



Bruce Peninsula Bird Observatory

Cabot Head Research Station Migration Monitoring Fall 2014 Field Season Report

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Prepared for

Bruce Peninsula Bird Observatory

November 2014

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Introduction

Cabot Head is a promontory of the northeast headland of the upper Bruce Peninsula in south-central Ontario. Cabot Head Research Station (CHRS) is situated on the western side of Wingfield Basin (at 45°15'N, 81°18'W) near the community of Dyer's Bay. In 2001, Cabot Head was designated as an Important Bird Area (IBA) by Birdlife International for its significant concentrations of migratory bird species (Cheskey and Wilson, 2001). Ontario Parks and Bruce Peninsula Bird Observatory (BPBO) manage Cabot Head Research Station.

The Breeding Bird Survey (BBS) is the principle method for monitoring bird populations in the United States. However, breeding ranges of many species in northern Canada are inaccessible to roadside surveys and are therefore poorly monitored by the BBS method. The Canadian Migration Monitoring Network (CMMN) is a nationwide Bird Studies Canada initiative, enacted to assess changes in populations during migration. There are 21 stations across Canada where data are being collected for each bird species during the spring and fall migrations, typically through a standardized capture and observation protocol. Bruce Peninsula Bird Observatory has demonstrated through data collection since 1998 that Cabot Head is a significant site for monitoring migrating land birds. In recognition of its importance and established migration monitoring effort, BPBO became a member of the CMMN in fall 2003.

Bruce Peninsula Bird Observatory was incorporated as a non-profit charitable organization in 2001 to initiate and direct ornithological assessments and monitoring at Cabot Head and surrounding areas. Migration monitoring has been the primary focus of bird research at Cabot Head since 1998. A standard migration monitoring protocol has been implemented since 2002 and 2013 represents the 13th consecutive season of migration monitoring at Cabot Head. This fall BPBO banded 1787 individuals of 70 species bringing the grand total since 2002 to 43,779 birds.

Executive Summary

In this document are summarized the results of migration monitoring at Cabot Head for fall, 2014. Fall fieldwork began on August 11th and ended on October 30th for a total of 79 consecutive days of coverage yielding 4889 net hours with a catch rate of 37.0 birds/100 net hours. A total of 166 species and forms were detected during the monitoring period. A total of 1,787 birds of 69 species were banded and 389

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birds of 34 species were recaptured and processed. The season banding total was the 6th highest fall total in 13 years. *Eastern white-crowned sparrows*, *golden-crowned kinglets*, *black-capped chickadees*, *slate-coloured junco*, *white-throated sparrow* and *red-eyed vireo* represented 53% of the banded birds. *E. white-crowned* sparrows were the most banded species representing 13% of the birds banded a total of 244 individuals which is nearly twice the previous season high of 127 in 2007. This fall we banded our; first *eastern screech owl*, first fall *mourning dove* and *Gambel's white-crowned sparrows*, our 11th and 12th *belted kingfishers* as well as high fall banding totals for *slate-coloured juncos* (149), *orange-crowned warblers*(31), *American goldfinch*(22), *blue jay*(18) and *yellow-bellied flycatcher*(7). Highlights of rarities observed include; *yellow rail*, *dickcissel*, *sedge wren*, *prairie warbler* and *tundra swan*.

Methods

The migration monitoring program at Cabot Head like all CMMN stations follows a field protocol (established by Heagy et al, 2003, modified from Heagy 2002) as it is essential for the production of population indices that data collection be consistent over the long term. At Cabot Head Research Station, fifteen mist nets are operated for 6 hours starting a half hour before sunrise, weather permitting. Personnel also complete a census done for one hour along a fixed route starting an hour after sunrise, where all birds seen or heard are recorded. Throughout a 7 hour period starting when nets open personnel also record any observations of birds during the morning.

The addition of birds banded, re-captured, daily observations and census create a value called the detected total (DT) which is the total number of a certain species that was observed in the census area for a given day. Estimated totals (ET) are also calculated which allows the personnel to estimate the number of birds likely to have moved through the area despite not physically counting every individual. The estimated total (ET) is used for calculating population trends by the Canadian Migration Monitoring Network from year to year. Supplemental surveys such as visible migration counts and bay watches are completed when circumstances permit.

