McGill Bird Observatory
Annual Program Report 2019

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MIGRATION RESEARCH FOUNDATION

Cover photo:

It was a spectacular spring in many respects, but unquestionably MBO's first ever Hooded Warbler was a top highlight, staying around for at least four days after being banded (photo by Simon Duval).

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1. Executive Summary

McGill Bird Observatory (MBO) is the flagship project of the Migration Research Foundation (MRF), focused on monitoring bird populations throughout the year at McGill University's Stoneycroft Wildlife Area, in Ste-Anne-de-Bellevue, Quebec. The primary objective is to collect data that can be used to contribute to the understanding of bird movements and population trends, in collaboration with the Canadian Migration Monitoring Network / Réseau Canadien de Surveillance des Migrations (CMMN-RCSM). MBO also pursues a variety of other research projects and delivers educational programs, ranging from banding workshops and ongoing training of volunteers to public presentations and development of identification resources.

This report summarizes all MBO activities for the 2019 project cycle, from November 7, 2018 through November 6, 2019. It focuses primarily on the Spring and Fall Migration Monitoring Programs, but also provides summaries of the winter and summer programs, as well as an overview of other MBO efforts throughout the year. Overall, 5109 birds of 96 species were banded (beating the record of 94 set in 2016 and tied in 2018), and 171 species were observed, tying the record high set in 2012.

The winter program (November 7, 2018 – March 27, 2019) was constrained by unusually cold temperatures for the fourth time in the past six years, though overall the 12 days of banding effort was close to average. Only 178 birds were banded, less than half the average winter total over the past decade, but the 19 species banded was slightly above average compared to the same period. The 48 species were observed this winter was marginally above average. Evening Grosbeak became the 124th species banded at MBO.

The Spring Migration Monitoring Program (March 28 – June 5) shattered many previous record highs, including the number of species (76) and individuals (1827) banded. For the first time in spring, more than 100 individuals were banded of each of the top five species (Magnolia Warbler, Yellow-rumped Warbler, Tennessee Warbler, White-throated Sparrow, and Ruby-crowned Kinglet). An incredible 31 species set new record high banding totals, including 17 warblers. The total of 155 species observed this spring was also a new record high by a wide margin. Belted Kingfisher and Hooded Warbler boosted the list of species banded at MBO to 126, while the warbler was also the 219th species observed on site, followed later in the season by Redhead, #220.

The summer program (June 6 – July 31) was operated for the 11th year as part of the international MAPS (Monitoring Avian Productivity and Survivorship) network. A record low 85 birds were banded, though the 34 species involved was just one less than last year's record high. Song Sparrow and Yellow Warbler tied as the top species banded, with only 7 individuals each. Ruby-throated Hummingbird, Hairy Woodpecker, and Blackpoll Warbler were banded in summer for the first time. The 60 species observed was average.

The Fall Migration Monitoring Program (August 1 – November 6) was for the fifth year in a row extended to 14 weeks by adding an extra week at the end. The 2774 individuals banded was a record low; the total of 78 species involved was average. White-throated Sparrow was the top species banded for the fifth time in the past six years. The 145 species observed was the fewest in fall since 2010. Green Heron became the 127th species banded at MBO, while Eastern Whip-poor-will and Black-backed Woodpecker were observed for the first time, bringing the overall list to 222 species.

The Northern Saw-whet Owl Monitoring Program (September 26 – November 6) operated nightly (aside from weather cancellations) for a tenth consecutive year, with 157 individuals banded (including an Eastern Screech-Owl), the lowest total since 2010. The busiest night was October 20, much later than usual. Hatch-year birds accounted for 35% of birds banded, the lowest proportion since 2013.

MBO also remained active in training and education in 2019. On site, dozens of students and other volunteers received hands-on instruction in bird banding techniques, and public outreach continued through the bilingual education program featuring the fall owl-banding program. MBO researchers also continued to augment and manage the photo library content in the *Piranga* module of Environment and Climate Change Canada's *NatureInstruct* program, which is now a fully bilingual resource for banders.

2. Introduction

McGill Bird Observatory (MBO) was founded in 2004 by graduate students in McGill University's Natural Resource Sciences department. It is operated by the Migration Research Foundation (MRF), and is a member of the Canadian Migration Monitoring Network / Réseau Canadien de Surveillance des Migrations (CMMN-RCSM). Located at 45.43°N, 73.94°W, near the western tip of the island of Montreal, MBO is the only active migration monitoring station in southwestern Quebec. The nearest sites with standardized migration research programs are Innis Point Bird Observatory in Ottawa (175 km to the west), Prince Edward Point Bird Observatory in Quinte (300 km to the southwest), and l'Observatoire d'Oiseaux de Tadoussac (450 km to the northeast). Operations at MBO are patterned after those at other Canadian bird observatories, with an emphasis on standardized migration monitoring protocols. In addition to collecting and analyzing valuable scientific data, MBO serves as a training facility for students and other individuals interested in developing practical skills in field ornithology.

This report summarizes all research activities at MBO during the 2019 project cycle, which began with the winter 2018-2019 season and concluded with the 2019 fall season. The Spring and Fall Migration Monitoring Programs are the most standardized and intensive surveys conducted at MBO, and are summarized in greatest detail in this report. The Migration Monitoring Programs follow a consistent protocol, most recently updated in 2014, but with only minimal changes since 2005 (Gahbauer et al. 2014). The Northern Saw-whet Owl fall monitoring project is summarized separately. Annual summaries of the winter and summer programs were published only on the MBO website from 2005 through 2010, but in recognition of the growing value of these programs, they have been incorporated in the annual reports since 2011.

Three highlights of 2019 at MBO were MBO's first ever Brewster's Warbler (hybrid Blue-winged Warbler x Golden-winged Warbler), banded May (right); the first Black-backed Woodpecker ever observed, in October (below right), and the first Olive-sided Flycatcher ever to be banded in spring, during the final week of the season (below; photos by Simon Duval)

3. Winter population monitoring program

The winter season at MBO spans the 20-week period from November 7 through March 27. Although relatively few species overwinter regularly at MBO, several of them are uncommon to absent in other seasons, and therefore winter provides the best opportunity to monitor them. Additionally, observations in early and late winter provide an opportunity to document lingering late fall migrants or early spring arrivals. Except at the beginning and end of the season, winter visits rarely occur more than twice per week, and scheduling of activities is much more weather-dependent than at other times of year. This winter, banding effort again focused on a trio of nets adjacent to a set of feeders (usually stocked with black oil sunflower, millet, and nyjer seed). An audiolure was played, comprising primarily a mix of Bohemian Waxwing, House Finch, Pine Grosbeak, Common Redpoll, White-winged Crossbill, Pine Siskin and American Goldfinch calls, interspersed with a few second of Black-capped Chickadee and White-breasted Nuthatch mobbing calls. Banding was usually limited to three hours per day, although sometimes extended when weather was suitable. Timing was variable, but often from late morning to early afternoon, when temperatures were warmest.

3.1. Effort

Observations were recorded on 49 (35%) of the 141 days during the winter season, the most since 2015-2016, and above the long-term average of 39 days. There were 11 visits each month, except for February with only 5; overall this was a more balanced level of coverage than in most previous winters. However, there were only 12 days with banding effort, just below the long-term average of 13, but more than in either of the two previous winters. There was no banding this winter in either January or February.

3.2. Site conditions

Table 3.1 summarizes the official weather records for winter 2018-2019 at the Montreal International Airport. In winter, the microclimate at MBO is often slightly colder, and as a result, snow accumulation deeper. Overall, it was the third-coldest winter in MBO's history, only a fraction of a degree warmer than 2013-2014 and 2014-2015. Of particular note, November was colder than in any previous winter, nearly 5°C below average; all other months were also colder than usual, but not at record levels. The 211 cm of snow that fall this winter was slightly less than the past two years, and close to the long-term average, but there was more snowfall in November than ever before, whereas the amount in December was a record low. Rainfall this winter was the most since 2010-2011.

Table 3.1: Weather conditions during the 2018-2019 winter population monitoring program, by month.

	Nov 7-30	Dec 1-31	Jan 1-31	Feb 1-28	Mar 1-27	Season
Mean daily high (°C)	0.9	-1.4	-6.1	-3.9	0.7	-2.1
Mean daily low (°C)	-5.4	-9.4	-14.8	-13.1	-7.7	-10.3
Mean daily temp (°C)	-2.2	-5.4	-10.5	-8.5	-3.5	-6.2
Highest temp (°C)	13	6	3	6	10	13
Lowest temp (°C)	-18	-18	-23	-21	-19	-23
# days with rainfall	8	9	3	8	4	32
Total rain (mm)	44	84	41	24	30	224
# days with snowfall	10	12	19	10	5	56
Total snow (cm)	41	15	70	66	20	211
Mean snow depth (cm)	4	1	7	20	13	9
Max. snow depth (cm)	7	3	18	30	24	30

3.3. Results

The 178 birds banded this winter (Table 3.2) was slightly more than the 162 last winter, but still less than half the average across all previous years. For the second year in a row, this was largely a function of unusually cold weather in November, which limited banding effort that month to the lowest level since 2007. Overall, the banding effort of 117.8 hours was greater than the past two winters, but still roughly one-third less than the long-term average of 185.9 hours across previous years. The rate of 151 birds banded per 100 net hours was

the lowest for winter since 2014-2015, and well below the average of 233 across previous years. However, 19 species were banded, the highest total since 2014-2015, and above the long-term average of 16. The number of species observed also rebounded this winter to 48, the highest in three years, and just above the long-term average of 47. Monthly totals were a bit above average in November and December, then just slightly below average in each of the remaining months.

Table 3.2: Summary results of the 2018-2019 winter population monitoring program, by month.

	Nov 7-30	Dec 1-31	Jan 1-31	Feb 1-28	Mar 1-27	Season
# individuals (species) banded	100 (13)	43 (7)	n/a	n/a	35 (8)	178 (19)
# individuals (species) return	15 (4)	1 (1)	n/a	n/a	10 (12)	26 (5)
# individuals (species) repeat	68 (4)	42 (5)	n/a	n/a	5 (3)	115 (8)
# species observed	38	27	18	19	28	48
# net hours	57.0	24.8	n/a	n/a	36.0	117.8
# birds banded / 100 net hours	175.4	173.7	n/a	n/a	97.2	151.2
# days operating	11	11	11	5	11	49
# days banding	6	3	n/a	n/a	3	12

3.3.1. Birds banded

Red-bellied Woodpecker and Evening Grosbeak were banded for the first time ever in winter, increasing the cumulative total for the season at 35 species; Evening Grosbeak was also added as the 124th species on the overall list of species banded at MBO. Other than them, there were no record high banding totals for any species, for the third winter in a row. The highest number of birds banded was 35 on November 17, while diversity of birds banded peaked at 7 species on November 12 and November 17.

For the fourth year in a row and ninth time overall, American Goldfinch was banded in greater numbers than any other species in winter (Table 3.3). Black-capped Chickadee ranked second for the first time since 2009-2010, reflecting the relative scarcity of other species as much as anything. Dark-eyed Junco was in third place, with the number banded the fewest since winter 2013-2014. These three species comprised over three-quarters of all birds banded this winter. The only species to exceed long-term averages this winter were Song Sparrow (4 vs. 3) and Downy Woodpecker (3 vs. 2). Song Sparrow was in the top ten for winter for the first time in three years; White-breasted Nuthatch ranked in the top ten for the fifth time in the past six years, after having not ranked that high in any of the previous eight winter seasons.

Table 3.3: Top 10 species banded at MBO during the 2018-2019 winter population monitoring program, with comparison to the numbers banded in previous winters (rank in other years in parentheses). Dashes represent species not banded during a particular winter season.

		2018-2019	2017-2018	2016-2017	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012	2010-2011	2009-2010	2008-2009	2006-2007	2005-2006	2004-2005
1.	American Goldfinch	72	65(1)	136(1)	434(1)	65(5)	70(1)	228(2)	87(2)	93(2)	80(1)	2(4)	21(1)	111(1)	113(1)
2.	Black-capped Chickadee	36	19(3)	26(4)	26(5)	19(8)	6(5)	28(5)	12(6)	33(5)	54(2)	3(2)	17(4)	51(3)	26(3)
3.	Dark-eyed Junco	28	49(2)	101(2)	55(3)	97(3)	28(3)	42(4)	90(1)	150(1)	50(3)	--	20(3)	54(2)	20(4)
4.	American Tree Sparrow	10	9(5)	12(6)	65(2)	33(6)	4(6)	24(6)	56(4)	25(6)	38(4)	2(4)	7(5)	11(5)	9(5)
5.	White-throated Sparrow	4	5(6)	16(5)	3(13)	25(7)	3(7)	8(9)	1(15)	12(7)	6(9)	--	--	2(11)	--
5.	Song Sparrow	4	--	--	6(10)	1(21)	--	2(11)	2(11)	1(11)	3(12)	--	1(9)	--	--
7.	Downy Woodpecker	3	--	1(11)	1(17)	3(13)	2(9)	3(10)	2(11)	1(11)	--	--	--	2(11)	1(11)
7.	Northern Cardinal	3	13(4)	12(6)	18(7)	19(8)	9(4)	9(8)	11(7)	5(9)	4(11)	1(6)	2(8)	4(10)	7(6)
7.	White-breasted Nuthatch	3	--	2(9)	6(10)	2(16)	3(7)	--	--	--	--	--	--	--	--
7.	Mourning Dove	3	2(7)	3(8)	6(10)	--	1(11)	1(15)	5(10)	2(10)	17(6)	--	6(6)	11(5)	2(10)

3.3.2. Birds recaptured

The 115 repeats (birds last captured within the previous 90 days) this winter was more than last year, but still 17% below the long-term average. This winter, 57% of individuals occurred as repeats only once, whereas 12 Black-capped Chickadees were captured at least three times, including two of them caught on 5 of 12 sessions this winter. Overall, Black-capped Chickadees accounted for 84% of repeats this winter, the highest percentage ever, aside from 2008-2009, which had only three days of banding effort. Conversely, the 5% of repeats accounted for by Dark-eyed Junco was the lowest ever for that species.

The 26 returns (birds not captured in at least 90 days) this winter (Table 3.4) was the same as last winter, around 13% below the long-term average. As in all previous winters, Black-capped Chickadees had more returns than any other species, for the second year in a row comprising 54% of the total, compared to 48% across all years. However, over half (8) of the chickadee returns had last been recorded more than one year earlier. Northern Cardinal set a new record high this winter with 5 returns.

The oldest return this winter was a Black-capped Chickadee banded as a hatch-year individual in September 2010, and therefore almost 8.5 years old when recaptured in November 2018. Five individuals were recaptured for the first time in over two years: three Black-capped Chickadees, a Northern Cardinal, and an American Goldfinch that had not been recorded since being banded over 4 years earlier in November 2014. Winter site fidelity was highlighted by a Dark-eyed Junco that was banded at MBO in February 2012 and has subsequently been recaptured in November 2017 and November 2018.

Table 3.4: List of returns captured during the 2018-2019 winter population monitoring program, sorted by time elapsed.

