15.0	11.0	13.0	18.0
Average Opening Wind	0	0	0	0	0.2	0
Average Closing Wind	1.2	0.6	0.2	0.1	1.3	2.0
Days with Rain	4	2	0	4	3	1
Days with Snow	0	0	0	0	0	0

Table 4. Comparison of weather conditions during 2016 as compared to previous years (spring season only).

Weather Parameter	Annual Average							2010-2015 Average
	2010	2011	2012	2013	2014	2015	2016	
Average Opening Temperature (°C)	0.8	1.9	1.4	0.5	0.5	1.9	4.1	1.2
Average Closing Temperature (°C)	13.7	12.4	11.2	10.7	12.7	15.0	13.3	12.6
Average Opening Wind (Beaufort scale)	0.1	0.3	0.1	0.2	0.0	0.2	0.0	0.2
Average Closing Wind (Beaufort scale)	1.1	1.2	0.9	1.1	0.5	0.6	0.8	0.9
Days with Rain	3	9	11	8	8	3	14	7
Days with Snow	2	1	3	6	1	0	0	2

3.2 Patterns in Captures

Each component of the 2015 data is summarized and presented in the following subsections and a summary account of the 6 estimated total data is shown in Appendix B. Unless otherwise stated, the results presented in this report combine and summarize both standard and non-standardized data. 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 observed within or passing through the count area on each day operation.

Among the top 10 species banded during 2016, three were captured in above average numbers and five in below average numbers (Table 5). Among the species banded in above average numbers, White-crowned Sparrow was the most notable with 512 banded compared to an average of 182 from 2007-2015. The most notable species banded in below average numbers was Myrtle Warbler with 101 banded compared to the 2007 to 2015 average of 332. Capture rates of this species are often highly variable between years. For example, the record season high banding total is 571 (2012) compared to the record low of 61 during 2013.

Table 5. The 10 most common bird species banded in 2016 as compared to 2010-2015 and the long term 2007 to 2015 average (numbers in brackets indicate the annual ranking in birds banded. The prefix “T” indicates a tied in annual banding totals).

Species	2016	2015	2014	2013	2012	2011	2010	2007 – 2015 Average
White-crowned Sparrow	512 (1)	224 (4)	6 (T23)	394 (1)	263 (6)	68 (11)	262 (2)	182
Northern Waterthrush	107 (2)	147 (7)	118 (5)	106 (5)	166 (10)	81 (9)	65 (9)	108
Myrtle Warbler	101 (3)	257 (2)	148 (3)	61 (11)	571 (1)	217 (2)	776 (1)	342
Wilson’s Warbler	88 (4)	266 (1)	273 (1)	228 (3)	259 (7)	125 (4)	249 (4)	247
Orange-crowned Warbler	65 (5)	162 (6)	125 (4)	78 (8)	288 (4)	75 (10)	177 (5)	185
Tennessee Warbler	47 (6)	49 (17)	47 (6)	19 (18)	78 (17)	23 (17)	26 (17)	32
Slate-colored Junco	44 (7)	100 (8)	13 (T17)	102 (6)	263 (T5)	109 (6)	57 (13)	116
American Tree Sparrow	32 (8)	196 (5)	13 (T17)	61 (T12)	571 (T1)	63 (13)	136 (6)	165
Lincoln’s Sparrow	31 (9)	94 (9)	16 (T14)	101 (7)	193 (8)	66 (12)	60 (11)	79
Purple Finch	29 (10)	8 (T25)	5 (T28)	0 (-)	3 (T35)	8 (T23)	14 (19)	6

The peak period for mist netting occurred during weeks 1-2 (May 1-14; Figure 2) when the captures were dominated by White-crowned Sparrow and to a lesser extent, Slate-colored Junco and Myrtle Warbler. The number of birds banded during mid to late May were very low during 2016 as this is typically the time period when high numbers of warblers (Wilson’s, Blackpoll, Orange-crowned and Yellow) are typically banded. It is unknown why such low numbers of these species were banded, although it was likely due to weather patterns.

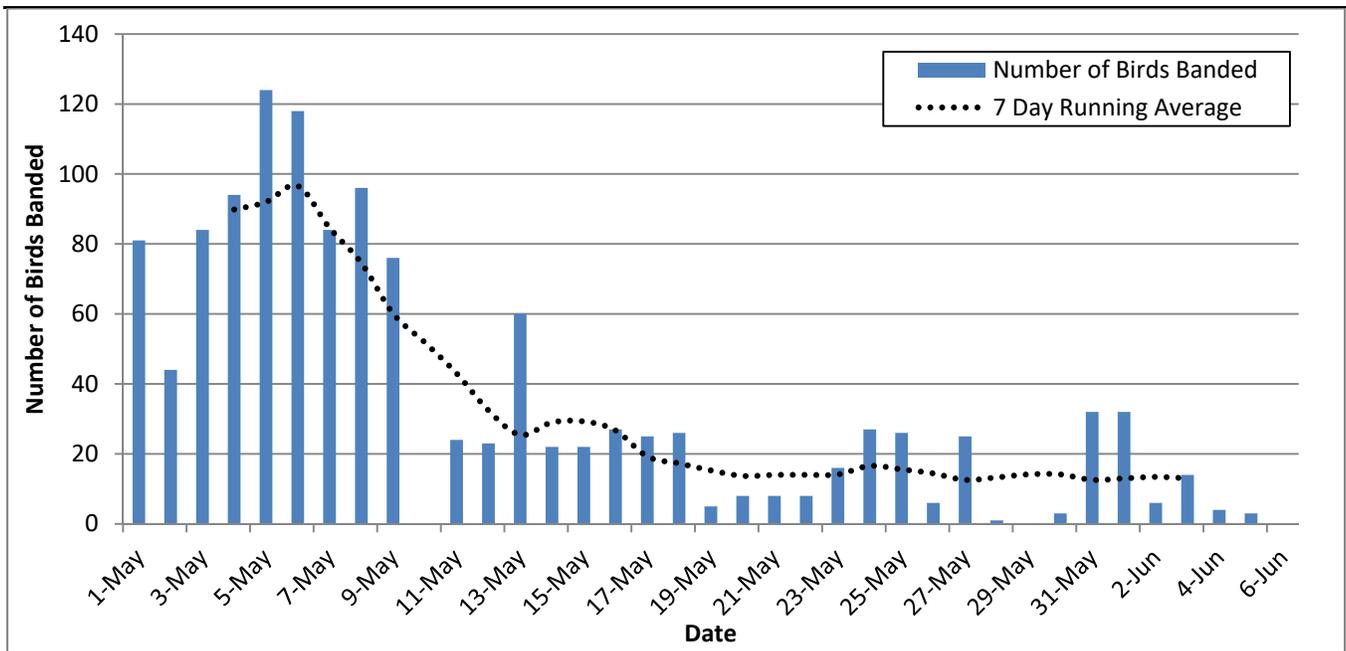


Figure 2. Summary of birds banded per day during the spring of 2016.