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Migration Monitoring Summary

BPBO opened its nets on August 11th at Cabot Head Research Station kicking off its 13th fall season. A cold spring and late thaw left the vegetation with a shorter growing and pushed back the slower than normal and migration seemed to be delayed by the late start at breeding and many periods of violent storms with a high rainfall and high winds throughout the fall period. This year the fall migration program started a week earlier than normal.

The first week of banding went quite slowly as for almost the entire week almost no net hours were put in due to rainstorms and high winds. August 12th to 16th no nets were operated. The first week was slow and was a typical mix of local breeding species, mostly warblers including; *American redstart*, *black-throated green warbler*, *common yellowthroat*, *black-and-white warbler*, *Nashville warbler*, *magnolia warbler*, *northern waterthrush*, *Canada warbler*, *yellow warbler*, *song sparrow*, *black-capped chickadee*, *red-breasted nuthatch*, *red-eyed vireo* and *downy woodpecker*. *Barn swallows* were still nesting until early September possibly working on a late 2nd brood. *Double-crested cormorant* numbers were high for much of August and into September as is typical at that time of year anywhere between 30 and 100 were seen at the tip of Ballahoola Point on which the station is located. *Ring-billed* and *herring gulls* as usual were very common throughout the fall except for the last couple weeks of October. The resident pair of *bald eagles* were around once again although this year they had no young due to they're blowing down again however there were at least 3 hatch-year *bald eagles* observed in the early part of the fall as well as 2 second-year and third-year individuals on and off throughout the first half of fall after which only the adult pair were hanging around. *Purple finches* seemed to be much more abundant than the last several years with a few per day during the first week and low numbers throughout the fall. Two *brown creepers* were also banded in the first week an interesting find, and both were juveniles so probably only a week or so out of the nest!

Table 1: Top 10 banded species divided by age ratios at BPBO Fall 2014.

Species	Number Banded	% Hatch Year	% After Hatch Year	% Unknown
<i>E. white-crowned sparrow</i>	244	61.1	38.9	0.0
<i>Golden-crowned kinglet</i>	184	87.5	4.5	8.0
<i>Black-capped chickadee</i>	167	97.6	2.4	0.0
<i>Slate-coloured junco</i>	149	96.7	3.3	0.0
<i>White-throated sparrow</i>	116	88.8	1.0	10.2
<i>Red-eyed vireo</i>	94	99.0	1.0	0.0
<i>American redstart</i>	61	86.9	13.1	0.0

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<i>Black-thr. green warbler</i>	60	96.7	3.3	0.0
<i>Yellow-rumped warbler</i>	57	96.5	3.5	0.0
<i>Ruby-crowned kinglet</i>	51	83.4	0.0	16.6

The first *greater yellowlegs* of the fall arrived on August 18th along with *Caspian terns* many *ruby-throated hummingbirds* and *belted kingfishers*. Kingfishers were seen daily throughout August and September. *Sandhill cranes* were observed uncommonly this and the first cranes were heard flying over on August 19th. Shorebirds were rare this fall even for Cabot Head with only *lesser* and *greater yellowlegs* and *spotted sandpipers* observed for August and part way through September. Song sparrows were common around the point for most of August and well into September. The first *ovenbird* was banded on the 21st along with many other warblers that continued to move through throughout the week including many “myrtle” *yellow-rumped warblers*. 2 *belted kingfishers* were banded on successive net runs August 22nd along with *hairy woodpecker*, *yellow-shafted flicker*, *magnolia warbler*, *Wilson’s warbler*, *Canada warbler* and *yellow-bellied flycatcher*. August 23rd 2 *blackburnian* and 1 *black-throated blue warbler* only one of two banded this fall, a record low for fall at Cabot Head. *Red-breasted nuthatches* continued to move through in August in good numbers along with *black-capped chickadees* throughout the fall. It was a very low count year for raptors as well as Cabot Head, one of the best days in August on the 24th including; 9 *broad-winged hawks*, 2 *red-tailed hawks* and a single *merlin*. The local breeding flycatchers and warblers continued to move through in August including; *eastern phoebe* and *great-crested flycatcher*.