Band number	Species	Age/sex at return	Age/sex at banding	Banding date	Previous capture	2018-19 return	Time elapsed		
2730-49550	AMGO	AHY-M	HY-M	26 Nov 2014	26 Nov 2014	14 Dec	4 years		18 days
2600-16133	BCCH	ASY-U	HY-U	26 Jun 2011	3 Jul 2016	20 Mar	2 years	8 months	17 days
2730-49966	BCCH	AHY-U	HY-U	8 Sep 2015	10 Mar 2016	17 Nov	2 years	8 months	7 days
2720-00705	BCCH	AHY-U	SY-U	31 Jan 2016	23 Mar 2016	12 Nov	2 years	7 months	20 days
2231-00154	NOCA	U-F	HY-U	11 Aug 2016	27 Oct 2016	30 Nov	2 years	1 month	3 days
2650-45645	BCCH	AHY-U	HY-U	12 Jul 2015	6 Dec 2016	17 Nov	1 year	11 months	11 days
2600-15948	BCCH	AHY-U	HY-U	9 Sep 2010	6 Dec 2016	12 Nov	1 year	11 months	6 days
2651-66697	NOCA	U-F	HY-F	3 Nov 2016	15 Jun 2017	26 Nov	1 year	5 months	11 days
2810-34525	BCCH	AHY-U	HY-U	23 Jul 2017	23 Jul 2017	26 Nov	1 year	4 months	3 days
2810-34520	BCCH	AHY-U	HY-U	23 Jul 2017	23 Jul 2017	26 Nov	1 year	4 months	3 days
2641-17990	NOCA	U-F	AHY-F	21 May 2016	3 Aug 2017	26 Nov	1 year	3 months	23 days
2650-41087	SCJU	AHY-M	SY-U	23 Feb 2012	13 Nov 2017	17 Nov	1 year		4 days
2650-45644	BCCH	AHY-U	HY-U	12 Jul 2015	13 Nov 2017	17 Nov	1 year		4 days
2810-34663	BCCH	AHY-U	SY-U	1 May 2018	1 May 2018	14 Mar		10 months	13 days
2810-34660	BCCH	AHY-U	SY-U	27 Feb 2018	27 Feb 2018	30 Nov		9 months	3 days
2810-34659	BCCH	ASY-U	SY-U	27 Feb 2018	20 Aug 2018	20 Mar		7 months	
2720-00724	BCCH	AHY-U	HY-U	14 Aug 2016	17 May 2018	8 Nov		5 months	22 days
2880-02177	AMGO	SY-F	HY-F	31 Oct 2018	31 Oct 2018	27 Mar		4 months	24 days
2471-50543	DOWO	TY-M	SY-M	19 Oct 2018	19 Oct 2018	14 Mar		4 months	23 days
2651-87913	NOCA	AHY-M	HY-M	19 Aug 2018	27 Oct 2018	20 Mar		4 months	21 days
2810-34689	BCCH	SY-U	HY-U	29 Sep 2018	12 Nov 2018	14 Mar		4 months	2 days
2880-02266	AMGO	SY-F	HY-F	17 Nov 2018	17 Nov 2018	14 Mar		3 months	25 days
2880-02228	SCJU	SY-U	HY-U	12 Nov 2018	26 Nov 2018	20 Mar		3 months	22 days
2810-34621	BCCH	ASY-U	HY-U	4 Sep 2017	26 Nov 2018	20 Mar		3 months	22 days
2651-67089	NOCA	U-M	HY-M	1 Aug 2018	1 Aug 2018	17 Nov		3 months	16 days
2691-45623	DOWO	ASY-M	HY-M	4 Jul 2015	9 Aug 2018	12 Nov		3 months	3 days
2810-34675	BCCH	SY-U	HY-U	26 Aug 2018	20 Dec 2018	20 Mar		3 months	

This winter we received three reports of birds banded at MBO being detected elsewhere, all in the second half of March. Two were Northern Saw-whet Owls – one banded on 7 October 2016 and found dead from a vehicle collision 350 km to the southeast near Westbrook, Massachusetts on 16 March 2019, and the other banded on 23 October 2018 and found dead at the Ecomuseum, adjacent to MBO, on 27 March 2019. Particularly notable was the report of an American Robin banded on 17 October 2009 and found nearly ten years later, 280 km to the southwest near Frankfort, New York, unfortunately also dead on a road.

3.3.3. Daily estimated totals (DET)

The number of species observed daily was highest (29) on November 8, and bottomed out at four species on December 6 and January 10. For the fourth winter in a row, no species were observed during the season for the first time, leaving the cumulative list for the season at 97 species. Three species had record high mean daily counts for winter: Common Raven (1.10 vs. 0.58 in 2014-2015), Evening Grosbeak (0.53 vs. 0.19 in 2010-2011), and Herring Gull (0.47 vs. 0.34 in 2005-2006). On the contrary, the mean daily count was below the long-term average for six of this year's top ten species (Canada Goose, American Robin, European Starling, American Goldfinch, Dark-eyed Junco, and American Tree Sparrow). Two species were missed entirely this winter despite being observed in at least 10 previous years: Mallard, and Rock Pigeon.

This female Evening Grosbeak was the first one ever banded at MBO.
(Photo by Ana Morales)

4. Spring Migration Monitoring Program (SMMP)

The Spring Migration Monitoring Program has been operated at MBO annually since 2005. It covers the 10-week period from March 28 through June 5. Since 2007, the protocol has been to focus banding on a 45-day window from April 18 through June 1, recognizing that during the first three weeks of the season it is often too cold to permit a consistent effort, and that by the last four days of the season, migrants are becoming scarce relative to local breeders; these periods are instead covered through census and supplementary observations.

4.1. Effort

Census was conducted on all days this spring. Banding took place on 39 (87%) of the 45 scheduled days; banding was cancelled on the other six days (April 20, 24, 27, May 10, 14, 19) due to rain. On an additional 8 days, rain and/or strong winds resulted in reduced net hours (less than 75 out of a normal 80), leaving 31 days (69%) of full banding effort according to the protocol, slightly above the spring average of 30 days. Overall, the 2908 net hours this spring was marginally more than the previous two years, and almost perfectly matching the average of 2904 from 2006 through 2018.

All captures this spring were through the standard set of 16 mist nets used for migration monitoring, arranged as in previous years (net locations A1, A2, B2, N1, N3, B3, C1, C2, D1, D2, D3, D4, E1, E2, H1, and H2; see Gahbauer et al. 2016 for a map). All nets were used throughout the season. All nets were new, 12 m long with 30 mm mesh, from Avinet.

4.2. Site conditions

Weather can have a significant influence on migration, especially in spring; conditions throughout the season are summarized in Table 4.1. It was by far the coolest spring in MBO's 15-year history, and the fifth consecutive year of below-average temperatures. The mean daily high of 13.0°C was far below the previous record low of 14.9°C in 2017, and the mean daily low a bit less than the previous record of 4.4°C in 2016. Remarkably, temperatures remained below average throughout the entire season, but the deviation from the norm was particularly pronounced in weeks 2, 5, and 10. For the second year in a row, small amounts of snow fell in each of the first four weeks of the season, but did not interfere with program operation. It was a fairly wet spring, with rain on nearly 60% of days, and total rainfall slightly above average. However, precipitation was uneven, with weeks 3, 6, 8, and 10 drier than usual, and only week 7 setting a new record high for volume of rain.

Table 4.1: Weather conditions during the 2019 SMMP, by week.

	1	2	3	4	5	6	7	8	9	10	Season
Mean daily high (°C)	5.9	4.5	10.8	13.8	10.3	16.3	15.0	17.8	18.5	17.6	13.0
Mean daily low (°C)	-2.3	-2.7	0.6	5.0	2.9	5.5	5.8	8.1	9.7	8.9	4.1
Mean daily temp (°C)	1.8	0.9	5.7	9.4	6.6	10.9	19.4	13.0	14.1	13.2	8.6
Highest temp (°C)	10	11	17	19	14	24	18	23	24	22	24
Lowest temp (°C)	-6	-7	-4	3	-1	2	3	6	7	6	-7
# days with rainfall	4	5	3	5	3	3	5	4	5	4	41
Total rain (mm)	15	17	9	55	39	5	46	14	23	11	235
# days with snowfall	3	2	2	1	0	0	0	0	0	0	6
Total snow (cm)	1	3	0	0	0	0	0	0	0	0	15

4.3. Results and discussion

4.3.1. Birds banded

Table 4.2 summarizes the spring 2019 banding results by week. The 1827 birds banded this spring was an incredible 35% increase over the previous record high of 1356 in 2014, and nearly doubled the record of 920 across all previous years. The 76 species banded was shattered the old record of 69 from 2014 and 2015, and was a notable departure from the consistent range of 64 to 69 in each of the previous eight years. The busiest day of the season (240 birds) was May 24 (Figure 4.1), the second-latest peak date for any spring. That tally also far exceeded the old single-day record for spring, of 145 on April 25, 2014. In total, 804 birds were banded

that week, nearly double the previous single-week record for spring, of 412 in week 8 of 2017. The 140 birds banded in the final week of the season was also a record high for the period, nearly double the old high of 74 set in 2014. Incredibly the total from just the final two weeks of spring this year was more than in any of the first seven full spring seasons! The only week this spring with below average numbers was week 7. The count of birds banded exceeded 40 on 14 days, ranging from April 21 to June 1, and including an uninterrupted nine-day streak from May 20 to 28. The mean count of birds banded per day this spring was 40.6 (or 46.8 during the 39 days with nets open).

Table 4.2: Summary results of the 2019 SMMP, by week.

	S1	S2	S3	S4	S5	S6
# individuals (species) banded	n/a	n/a	n/a	140 (22)	128 (20)	118 (28)
# individuals (species) return	n/a	n/a	n/a	13 (5)	6 (6)	8 (5)
# individuals (species) repeat	n/a	n/a	n/a	19 (7)	24 (10)	26 (9)
# species observed	31	35	56	74	77	106
# net hours	n/a	n/a	n/a	336.0	440.0	520.0
# birds banded / 100 net hours	n/a	n/a	n/a	41.7	29.1	22.7
# days operating	7	7	7	7	7	7
# days banding	n/a	n/a	n/a	5	6	7
# days with full net coverage	n/a	n/a	n/a	3	5	5

	S7	S8	S9	S10	Average	Season
# individuals (species) banded	113 (31)	384 (48)	804 (49)	140 (25)	261 (32)	1827 (76)
# individuals (species) return	26 (15)	20 (11)	16 (8)	10 (7)	14 (8)	99 (27)
# individuals (species) repeat	27 (10)	58 (19)	178 (31)	47 (15)	54 (14)	379 (45)
# species observed	112	123	110	93	82	155
# net hours	384.0	436.0	552.0	240.0	415.4	2908.0
# birds banded / 100 net hours	29.4	88.1	145.7	58.3	59.3	62.8
# days operating	7	7	7	7	7.0	70
# days banding	5	6	7	3	5.6	39
# days with full net coverage	4	5	6	3	4.4	31

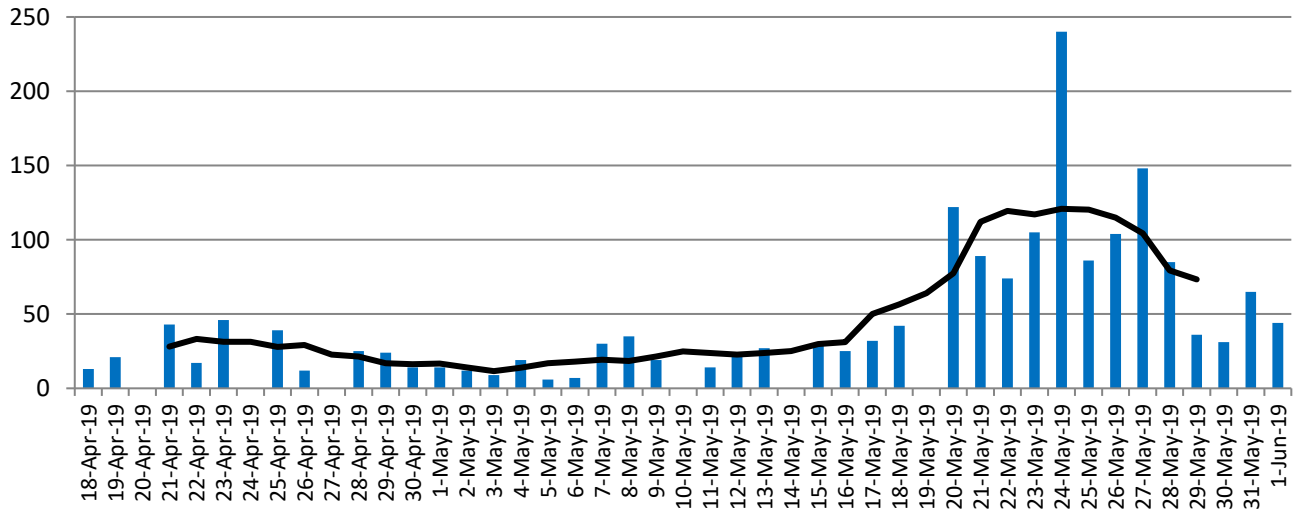


Figure 4.1: Daily and running 7-day mean number of individuals banded per day throughout spring 2019.

Species richness among banded birds peaked in the final third of May this year (Figure 4.2), later than usual. The greatest variety banded in a single day was 36 species on May24, far above the previous single-day record for spring of 26, on May 22, 2011 (notably four other days between May 21 and May 27 this year also exceeded the old high). The mean number of species banded per day was 14.3, well above average.

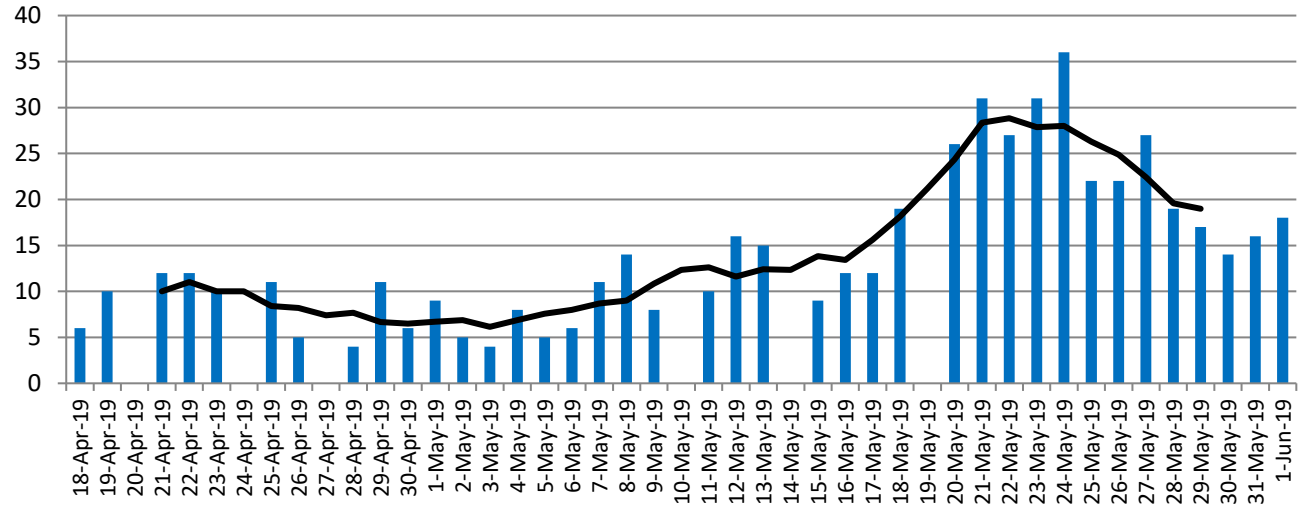


Figure 4.2: Daily and running 7-day mean number of species banded per day throughout spring 2019.