The overall number of birds banded during 2016 was the lowest to date since the observatory began full scale spring operation during 2004 (Figure 3). The overall number of birds banded per 100 net hours (35.8) was considerably lower than the long term average of 53.5 but still higher than the record low of 29.3 during 2014.

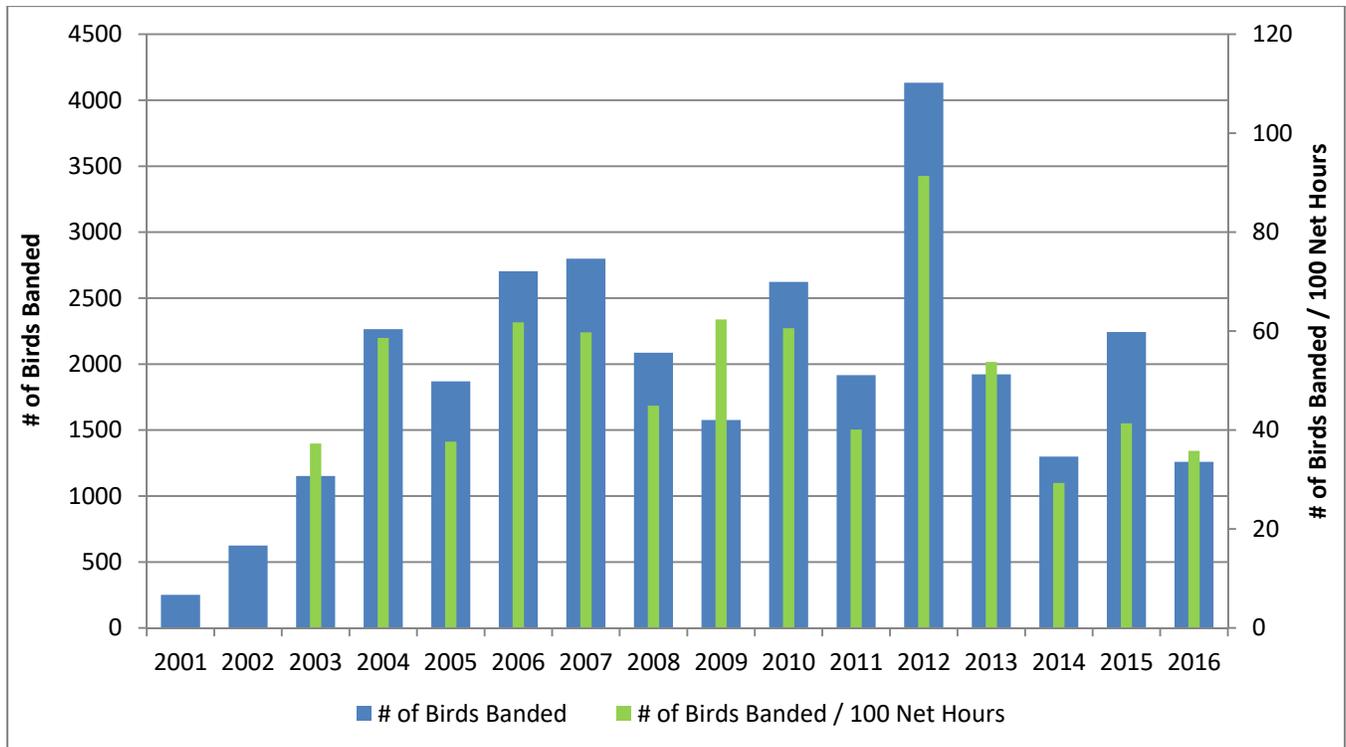


Figure 3. Summary of birds banded during the spring from 2001 to 2016.

The high level of consistency in effort across all standard mist nets (Figure 4) demonstrates adherence to the observatory’s monitoring protocol, particularly nets 1 through 9 and 21/22/23 which are the core nets. Nets 22 and 18 are 18 m nets and therefore their effort is multiplied by 1.5 to be consistent with the effort of the other nets which are 12 m in length. Also note that net 27 is considered non-standard and is used primarily to target species not frequently captured such as waterfowl, shorebirds and blackbirds.

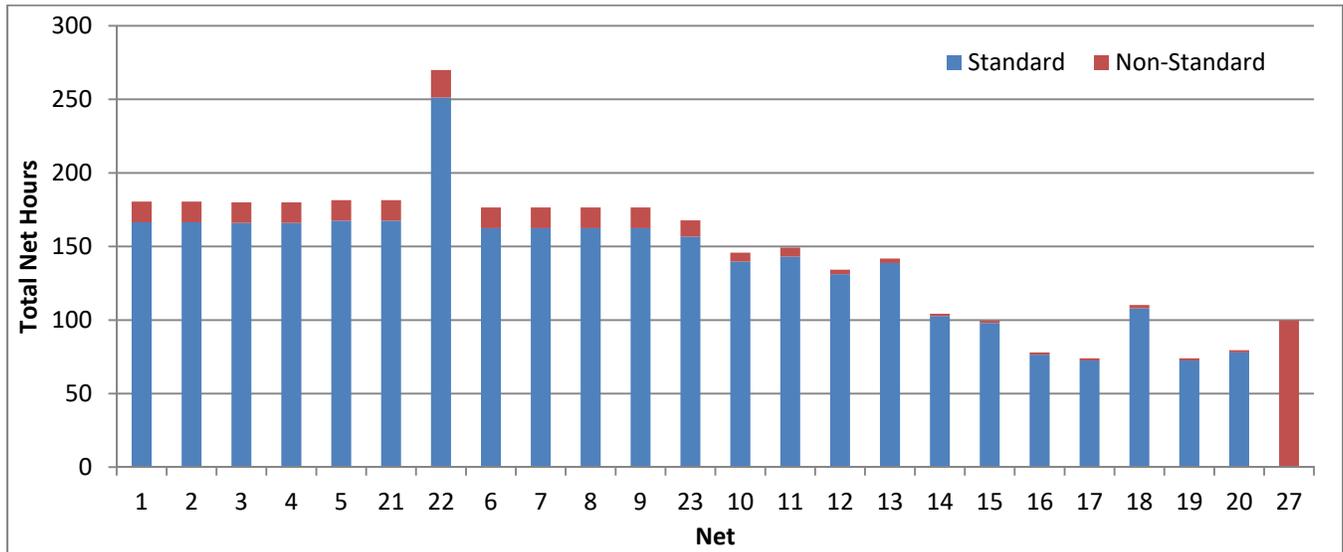


Figure 4. Summary of hours per mist net during the spring of 2016 (all nets 12 m long except 18 and 22 which are 18 m).