The last week of August was similar to mid-August with only 3 days when nets could be operated due to rainstorms. Flycatchers and warblers continued with *Traill’s and yellow-bellied flycatcher*, *chestnut sided warbler*, *mourning warbler*, *black-and-white warbler* and *northern waterthrush*. *Black-capped chickadees* continued to move through in large numbers throughout the fall with many banded toward the end of the fall. Local breeding *merlins* were observed continually this fall along with at least two hatch-year fledglings. *Whip-poor-wills* were hanging around for the last week of August calling every morning and evening and continued through early September.

The week of September 1st started off with the local *great-horned owl* observed on census this individual has been seen at Cabot Head for several years. A slow week several days were windy with no nets and few birds banded. The first *mourning warbler* was banded on the 2nd and first *bay-breasted warbler* was banded the 1st. The first *slate-coloured junco* of the fall was banded on the 3rd a local hatch-year still in partial juvenile plumage. *Gray-cheeked* and *Swainson’s thrushes* began to move through early September and continued until early October when they were replaced by *hermit thrushes*. The local *barn swallows* fledged their young and they quickly disappeared by mid-September. *Ovenbirds* were a regular

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capture along with *yellow-bellied flycatcher* throughout early September and warblers continued in low numbers throughout as well. *Myrtle warblers* moved through starting in September and continued throughout with totals as high as 120 observed. 2 *blue-winged teals* landed in Wingfield Basin on the 7th and shortly thereafter flew away.

Warbler diversity continued through mid-September with; *Wilson's, magnolia, "Myrtle" yellow-rumped, black-throated green, black-throated blue, black-and-white, pine, chestnut-sided, Cape May, Nashville, orange-crowned, American redstart, common yellowthroat, northern waterthrush and Ovenbird* observed and banded daily. *Blue-headed, Philadelphia* and *red-eyed vireo* were observed through mid-September and all 3 species were banded on Sept. 14. *Black-capped chickadee* were in high abundance toward the latter half of September with high counts of 138 and 177 individuals on the 23rd and 24th respectively. A *yellow-billed cuckoo* was observed on the 23rd and 24th and a *yellow rail* (a first for the station) was observed at the alvar on September 23rd. *American green-winged teal* were observed September 6th, 11th and 21st and 3 *blue-winged teal* were observed on the 22nd. 2 *cackling geese* were observed with a flock of 11 *Canada geese* on September 19th.

The first *ruby-crowned kinglet* of the fall was banded on Sept. 22nd along with *pine warbler* and 2 *white-throated sparrows* and a *northern saw-whet owl* captured after dark. The 23rd was a good banding day with 41 birds banded of 22 species including *rose-breasted grosbeak, chipping sparrow, blackpoll warbler, gray catbird, blue-head vireo* and a *northern flicker*. The night of the 23rd but researchers captured an *eastern screech owl* which was promptly banded and released the bird was a hatch-year born this summer and probably a local. 61 birds of 26 species were banded on the 24th including; *slate-coloured junco, Lincoln's sparrow, savannah sparrow, "western" palm warbler, gray-cheeked, Swainson's and hermit thrush, golden-cr. kinglet, brown creeper, 17 black-capped chickadees, blue jay, yellow-bellied sapsucker and downy and hairy woodpecker. Pine siskins and American goldfinch* were seen daily between numbers of 20 to 150 observed.

A single *wood duck* was observed on the 25th and continued to hang around for two weeks. *White-throated* and *white crowned sparrows* were high abundance the morning of the 26th with 11 and 9 of each and 120 and 166 of each observed respectively. *Song sparrow, Lincoln's sparrow and swamp sparrow* were banded on the 26th along with 7 *hermit thrush*, 4 *American robins*, 9 *black-capped chickadees*, and a *red-eyed vireo*. A *whip-poor-will* and a *common nighthawk* were observed the morning of the 27th along with 2 *long tailed ducks*, 18 *common loons*, 17 *horned grebes*, 10 *red-necked grebes*, a *merlin* and an *American kestrel*. 88 birds of 18 species were banded on the 27th. *White-throated sparrows* and *golden-crowned kinglets* made up the bulk of banded birds with 25 and 18 banded respectively. 4 *rusty* and *red-winged blackbirds* were observed as well. 59 birds of 16 species were banded on the 28th;

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golden-crowned kinglet, *gray catbird*, *yellow-bellied sapsucker* and *black-capped chickadees*. A *white-eyed vireo* was also observed during census along with an *eastern phoebe*. The last week of September had an interesting vagrant a *dickcissel* on the 29th along with a *rock pigeon*.