Five species were new to the spring banding list, expanding it to 108 species: Belted Kingfisher (April 21), Evening Grosbeak and Hooded Warbler (both on May 7!), Ruby-throated Hummingbird (May 18), and Eastern Wood-Pewee (May 21). The kingfisher and warbler had never been banded in any other season either, becoming the 125th and 126th species banded at MBO overall. New season highs were documented for an unusually high 29 additional species, including 17 warblers, 5 of which more than quadrupled previous records. In order of decreasing abundance, the full list is: Magnolia Warbler (173, vs. 88 in 2018), Yellow-rumped Warbler (171, vs. 108 in 2018), Yellow Warbler (70, vs. 47 in 2005), Northern Waterthrush (61, vs. 48 in 2014), Common Yellowthroat (59, vs. 40 in 2014), Wilson's Warbler (54, vs. 39 in 2015), American Redstart (53, vs. 28 in 2015), Canada Warbler (43, vs. 10 in 2011), Swainson's Thrush (38, vs. 19 in 2018), Least Flycatcher (37, vs. 21 in 2014), Traill's Flycatcher (35, vs. 34 in 2014), Swamp Sparrow (35, vs. 27 in 2016), Bay-breasted Warbler (31, vs. 4 in 2014), Mourning Warbler (30, vs. 7 in 2015), Chestnut-sided Warbler (26, vs. 15 in 2015), Lincoln's Sparrow (24, vs. 13 in 2016), Cape May Warbler (21, vs. 4 in 2018), Golden-crowned Kinglet (18, vs. 15 in 2017), Black-throated Blue Warbler (15, vs. 6 in 2018), Yellow-bellied Flycatcher (13, vs. 5 in 2011), Brown Creeper (11, vs. 4 in 2014), Black-and-white warbler (11, vs. 7 in 2018), House Wren (10, vs. 9 in 2012), Northern Cardinal (10, vs. 6 in 2016), Blackburnian Warbler (8, vs. 1 in 2005, 2009, and 2013), Ovenbird (7, vs. 5 in 2016), Eastern Kingbird (6, vs. 3 in 2011), Orange-crowned Warbler (4, vs. 2 in 2010), and Red-breasted Nuthatch (3, vs. 1 in 2017).

There were 11 species banded just once this spring: Black-billed Cuckoo, Olive-sided Flycatcher, Black-capped Chickadee, Gray-cheeked Thrush, Evening Grosbeak, Savannah Sparrow, Rusty Blackbird, Hooded Warbler, Yellow Parlm Warbler, Black-throated Green Warbler; additionally a single hybrid warbler was banded. All of these species are typically rare in spring, with an annual mean of one or fewer banded, except Black-capped Chickadee, with a long-term average of 5.

At the other extreme, Table 4.3 lists the 10 most frequently banded species, which account for 56.3% of all birds banded during SMMP 2019. One of these, Ruby-crowned Kinglet, is now the only species to have been in the top ten for spring annually since 2005; this year marked the first time that Red-winged Blackbird missed it (ranked 13th, with 40 individuals banded). For the first time ever, warblers accounted for eight of the top ten species, and it was only the second time that the top three were all warblers (the same species as in 2015).

After 15 years of the SMMP, the top three species for cumulative totals are now Red-winged Blackbird (1235), Tennessee Warbler (1203), and Ruby-crowned Kinglet (1022).

Table 4.3: Top 10 species banded at MBO during the 2019 SMMP, with comparison to the numbers banded in 2005-2018 (rank in other years in parentheses).

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
1. Magnolia Warbler	173	88(4)	57(4)	42(7)	87(2)	82(3)	66(2)	39(8)	27(13)	11(19)	41(6)	18(14)	17(9)	22(8)	5(21)
2. Yellow-rumped Warbler	171	108(3)	19(13)	45(6)	69(3)	56(7)	23(10)	46(7)	102(1)	30(5)	37(8)	47(4)	32(5)	22(8)	25(7)
3. Tennessee Warbler	166	141(1)	211(1)	101(2)	111(1)	142(2)	49(3)	94(2)	71(2)	7(22)	82(1)	6(27)	16(11)	2(40)	4(28)
4. White-throated Sparrow	114	35(10)	110(3)	138(1)	39(11)	40(10)	40(7)	57(4)	51(4)	22(8)	34(9)	79(3)	13(16)	42(5)	29(6)
5. Ruby-crowned Kinglet	107	65(6)	147(2)	97(3)	68(4)	71(4)	39(8)	54(5)	43(7)	36(4)	73(2)	92(2)	52(2)	58(3)	20(9)
6. Yellow Warbler	70	40(8)	37(7)	36(9)	34(13)	36(12)	43(4)	37(9)	30(9)	26(7)	43(5)	36(6)	29(6)	21(10)	47(4)
7. Northern Waterthrush	61	30(12)	29(10)	37(8)	42(8)	48(8)	43(4)	28(10)	28(12)	12(18)	26(12)	12(18)	15(12)	5(29)	4(28)
8. Common Yellowthroat	59	33(11)	36(8)	18(17)	25(15)	40(10)	23(10)	25(12)	30(9)	17(10)	28(10)	25(9)	12(17)	25(7)	22(8)
9. Wilson's Warbler	54	26(13)	15(16)	13(20)	39(11)	35(13)	17(14)	25(12)	14(18)	6(23)	28(10)	24(10)	9(20)	15(14)	5(21)
10. American Redstart	53	14(19)	13(20)	22(16)	28(14)	10(24)	9(24)	19(18)	14(18)	5(25)	6(27)	6(27)	3(36)	3(37)	6(19)

Magnolia Warbler was the top species banded in spring for the first time ever, just barely ahead of Yellow-rumped Warbler, which had its highest ranking since topping the list in 2011. Tennessee Warbler was in third place, tying its lowest rank since 2013, and tying Red-winged Blackbird (2005-2013) as the only species with a nine-year streak of being in the top three. White-throated Sparrow and Ruby-crowned Kinglet rounded out the top five, also with above average numbers, though short of records. All of the remaining species in the top ten set new records for the season: Wilson's Warbler and American Redstart were on the list for the first time.

4.3.2. Birds recaptured

There were 379 repeats this spring, 25% more than the previous record of 302 set last year. Nearly 60% of these were in the final two weeks of the season. The 268 individuals involved also greatly exceeded the previous high (187 in 2018). Of these, 193 (72%) were recaptured just once, whereas 24 individuals were recorded as repeats at least three times each this spring, most notably a House Wren on eight occasions. The 45 species with repeats exceeded the previous high (from 2017 and 2018) by six, and included the first spring repeats ever for three warbler species: Orange-crowned, Bay-breasted, and Cape May.

In most years, the list of repeats is dominated by species that breed locally, but this year six of the top ten species (including the top three) were species that only migrate through MBO. Except for Yellow Warbler, Ruby-crowned Kinglet, and Song Sparrow, all other species in the top ten established new record high counts this spring, as did ten other less frequently encountered species. For only the third time, Red-winged Blackbird missed the top ten; the lone repeat was an exceptionally low count compared to the long-term average of 13.

Table 4.4: Top 10 species recaptured most often during the 2019 SMMP (species with local breeding populations marked with an asterisk).

	Species	# Repeats	# Individuals
1.	Magnolia Warbler	32	23
1.	Wilson's Warbler	32	21
3.	Northern Waterthrush	29	18
4.	Yellow Warbler*	26	15
5.	Common Yellowthroat*	25	21
6.	Ruby-crowned Kinglet	24	16
7.	House Wren*	22	7
8.	Song Sparrow*	20	11
9.	Yellow-rumped Warbler	17	17
10.	American Redstart*	16	12

This spring there were 99 returns (Table 4.5), nearly matching the average of 98 from 2006 to 2018. The 27 species involved tied last year's record high. The oldest return this spring was a male Baltimore Oriole banded as a second-year bird during the MAPS program in June 2010, and recaptured as a nearly 10-year-old bird this May. There were 20 returns this spring that were last recorded at MBO one year ago or longer, the fewest since 2010. Red-bellied Woodpecker was recorded as a return in spring for the first time. One other species had a record high number of returns this spring, Common Grackle (3, vs. 2 in 2009, 2014, 2016, and 2017).

Table 4.5: List of returns captured during the 2019 SMMP, sorted by time elapsed.

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed		
1433-37760	COGR	AHY-U	AHY-M	23 May 2015	23 May 2015	1 Jun	4 years		9 days
2561-32204	RWBL	ASY-F	SY-F	6 Jun 2014	14 Jun 2015	7 May	3 years	10 months	23 days
2720-01052	YEWA	ASY-M	ASY-M	15 May 2016	15 May 2016	27 May	3 years		12 days
2720-00971	AMGO	ASY-M	ASY-M	20 May 2016	20 May 2016	28 May	3 years		8 days
2730-49586	AMGO	ASY-F	SY-F	17 May 2015	27 May 2016	24 May	2 years	11 months	27 days
2650-44730	COYE	ASY-F	HY-U	25 Aug 2015	4 Aug 2016	25 May	2 years	9 months	21 days
2650-45314	YEWA	ASY-F	ASY-F	8 May 2013	11 Aug 2016	20 May	2 years	9 months	9 days
2810-34257	YEWA	ASY-F	ASY-F	20 May 2017	25 May 2017	30 May	2 years		5 days
2631-76388	INBU	ASY-F	ASY-F	19 May 2017	19 May 2017	23 May	2 years		4 days
2521-95197	TRES	AHY-M	AHY-M	22 May 2016	18 May 2017	20 May	2 years		2 days
2771-52071	SOSP	AHY-U	AHY-F	12 May 2017	12 May 2017	8 May	1 year	11 months	26 days
2810-34237	WAVI	ASY-U	AHY-U	19 May 2017	19 May 2017	13 May	1 year	11 months	24 days
2650-45669	YEWA	ASY-M	SY-M	24 Jun 2016	15 Jun 2017	12 May	1 year	10 months	27 days
2631-76458	SWSP	ASY-U	HY-U	2 Aug 2017	2 Aug 2017	26 Apr	1 year	8 months	24 days
1803-09978	BLJA	ASY-U	HY-U	11 Oct 2017	11 Oct 2017	18 Apr	1 year	6 months	7 days
2561-09236	BAOR	ASY-M	HY-M	26 Aug 2013	18 May 2018	29 May	1 year		11 days
1833-10909	COGR	AHY-F	AHY-F	24 May 2018	24 May 2018	30 May	1 year		6 days
2631-99348	TRES	AHY-M	AHY-M	12 May 2018	12 May 2018	17 May	1 year		5 days
1833-10923	COGR	AHY-M	AHY-M	29 May 2018	29 May 2018	31 May	1 year		2 days
2740-77991	COYE	ASY-M	ASY-M	12 May 2018	12 May 2018	13 May	1 year		1 day
1372-11265	RWBL	ASY-M	ASY-M	20 May 2016	10 May 2018	9 May		11 months	29 days
2810-34261	YEWA	ASY-M	SY-M	20 May 2017	28 May 2018	25 May		11 months	27 days
2651-67055	BAOR	ASY-F	SY-F	18 May 2018	21 May 2018	16 May		11 months	25 days
2641-17716	RBGR	ASY-F	SY-F	3 Jul 2016	17 May 2018	11 May		11 months	24 days
2650-44586	COYE	ASY-M	HY-U	7 Aug 2015	29 May 2018	23 May		11 months	24 days
2641-09076	RBGR	ASY-M	SY-M	18 May 2015	21 May 2018	15 May		11 months	24 days
2820-67702	WAVI	ASY-U	ASY-U	12 May 2018	25 May 2018	18 May		11 months	23 days
1891-91604	BAOR	ASY-M	SY-M	27 Jun 2010	25 May 2018	17 May		11 months	22 days
2651-67051	BAOR	ASY-F	SY-F	18 May 2018	1 Jun 2018	23 May		11 months	22 days
2820-67746	HOWR	ASY-U	AHY-M	14 May 2018	14 May 2018	5 May		11 months	21 days
2651-67015	BAOR	ASY-M	SY-M	7 May 2018	21 May 2018	11 May		11 months	20 days
2820-67866	HOWR	ASY-U	SY-M	23 May 2018	23 May 2018	13 May		11 months	20 days
2820-67837	CHSP	ASY-U	SY-M	19 May 2018	19 May 2018	9 May		11 months	20 days
2421-70682	BAOR	ASY-M	ASY-M	18 May 2011	24 May 2018	13 May		11 months	19 days
2641-09095	RWBL	ASY-F	SY-F	25 May 2015	16 May 2018	4 May		11 months	18 days
1372-14805	RWBL	ASY-M	SY-M	24 May 2018	24 May 2018	11 May		11 months	17 days
2651-66758	RWBL	ASY-F	AHY-F	8 May 2017	16 Jun 2018	1 Jun		11 months	16 days
1372-14979	RWBL	ASY-M	SY-M	6 May 2018	6 May 2018	21 Apr		11 months	15 days
1372-14808	RWBL	ASY-M	SY-M	25 May 2018	1 Jun 2018	16 May		11 months	15 days
2741-64547	SOSP	AHY-M	AHY-U	18 Apr 2016	16 May 2018	29 Apr		11 months	13 days
1372-14971	RWBL	ASY-M	SY-M	2 May 2018	1 Jun 2018	12 May		11 months	11 days
2651-67072	GRCA	ASY-M	SY-M	29 May 2018	25 Jun 2018	1 Jun		11 months	7 days
2631-76429	TRES	AHY-M	L-U	20 Jun 2017	22 May 2018	22 Apr		11 months	