Standard mist nets with the highest productivity were those within and adjacent to marsh habitats such as net 1, 6 8, 9 and 23 (Figure 5). This is likely due to the edge habitats present in these areas which provide feeding opportunities and movement corridors within the marsh. Mist nets are placed in various habitats to sample different species of birds despite lower overall capture rates; examples include nets 16 through 20 which are located in a mature forest.

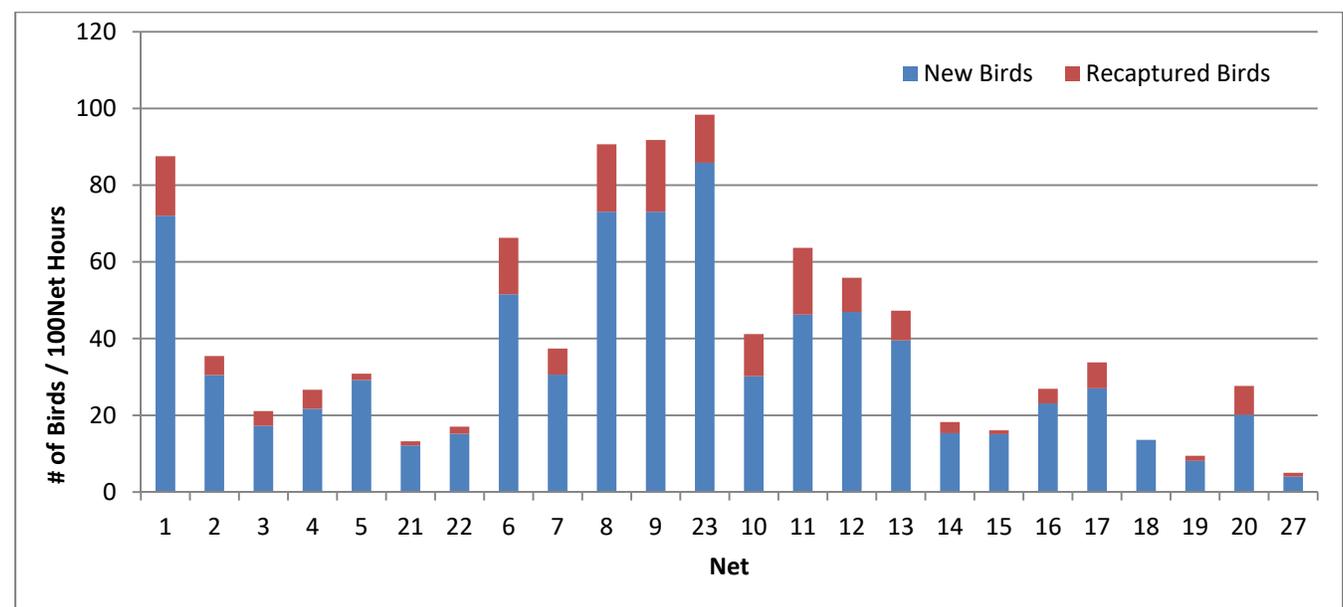


Figure 5. Number of birds banded per mist net during the spring of 2016.

3.3 Band Repeats, Returns & Recoveries

The proportion of band repeats during 2016 was 14.3% across all species combined (Table 6). The proportion of band repeats during 2016 was higher as compared to previous years which has typically been in the range of 8-10%.

Table 6. Summary of band repeats during the spring 2016 season.

Species	# of Individuals Recaptured	Proportion of Original Individuals Banded (%)
Yellow-bellied Sapsucker	3	27.3
Gray Jay	1	50.0
Black-capped Chickadee	1	25.0
Boreal Chickadee	2	50.0
American Robin	4	36.4
Northern Waterthrush	10	9.3
Tennessee Warbler	10	21.3
Common Yellowthroat	3	23.1
Wilson's Warbler	1	1.1
American Tree Sparrow	4	12.5
Lincoln's Sparrow	4	12.9
Fox Sparrow	2	28.6
White-crowned Sparrow	124	24.2
White-throated Sparrow	1	8.3
Golden-crowned Sparrow	1	50.0
Slate-colored Junco	6	13.6
Purple Finch	3	10.3
ALL SPECIES	180	14.3

Band returns (individuals banded at the site in previous years) typically represent individuals that breed within the study site as the likelihood of re-trapping migrants is relatively low. During 2016, the observatory had 17 returns of birds banded in previous years representing 10 species (Table 7). The oldest band recovery during 2016 was a Swainson's Thrush banded as a hatch year bird during August 2012. Other relatively old band recoveries included single Northern Waterthrush and White-crowned Sparrow banded during 2014.

Table 7. Summary of band returns during the spring 2016 season.

Species	Band Number	Banded		Recaptured
		Date	Age – Sex ¹	Date
Gray Jay	1352-02126	23 May 2015	AHY – F	14 May 2016
Black-capped Chickadee	2740-19466	18 May 2015	ASY – U	14 May 2016
Boreal Chickadee	2740-18838	4 May 2015	AHY – U	17 May 2016
Swainson’s Thrush	2261-80174	24 Aug 2012	HY – U	1 Jun 2016
Swainson’s Thrush	2261-80647	29 May 2015	ASY – M	1 Jun 2016
Swainson’s Thrush	2261-80653	1 Jun 2015	ASY – M	2 Jun 2016
American Robin	1352-02103	13 May 2015	ASY – F	12 May 2016
American Robin	1352-02119	21 May 2015	ASY – M	5 May 2016
American Robin	1352-02122	22 May 2015	ASY – M	6 May 2016
American Robin	1352-02123	22 May 2015	SY – F	7 Jun 2016
Northern Waterthrush	2730-84664	25 May 2012	ASY – U	25 May 2016
Northern Waterthrush	2740-17419	21 May 2013	SY – U	18 May 2016
Northern Waterthrush	2740-19477	19 May 2015	ASY – U	19 May 2016
Lincoln’s Sparrow	2511-89161	17 May 2015	AHY – U	15 May 2016
White-crowned Sparrow	2261-80476	7 May 2013	SY – U	7 May 2016
Purple Finch	2511-89006	29 May 2014	ASY – F	9 May 2016
Purple Finch	2511-89159	16 May 2015	ASY – M	9 May 2016

¹ HY – hatch year, AHY – after hatch year, ASY – after second year, TY – third year; M – male, F – female, U – unknown.