September finished off with good numbers of banded birds and high numbers of *white-throated* and *crowned sparrows* and continued into early October, along with increasing numbers of *golden-crowned kinglets* and *slate-coloured juncos* a high count of 311 *white-crowned sparrows* was observed on the 6th. The first week of October and to a lesser extent in to mid-October *peregrine falcons* were observed flying along the shore of Georgian Bay with 5 or 6 individuals some days. On the 5th for the first time *tundra swans* were observed flying past Cabot Head a new specie for the checklist! *Hermit*, *gray-cheeked* and *Swainson's thrushes* were common throughout early October as were *myrtle warbler* with a high of 65 on the 7th. The first week of October was a busy week with many birds banded within a short period. 70 birds were banded on the 4th mostly *white-crowned sparrows* and *golden-crowned kinglets*. October brought higher diversity in waterfowl including: *horned grebes*, *red-necked grebes*, *common loons*, all three species of scoters and a few other diving ducks. The 6th was an interesting day with a single *sedge wren* observed during census, an *eastern screech owl* recapture and 3 *surf scoters* observed flying over Georgian Bay.

A storm slowed migration with no nets open due to rain on the 8th and 9th however a *prairie warbler* was found at the tip along with a *gray catbird* which made for an exciting day. The storm broke on the 10th and 11th and brought many birds with 78 and 98 birds banded respectively on each day. *Slate-coloured juncos* were the most commonly banded bird with 60 between the 10th and 11th followed by *white-crowned sparrows*. *Nashville* and *orange-crowned warblers* were banded over the next week in low numbers a few individuals per day. A *red-bellied woodpecker* and *Lapland longspur* were observed during on the 11th as well. After the burst of birds activity slowed down greatly as *white-crowned* and *white-throated sparrows* began to dwindle in number. After mid-October *downy woodpeckers* were much more frequently ending up with a total of 20 at the end of October. Late migrant arbler continued into mid-October particularly *Nashville* and *orange-crowned warblers* as well as *myrtle* and *western palm warblers*.

In mid to late October banding was slow except for the 19th when 91 birds were banded, mostly *slate-coloured juncos* as well as 30 *American tree sparrows*. The 19th was the peak duck migrating day with 152 *white-winged scoters*, 27 *lesser scaup*, 44 *long-tailed ducks*, 3 *black scoter* and 2 *ring-necked ducks*. *White-crowned sparrow* number continued to drop though late October with less than a dozen banded per day. A *northern cardinal* was banded on the 16th and another on the 29th. On the 17th more than 500 *pine siskins* were estimated in the area as they moved around in large flocks all morning, 4 were

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banded this fall all in the last 2 weeks of October. *Lapland longspurs* and *snow buntings* were observed at the tip regularly in mid to late October.

The last week of October was slow but at least some net could be run every day but with many fewer net hours than the normal 90. *American goldfinches*, *pine siskins* and *purple finch* observed daily and banded regularly with 12 *American goldfinch* banded on the 27th. 3 *white-winged crossbill* were observed during census on the 24th. The first of 2 *northern shrikes* this fall was banded on the 27th and second on the 29th. The season ended slowly with a few *American tree sparrows*, *slate-coloured juncos* and *black-capped chickadees* banded over the last few days. The weather this fall was a big disadvantage fewer banding and there were significantly less net hours this fall however the banding totals for this fall were above average and totals and proportion of sparrows was significantly higher than other years in the *golden-crowned kinglet* is normally the most banded species.

Personnel

This fall, 3 long-term volunteers and 1 short-term volunteer from Canada, France and the USA logged over 1500 person-hours monitoring migration at Cabot Head Research Station. Special thanks go out to all the volunteers and other personnel to their dedication and contribution to BPBO's Migration Monitoring program this fall.

Long Term Volunteers (> 3 weeks): Kati Fleming (Houston, Texas), Dave Scheck (Ithaca, New York), Hugo Touze (Nantes, France).