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed	
2641-17765	GRCA	ASY-M	SY-M	25 Jun 2018	25 Jun 2018	16 May	10 months	21 days
1352-85448	AMRO	ASY-M	SY-M	25 Jun 2018	25 Jun 2018	13 May	10 months	18 days
2650-45681	COYE	ASY-M	SY-M	17 Jul 2016	15 Jul 2018	31 May	10 months	16 days
2241-31121	SOSP	AHY-M	HY-U	1 Aug 2018	1 Aug 2018	28 May	9 months	27 days
2641-17774	WOTH	SY-M	HY-U	21 Jul 2018	4 Aug 2018	31 May	9 months	27 days
2241-31107	SOSP	AHY-U	AHY-M	14 May 2018	25 Jun 2018	19 Apr	9 months	25 days
2810-34566	COYE	ASY-M	ASY-M	30 Jul 2018	30 Jul 2018	24 May	9 months	24 days
1372-14973	AMRO	ASY-M	SY-M	2 May 2018	21 Jul 2018	15 May	9 months	24 days
2641-17771	BAOR	SY-F	HY-F	15 Jul 2018	30 Jul 2018	23 May	9 months	23 days
2771-73221	VEER	SY-U	HY-U	15 Jul 2018	3 Aug 2018	21 May	9 months	18 days
2830-69942	AMRE	ASY-F	SY-F	5 Aug 2018	5 Aug 2018	21 May	9 months	16 days
2651-66803	GRCA	ASY-U	SY-U	24 May 2017	8 Aug 2018	23 May	9 months	15 days
2820-68050	COYE	SY-F	HY-U	17 Aug 2018	17 Aug 2018	1 Jun	9 months	15 days
2651-82650	GRCA	ASY-M	AHY-U	7 Aug 2018	7 Aug 2018	20 May	9 months	13 days
2651-82613	GRCA	ASY-U	SY-F	2 Aug 2018	2 Aug 2018	15 May	9 months	13 days
2771-73224	BHCO	ASY-F	AHY-F	15 Jul 2018	15 Jul 2018	26 Apr	9 months	11 days
2820-67862	YEWA	ASY-M	SY-M	22 May 2018	10 Aug 2018	20 May	9 months	10 days
2820-67804	YEWA	ASY-M	SY-M	17 May 2018	8 Aug 2018	17 May	9 months	9 days
2720-01132	COYE	ASY-F	SY-F	28 May 2016	16 Aug 2018	24 May	9 months	8 days
2550-58462	AMRE	ASY-M	SY-M	21 Jul 2018	15 Aug 2018	22 May	9 months	7 days
2830-68094	AMRE	SY-M	HY-M	18 Aug 2018	18 Aug 2018	21 May	9 months	3 days
2740-77877	AMGO	ASY-M	SY-M	18 Aug 2018	30 Aug 2018	1 Jun	9 months	2 days
2241-31180	SOSP	AHY-U	HY-U	8 Aug 2018	8 Aug 2018	6 May	8 months	28 days
2820-68025	COYE	ASY-M	AHY-M	13 Aug 2018	28 Aug 2018	22 May	8 months	24 days
2651-67088	GRCA	SY-U	HY-U	1 Aug 2018	28 Aug 2018	21 May	8 months	23 days
2820-67968	HOWR	ASY-U	AHY-F	6 Aug 2018	6 Aug 2018	26 Apr	8 months	20 days
2651-66776	RBGR	ASY-M	SY-M	18 May 2017	2 Sep 2018	20 May	8 months	18 days
1372-14835	BRTH	SY-U	HY-U	30 Aug 2018	30 Aug 2018	15 May	8 months	15 days
2650-45698	COYE	ASY-F	SY-F	7 Jun 2017	4 Sep 2018	18 May	8 months	14 days
2820-67895	COYE	ASY-F	SY-F	30 May 2018	14 Sep 2018	27 May	8 months	13 days
2651-67058	GRCA	ASY-U	SY-M	20 May 2018	4 Sep 2018	15 May	8 months	11 days
2771-52235	SOSP	AHY-U	AHY-M	12 May 2017	14 Aug 2018	23 Apr	8 months	9 days
2261-70716	SOSP	AHY-U	HY-U	14 Aug 2018	14 Aug 2018	19 Apr	8 months	5 days
2261-70735	SOSP	AHY-U	HY-U	26 Aug 2018	26 Aug 2018	21 Apr	7 months	26 days
2471-50368	PUFI	SY-M	HY-M	1 Oct 2018	1 Oct 2018	9 May	7 months	8 days
2810-34667	BCCH	SY-F	HY-U	11 Aug 2018	12 Oct 2018	15 May	7 months	3 days
1372-39183	BLJA	ASY-U	AHY-U	1 Sep 2017	3 Oct 2018	3 May	7 months	
1383-62336	BLJA	ASY-U	AHY-U	23 Sep 2011	30 Oct 2018	23 May	6 months	23 days
2741-62949	SOSP	AHY-U	AHY-U	19 Sep 2016	27 Sep 2018	19 Apr	6 months	23 days
2421-93989	NOCA	AHY-M	HY-M	20 Sep 2012	26 Oct 2018	12 May	6 months	16 days
1372-14901	BLJA	ASY-F	HY-U	3 Oct 2017	27 Oct 2018	12 May	6 months	15 days
2810-34609	BCCH	ASY-U	HY-U	9 Aug 2017	10 Oct 2018	21 Apr	6 months	11 days
2720-00724	BCCH	ASY-F	HY-U	14 Aug 2016	8 Nov 2018	12 May	6 months	4 days
2471-50080	DOWO	SY-M	HY-M	13 Aug 2018	25 Oct 2018	25 Apr	6 months	
2810-33800	BCCH	ASY-F	HY-U	2 Aug 2017	17 Nov 2018	12 May	5 months	25 days
2810-34654	BCCH	ASY-U	SY-U	28 Jan 2018	8 Nov 2018	30 Apr	5 months	22 days
2880-02225	BCCH	ASY-U	AHY-U	12 Nov 2018	26 Nov 2018	9 May	5 months	13 days
2880-02229	BCCH	SY-U	HY-U	12 Nov 2018	30 Nov 2018	9 May	5 months	9 days
2880-02213	BCCH	SY-U	HY-U	8 Nov 2018	12 Nov 2018	18 Apr	5 months	6 days
2810-34683	BCCH	SY-U	HY-U	18 Sep 2018	12 Nov 2018	18 Apr	5 months	6 days
1352-95478	RBWO	SY-M	HY-M	14 Dec 2018	14 Dec 2018	17 May	5 months	3 days
2810-34622	BCCH	ASY-F	HY-U	6 Sep 2017	16 Dec 2018	12 May	4 months	26 days

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed	
2810-34690	BCCH	SY-U	HY-U	30 Sep 2018	14 Dec 2018	2 May	4 months	18 days
2810-34601	BCCH	ASY-U	HY-U	2 Aug 2017	16 Dec 2018	2 May	4 months	16 days
2810-34673	BCCH	SY-U	HY-U	26 Aug 2018	16 Dec 2018	21 Apr	4 months	5 days
2880-02206	BCCH	SY-U	HY-U	7 Nov 2018	14 Dec 2018	18 Apr	4 months	4 days

This spring we did not capture any foreign-banded birds, but two of our birds were reported from elsewhere. nor were any birds banded at MBO reported from other locations. First, a Common Grackle banded the previous spring on 29 May 2018 was reported dead near Peanns Beach, New Jersey on 19 April 2019, over 650 km to the south. Then on 22 May 2019, a Veery that we banded on 4 August 2018 was found dead, likely from a window collision, just 8 km to the northwest of MBO at Point Calumet, after having survived migration to and from its wintering grounds in South America.

4.3.3. Census

One or more experienced observers walked the standardized census route on all 70 days this spring. Over the course of the season, 132 species were observed on census, six more than last year's previous record high. The number of species observed on census was slightly below average for the first two weeks of spring, then above average for the remainder of the season, including record highs in weeks 3, 5, 6, 8, and 9. The 91 species observed on census in week 8 was the most ever in a single week during any season. This spring only two species were observed on census that were not otherwise detected: Sandhill Crane and Northern Shrike.

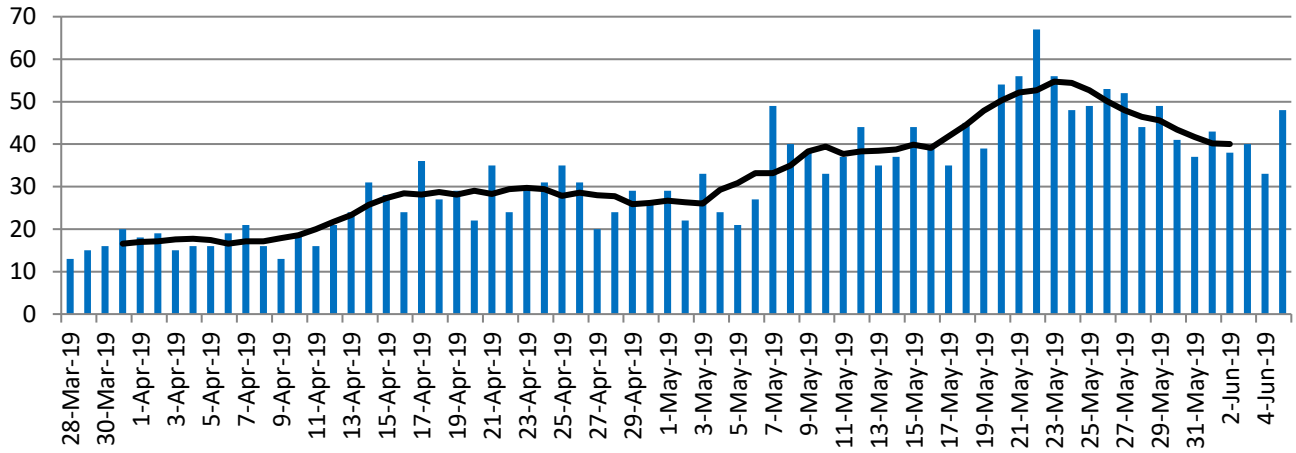


Figure 4.3: Daily species count and running 7-day mean number of species on census throughout spring 2019.

As shown in Figure 4.3, there was some daily variation in the number of species observed on census, but there was a notable boost in diversity just before mid-April, and then another steady increase over the first three weeks of May, until eventually peaking at 55 species on May 23, then tapering off to mid-May levels again by the end of the season. Of the days with census conducted, the lowest species count was 13 species on March 28 and April 9, while the highest was 67 species (an all-time record high) on May 22.

4.3.4. Daily estimated totals (DET)

The DET reflects not only banding and census data, but also all supplemental observations made by participants throughout each morning. It is particularly important for waterfowl and raptors, which are not targeted by the banding program, and are only marginally sampled by the census, since many are more active later in the morning. During SMMP 2019, 155 species were recorded, the most ever in any single season at MBO, and seven more than the spring record of 148 set in 2006 and tied in 2018. There were 8 species seen on just one date (Brant, Redhead, White-winged Scoter, Black Scoter, Wild Turkey, Common Tern, Northern

Shrike, and Blue-gray Gnatcatcher), plus two additional recognizable forms (Brewster's Warbler and Yellow Palm Warbler), highlighting the importance of daily coverage by experienced observers throughout the season. Three species were observed for the first time ever in spring, Hooded Warbler (#197, May 7), Wild Turkey (#198, May 16), and Redhead (#199, May 23). Redhead and Hooded Warbler were new to MBO overall, increasing the overall site checklist to 219 species.

The highest single day DET of 87 species on May 24 was three more than the previous record of 84 reached on May 13, 2018; incredibly there were an additional six days between May 20 and May 27 with a count of 80 or more, compared to only five such days across all 14 previous spring seasons combined. At the weekly scale, the number of species observed was a new record high for every week from 3 to 10, with the 123 species in week 8 far ahead of the previous high of 110 reached in each of the past three years. The weekly species count remained above 100 from week 6 through week 9, marking the first year ever with more than three 100+ species weeks. The lowest count of 13 species was on the first day of the season, March 28. The seven-day running average (Figure 4.4) shows a pattern largely similar to that generated by census (Figure 4.3), except peaking a bit more strongly just before mid-May and tapering off more thereafter. The average remained above 60 species for 24 consecutive days (May 8 to May 31), shattering the previous record of 17 days set just last year, and included a 12-day period (May 18 to May 29) with the running average staying above 70 species.

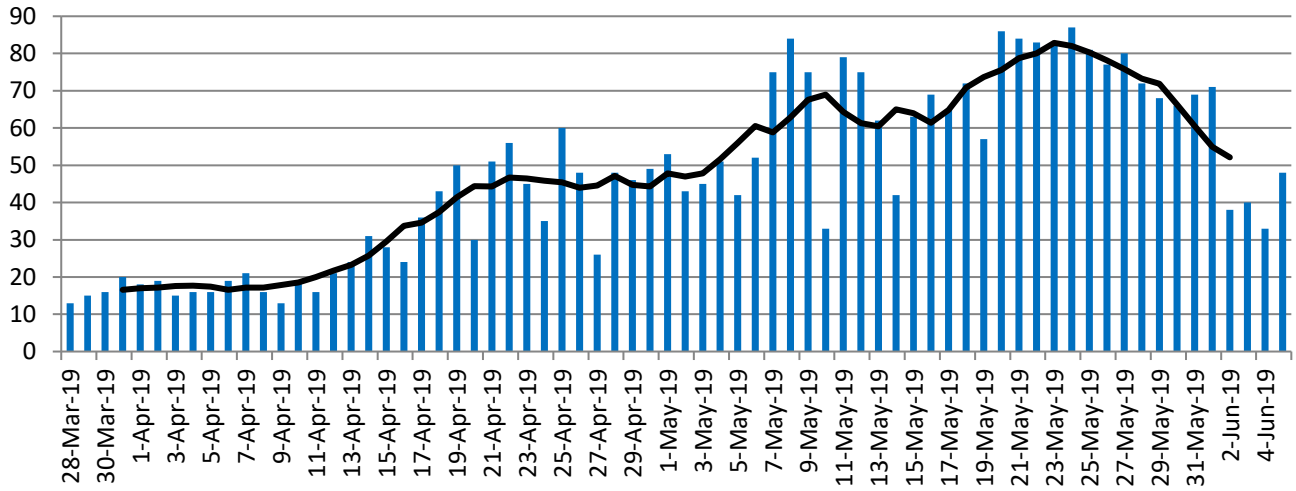


Figure 4.4: Daily species count and running 7-day mean number of species observed throughout spring 2019.

This year 20 species were observed during all 10 weeks of the spring season, but only 70% of them were also documented weekly in spring 2018: Canada Goose, Ring-billed Gull, Downy Woodpecker, Pileated Woodpecker, Blue Jay, American Crow, Black-capped Chickadee, White-breasted Nuthatch, American Robin, American Goldfinch, Song Sparrow, Red-winged Blackbird, Common Grackle, and Northern Cardinal. Among the other six species, the biggest surprise was Ruby-crowned Kinglet, which had only once previously been seen weekly throughout spring (in 2005); Mourning Dove and Turkey Vulture have also been this prevalent in fewer than half of spring seasons, while Hairy Woodpecker, European Starling, and Cedar Waxwing were missed last year but have been observed weekly in the majority of previous spring seasons. Only Wood Duck, Mallard, Common Raven, and Purple Finch were observed weekly in 2018 but not in 2019.

4.3.5. Coverage of priority species

MBO has produced a list of 62 target species for priority monitoring (Gahbauer et al. 2014). The list is based on priority rankings proposed by Bird Studies Canada, with an emphasis on species poorly studied by the Breeding Bird Survey due to their northern breeding distribution, and on neotropical migrants, recognized as being at elevated conservation risk due to threats to their wintering grounds. The MBO list has been modified to eliminate western species not expected to occur at the site.

For only the second time (matching 2015), all 62 species on the MBO priority list were observed during the 2019 SMMP; this year 85% of them were also banded, 3% more than the previous record set in 2015 (Table 4.6). Of the 1827 individuals banded this spring, 89% were priority species, matching the record high from 2011. Of the top 10 species banded at MBO during the 2019 SMMP, all were priority A (4), B (3), or C (3), a first for the season. This underscores the value of SMMP for documenting these otherwise poorly monitored birds.

Table 4.6: Summary of priority species observed and banded during the 2019 SMMP. Detailed category definitions are provided in Gahbauer et al. (2014).

	Priority A	Priority B	Priority C	Priority D
Number of species in category	15	10	18	19
Number of species observed	15	10	18	19
Number of species banded	14	10	15	14
Number of individuals banded	610	500	342	178

4.3.6. Net productivity

The nets used for MBO's migration monitoring programs are clustered into three main groups. The C and D nets (six in total) are along the east and north edges of Stoneycroft Pond, the A and E nets (four in total) sample the shrubby areas east of Stoneycroft Pond, while H and B/N nets (six in total) are along the back ponds. Under normal conditions, all nets were operated for five hours daily, although on windy days, some nets were selectively closed earlier than usual, as warranted by conditions. Table 4.7 summarizes the usage and productivity of all nets during the 2019 Spring Migration Monitoring Program.

Table 4.7: Net usage and capture rates during the 2019 SMMP.

Net	Hours open	New Captures	Returns + Repeats	Total Captures	Birds / 100 net hours	
					New	Total
A1	181.8	58	26	84	31.9	46.2
A2	181.8	103	39	142	56.7	78.1
A - TOTAL	**363.5**	**161**	**65**	**226**	**44.3**	**62.2**
B2	181.8	112	24	136	61.6	74.8
N1	181.8	140	34	174	77.0	95.7
N3	181.8	130	29	159	71.5	87.5
B3	181.8	146	30	176	80.3	96.8
B/N - TOTAL	**727.0**	**528**	**117**	**645**	**72.6**	**88.7**
C1	181.8	178	46	224	97.9	123.2
C2	181.8	185	47	232	101.8	127.6
C - TOTAL	**363.5**	**363**	**93**	**456**	**99.9**	**125.4**
D1	181.8	72	30	102	39.6	56.1
D2	181.8	77	20	97	42.4	53.4
D3	181.8	69	12	81	38.0	44.6
D4	181.8	72	18	90	39.6	49.5
D - TOTAL	**727.0**	**290**	**80**	**370**	**39.9**	**50.9**
E1	181.8	76	24	100	41.8	55.0
E2	181.8	118	30	148	64.9	81.4
E - TOTAL	**363.5**	**194**	**54**	**248**	**53.4**	**68.2**
H1	181.8	173	38	211	95.2	116.1
H2	181.8	118	31	149	64.9	82.0
H - TOTAL	**363.5**	**291**	**69**	**360**	**80.1**	**99.0**
GRAND TOTAL	**2908.0**	**1827**	**478**	**2305**	**62.8**	**79.3**

[1] *– Total captures include new captures, returns, repeats, and foreign recaptures.*

The overall capture rate for SMMP 2019 was 62.8 new birds per 100 net hours, nearly 40% higher than the previous record of 45.1 in 2014, and 90% above the average of 33.1 across all 14 previous years. An additional 16.5 birds per 100 net hours were recaptured, also more than in any previous year.