Foreign band recoveries are a very infrequent event and to date there have been four foreign band recoveries of birds banded at Albert Creek;

- Hatch year male Yellow-rumped Warbler banded on July 26, 2010 and recovered near Colfax, Louisiana on November 2, 2010.
- After hatch year male Yellow-rumped Warbler banded on May 1, 2005 and recovered near Mehanga, Minnesota on April 27, 2006.
- Hatch year Pine Siskin banded on August 22, 2011 and recovered in Bottrel, Alberta on May 19, 2012.
- Hatch year Pine Siskin banded on July 17, 2010 and recovered near Portland, Oregon on April 4, 2012.

3.5 Interesting & Notable Captures / Observations

The vast majority of birds banded and observed at Albert Creek are species which are common and widespread north and west of the study site. As the observatory operates on a daily basis during the migration season, there are often a number of interesting and notable species captured and/or observed at the site. The following section summarizes these occurrences during 2016 as well as the occurrence of the species not regularly found farther west and north in the Yukon than Albert Creek.

Eurasian Collared Dove

Originally from Europe, this species was first introduced to the New World in the Bahamas during the 1970s. Since then the species has spread rapidly throughout much of North America, primarily due to

the presence of human altered habitats. This species was first documented in the Yukon at Haines Junction during 2006. Since then, it has become more common and is now reported annually and considered rare. The species was first observed at Albert Creek during 2013 when a single bird was observed on May 28. There were no observations during 2014 or 2015; however, a single individual was observed during 2016 (May 13).

Barred Owl

The Yukon's first Barred Owl was documented at Albert Creek during the spring season of 2010 when it was heard on 20 days between April 20 and June 4 and also on August 26. In 2012, a singing individual was heard on 31 days from April 23 to June 5 and also on one day during the fall (August 28). Once again during 2013, a singing individual was observed on 19 days from May 10 to 29. As incidental observations, two Barred Owls were heard calling back and forth at Albert Creek on August 6 by bird observatory personnel and again on September 1. During 2014, a single bird was heard on 33 days between April 25 and June 7 and once again during 2015, a single individual was observed on 15 days between April 22 and June 3. Two individuals were detected on May 27 suggesting that there is likely a breeding pair present at the site. During 2016, up to two individuals were detected on 25 days between May 1 and June 7, thus indicating that there is likely a breeding pair at the site.

American Crow

American Crow appears to be increasing in numbers in the Yukon and is now regularly encountered at a number of locations near Albert Creek, including the town of Watson Lake, Watson Lake airport and Upper Liard. In 2016, this species was encountered on 12 days from May 3 to June 3 with one to two birds observed on each day.

Magnolia Warbler

Magnolia Warbler is typically restricted to the southeast portion of the Yukon only and Albert Creek is located near the western extent of the breeding range in the territory. Although it has been banded on a small number of occasions at the Teslin Lake Bird Observatory, it is much more common towards the Watson Lake area and further east. Prior to 2012 when Albert Creek operated annually during the fall migration season, this species was banded much more frequently as many of the local breeders likely arrive after the spring monitoring season is finished in early June. For example, the all-time banding total for this species at Albert Creek (back to 2001) is 316 individuals of which only 24 have been banded during the spring. None were banded during 2016, although one individual was observed in the count area on June 5.

Swamp Sparrow

In most of the Yukon, Swamp Sparrow is rare; however, it is a regular breeding species in the southeast portion of the territory (and a highly probable breeder at Albert Creek). In the spring of 2016, a total of 4 individuals were banded between May 8 and 15 with single birds on all days. When birds banded

and observations are combined, this species was encountered on 32 days from May 5 to June 7 with a high count of 4 birds on June 1. Of the 256 individuals banded to date, 80% have been banded in fall. When the observatory used to operate during the fall migration season, higher numbers of this species were banded annually due to the relatively high number of juveniles banded. The earliest and latest records of this species at the observatory to date are April 27 (2005) and September 21 (2006).

White-throated Sparrow

This species is observed infrequently in most of the Yukon, but is a regular breeder in the southeast Yukon as far west as the Rancheria area. In 2016, a total of 12 birds were banded and when this data is combined with observation data, a total of 59 bird days were recorded and the species was encountered on 24 days from May 12 to June 7 with a high count of 5 on May 18 and 19. Of the 417 individuals banded at Albert Creek to date, 45% have been banded in spring. The earliest and latest records of this species are May 1 (2010) and September 21 (2008).

Western Tanager

Western Tanager is another species with a restricted Yukon range and which is a likely local breeder at Albert Creek. In the spring of 2016, two individuals were banded including one on May 16 and one on May 22. The species was detected on 24 days from May 12 to June 7 with a high count of 3 individuals on June 1. To date, a total of 38 individuals have been banded with 52% during the fall. The earliest and latest records of this species at the observatory are May 11 (2014) and August 31 (2005).

3.6 *Rusty Blackbirds*

As part of an ongoing project in co-operation the other Yukon Bird Observatories field stations (Teslin Lake, McIntyre Marsh), all Rusty Blackbirds captured are fitted with a color band (light green) in addition to the regular numbered leg band. As each Rusty Blackbird study site uses a different color, the color bands help to identify the origin of a re-sighted individual without the need to recapture it. Only a single individual was banded during 2016; however, the early spring combined with the later than average season start date likely resulted in the majority of the migration being missed. When the 2016 banding and observation data are combined, a total of 56 bird days were recorded for Rusty Blackbird and the species was encountered on 30 days from May 1 to June 7 with a high count of 4 on May 1 and 2. These relatively low numbers of observations also support the conclusion that the bulk of the migrants of this species were missed during 2016 and it is likely that the individuals observed were local breeders.

3.7 Visitors and Volunteers

Once again the observatory hosted numerous visitors and volunteers during 2016. On many days of operation, volunteer personnel were available onsite to provide valuable assistance with the observatory's operation. Long term volunteer Alex Roberts and intern Tory Hartley-Cox spent the majority of the season at the observatory and contributed considerably to the success of the operation during 2016. Table 8 and Table 9 summarize the number of hours spent at the observatory by visitors, volunteers and paid workers. Visitors were defined as those people who visited the observatory (often for a short time) and did not take part in activities at the observatory. Volunteers were those people who took part in the operation of the observatory (often extensively) without being financially compensated. Paid hours were spent by individuals being paid to be at the observatory. This category includes the Banders-In-Charge (Jukka Jantunen and Ted Murphy-Kelly). Note that the values shown for "paid hours" only include those spent at the observatory and do not include the extensive amount of travel to and from the site, data entry, data analysis, report writing and other communication of the observatory's results. The Watson Lake Visitor's Center and public library played a key role in directing visitors to the observatory, particularly those individuals travelling the Alaska Highway.

Table 8. Summary of paid and volunteer hours at the observatory during 2016.