Short Term Volunteers (< 3 weeks): Katherine Loewen (Vancouver, British Columbia)

Coverage

Mist net and census coverage began on August 11th and ran through until October 30th. A total of 4889.5 net hours were completed this fall yielding a catch rate of 37.0 birds/100 net hours. This represents 71% of full coverage that is 77 days with 90 hours each. This fall, Cabot Head was subject to many days of inclement weather including 13 days when no nets could be operated. There were an above average number of stormy days with many days rained out and many days of high winds. Net hours were below average this fall however the number of banded birds was above average.

Acknowledgements

As a non-profit, volunteer-based initiative, the Bruce Peninsula Bird Observatory would not be operable without the overwhelming support of its membership, financial supporters and volunteers. BPBO wishes to thank Ontario Park and Parks Canada (Bruce Peninsula National Park), for their

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continued support.

The author wishes to thank all the members of the Bruce Peninsula Bird Observatory, as well as Mike and Sarah Jane Van de Laar the administrators of the field site and Bob Lesperance of Ontario Parks for their support during the field season. I would also like to thank all the field volunteers as well as administrative volunteers who helped make the field season efficient and enjoyable.

Conclusion

The 13th consecutive year of Bruce Peninsula Bird Observatory's migration monitoring at Cabot Head Research Station was a success. In total 3767 birds of 87 species and forms were banded this year and a total of 185 species and forms were observed. Eight volunteers from five countries including; Canada, Germany, UK and USA contributed over 4000 hours to the migration monitoring program this year. Aside from migration monitoring B.P.B.O. also finished its 3-year species at risk program surveying grasslands across the municipality of Northern Bruce Peninsula carrying out an outreach and education program of bird species at risk in the area. 1 new species was added to the checklist of Cabot Head *tundra swan* observed for the first time at CHRS flying over Georgian Bay and this spring the first *American kestrel* was banded at CHRS. Monitoring was a success as coverage was good and complete and the data collected was of high quality. The number of volunteers was low compared to last year however the personnel managed to continue collecting data to the very highest standard despite having fewer personnel than normal. We recaptured many birds which are local breeding species that we banded previous years including; 1 *red-eyed vireo*, 1 *black-throated green warbler*, 2 *black-capped chickadees*, 4 *American redstarts*. This type of data is always helpful for us to understand the movement of birds and how they find the place they decide to breed. Cabot Head is an excellent location for this program as bird concentrations are significant, the facilities are ideal and there is a skilled, enthusiastic, and increasingly local base of volunteer support. Migration monitoring at Cabot Head Research Station is an ongoing project and contributes to the efforts of the Canadian Migration Monitoring Network and ultimately to the understanding and monitoring of bird populations. This year two new long-term monitoring programs of migratory birds began and Cabot Head was one of the sites. The MOTUS array of radio telemetry towers has locations across the province including at CHRS, Little Cove and Lion's Head this network is tool that will allow researchers to track migratory birds during the spring and fall migration. Another researcher is using Cabot Head as a site for recording flight calls migratory birds give at night while flying over to estimate numbers of migrants. Cabot Head will continue to be used as a site for both these new methods of monitoring migratory birds.

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Appendix 1. Fall 2014 Recaptures summary

Species	# within year re-captures	# between year re-captures
<i>American goldfinch</i>	3	0
<i>American redstart</i>	10	4
<i>American robin</i>	1	0
<i>American tree sparrow</i>	2	0
<i>Black-and-white warbler</i>	3	0
<i>Black-capped chickadee</i>	29	2
<i>Brown creeper</i>	3	0
<i>Black-throated green warbler</i>	4	1
<i>Common yellowthroat</i>	8	0
<i>Downy woodpecker</i>	7	0
<i>Eastern screech-owl</i>	1	0
<i>Eastern white-crowned sparrow</i>	35	0
<i>Golden-crowned kinglet</i>	17	0
<i>Gray-cheeked thrush</i>	2	0
<i>Hairy woodpecker</i>	5	0
<i>Hermit thrush</i>	4	0
<i>Indigo bunting</i>	1	0
<i>Mourning dove</i>	6	0
<i>Myrtle warbler</i>	6	0
<i>Orange-crowned warbler</i>	1	0
<i>Ovenbird</i>	7	0
<i>Purple finch</i>	1	0