The relative effectiveness of nets varies from year to year, although typically the A and C nets along with E2 and H2 have been the most productive in spring. This year the C nets were distinctly the most productive group, but followed closely by H1. Interestingly, the B/N nets this year were particularly good, whereas the A and E groups were unusually below average, with A only slightly better than the D group, which as in most years had the lowest capture rates.

4.4. Summary and analysis

It was the coldest spring in MBO's history, and also by far the most productive. The number of birds banded nearly double the average across the previous 14 years, and more than one-third above the previous record high of 1356 set in 2014, which was also a cooler than usual spring. The season total was strongly driven by the incredible 804 birds banded in week 9, a later peak than in most previous years, and reflecting a number of common species that noticeably delayed their migration this spring. For the third year in a row, each of the top three species exceeded 100 individuals banded (this year in fact all in the top five reached this level).

With 111 species banded in spring across 15 years, an average season would be expected to generate record high results for 7 species. The 31 species reaching new record highs for banding totals this spring was therefore substantially more than usual. Overall, it was a surge in warblers that really dominated this spring, accounting for eight of the top ten species banded, and with 19 species occurring at record or near-record high levels. Nashville Warbler was a notable exception, the only warbler well below long-term average numbers.

There were also some other common species at unusually low levels, including Black-capped Chickadee, American Robin, American Goldfinch, Red-winged Blackbird, and Common Grackle. Considering just observations, some of the typically common waterbirds such as Snow Goose, Canada Goose, Wood Duck, and Mallard were unusually scarce, whereas a variety of uncommon ones were in good numbers this year, including Gadwall, Hooded Merganser, Sora, Spotted Sandpiper, Solitary Sandpiper, and Greater Yellowlegs.

Although present at MBO annually, Belted Kingfisher was only banded for the first time this spring. (Photo by Gay Gruner)

5. Summer (MAPS) program

Summer at MBO spans an 8-week period between migration periods, from June 6 through July 31. From 2005 through 2008, observations during this period were on a casual basis, but since 2009 data have been collected in a more standardized manner through the Monitoring Avian Productivity and Survivorship (MAPS) program. Banding takes place at 9 nets, reserved only for MAPS, around the southern half of Stoneycroft Pond.

5.1. Effort

Seven MAPS visits were conducted between 6 June and 31 July; on each occasion there were six hours of banding. Incidental observations of all species were also recorded during each visit. Additionally, Tree Swallow nestlings were banded on five occasions (June 16, 21, 25, and July 4 and 24).

5.2. Site conditions

For the second year in a row it was an unusually hot summer, with the mean daily high only 0.3°C than the record high set in 2012 and matched in 2018. Temperatures were particularly high in week 8, just the third week of summer ever averaging over 30°C, and unusually low only in week 2. It was the second-driest summer on record, with 18 mm more rain than in 2016.

Table 5.1: Weather conditions during the 2019 MAPS program, by week.

	1 Jun 6-12	2 Jun 13-19	3 Jun 20-26	4 Jun 27- Jul 3	5 Jul 4-10	6 Jul 11-17	7 Jul 18-24	8 Jul 25-31	Season
Mean daily high (°C)	25.3	19.8	25.5	28.7	29.5	27.4	28.3	30.5	26.9
Mean daily low (°C)	11.0	12.8	15.5	17.5	17.2	17.6	17.9	19.2	16.1
Mean daily temp (°C)	18.2	16.3	20.5	23.1	23.4	22.5	23.1	24.9	21.5
Highest temp (°C)	30	21	29	31	33	29	33	32	33
Lowest temp (°C)	8	11	12	15	13	16	14	14	8
# days with rainfall	2	3	3	3	1	2	1	1	16
Total rain (mm)	25	14	23	19	4	31	4	2	122

5.3. Results

5.3.1. Birds banded

Only 85 birds were banded in the 2019 MAPS program (Table 5.2), by far the fewest in its ten-year history, and 40% below the average count over that period. The relatively low count over the three June dates was actually slightly above the ten-year average of 22, and the 15 species banded that month was a record high; the big difference was the paltry count in July, which typically is dominated by juveniles. For the sixth consecutive year, the highest count of birds was banded on the second-last session of the season, this year being July 21. Despite abundance being low, the 34 species banded was just one short of the record high set last year, and distinctly above the ten-year average of 30. Additionally, an above-average total of 33 Tree Swallows were banded, all of which were nestlings as usual.

Table 5.2: Summary results of the 2019 MAPS Program, by month.

	Jun	Jul	Season
# individuals (species) banded	26 (15)	59 (28)	85 (34)
# individuals (species) return	5 (4)	9 (7)	14 (9)
# individuals (species) repeat	11 (6)	10 (6)	21 (10)
# species observed	50	50	60
# net hours	162.0	207.0	369.0
# birds banded / 100 net hours	16.1	28.5	23.0
# days operating	3	4	7
# days banding	3	4	7

Until 2014, four species had been in the top ten in all five years of the MAPS program (Red-eyed Vireo, American Robin, Yellow Warbler, and Song Sparrow), but 2019 marked the first time since then that Yellow Warbler has ranked that high. It tied for top spot this year with Song Sparrow, even though both were banded in substantially below average numbers compared to all previous MAPS years. The remainder of this year's top ten are only marginally differentiated from one another in abundance. The most noteworthy results among them were Traill's Flycatcher (the only species this year to tie a previous record high, set in 2014), and conversely Red-eyed Vireo, with less than one-quarter as many banded as the average of the previous four years, over the course of which it was by far the most commonly banded species overall. Despite the low overall numbers, three species were banded for the first time in summer, increasing the cumulative total for the season to 57 species. The Blackpoll Warbler on June 7 was undoubtedly a late spring migrant; Hairy Woodpecker on July 21 was long overdue, considering its status as a year-round resident at MBO; Ruby-throated Hummingbird on July 30 was new primarily because banding of this species has only started at MBO within the past year. Conversely, four species were missed that had been banded in at least six of the ten previous MAPS years: Yellow-shafted Flicker, Least Flycatcher, Warbling Vireo, and White-throated Sparrow.

Table 5.3: Top 10 species banded at MBO during the 2019 MAPS program, with comparison to the numbers banded in 2005-2018 (rank in other years in parentheses). Dashes represent species not banded during a particular year.

		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2007	2006	2005
1.	Song Sparrow	7	8(7)	8(5)	10(4)	9(5)	7(6)	29(1)	26(2)	18(1)	20(1)	10(3)	3(1)	10(1)	4(1)
1.	Yellow Warbler	7	2(18)	5(10)	5(8)	3(14)	4(11)	8(5)	61(1)	11(4)	8(6)	10(3)	--	3(3)	4(1)
3.	Rose-breasted Grosbeak	6	8(7)	1(23)	3(15)	8(6)	8(4)	1(22)	1(19)	--	5(10)	5(8)	--	3(3)	4(1)
4.	Traill's Flycatcher	5	--	--	--	1(22)	5(9)	3(12)	1(19)	--	1(18)	1(18)	--	--	--
4.	American Redstart	5	15(3)	11(3)	2(16)	8(6)	2(18)	4(9)	--	1(18)	1(18)	--	--	--	--
6.	American Robin	4	7(9)	12(1)	10(4)	20(1)	20(1)	11(3)	18(3)	14(2)	13(3)	13(1)	--	--	--
6.	Veery	4	2(18)	6(8)	2(16)	3(14)	4(11)	8(5)	2(12)	--	4(12)	4(10)	--	--	4(1)
6.	Red-eyed Vireo	4	25(1)	11(3)	18(1)	15(3)	8(4)	4(9)	6(7)	12(3)	9(5)	4(10)	--	--	--
6.	Common Yellowthroat	4	10(4)	2(20)	6(7)	7(9)	2(18)	1(22)	8(5)	3(9)	--	5(8)	--	--	--
6.	American Goldfinch	4	6(11)	6(8)	4(12)	1(22)	13(3)	2(15)	2(12)	1(18)	--	1(18)	--	--	--

5.3.2. Birds recaptured

There were 21 repeats of 10 species, both below average during the ten years of the MAPS program; in contrast, 14 returns of 9 species were slightly above average (Table 5.4). For the second year in a row, Northern Cardinal accounted for more returns (3) than any other species; three species tied for second place with two returns each: American Goldfinch, Ovenbird, and Common Yellowthroat. Of these, Ovenbird was the biggest surprise, as there had been only one previous return across all summers.

The longest time elapsed prior to recapture this summer was by a male Northern Cardinal, banded during the winter program in November 2015 as a hatch-year bird, and therefore 4 years old at time of recapture. Four other birds were last recorded at MBO one year ago or longer. The oldest bird recaptured was a male American Goldfinch, banded as an after-second-year male in May 2015, and therefore at least 6 years old.

Table 5.4: List of returns captured during the 2019 MAPS program, sorted by time elapsed.

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed		
2641-17915	NOCA	AHY-M	HY-M	21 Nov 2015	22 May 2016	30 Jul	3 years	2 months	8 days
2631-95208	OVEN	ASY-F	AHY-U	2 Sep 2017	2 Sep 2017	21 Jul	1 year	10 months	19 days
2810-34187	COYE	ASY-M	ASY-M	16 May 2017	27 May 2018	2 Jul	1 year	1 month	5 days
2740-77862	AMGO	ASY-F	SY-F	22 May 2018	22 May 2018	7 Jun	1 year		16 days
2771-73202	VEER	AHY-U	HY-U	30 Jul 2017	15 Jul 2018	30 Jul	1 year		15 days
2641-17741	NOCA	AHY-F	AHY-F	4 Jul 2017	15 Jul 2018	10 Jul		11 months	25 days

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed	
2810-34548	HOWR	AHY-M	AHY-U	15 Jul 2018	15 Jul 2018	2 Jul	11 months	17 days
2521-74073	REVI	AHY-U	ASY-U	4 Jul 2017	17 Aug 2018	21 Jul	11 months	4 days
2521-74094	OVEN	SY-F	HY-U	25 Jun 2018	24 Aug 2018	10 Jul	10 months	16 days
2830-69997	AMRE	ASY-M	AHY-M	9 Aug 2018	9 Aug 2018	7 Jun	9 months	29 days
2730-49590	AMGO	ASY-M	ASY-M	18 May 2015	24 Aug 2018	7 Jun	9 months	14 days
2880-02033	COYE	SY-F	HY-U	20 Sep 2018	20 Sep 2018	7 Jun	8 months	18 days
2651-67089	NOCA	AHY-M	HY-M	1 Aug 2018	17 Nov 2018	7 Jun	6 months	21 days
2810-34654	BCCH	AHY-U	SY-U	28 Jan 2018	30 Apr 2019	30 Jul	3 months	

No foreign-banded birds were captured at MBO this summer, nor were any of MBO's birds encountered elsewhere during this period.

5.3.3. Daily estimated totals (DET)

The number of species observed daily ranged from a low of 27 on July 10 to a high of 41 on July 21. Overall, 60 species were observed during the season, which is average for summer across all years, and slightly above the average of 57 over the ten previous years of MAPS. This was the lowest peak count since 2013, and overall the 55 species observed in summer was the fewest since 2012, and slightly below the average of 57 over the ten years of the MAPS program. No new species were added to the list of birds observed in summer, which remains at 111 species. Record high mean daily counts were established for only three uncommon species: Eastern Wood-Pewee (0.7, vs. 0.6 in 2017), Tennessee Warbler (0.4, vs. 0.2 in 2010), and Blackpoll Warbler (0.4, vs. 0.1 in 2008). For the first time ever, there were no observations of Indigo Bunting in summer; seven other species were also missed despite being observed in at least 10 of 14 previous summers: Wood Duck, Mallard, Red-shouldered Hawk, Least Flycatcher, European Starling, Chipping Sparrow, and White-throated Sparrow.

Ruby-throated Hummingbird banding started at MBO only in fall 2018, following specialized training by our banders. This year marked the first time that the species was also banded in spring and summer. (Photo by Ana Morales).

6. Fall Migration Monitoring Program (FMMP)

The Fall Migration Monitoring Program has been operated at MBO annually since 2004, with standardized operations since 2005. It previously covered 13 weeks from August 1 to October 30, but based on a pilot study in 2014, a 14th week was added starting in 2015, extending the season to November 6. Census, observations, and a five-hour banding period occur daily throughout FMMP (weather permitting).

6.1. Effort

Census was conducted on all 98 days of the season, and banding occurred on 92 days (94%), with 6 days entirely lost to unsuitable weather, mostly over the final third of the season (September 2; October 7, 17, 27; November 1, 5). However, there were 25 additional days with rain and/or strong winds resulting in reduced net hours (less than 75 out of a normal 80), leaving only 67 days (68%) of full banding effort according to the site protocol, the fewest since 2014. Fortunately, restrictions were in many cases only partial, so the total of 6815 net hours was actually above average. All captures this fall were through the standard set of 16 mist nets used for migration monitoring, as described in Section 4.1. All nets were from Avinet, 12 m long with 30 mm mesh, and were used, from spring 2019.

6.2. Site conditions

For the second year in a row, it was an unusually cool fall, with the lowest mean daily temperature since 2009. Only weeks 1, 3, 8, 11, and 13 were slightly warmer than average; weeks 6, 9, and 10 were most notably below average. The bigger weather story this fall was the rain, with only 5 mm less than the record set in MBO's first fall season in 2005. This resulted in unusually frequent reductions to banding effort.

Table 6.1: Weather conditions during the 2019 FMMP, by week.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Season
Mean daily high (ºC)	27.8	25.8	27.2	24.6	22.9	21.0	20.3	22.8	16.9	14.5	16.5	12.7	12.8	9.1	19.6
Mean daily low (ºC)	16.2	16.1	16.3	14.0	13.4	10.3	9.7	12.8	7.7	4.7	6.1	4.4	5.0	2.2	9.9
Mean daily temp (ºC)	22.0	21.0	21.8	19.3	18.2	15.7	15.0	17.8	12.3	9.6	11.3	8.6	8.9	5.7	14.8
Highest temp (ºC)	31	29	30	27	25	27	23	26	20	17	19	16	17	16	31
Lowest temp (ºC)	11	14	12	12	10	7	7	6	4	1	4	1	2	-1	-1
# days with rainfall	1	4	4	1	4	3	1	3	5	3	3	4	3	5	44
Total rain (mm)	1	26	9	17	65	17	7	6	68	16	15	81	38	74	440

6.3. Results

6.3.1. Birds banded

Table 6.2 summarizes the fall 2018 banding results throughout the season. The 2774 birds banded was the fewest ever in fall, even despite the extended season compared to the first decade. Weekly banding totals were slightly above average only in weeks 2, 3, and 6; conversely the totals for weeks 5, 7, and 10 were record lows. The 78 species banded over the course of the season was slightly below the long-term average of 79.