Season	Paid		Volunteer	
	# of Individuals	Hours	# of Individuals	Hours
Spring	2	307.0	12	361.25

Table 9. Summary of visitor hours at the observatory during the spring 2016 season.

Season	Locals		Yukon		Canada		USA		TOTAL	
	#	Hours	#	Hours	#	Hours	#	Hours	#	Hours
Spring	4	5.75	11	29.5	4	2.0	4	21.5	23	58.75

4.0 Conclusion

The results from this season's operation continue to add to the knowledge of numerous aspects of bird biology in the Yukon, including: species distribution, migration timing and local productivity. The study site has proven to be a very effective location for monitoring bird migration. The primary reason for this is the proximity to the extensive Albert Creek Marsh which is a very productive stopover and breeding area for numerous bird species. The geographic location of the observatory also allows a number of species to be monitored which are at the margin of their range and cannot be found elsewhere in the Yukon. Monitoring data collected for species such as Cape May Warbler, White-throated Sparrow and Western Tanager provide information on relative species abundance near the margin of the breeding range.

In 2016, the observatory completed its sixteenth consecutive year of operation; however, the observatory's protocols were not well developed until 2003/2004. The data collected at the observatory to date have indicated a capacity to monitor bird migration during the spring and fall. The primary long term goal of the observatory is to continue migration monitoring and collect data to facilitate the calculation of long term population trends. Although a high diversity of bird species are encountered at the observatory, not all species are suitable candidates for trend analysis. This is due to inadequate sample size of less numerous species or incomplete migration season coverage. As such, the key species for monitoring are those which are relatively common and have the majority of their migration covered by the observatory's monitoring season. Data collected to date suggest that the observatory has a high potential for monitoring a variety of bird species with a primary focus on passerines. Further data collection is required; however, species trend analysis may also be possible for other groups of birds in the future including waterfowl, waterbirds, shorebirds and raptors.

The observatory has been successful in attracting members of the public from Watson Lake and elsewhere to learn about birds and bird migration. Due to the proximity to the Alaska Highway, the observatory has also been successful in attracting tourists to the site.

4.1 Recommendations

The following list summarizes a number of recommendations for the future operation of the Albert Creek Bird Observatory.

- Continue standardized monitoring to allow for the future analysis of species trends.
- Make efforts to attract additional qualified volunteers to assist with activities at the observatory.
- Make efforts to diversify the funding base for the bird observatory to ensure long term operation.

Appendix A – Species Checklist

Species	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	2014	2015	2016	TOTAL BANDED			Taxon				
	Spring	Fall	Spring	Spring	Spring	Spring	Spring	Spring	Spring	Fall	ALL	Order																								
Short-billed Dowitcher														✓		✓																		4181		
Long-billed Dowitcher									✓		✓		✓	✓	✓		✓		✓	✓	✓		✓		✓	✓	✓							4185		
Wilson's Snipe					1		✓	✓	✓	✓	✓	1	1	1	✓	✓	1	✓	✓	✓	✓	✓	1	2	✓	1	✓	2	7	4	11		4204			
Red-necked Phalarope																							✓											4241		
Spotted Sandpiper							✓	✓		✓	✓	1	1		✓	✓	✓	✓	✓	✓	✓	1	2		✓	✓	✓	✓	3	2	5		4246			
Solitary Sandpiper					1		✓	✓	3	✓	12	✓	9	2	1	✓	2	✓	2	✓	1	2	6		2	5	2	2	46	4	50		4249			
Wandering Tattler											✓		✓																					4253		
Greater Yellowlegs							✓		✓		✓	✓	✓		✓		✓		✓	✓	✓	✓			✓	✓	✓	✓						4256		
Lesser Yellowlegs							✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	1	✓	1		1			4263		
Bonaparte's Gull							✓		✓		✓		✓		✓							✓		✓		✓	✓	✓	✓					4486		
Mew Gull							✓		✓		✓		✓	✓	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓						4531		
Herring Gull							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓						4549		
Arctic Tern																				✓						✓	✓	✓	✓						4734	
Eurasian Collared Dove																											✓		✓						4995	
Great Horned Owl														✓						✓	✓	✓	✓											6556		
Northern Hawk Owl												✓	✓									✓													6640	
Barred Owl																				✓	✓			✓	✓	✓	✓	✓	✓						6843	
Short-eared Owl							✓																													6892
Boreal Owl														✓	2	1	✓			✓	2		✓									1	4	5	6918	
Northern Saw-whet Owl														✓																					6926	
Common Nighthawk								✓			✓		✓				✓	✓			✓	✓					✓	✓							7101	
Belted Kingfisher							✓	✓		✓	1	✓	1	2	✓	✓	✓	✓	✓	✓	1	4	1	1	1	✓	✓	✓	4	7	11		9517			
Yellow-bellied Sapsucker	1	1	2	1	7	8	15	21	9	14	17	18	16	16	9	10	9	5	7	16	11	9	14	4	5	18	16	11	163	123	285		10416			
Downy Woodpecker							✓					1							✓	✓		1										1	2	3	10643	
Hairy Woodpecker					1		1	✓	1	✓	✓	✓	✓	✓	✓	✓	1	✓	✓	✓	✓	✓	✓	✓	2	✓	✓	1	5			5		10661		
American Three-toed Woodpecker						2		1		✓	✓	✓	1	✓	✓	✓	✓	✓	✓	1	✓	✓	✓	✓	1	✓	✓	✓	1	4	5			10700		
Black-backed Woodpecker							1		✓					✓	✓	✓				✓							1		1	1	2				10704	
Northern Flicker (Yellow-shafted)			1				2	1	1	2	✓	1	1	1	3	1	✓	✓	✓	✓	✓	✓	✓	1	✓	1	✓	3	✓					10817		
Pileated Woodpecker							✓	✓	1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	2	3			10984		
American Kestrel							✓	✓	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1				1		11197	
Merlin							✓	✓						✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	✓						11230	
Peregrine Falcon																							✓				✓								11276	
Olive-sided Flycatcher							2		✓		5	✓	1	✓	2	✓	✓	✓	2	1	✓		4		✓	2	✓	✓	18	1	19			15401		
Western Wood-pewee					1		✓				4		✓		2	✓	✓		2	✓	1	1	✓	1	✓	4	✓	✓	14	2	16			15414		
Yellow-bellied Flycatcher			1	4			2	1	1	2			1	2		2	✓	6	✓	1	✓	6	1	1			✓							15460		
Alder Flycatcher	5	5	19	27	16	80	19	217	23	174	80	183	28	253	21	202	35	93	7	78	14	122	79	36	5	17	13	9	385	1470	1855		15462			
Least Flycatcher	1	3	5	9	3	8	✓	19	2	16	3	12	4	14	2	11	1	7	✓	15	3	44	3	9	5	3	7	1	38	167	205		15474			
Hammond's Flycatcher							2	1	2	12	14	14	8	9		2	7	2	4	1	16	6	20	12	8	5	6	6	2	73	81	154		15475		
Dusky Flycatcher										1				1	1				2			1				1	1								15477	
Say's Phoebe							✓				1		✓		✓		✓				1	✓	4		1										15519	
Eastern Kingbird																											✓									15955
Northern Shrike				1			✓					4	✓		1	1		1		✓	✓	✓			✓										18662	
Blue-headed Vireo						2		6		4	✓	2		1								1	✓		✓										18939	
Philadelphia Vireo								1								✓																				18954
Warbling Vireo	2	3	8	19	6	17	11	28	10	34	7	22	7	26	3	17	5	14	4	27	5	64	1	8	5	3	15	4	91	279	370		18955			
Red-eyed Vireo							1							✓																						18975
Gray Jay	1		4		4		1	1	1	2	✓	2	1	1	✓	✓	✓	✓	4	1	✓	1	3	2	3	1	5	2	27	10	37		19819			
Common Raven							✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						20156	
American Crow											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							20192	
Horned Lark													✓			✓																				20822
Northern Rough-winged Swallow															✓																					21089
Tree Swallow							✓	✓		✓	✓	✓	1	✓	13		✓	✓	4	✓	3	✓	7	✓	7	9	1	2	40			40		21126		