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<i>Red-breasted nuthatch</i>	7	0
<i>Red-eyed vireo</i>	4	1
<i>Savannah sparrow</i>	2	0
<i>Slate-colored junco</i>	4	0
<i>Song sparrow</i>	1	0
<i>Swainson's thrush</i>	3	0
<i>Traill's flycatcher</i>	1	0
<i>White-crowned sparrow</i>	98	0
<i>Winter wren</i>	2	0
<i>Western palm warbler</i>	1	0
<i>White-throated sparrow</i>	15	0
<i>Yellow-shafted flicker</i>	1	0
Total	350	8

Appendix 2. Banding Totals by Species for fall at Cabot Head Research Station 2002-2014

A record high number banded for the fall season. (Highlighted in red)

A record low number banded for the fall season. (Highlighted in yellow)

First individual banded for the fall season. (Highlighted in green)

Species	Fall												
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
American Woodcock								1		2			
Mourning Dove													1
Sharp shinned Hawk		2	2	3	3	3	2	1	3	5	1	5	2
Cooper's Hawk	1											1	
Merlin			1			1							

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Yellow-billed Cuckoo	2	2		1		2	2		1		2	2	
Black-billed Cuckoo	2	5									1		
Eastern Screech Owl													1
Northern Saw-whet Owl	1				1	1	1	1		2	12	3	2
Belted Kingfisher	1	1	2		1					1		3	2
Red bellied Woodpecker		1	1						1		1		
Yellow bellied Sapsucker		1		1	1	2			1	3	1	2	3
Downy Woodpecker	1	12	4	3	6	7	4	31	13	4	12	5	18
Hairy Woodpecker		5	5	2	4	11	8	8	6		6	4	10
Black-backed Woodpecker					1								
Yellow-shafted Flicker		3	2	1	6	2	3	4	6	4	8	3	5
Pileated Woodpecker	1				1	1	1		1	1		1	
Whip-poor-will												1	
Eastern Wood-Pewee								1			1	1	
Yellow-bellied Flycatcher	3	1	1			3	1	3	2	2	1	3	7
Traill's Flycatcher	3	5	3	6	6	16	5	7	12	1	10	6	7
Least Flycatcher	3	5	5	7	3	6	4	3	9	6	4	8	3
Olive-sided Flycatcher									1				
Eastern Phoebe	4	1			3	2	4	1	1		3	2	
Great Crested Flycatcher						1	1		1				
Eastern Kingbird	1												
Northern Shrike	2	1	3	1		2							2
White-eyed Vireo											1		
Blue-headed Vireo	1	3	4	11	8	1	8	3	9	7	4	6	11
Philadelphia Vireo		1		2		1		2	1	4	5	4	3
Red-eyed Vireo	51	117	31	239	52	49	66	24	121	105	116	61	94
Blue Jay	3	4	3	6		1	4	2	3	4	9	7	18
Black-capped Chickadee	29	368	169	717	12	269	47	131	125	94	164	31	16

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Red-breasted Nuthatch	5	26	62	73	17	89	93	22	37	24	166	12	26
White-breasted Nuthatch				1		2					1		
Brown Creeper	53	48	28	32	46	39	31	19	65	22	71	57	30
House Wren		2	1				1	2	1	1		1	
Winter Wren	3	1	5	4	4	8	8	6	2	6		8	4
Carolina Wren											1		
Golden-crowned Kinglet	490	321	262	113	407	148	255	312	514	205	476	758	18
Ruby-crowned Kinglet	71	122	62	20	106	40	63	48	41	31	36	106	51
Blue-gray Gnatcatcher	1												
Veery			3	5	3	6	4	2	1	2	6		2
Gray-cheeked Thrush	19	16	12	22	9	12	8	9	6	21	7	7	15
Gray-cheeked/Bicknell's Thrush												1	
Swainson's Thrush	11	38	16	36	10	18	15	50	34	23	38	25	45
Hermit Thrush	16	34	24	48	57	28	39	32	49	87	30	68	46
Wood Thrush				2	1	1							
American Robin	11	19	16	10	36	1	21	20	17	15	18	33	20
Gray Catbird	10	7	7	12	7	5	2	5	2	4	6	3	5
Brown Thrasher	1										2	2	
American Pipit	1		1										
Cedar Waxwing	43	10	16	117	80	2	45	4	26	81		17	1
Brewster's Warbler	1												
Golden-winged Warbler			1										
Tennessee Warbler	3	8	38	44	5			2	6	4	5	3	8
Orange-crowned Warbler	10	23	9	3	23	23	4	6	15	5	14	22	31
Nashville Warbler	41	48	24	78	32	37	22	21	19	27	37	25	30
Northern Parula				1			1						
Yellow Warbler	6	13	3	4	4	1	1	2	3	8	3	4	1
Chestnut-sided Warbler	5	2		1	3	3	1	1	1	1		2	2