The busiest day of the season was October 18, with 88 birds banded (Figure 6.1). This was the lowest season peak ever, and the latest by eight days. The daily total exceeded 60 birds on just 8 dates, between September 7 and October 24. For the 2018 FMMP the mean count of birds banded per day was 28.3 (30.2 for the 92 days with banding effort).

Table 6.2: Summary results of the 2019 FMMP, by week.

	F1	F2	F3	F4	F5	F6	F7	F8
# individuals (species) banded	209 (38)	196 (39)	189 (36)	160 (36)	127 (34)	274 (41)	131 (37)	302 (42)
# individuals (species) return	9 (6)	3 (2)	7 (3)	5 (5)	3 (3)	6 (5)	4 (4)	5 (5)
# individuals (species) repeat	35 (17)	53 (18)	53 (20)	47 (18)	35 (17)	38 (14)	21 (9)	51 (18)
# species observed	72	84	75	78	81	88	91	90
# net hours	560.0	540.0	536.0	512.0	424.0	560.0	504.0	470.0
# birds banded / 100 net hours	37.3	36.3	35.3	31.3	30.0	48.9	26.0	64.3
# days operating	7	7	7	7	7	7	7	7
# days banding	7	7	7	7	6	7	7	7
# days with full net coverage	7	5	5	5	4	7	6	5

	F9	F10	F11	F12	F13	F14	Average	Season
# individuals (species) banded	222 (36)	232 (31)	256 (18)	191 (20)	193 (25)	92 (17)	198 (32)	2774 (78)
# individuals (species) return	1 (1)	7 (5)	0	0	2 (2)	3 (2)	4 (3)	55 (18)
# individuals (species) repeat	17 (10)	58 (15)	68 (11)	40 (9)	55 (10)	25 (8)	43 (14)	596 (48)
# species observed	81	65	58	60	60	60	75	145
# net hours	414.5	470.0	522.0	463.3	472.0	367.0	486.8	6814.8
# birds banded / 100 net hours	53.6	49.4	49.0	41.2	40.9	25.1	40.6	40.7
# days operating	7	7	7	7	7	7	7.0	98
# days banding	7	6	7	6	6	5	6.6	92
# days with full net coverage	1	5	4	4	5	4	4.8	67

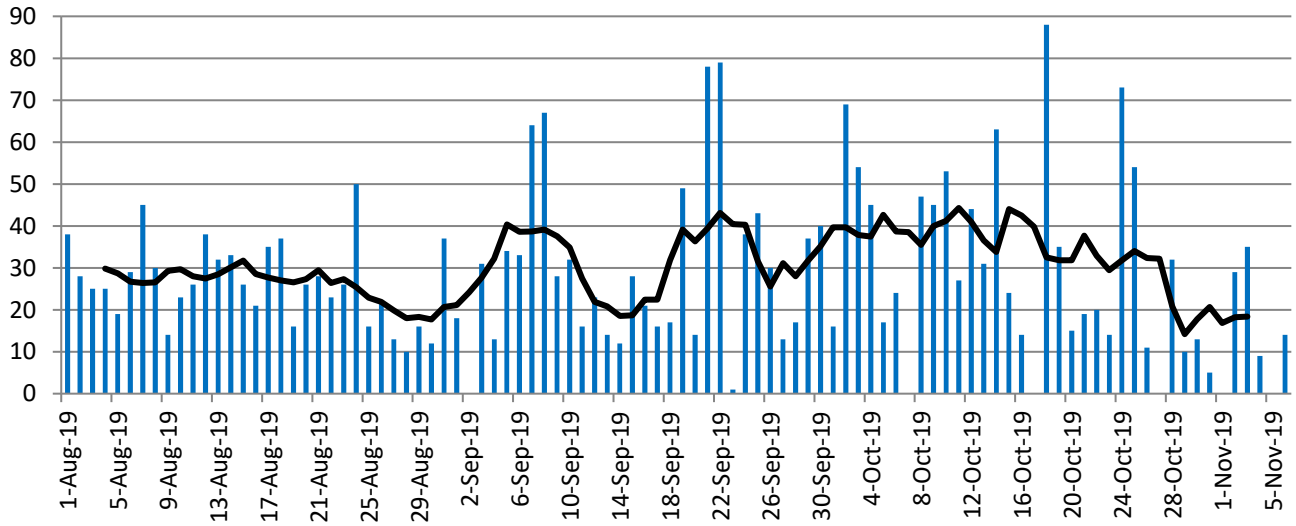


Figure 6.1: Daily and running 7-day mean number of individuals banded per day throughout fall 2019.

The running mean of species richness among banded birds fluctuated between 10 and 15 over the first two months of the season, then dropped sharply in early October and was mostly below 10 for the remainder of fall. (Figure 6.2). The greatest variety banded in a single day was 23 on September 7, the lowest peak since 2009. The mean number of species banded per day this fall was 12.2.

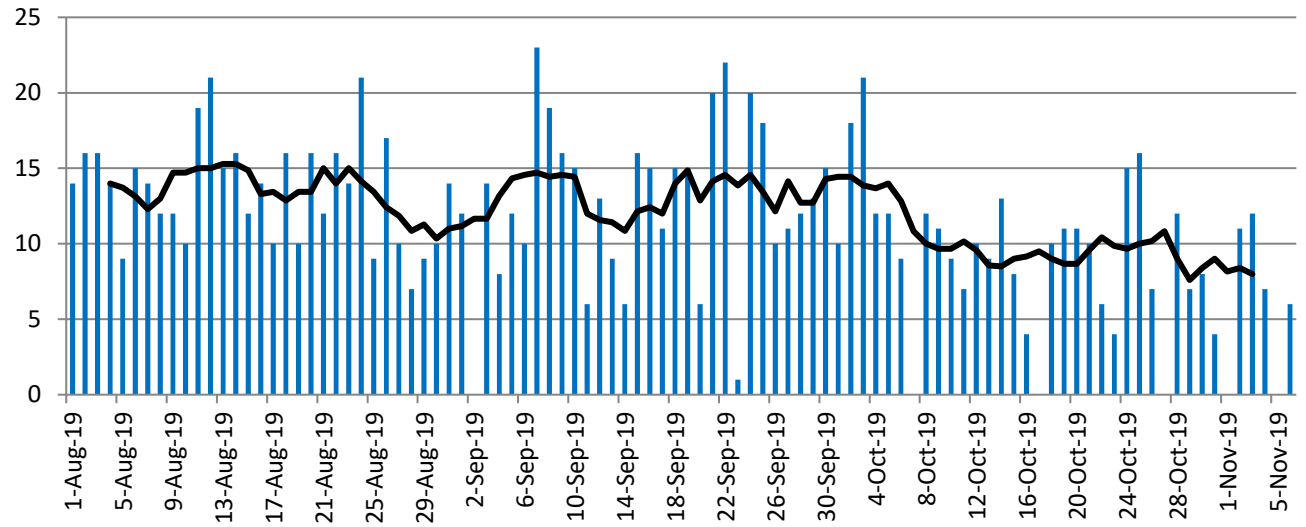


Figure 6.2: Daily and running 7-day mean number of species banded per day throughout fall 2019.

Two species were banded for the first time this fall, Ruby-throated Hummingbird on August 1, and Green Heron on August 7, increasing the cumulative season total to 108 species. Green Heron was new for MBO overall, becoming the 127th species banded on site. Record high banding totals were reached by only four other species this fall: Ovenbird (93, vs. 71 in 2017), Yellow-bellied Flycatcher (33, vs. 30 in 2014), Bay-breasted Warbler (17, vs. 13 in 2018), and Wood Thrush (8, vs. 7 in 2015). Conversely, it was the first time ever that no Hairy Woodpeckers were banded in fall, while House Finch was missed for the first time since 2011, and Eastern Wood-Pewee for the first time since 2012. Record low banding totals were set for three species: Song Sparrow (127, vs. 136 in 2016), Common Yellowthroat (39, vs. 51 in 2007), Eastern White-crowned Sparrow (7, vs. 10 in 2016).

Seven species were banded just once this fall: American Woodcock, Green Heron, Great Crested Flycatcher, Carolina Wren, Brown-headed Cowbird, Rusty Blackbird, and Scarlet Tanager. At the other extreme, Table 6.3 lists the 10 most frequently banded species, which account for 58% of all birds banded during FMMP 2019. Four of these (Ruby-crowned Kinglet, Magnolia Warbler, Song Sparrow, and White-throated Sparrow) have been in the top 10 for fall annually since 2005. There were four warblers among the top ten species this fall, and overall the 23 warbler species banded accounted for 39% of birds banded. Conversely, there were only two sparrows among the top ten, all 9 sparrow species banded this fall were in below average numbers, and collectively they comprised a record low 18% of birds banded. After 15 years of the FMMP, the top three species for cumulative totals are now Yellow-rumped Warbler (5968), White-throated Sparrow (5240), and Ruby-crowned Kinglet (4578).

Table 6.3: Top 10 species banded at MBO during the 2019 FMMP, with comparison to the numbers banded in 2005-2018 (rank in other years in parentheses).

		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
1.	White-throated Sparrow	257	385(1)	282(2)	566(1)	326(1)	484(1)	263(4)	506(1)	216(2)	351(5)	428(1)	317(4)	318(2)	187(5)	354(1)
2.	Ruby-crowned Kinglet	251	309(2)	301(1)	341(2)	257(3)	327(2)	347(1)	353(2)	180(4)	271(6)	257(4)	319(3)	376(1)	444(2)	245(2)
3.	Magnolia Warbler	241	181(6)	248(3)	133(9)	173(4)	279(3)	284(2)	203(5)	252(1)	260(7)	103(9)	264(5)	74(10)	157(6)	192(5)
4.	American Redstart	236	291(3)	237(4)	176(4)	165(6)	138(8)	146(7)	139(9)	150(6)	149(10)	104(8)	99(9)	77(9)	48(13)	66(13)
5.	Song Sparrow	127	176(7)	139(6)	136(8)	146(7)	136(9)	267(3)	217(4)	170(5)	219(8)	322(3)	199(7)	198(4)	302(3)	215(4)
6.	Tennessee Warbler	119	88(10)	47(15)	29(26)	68(14)	168(5)	249(5)	75(14)	208(3)	114(11)	23(31)	86(11)	18(31)	57(11)	46(18)
7.	American Robin	106	233(4)	56(13)	108(11)	263(2)	144(7)	236(6)	130(10)	79(10)	394(4)	200(5)	346(2)	318(2)	302(3)	119(9)
8.	Golden-crowned Kinglet	100	69(13)	85(10)	138(7)	63(15)	82(16)	101(9)	91(13)	70(12)	90(14)	25(29)	36(23)	22(25)	73(9)	54(15)
9.	Ovenbird	93	64(15)	71(11)	64(14)	70(13)	41(24)	47(17)	32(29)	47(16)	40(26)	36(23)	44(18)	13(38)	46(14)	34(22)
10.	Red-eyed Vireo	89	132(8)	67(12)	109(10)	85(11)	126(10)	78(12)	75(14)	41(20)	96(13)	56(16)	70(12)	62(12)	42(18)	117(10)

For the fifth time in the past six years and eighth time overall, White-throated Sparrow was the most frequently banded species in fall. It was followed closely by Ruby-crowned Kinglet, which has been among the top three species every year since 2012. Also not far behind were Magnolia Warbler, in the top five for the fifth time since 2011, and American Redstart, in the top four for the fourth consecutive year. After those top four species, there was a substantial drop of over 100 individuals to fifth place, where Song Sparrow found itself in the top five for the first time since 2013, despite a record low total of 127 individuals. American Robin, in seventh place, had its third-lowest total across all years. In sixth place, Tennessee Warbler was one of the few positive stories this fall, with the highest count since 2014; similarly the eighth place Golden-crowned Kinglet total was the greatest since 2013, and Ovenbird in ninth place actually set a new record high. Red-eyed Vireo, rounding out the top ten, was just above average.

6.3.2. Birds recaptured

There were 596 repeats this fall, marginally more than the 591 in 2017, but otherwise the fewest since 2007, and well below the average of 711 across all previous years. However, 48 species were represented, above the long-term average of 45. For just the second time (matching 2016), White-throated Sparrow outnumbered all other species; it was followed by Black-capped Chickadee, which has been in the top two every spring. Including the chickadee, seven species in the top ten this fall (also Red-eyed Vireo, Gray Catbird, Song Sparrow, Ovenbird, American Redstart, and Northern Cardinal; Table 6.4) breed regularly at MBO, and most of the repeats were likely of local birds. A number of individuals were recaptured on multiple occasions, most notably a Downy Woodpecker and a Black-capped Chickadees that were recaptured seven times each; two other Black-capped Chickadees and two Northern Cardinals were recaptured six times each. For only the second time, there were no repeats of Baltimore Oriole, and there were none of Dark-eyed Junco for the second year in a row, and only the third time ever in fall.

Table 6.4: Top 11 species recaptured most often during the 2019 FMMP (species with local breeding populations marked with an asterisk).

	Species	# Repeats	# Individuals
1.	White-throated Sparrow	72	60
2.	Black-capped Chickadee*	60	22
3.	Ruby-crowned Kinglet	41	30
4.	Gray Catbird*	39	22
5.	Song Sparrow*	38	29
6.	Hermit Thrush	37	25
7.	Northern Cardinal*	31	14
8.	American Redstart*	27	21
9.	Magnolia Warbler	25	22
10.	Red-eyed Vireo*	21	17
10.	Ovenbird*	21	15

Compared to previous years, there were remarkably few individuals that clearly stopped over for at least two weeks. Most repeats over this duration involved birds likely to be local breeders, or their offspring; the most notable exception was a Brown Creeper over 23 days. Two Purple Finches with recorded stopovers of 38 and 51 days may have been local residents, given regular summer records in recent years, including one observation this summer. Conversely, a small number of White-throated Sparrows typically breed at or adjacent to MBO, but given the lack of any sightings this summer, the 11 individuals recaptured over periods of 14 to 28 days may mostly, or even all, have been migratory stopovers. Additional stopovers were recorded through our Motus research on Tennessee Warblers (see Section 8.3).

There were 55 returns during the 2019 FMMP, the second-lowest count since 2013, but just above average over the history of the program; the 18 species involved perfectly matched the long-term average (Table 6.5).

For the second year in a row, Red-eyed Vireo set a new record high with 12, but it was the only species to do so this fall. Overall, 9 birds had not been encountered since two years or more, with three of them (two Common Yellowthroats and an Indigo Bunting) last captured between July 31 and August 15 in 2015. One of those Common Yellowthroats was also the oldest bird recaptured this fall, a female originally banded as a hatch-year bird in August 2010, and now 9 years old.

Table 6.5: List of returns captured during the 2019 FMMP, sorted by time elapsed.