Species	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		TOTAL BANDED			Taxon
	Spring	Fall	ALL	Order																																
Violet-green Swallow							✓	✓			✓		✓		2		✓		1	✓	1	✓	✓		✓	12	✓	✓	✓		16		16	21136		
Bank Swallow													✓		✓		✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓					21157		
Barn Swallow							✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓						21203		
Cliff Swallow								✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						21294	
Black-capped Chickadee		4	4	5		3	5	12	2	13	✓	16	✓	10	✓	16	✓	8	2	6	✓	11	✓	9	✓	3	1	4	21	113	134			21514		
Boreal Chickadee		8	5	7	6	7	1	6	1	8	3	8	✓	13	3	6	✓	27	5	14	8	48	5	2	2	16	6	2	61	154	215			21546		
Red-breasted Nuthatch		3			1		✓	1		✓	✓	✓	✓	1	✓	✓		✓	✓	1	✓	2	✓	2	✓	✓	✓	✓	✓	1	10	11			21849	
Winter Wren											✓																									22131
Golden-crowned Kinglet										3				3		✓					✓	3				✓		✓				9	9			23061
Ruby-crowned Kinglet	17		20	29	24	125	51	47	18	200	246	412	75	184	88	53	✓	121	42	93	40	55	94	51	72	34	67	3	819	1370	2189			23068		
Mountain Bluebird																									✓											27338
Townsend's Solitaire													✓																							27342
Gray-cheeked Thrush			9	4	1	1	18	10	2	8	22	17	13	8	2	5	2	10	6	5		2	16	2	17	8	5	9	113	72	185			27436		
Swainson's Thrush	2	1	25	7	21	65	53	104	19	133	46	93	55	137	15	70	19	43	29	66	35	74	82	31	43	21	27	24	473	824	1297			27442		
Hermit Thrush		1	2	3	2	3	3	7	4	2	6	6	1	3	5	2	2	10	2	10	9	1	16		1	6	1	1	60	48	108			27451		
American Robin	3		6		10	3	13	6	19	1	31	2	18	2	5	1	9	✓	17	11	19	5	21	4	15	18	58	11	258	35	293			27765		
Varied Thrush				2	1	3	✓	3	2	2	3	7	✓	3	✓	5	✓	5	1	7	5	10	10	1	4	2	13	2	39	48	87			27795		
American Pipit			1				✓	2		✓	5	✓	1	✓	✓	✓	✓	1	✓	✓	3	✓	1	✓	✓	5	✓	✓	16	3	19			29190		
Bohemian Waxwing					2		✓		6	✓	9	✓	✓	✓	2		2	✓	✓	✓	1	✓	1		✓	✓	2	1	26		26			29257		
Cedar Waxwing								8						8	✓	3		1		4	1	✓		✓			✓		1	24	25			29261		
Lapland Longspur						2	✓		✓	35	✓	1	✓	2	✓	6	✓	1	✓	3		1	✓	✓	✓	1	1	1	53		53			29292		
Smith's Longspur																											✓								29297	
Snow Bunting													✓																							29300
Ovenbird					1							1					✓							1		1		2		4	1	5			29308	
Northern Waterthrush	11	3	51	22	47	33	69	95	50	157	91	97	145	248	31	195	113	202	65	248	81	191	166	93	106	118	147	107	1292	1584	2876			29314		
Black-and-white Warbler					1					1	1		1				1						1		✓		1		6	1	7				29323	
Tennessee Warbler	1	4	12	9	17	14	48	12	51	30	60	15	21	22	22	28	8	137	26	158	23	152	78	5	19	47	49	47	520	586	1106			29333		
Orange-crowned Warbler	57	12		30	137	52	286	199	105	122	214	151	251	152	339	87	170	97	177	61	75	88	288	36	78	125	162	65	2351	1087	3538			29334		
Common Yellowthroat	3	6	38	40	35	72	17	107	19	199	62	228	85	217	46	191	35	233	57	205	102	185	86	68	40	22	57	13	677	1751	2428			29334		
MacGillvray's Warbler							1															1				1			2	1	3				29365	
American Redstart		1	9	19	7	27	18	35	9	54	15	48	10	50	6	90	2	38	7	54	3	52	15	17	1	4	12	4	121	485	606			29414		
Cape May Warbler							✓			2	✓		2	3	3	2	1		✓	1	✓	1	✓		1	✓	✓		6	9	15				29416	
Magnolia Warbler	1	1	2	22	1	36	4	26	4	19	1	32	5	38	4	38	✓	27	✓	20	✓	24	2	8		✓	✓	✓	24	291	315			29438		
Bay-breasted Warbler							1	1				1	✓		✓					1									1	3	4				29440	
Yellow Warbler	6	7	84	22	65	50	61	159	33	149	313	125	261	214	208	93	96	157	65	85	334	82	485	29	23	226	56	21	2314	1172	3486			29443		
Blackpoll Warbler	3	8	8	8	22	13	22	44	17	30	62	32	57	41	88	19	65	36	62	16	121	28	107	23	5	34	8	6	682	298	980			29486		
Yellow-rumped Warbler											3				✓	1														3	1	4			29500	
Yellow-rumped Warbler (Myrtle)	73	35	9	80	143	86	268	138	91	185	364	105	113	262	434	117	505	90	776	83	217	287	571	89	61	148	257	101	4060	1557	5627			29501		
Townsend's Warbler		1				3	1			3		1	✓	1	4		✓	2	✓		✓	1	✓		✓	✓	✓		5	12	17			29536		
Wilson's Warbler	16	10	189	28	384	83	502	203	552	106	398	218	369	167	182	146	274	158	249	90	125	68	259	42	228	273	266	88	4126	1319	5445			29667		
American-tree Sparrow	6	1	9	19	24	26	172	66	175	150	196	223	345	116	74	61	28	117	136	31	63	19	571	2	61	13	196	32	2040	831	2871			31100		
Chipping Sparrow			7	1	10	1	4	9	12	2	8	1	8	3	6	1	2	4	9	2	6	2	2		4	3	3	✓	80	26	106			31103		
Clay-colored Sparrow																			1									✓		1		1			31109	
Fox Sparrow	4		1	4	11	14	28	15	143	25	28	53	60	9	51	22	11	54	257	49	164	14	181	19	155	2	73	7	1021	278	1299			31208		
Dark-eyed Junco													4				1		2	3	2		2			1			12	3	15			31232		
Dark-eyed Junco (Slate-colored)	3	4	15	65	20	39	194	44	42	585	70	179	334	81	48	39	15	96	57	50	109	91	263	6	102	13	100	44		1327	1279	2606			31234	
Dark-eyed Junco (Oregon)													1																1		1				31238	
White-crowned Sparrow	6	1	7	3	6	9	184	11	269	13	14	22	217	10	138	5	64	26	262	15	68	16	263	4	394	6	224	512	2240	135	2375			31294		
Golden-crowned Sparrow					2		6	1	4		2		14	1	3		3		1		3	1	6		15	1	2	47	3	50				31302		
White-throated Sparrow	2	4	19	6	20	33	9	30	14	27	18	22	14	9	14	10	7	22	12	26	17	23	10	7	22	8	18	12	194	219	413			31306		
Vesper Sparrow															1														1		1				31322	
Savannah Sparrow	4		7	3	27	6	38	19	31	7	42	13	70	18	53	7	37	28	49	6	85	3	41	2	63	5	56	20	565	112	817			31326		