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Magnolia Warbler	17	29	25	34	20	21	20	25	26	18	16	16	23
Cape May Warbler		3	1	1		3	2	1		1	5	1	
Black-throated Blue Warbler	21	18	14	7	14	11	18	18	13	16	13	13	2
Myrtle Warbler	90	92	34	204	70	50	59	54	70	84	167	83	57
Black-throated Green Warbler	116	115	115	81	29	15	37	35	45	75	32	63	60
Blackburnian Warbler	5	3	3	10		5			3	2	1	4	4
Pine Warbler	2		2				2		1	3			1
Western Palm Warbler	6	10	1	10	18	8	2	3	7	6	22	5	6
Bay-breasted Warbler		2		6	2	5	5	1	7	5	7	10	4
Blackpoll Warbler	6	6	7	23	5	7	6	10	8	19	23	17	6
Black-and-White Warbler	26	30	17	15	12	12	25	33	21	32	28	37	23
American Redstart	103	198	85	65	66	44	171	124	82	133	74	141	61
Ovenbird	10	16	16	24	17	10	16	25	19	18	31	14	21
Northern Waterthrush	11	4	4	1	7	4	8	7	15	11	2	6	3
Connecticut Warbler		1		1									
Mourning Warbler	1			2	3	3	2	4	3	2	4		2
Common Yellowthroat	17	35	31	23	26	18	17	25	39	26	35	29	25
Hooded Warbler									1				
Wilson's Warbler	5	4	2	10	4	11	9	12	9	8	7	6	6
Canada Warbler	7	4	1	4	1	3	5	3	7	2	3	5	3
Yellow-breasted Chat								1		1			
American Tree Sparrow	10	19	56	12	18	29	28	27	88	29	21	14	36
Chipping Sparrow	3	1	6	6	1	4		1	2	1	3	2	4
Clay-colored Sparrow		1											
Savannah Sparrow	1	3	1	2	2	8			4		3		2
Fox Sparrow		1	3	2	2	1	3	5	2	5	2	4	1
Song Sparrow	20	17	10	10	15	13	22	20	18	12	10	15	16
Lincoln's Sparrow	9	2	4	7	8	9	4		13	5	3	6	5

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Swamp Sparrow	4	11	7	2	4	2	5	4	4	5	1	4	5
White-throated Sparrow	49	42	84	199	43	39	158	84	58	56	60	94	11
Gambel's White-crowned Sparrow													2
Eastern White-crowned Sparrow	29	22	79	26	19	127	53	56	41	33	112	85	24
Slate-colored Junco	43	65	63	56	103	80	83	63	92	96	107	86	14
Eastern Towhee							1	1					
Snow Bunting					1				3				
Northern Cardinal	1	3	1	1		1	1	2	1	1	1		
Rose-breasted Grosbeak	1	6				2	1			8	4	4	3
Indigo Bunting		5	5	1	1		5		1		2	1	1
Summer Tanager			1										
Scarlet Tanager	1			2					1	2	2	2	
Rusty Blackbird						1							
Baltimore Oriole		1					1						
Pine Grosbeak				2		5					3		1
Purple Finch	2	3	5	2	2	3	4	7	2	17	1	2	13
White-winged Crossbill							22			2	1		
Pine Siskin			4			3	44	5	22	170	12		4
American Goldfinch	3				6	1	1		1	3	2		21
Common Redpoll						6			5				
Total	1530	2047	1513	2477	1477	1419	1615	1442	1890	1719	2097	2083	178
Species Total	68	68	65	67	62	74	68	63	73	69	73	70	69