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed		
2650-45656	COYE	AHY-F	HY-U	31 Jul 2015	31 Jul 2015	8 Sep	4 years	1 month	8 days
2600-16802	COYE	ASY-F	HY-U	31 Aug 2010	1 Aug 2015	3 Aug	4 years		2 days
2521-91087	INBU	AHY-M	ASY-M	15 Aug 2015	15 Aug 2015	4 Aug	3 years	11 months	20 days
2741-62860	VEER	AHY-U	HY-U	5 Aug 2016	5 Aug 2016	26 Aug	3 years		21 days
2521-74146	REVI	ASY-U	AHY-U	12 Aug 2014	31 May 2017	2 Aug	2 years	2 months	2 days
2521-74070	REVI	AHY-U	ASY-U	30 Jul 2016	16 Jul 2017	14 Aug	2 years		29 days
2521-74086	REVI	AHY-U	AHY-F	23 Jul 2017	23 Jul 2017	21 Aug	2 years		29 days
1372-14903	BLJA	AHY-U	HY-U	5 Oct 2017	5 Oct 2017	2 Nov	2 years		28 days
2521-74089	REVI	AHY-U	SY-U	30 Jul 2017	30 Jul 2017	20 Aug	2 years		21 days
2631-76516	REVI	AHY-U	AHY-U	10 Aug 2017	19 Aug 2017	17 Aug	1 year	11 months	29 days
1372-14966	BRTH	AHY-U	SY-U	27 Apr 2018	27 Apr 2018	20 Sep	1 year	4 months	24 days
2241-31033	VEER	AHY-U	SY-M	24 May 2018	24 May 2018	6 Aug	1 year	2 months	13 days
2561-32371	NOCA	AHY-F	HY-F	14 Oct 2014	9 Aug 2018	9 Oct	1 year	2 months	
2721-78615	PUFI	AHY-M	HY-U	1 Aug 2018	1 Aug 2018	3 Sep	1 year	1 month	2 days
2471-50108	SWTH	AHY-U	AHY-U	25 Aug 2018	25 Aug 2018	18 Sep	1 year		24 days
2790-29468	NAWA	AHY-U	AHY-F	29 Aug 2018	29 Aug 2018	21 Sep	1 year		23 days
2830-69966	AMRE	AHY-F	HY-U	7 Aug 2018	7 Aug 2018	21 Aug	1 year		14 days
2261-70726	SOSP	AHY-U	AHY-F	19 Aug 2018	16 Sep 2018	27 Sep	1 year		11 days
2721-78711	REVI	AHY-U	HY-U	13 Aug 2018	13 Aug 2018	22 Aug	1 year		9 days
2521-95297	REVI	AHY-U	AHY-U	16 Aug 2016	21 Aug 2018	30 Aug	1 year		9 days
2631-99264	REVI	AHY-U	AHY-F	21 Jul 2018	30 Jul 2018	7 Aug	1 year		8 days
2721-78822	INBU	AHY-F	HY-U	2 Sep 2018	2 Sep 2018	10 Sep	1 year		8 days
2791-41074	SOSP	AHY-U	AHY-U	29 Sep 2018	7 Oct 2018	8 Oct	1 year		1 day
2631-99262	REVI	AHY-U	AHY-F	21 Jul 2018	9 Aug 2018	6 Aug		11 months	28 days
2521-74097	REVI	AHY-U	SY-U	7 Jul 2018	21 Aug 2018	17 Aug		11 months	27 days
2651-67022	GRCA	AHY-U	ASY-U	10 May 2018	20 Sep 2018	16 Sep		11 months	27 days
2721-78742	REVI	AHY-U	AHY-U	17 Aug 2018	17 Aug 2018	13 Aug		11 months	27 days
2721-78716	REVI	AHY-U	AHY-U	13 Aug 2018	13 Aug 2018	4 Aug		11 months	22 days
2651-87903	NOCA	AHY-F	HY-F	15 Aug 2018	15 Aug 2018	1 Aug		11 months	17 days
2261-70744	SOSP	AHY-U	HY-U	15 Sep 2018	15 Sep 2018	18 Aug		11 months	3 days
2691-45623	DOWO	ASY-M	HY-M	4 Jul 2015	12 Nov 2018	9 Oct		10 months	27 days
2651-87969	GRCA	ASY-U	AHY-U	13 Sep 2018	13 Sep 2018	4 Aug		10 months	22 days
2880-02181	AMGO	SY-M	HY-M	31 Oct 2018	31 Oct 2018	6 Sep		10 months	6 days
2880-02304	BCCH	AHY-U	HY-U	14 Dec 2018	20 Dec 2018	22 Aug		8 months	2 days
2791-41625	DOWO	SY-F	SY-F	27 Mar 2019	27 Mar 2019	26 Oct		6 months	29 days
2471-50543	DOWO	ASY-M	SY-M	19 Oct 2018	14 Mar 2019	25 Sep		6 months	11 days
2810-34659	BCCH	AHY-U	SY-U	27 Feb 2018	20 Mar 2019	20 Sep		6 months	
2810-34667	BCCH	AHY-U	HY-U	11 Aug 2018	15 May 2019	24 Oct		5 months	9 days
2810-34683	BCCH	AHY-U	HY-U	18 Sep 2018	28 Apr 2019	6 Oct		5 months	8 days
2810-34609	BCCH	AHY-U	HY-U	9 Aug 2017	27 May 2019	2 Nov		5 months	6 days
2810-34622	BCCH	AHY-U	HY-U	6 Sep 2017	12 May 2019	6 Oct		4 months	24 days
1372-14901	BLJA	AHY-U	HY-U	3 Oct 2017	12 May 2019	4 Oct		4 months	22 days
2791-41645	SOSP	AHY-U	AHY-U	21 Apr 2019	22 Apr 2019	10 Sep		4 months	19 days
2241-31121	SOSP	AHY-U	HY-U	1 Aug 2018	28 May 2019	6 Oct		4 months	8 days

Band number	Species	Age/sex in 2019	Age/sex at banding	Banding date	Previous capture	2019 return	Time elapsed	
2810-34675	BCCH	AHY-U	HY-U	26 Aug 2018	12 May 2019	15 Sep	4 months	3 days
2471-50080	DOWO	SY-M	HY-M	13 Aug 2018	25 Apr 2019	28 Aug	4 months	3 days
2880-02331	BCCH	AHY-U	SY-U	14 Mar 2019	12 May 2019	5 Sep	3 months	24 days
2791-41683	SOSP	AHY-F	AHY-U	25 Apr 2019	25 Apr 2019	10 Aug	3 months	16 days
2820-68025	COYE	AHY-M	AHY-M	13 Aug 2018	28 May 2019	11 Sep	3 months	14 days
2880-02398	BCCH	AHY-U	SY-U	6 May 2019	15 May 2019	29 Aug	3 months	14 days
2650-45698	COYE	AHY-F	SY-F	7 Jun 2017	31 May 2019	13 Sep	3 months	13 days
2641-09076	RBGR	AHY-M	SY-M	18 May 2015	21 Jun 2019	22 Sep	3 months	1 day
2830-70702	AMRE	AHY-F	SY-F	21 May 2019	21 May 2019	21 Aug	3 months	
2810-34261	YEWA	AHY-M	SY-M	20 May 2017	25 May 2019	25 Aug	3 months	
2880-03059	BCCH	HY-U	HY-U	5 Aug 2019	5 Aug 2019	4 Nov	2 months	30 days

As in all other seasons this year, we captured no foreign-banded birds this fall. However, we learned that a Blue Jay we banded on 8 September 2011 survived nearly another eight years before dying from a window collision just 3 km to the southeast in Baie d'Urfé on 15 August 2019.

6.3.3. Census

One or more experienced observers walked the standardized census route daily during FMMP. In total, 114 species were observed on census, four less than average. Four species this fall were observed only on census: Lesser Yellowlegs, Red-bellied Woodpecker, Alder Flycatcher, and Eastern Towhee.

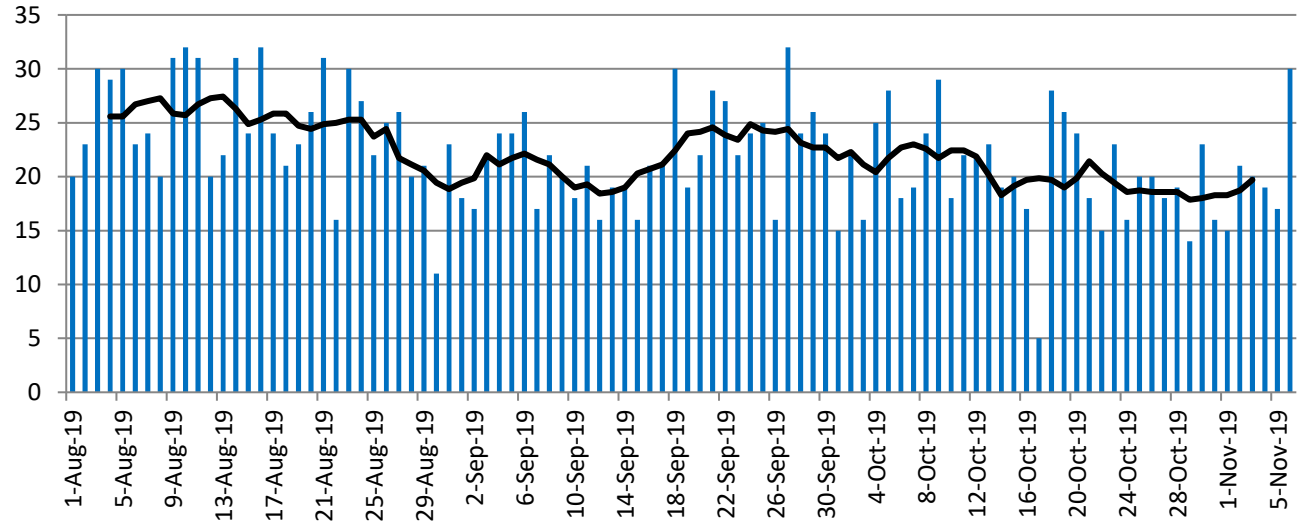


Figure 6.3: Daily species count and running 7-day mean of species recorded on census throughout fall 2019.

As shown in Figure 6.3, there was daily variation in the number of species observed during the census, from a low of 5 on October 17 to a high of 32 on August 10, August 16, and September 27. This reflects not only actual changes in the bird population from day to day, but also differences in weather and among observers. To account for this, a 7-day running mean was plotted. This fall it dipped to around 20 between late August and mid-September, but otherwise averaged near 25 for most of the first two months, before tapering off to an average around 20 again over the course of October and early November.

6.3.4. Daily estimated totals (DET)

The DET, as described in Section 4.3.4, includes all observations made by participants at MBO. During the 2018 FMMP, 149 species were recorded, matching the average since 2011. However, three of these were only observed during week 14, so the 13-week total of 146 actually matched the long-term fall average.

This fall, 15 species and one form were seen on just one day: Greater Snow Goose, Northern Pintail, Black Scoter, Wild Turkey, Common Nighthawk, Eastern Whip-poor-will, Spotted Sandpiper, Lesser Yellowlegs, Black-backed Woodpecker, Olive-sided Flycatcher, Alder Flycatcher, Bank Swallow, Northern Rough-winged Swallow, White-winged Crossbill, Eastern Towhee, and Yellow Palm Warbler. Eastern Whip-poor-will (September 9) and Black-backed Woodpecker (October 19) were seen for the first time ever at MBO, increasing the site list to 221 species. Additionally, Wild Turkey (August 26) was seen for the first time in fall; with the addition of these three species, the fall list now comprises 203 species.

The highest single day DET, 68 species, was on September 17, the latest peak since 2014. It was also the sixth-highest single day count across all fall seasons. The lowest count of 5 species occurred on October 17. At the weekly scale, the highest number of species was 91 in week 7, the lowest peak week total since 2012. Record high weekly counts were set in week 14 (60, vs. 59 in 2016 and 2018) and tied in weeks 2 (84, matching 2006, 2012, and 2016) and 8 (90, matching 2005, 2015, and 2016). Conversely, species counts were below long-term averages in weeks 1, 3, 4, 5, 10, and 11.

The seven-day running mean shown in Figure 6.4 smooths out the day-to-day variation resulting from differences in weather and among observers. It fluctuated only slightly over the first month and a half, then peaked at 56 species on September 19, nearly one month later than the average peak date of August 24. There were only 12 days this fall when the seven-day running mean was at or above 50 species, in contrast to last year when that was the case for over 30 days. The DET tapered off over the first couple of weeks of October and then remained in the low-mid 30s for most of the remainder of fall.

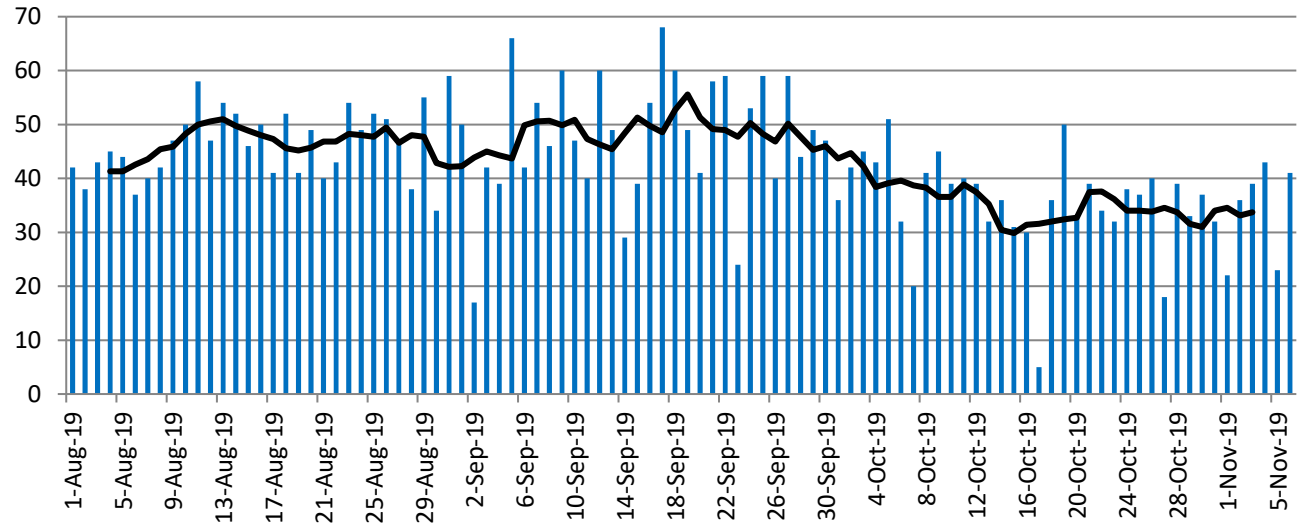


Figure 6.4: Daily species count and running 7-day mean of species observed throughout fall 2019.

As in 2018, 21 species were observed each week throughout fall (those detected weekly across all 15 fall seasons marked with an asterisk): Canada Goose, Rock Pigeon, Mourning Dove, Ring-billed Gull, Great Horned Owl, Downy Woodpecker*, Hairy Woodpecker*, Yellow-shafted Flicker, Pileated Woodpecker, Blue Jay*, American Crow*, Common Raven, Black-capped Chickadee*, White-breasted Nuthatch*, American Robin, Cedar Waxwing, American Goldfinch*, Song Sparrow*, Red-winged Blackbird, Common Grackle*, and Northern Cardinal*.

6.3.5. Coverage of priority species

MBO has produced a list of 62 target species for priority monitoring, as described in Section 4.3.5. All but two species on the MBO priority list were observed during the 2019 FMMP (Cliff Swallow and Savannah Sparrow ere missed), and 51 (82%) were banded, the fewest since 2011 (Table 6.6). However, 86% of individuals banded

were priority species, near the middle of the range of 82% to 91% in previous years. Of the top 10 species banded at MBO during the 2019 FMMP, all are designated as priority species, with four of them classified as priority A or B, including the top three, indicating the program is effective at documenting these otherwise poorly monitored birds.

Table 6.6: Summary of priority species observed and banded during the 2019 FMMP. Detailed category definitions are provided in Gahbauer et al. (2014).

	Priority A	Priority B	Priority C	Priority D
Number of species in category	15	10	18	19
Number of species observed	14	10	17	19
Number of species banded	13	10	14	14
Number of individuals banded	533	658	628	557

6.3.6. Net productivity

The nets used for FMMP are the same as described for SMMP (see Section 4.3.6). Under normal weather and personnel conditions, all nets were operated for five hours daily. Table 6.7 summarizes the usage and productivity of all nets during the 2019 FMMP.