Species	2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013	2014	2015	2016	TOTAL BANDED			Taxon
	Spring	Fall	Spring	Spring	Spring	Spring	Spring	Spring	Fall	ALL																						
Song Sparrow										1																				1	1	31352
Lincoln's Sparrow	16	14	30	29	39	42	42	91	51	108	23	124	120	74	27	57	32	99	60	89	66	80	193	34	101	16	94	31	840	841	1681	31385
Swamp Sparrow		4		6	4	9	2	7	1	33	4	40	5	21	5	29		17	6	20	7	16	6	2	3	5	6	4	55	204	259	31389
Western Tanager			1			1	2	2	1	3	1	1	1	2		2	3		1	2	1	7	1		✓	1	3	2	18	20	38	31767
Rose-breasted Grosbeak							✓						✓						✓				✓			✓						31885
Red-winged Blackbird							✓	✓	7	✓	8	✓	4	✓	2	✓	2	✓	1	✓	8	✓	1	✓	✓	✓	3	3	39		39	31953
Yellow-headed Blackbird																					✓					✓						32028
Rusty Blackbird	2	2		1	5	10	5	12	37	15	81	35	14	31	47	9	1	10	3	26	57	4	80	5	8	6	53	1	392	160	552	32034
Brown-headed Cowbird						1	✓			✓	✓		4		1				2		✓	✓	3		1	✓	3	✓	13	1	14	32143
Gray-crowned Rosy Finch																									1			1	0	1	32452	
Pine Grosbeak												2				✓		✓				✓	✓		✓		✓		2	2	32477	
Purple Finch	5		9		11		10	3	8	11	8		5	1	9		4		14	✓	8	✓	3		✓	5	8	✓	107	15	122	32576
Red Crossbill										✓			✓		✓	✓	✓		✓	✓	✓	✓	✓			✓		29	29		29	32678
White-winged Crossbill							✓	✓		7	16	✓	✓	12	✓	✓	✓	1	✓	10	✓	2	✓	✓		6	✓	✓	22	32	54	32718
Common Redpoll							68		2		46	1	12		54	14	✓	✓	127	✓	1	1	58		294	12	228	12	620	16	6364	32722
Hoary Redpoll																									3							32729
Pine Siskin			6	4	2	31	2	5		✓		✓	✓	✓	2	✓	✓	✓	✓	41	✓	28	2	34	20	2	✓	✓	16	143	159	32736
TOTAL BIRDS BANDED	251	147	625	540	1152	1021	2265	1839	1867	2681	2701	2585	2799	2502	2087	1676	1576	2013	2623	1770	1920	1964	4133	703	2011	1301	2339	1260	28898	19441	48339	
TOTAL SPECIES BANDED	26	27	35	35	44	40	46	48	47	48	49	45	53	52	51	42	39	40	46	48	48	54	57	40	50	50	49	45	85	78	93	
TOTAL SPECIES OBSERVED	-	-	-	-	-	-	103	87	85	87	111	87	125	104	120	88	107	86	112	106	118	107	116	70	120	115	115	130	-	-	162	

Appendix B – Daily Species Total Summary

Table B1. Estimated total data summary,

Species	First Date	Days Recorded	Sum of Bird Days	Last Date	High Count	
Canada Goose	1-May	34	135	7-Jun	13	1-Jun
Trumpeter Swan	1-May	17	43	6-Jun	10	7-May
Tundra Swan	19-May	1	1	-	-	-
American Wigeon	7-May	2	3	1-Jun	2	1-Jun
Mallard	1-May	31	135	6-Jun	14	5-Jun
Blue-winged Teal	7-May	17	42	6-Jun	6	25-May
Northern Shoveler	14-May	8	13	4-Jun	3	22-May
Northern Pintail	1-Jun	1	2	-	-	-
American Green-winged Teal	1-May	5	7	21-May	2	14/15 May
Ring-necked Duck	9-May	24	58	7-Jun	6	2-Jun
Bufflehead	4-Jun	2	5	5-Jun	4	5-Jun
Common Goldeneye	1-May	18	44	7-Jun	14	7-Jun
Barrow's Goldeneye	5-May	1	1	-	-	-
Unidentified Goldeneye	2-May	11	27	25-May	4	many days
Common Merganser	22-May	2	6	23-May	5	23-May
Ruffed Grouse	1-May	26	53	7-Jun	4	25-May
Spruce Grouse	19-May	6	10	7-Jun	3	21-May
Red-throated Loon	7-Jun	1	1	-	-	-
Common Loon	6-May	19	20	7-Jun	2	22-May
Red-necked Grebe	15-May	2	3	19-May	2	19-May
Osprey	17-May	1	1	-	-	-
Northern Harrier	1-May	8	9	27-May	2	1-May
Sharp-shinned Hawk	8-May	5	6	5-Jun	2	5-Jun
Northern Goshawk	21-May	4	4	30-May	1	all days
Bald Eagle	1-May	5	6	27-May	2	22-May
Red-tailed Hawk	25-May	1	1	-	-	-
Sandhill Crane	1-May	5	5	11-May	1	all days
Semi-palmated Plover	17-May	1	1	-	-	-
Killdeer	1-May	7	7	16-May	1	all days
Wilson's Snipe	1-May	35	54	7-Jun	4	8-May
Spotted Sandpiper	31-May	2	2	1-Jun	1	both days
Solitary Sandpiper	1-May	24	32	7-Jun	2	many days
Greater Yellowlegs	21-May	1	1	-	-	-
Lesser Yellowlegs	1-May	12	18	1-Jun	4	15-May
Unidentified Yellowlegs	25-May	1	1	-	-	-
Unidentified Shorebird	13-May	1	1	-	-	-
Bonaparte's Gull	19-May	1	1	-	-	-

Species	First Date	Days Recorded	Sum of Bird Days	Last Date	High Count	
Mew Gull	5-May	21	35	7-Jun	2	many days
Herring Gull	1-May	5	8	2-Jun	2	many days
Arctic Tern	5-Jun	1	1	-	-	-
Eurasian Collared Dove	13-May	1	1	-	-	-
Barred Owl	1-May	25	26	7-Jun	2	3-Jun
Common Nighthawk	5-May	2	2	20-May	1	both days
Belted Kingfisher	1-May	30	35	7-Jun	2	many days
Yellow-bellied Sapsucker	3-May	32	137	7-Jun	11	22-May
Downy Woodpecker	18-May	1	1	-	-	-
Hairy Woodpecker	9-May	14	14	6-Jun	1	all days
American Three-toed Woodpecker	1-May	27	37	7-Jun	4	1-May
Northern Flicker	1-May	22	29	6-Jun	2	many days
American Kestrel	1-May	7	8	6-Jun	2	21-May
Merlin	8-May	3	3	-	1	all days
Olive-sided Flycatcher	1-Jun	1	1	-	-	-
Western Wood-Pewee	16-May	1	1	-	-	-
Alder Flycatcher	31-May	8	20	7-Jun	4	1/7 Jun
Least Flycatcher	27-May	10	25	7-Jun	4	many days
Hammond's Flycatcher	1-May	33	62	7-Jun	44	22-May
Warbling Vireo	5-May	28	168	7-Jun	11	31-May
Gray Jay	1-May	27	61	7-Jun	4	many days
American Crow	3-May	12	16	3-Jun	4	19-May
Common Raven	1-May	35	107	7-Jun	7	16-May
Tree Swallow	1-May	34	283	7-Jun	20	17/18 May
Violet-green Swallow	13-May	8	17	7-Jun	6	7-Jun
Bank Swallow	19-May	9	63	7-Jun	20	5/7 Jun
Barn Swallow	14-May	7	13	7-Jun	4	17-May
Cliff Swallow	18-May	11	34	7-Jun	6	19-May
Black-capped Chickadee	1-May	27	55	7-Jun	6	14-May
Boreal Chickadee	1-May	26	46	7-Jun	3	many days
Red-breasted Nuthatch	13-May	10	13	31-May	2	many days
Golden-crowned Kinglet	18-May	11	11	7-Jun	1	all days
Ruby-crowned Kinglet	1-May	34	163	7-Jun	8	many days
Gray-cheeked Thrush	14-May	6	10	31-May	3	24/27 May
Swainson's Thrush	14-May	16	73	7-Jun	10	1-Jun
Hermit Thrush	7-May	2	2	23-May	1	both days
American Robin	1-May	35	194	7-Jun	10	21/25 May
Varied Thrush	1-May	26	50	7-Jun	4	21/23 May
American Pipit	2-May	7	9	19-May	2	7/19 May

Species	First Date	Days Recorded	Sum of Bird Days	Last Date	High Count	
Bohemian Waxwing	2-May	23	81	6-Jun	20	5-May
Lapland Longspur	2-May	9	30	21-May	8	6-May
Northern Waterthrush	6-May	29	210	7-Jun	21	13-May
Tennessee Warbler	15-May	23	247	7-Jun	26	1-Jun
Orange-crowned Warbler	1-May	23	78	1-Jun	12	13-May
Common Yellowthroat	17-May	18	55	7-Jun	10	1-Jun
American Redstart	26-May	11	41	7-Jun	7	31-May
Magnolia Warbler	5-Jun	1	1	-	-	-
Yellow Warbler	13-May	18	42	7-Jun	8	31-May
Blackpoll Warbler	12-May	17	27	3-Jun	5	13/17 May
Myrtle Warbler	1-May	35	262	7-Jun	34	9-May
Wilson's Warbler	1-May	30	149	5-Jun	23	17-May
American Tree Sparrow	1-May	12	54	13-May	20	1-May
Chipping Sparrow	20-May	16	22	6-Jun	3	4-Jun
Fox Sparrow	1-May	33	52	7-Jun	3	9/16 May
Slate-colored Junco	1-May	29	106	7-Jun	24	1-May
Gambel's White-crowned Sparrow	1-May	16	788	18-May	185	5-May
Golden-crowned Sparrow	5-May	8	13	21-May	4	16-May
White-throated Sparrow	12-May	24	59	7-Jun	5	18/19 May
Savannah Sparrow	1-May	15	28	1-Jun	5	13-May
Lincoln's Sparrow	1-May	33	101	7-Jun	6	6-May
Swamp Sparrow	5-May	32	54	7-Jun	4	1-Jun
Western Tanager	12-May	24	43	7-Jun	3	1-Jun
Red-winged Blackbird	1-May	35	120	7-Jun	8	11/15 May
Rusty Blackbird	1-May	30	56	7-Jun	4	1/2 May
Brown-headed Cowbird	12-May	24	45	7-Jun	4	19/23 May
Pine Grosbeak	6-May	3	5	2-Jun	3	2-Jun
Purple Finch	1-May	32	153	7-Jun	14	8-May
Red Crossbill	19-May	5	9	7-Jun	3	7-Jun
White-winged Crossbill	22-May	8	41	7-Jun	14	6-Jun
Common Redpoll	1-May	17	75	5-Jun	15	6-May
Pine Siskin	18-May	8	23	7-Jun	8	24-May