Table 6.7: Net usage and capture rates during the 2019 FMMP.

Net	Hours open	New Captures	Returns + Repeats	Total Captures	Birds / 100 net hours	
					New	Total
A1	433.8	89	21	110	20.5	25.4
A2	433.8	205	62	267	47.3	61.6
A - TOTAL	**867.5**	**294**	**83**	**377**	**33.9**	**43.5**
B2	416.0	69	27	96	16.6	23.1
N1	416.0	131	43	174	31.5	41.8
N3	390.8	133	42	175	34.0	44.8
B3	390.8	150	39	189	38.4	48.4
B/N - TOTAL	**1613.5**	**483**	**151**	**634**	**29.9**	**39.3**
C1	433.8	508	86	594	117.1	136.9
C2	433.8	367	64	431	84.6	99.4
C - TOTAL	**867.5**	**875**	**150**	**1025**	**100.9**	**118.2**
D1	433.0	73	26	99	16.9	22.9
D2	433.0	50	21	71	11.5	16.4
D3	433.0	80	18	98	18.5	22.6
D4	432.3	86	18	104	19.9	24.1
D - TOTAL	**1731.3**	**289**	**83**	**372**	**16.7**	**21.5**
E1	433.8	145	23	168	33.4	38.7
E2	433.8	215	67	282	49.6	65.0
E - TOTAL	**867.5**	**360**	**90**	**450**	**41.5**	**51.9**
H1	433.8	229	52	281	52.8	64.8
H2	433.8	244	42	286	56.3	65.9
H - TOTAL	**867.5**	**473**	**94**	**567**	**54.5**	**65.4**
GRAND TOTAL	**6814.8**	**2774**	**651**	**3425**	**40.7**	**50.3**

1 – Total captures include new captures, returns, repeats, and foreign recaptures.

The overall capture rate of new birds for the 2019 FMMP was 40.7, below the old record low of 42.6 in 2017. The additional 9.6 birds per net hour for recaptures was also a record low, marginally less than 9.7 in 2017.

The relative effectiveness of nets varies from year to year, although overall E2 has been the most productive, followed by H1 and H2, with the A and C nets also above average. This year the capture rate at the C net group was nearly twice as high as the next best group, the H nets. Aside from these four nets, the only other two above average this fall were A2 and E2. C1 was the most productive net for the second year in a row, especially intriguing as some of the adjacent vegetation was cleared to facilitate pond restoration work in spring 2018. As a group, the D nets were as usual the least productive; in terms of individual nets, D2 fared most poorly, followed by B2 and D1. More aggressively attempting to restore vegetation openings along the D nets could improve capture rates similar to the effects observed at C1.

Habitat maintenance is an ongoing challenge at MBO. Although efforts have been made annually to maintain consistency, especially near the nets, it is impossible to keep conditions identical from year to year, especially given annual variability in growing conditions for species like goldenrod, and growth/senescence of shrubs. This year, the volume of migration in spring prevented any maintenance from being done. In fall, we concentrated on thinning the buckthorns and hawthorns around the nets, as well as along the census trail.

6.4. Summary and analysis

After a spectacularly successful spring, MBO's summer results were disappointing, and the record low fall totals continued that trend. It was an especially poor fall for sparrows, with all nine regularly occurring species observed and banded in far below average numbers. For warblers the season was more balanced, with significantly above average rates of observation for six species compared to seven well below average. Similar splits were observed among other groups, for example great numbers of Hermit Thrush and Wood Thrush, offsetting particularly low counts of Swainson's Thrush and Gray-cheeked Thrush. It was generally a good fall for raptors, with six observed in unusually high numbers, compared to only Red-shouldered Hawk well below average; conversely waterfowl counts were generally poor. There was no obvious seasonal pattern behind the species that fared unusually well or poorly.

Green Heron was banded at MBO for the first time ever this fall.
(Photo by Simon Duval)

7. Northern Saw-whet Owl Migration Monitoring Program

Nocturnal banding of Northern Saw-whet Owls has been undertaken at MBO during fall migration annually since 2004, except in 2006 and 2008. For the first four years, it was sporadic, primarily limited by availability of banders. Since 2010, effort has been largely standardized, with nightly coverage (weather permitting) over six weeks from September 26 to November 6 (numbered as weeks 9 to 14 to correspond with the FMMP), plus supplemental effort in some years until roughly mid-November on nights with suitable conditions. Owl banding since 2010 has primarily used a roughly elliptical array of seven nets surrounding a FoxPro broadcaster playing a standard Northern Saw-whet Owl audiolure from Project Owlnet (2016). As has been the case since 2016, an additional seven nets were operated at a second location this fall, targeting Long-eared Owls with a broadcast of a male hooting. The program operates a standard banding period of 4 hours, beginning 30 minutes after sunset, but when conditions are favourable, non-standard banding continues later into the night, up to within 3.5 hours of sunrise.

7.1. Effort

Banding was possible on 33 (79%) of 42 nights during the standard season, with rain, snow, or strong winds preventing efforts on the remaining occasions. For the seventh year in a row, there was no banding outside of the standard season.

7.2. Site conditions

Temperatures were notably below average for the first two weeks of the season, close to normal for the next three weeks, and then a bit colder again for the final week. More significantly, the 292 mm of rain over this six-week period was far more than the previous record of 241 in 2005, and over double the average since 2010. Fortunately, much of the rain occurred during daylight hours, such that the number of nights of operation for the owl program was below average, but similar to the past two years (Table 7.1).

Table 7.1: Weather conditions during the 2019 Northern Saw-whet Owl Monitoring Program, by week.

	9 Sep 26-Oct 2	10 Oct 3-9	11 Oct 10-16	12 Oct 17-23	13 Oct 24-30	14 Oct 31- Nov 6	Season
Mean daily high (°C)	16.9	14.5	16.5	12.7	12.8	9.1	13.7
Mean daily low (°C)	7.7	4.7	6.1	4.4	5.0	2.2	5.0
Mean daily temp (°C)	12.3	9.6	11.3	8.6	8.9	5.7	9.4
Highest temp (°C)	20	17	19	16	17	16	20
Lowest temp (°C)	4	1	4	1	2	-1	-1
# days with rainfall	5	3	3	4	3	5	23
Total rain (mm)	68	16	15	81	38	74	292

7.3. Results

The 156 Northern Saw-whet Owls banded this fall was the fewest since 2010; the only other owl banded this fall was an Eastern Screech-Owl (Table 7.2). Other than these two species, Barred and Great Horned Owls were also heard during the season.

Table 7.2: Summary results of the 2019 Northern Saw-whet Owl Monitoring Program, by week.

	9	10	11	12	13	14	Average	Season
# owls banded	14	36	16	57	19	15	26.2	157
# owls return	0	0	0	0	1	0	0.2	1
# owls repeat	0	2	4	6	12	9	5.5	33
# owls foreign	2	1	0	2	0	0	0.8	5
# net hours	598.5	577.5	611.4	480.6	687.1	646.4	600.3	3601.5
# owls banded / 100 net hours	2.3	6.2	2.6	11.9	2.8	2.3	4.7	4.4
# nights banding	6	5	5	5	6	6	5.5	33

7.3.1. Birds banded

Weekly banding totals this fall were close to the long-term averages in weeks 9, 10, and 14, and slightly below in week 13. The most notable deviations from historical patterns were in week 11, with the fewest banded during that period since 2011, and week 12, with a total 50% above average, and accounting for 36% of this year's banding. Despite the overall low numbers this fall, the peak of 29 owls banded on October 20 was the second-highest single night total in MBO's history, just one less than on October 16, 2012. The peak night has only been later in the season once before, on October 22, 2011. The three nights from October 18 to October 20 accounted for 35% of the season total, and followed two nights of rain. On just four of the 33 nights of banding effort, no owls were banded.

This year, hatch-year birds accounted for only 35% of Northern Saw-whet Owls banded, the lowest proportion since 2013. Second-year birds comprised 45% of the total, correspondingly the most since 2013. As always, females dominated, comprising 76% of birds banded, just above the long-term average; only 4% were determined to be males, tying the record low from 2017.

7.3.2. Birds recaptured

For only the seventh time ever, there was a return this fall, a Northern Saw-whet Owl originally banded in October 2016 as an after-second-year female, and not encountered again until its recapture in October 2019. The 32 repeats tied the record high set last fall, and included four Northern Saw-whet Owls that were recaptured twice. Eight Northern Saw-whet Owls stopped over for at least 10 nights, with the longest duration recorded being 25 nights.

Five foreign owls were recaptured at MBO this fall (Table 7.3), originally banded in five different provinces or states, at locations 372 to 783 km from MBO. We also heard about four of the owls we had banded being recaptured by banders in the northeastern USA, including one that covered nearly 400 km in less than one week (Table 7.4).

Table 7.3: Foreign-banded Northern Saw-whet Owls captured at MBO during 2019, sorted by time elapsed.

Band number	Age/sex in 2019	Age/sex at banding	Banding date	2019 capture	Time Elapsed	Banding Location	Distance (km)
1014-69546	ASY-F	AHY-F	26 Sep 2017	Oct 19	2 years 23 days	Tadoussac QC	445
1104-10185	ASY-F	ASY-F	18 Oct 2017	Oct 19	2 years 1 day	Bobcaygeon ON	372
1104-36173	SY-F	HY-F	12 Nov 2018	Oct 10	11 months 2 days	Bittinger MD	783
1104-07379	SY-F	HY-F	31 Oct 2018	Oct 3	11 months 3 days	Hedgesville WV	730
1124-00555	SY-F	HY-F	3 Nov 2018	Oct 2	10 months 29 days	Walnutport PA	537

Table 7.4: MBO-banded Northern Saw-whet Owls captured elsewhere during 2019, sorted by time elapsed.

Band number	Age/sex in 2019	Age/sex at banding	Banding date	2019 capture	Time Elapsed	Banding Location	Distance (km)
1014-95187	ASY-F	SY-F	15 Oct 2015	Nov 5	4 years 21 days	Carsonville PA	594
1104-24602	ASY-F	HY-U	5 Oct 2016	Oct 19	3 years 14 days	Williamstown MA	306
1104-49119	SY-F	HY-F	5 Oct 2018	Nov 3	10 months 29 days	Valhalla NY	486
1104-33605	ASY-F	ASY-F	20 Oct 2019	Oct 26	6 days	Dickinson NY	399

7.3.3. Net productivity

Again this fall the primary net array used for owl banding comprised five 60-mm nets (O1-O4, O6) exclusive to the owl program, and two 30-mm nets (E1-E2) that are shared with the Fall Migration Monitoring Program. O1-O4, and E1 are all within 10-15 m of an audiolure broadcasting a Northern Saw-whet Owl call, while E2 is nearly 30 m away. O4 is entirely within a conifer grove, while O1-O3, and E1 are along its periphery, and E2 is within an adjacent cluster of hawthorns; all of these have been in use since 2010. O6 is perpendicular to and on the far side of O4, within the conifer stand, and has been in use since 2013, replacing net O5 that was

previously on the northern edge of the conifers. Since 2016, seven additional nets (X1-X7) have been installed at the northeast end of the property to target Long-eared Owls, in the same area that was used for the Boreal Owl pilot project (nets T1-T4) in 2012 (see Gahbauer et al. 2016). Three nets (X1, X4, and X7) were placed along the census trail, interspersed with two pairs of perpendicular nets (X2/X3 and X5/X6). The three nets closest to the centre of the array (X2, X4, and X5) were 90-mm nets, while the others were 60-mm nets.

Table 7.5 shows that the O and E nets were evenly matched in capture rates this fall, and roughly eight times more successful than the X nets. As in most years, O1 and O4 were the two most productive nets; E1 was the only other with above average capture rates this fall. Among the X nets, only X6 stood out as somewhat more effective than the others.

Table 7.5: Net usage and capture rates during the 2019 Northern Saw-whet Owl Monitoring Program.

Net	Hours open	New Captures	Returns + Repeats	Total Captures	Owls / 100 net hours	
					New	Total
O1	267.8	30	5	36	11.2	13.4
O2	267.8	18	2	22	6.7	8.2
O3	267.8	6	0	6	2.2	2.2
O4	267.8	27	8	36	10.1	13.4
O6	267.8	19	1	21	7.1	7.8
O - TOTAL	**1338.8**	**100**	**16**	**121**	**7.5**	**9.0**
E1	267.8	21	5	26	7.8	9.7
E2	267.8	19	1	20	7.1	7.5
E - TOTAL	**535.5**	**40**	**6**	**46**	**7.5**	**8.6**
X1	246.8	1	2	3	0.4	1.2
X2	246.8	2	1	3	0.8	1.2
X3	246.8	2	0	3	0.8	1.2
X4	246.8	1	0	1	0.4	0.4
X5	246.8	3	2	5	1.2	2.0
X6	246.8	6	2	8	2.4	3.2
X7	246.8	1	4	5	0.4	2.0
X - TOTAL	**1727.3**	**16**	**11**	**28**	**0.9**	**1.6**
GRAND TOTAL	**3601.5**	**156**	**33**	**195**	**4.3**	**5.4**

[1] – Total captures include new captures, returns, repeats, and foreign recaptures.

7.4. Summary and analysis

It was an unusually poor fall for Northern Saw-whet Owls, with the lowest total since 2010, when the six-week standardized program began. However, the busiest night of the season on October 20 had the second-highest single-night total across all years. Similar to past years with low season totals, hatch-year individuals were unusually scarce.

Over the four years that the satellite net array has been in use to target Long-eared Owls, 10-15% of Northern Saw-whet Owls have been captured there annually, including 10% this fall. It remains unclear whether Northern Saw-whet Owls are somewhat attracted by the Long-eared Owl lure, or the capture rates there represent their background level of movement through the area (although likely still influenced to some extent by the Northern Saw-whet Owl lure playing ~350 m to the south). Interestingly, a higher proportion of returns and repeats (33%) was in the X nets.

One of the two Northern Saw-whet Owls banded during daytime this fall. (Photo by Simon Duval)

8. Other MBO programs

Although the seasonal monitoring programs are the primary focus at MBO, they also provide opportunities to pursue a number of secondary objectives, including education and training, improvement identification techniques, and more detailed research on particular species or aspects of migration and stopover ecology.

8.1. Education and training

MBO provides ongoing training in avian research techniques to McGill University students and other interested individuals. This is implemented through seasonal internships and training of other volunteers throughout the spring and fall programs in all aspects of migration monitoring from field identification skills and data recording to practice in extraction and banding. To keep learning opportunities accessible, we generally limit the number of volunteers per day to one experienced extractor/bander-in-training, two extractors-in-training and up to three additional assistants, who could get one-on-one training from either the extractors or the bander-in-charge. Experienced extractors able to work independently are a limiting factor for banding operations, and thus helping volunteers improve their skills at extraction is a priority at MBO. Observers with good identification skills are also critical to effective migration monitoring, and again in 2019 we were fortunate to have many experienced observers contributing their sightings, as well as training newer volunteers.

There is also an ongoing effort to share results with the local, national, and international communities, to illustrate how migration monitoring data can contribute to understanding and conservation of boreal birds. This year we again welcomed several groups for tours of MBO, including members of the McGill Wildlife Group, as well as McGill classes. In addition, we maintain the fully bilingual MBO website at www.oommbo.org, and routinely share current news through MBO's popular Facebook page, at https://www.facebook.com/oommbo/.

This year also marked the fourth year of our education initiative centered around our owl banding program. With funding support again from Bird Protection Quebec, Sarah Dixon led four interpretive programs at the Morgan Arboretum in October 2019, two in English and two in French, with 90 people attending in total. Each presentation provided an overview of the owls of Quebec, the biology and behaviour of the Northern Saw-whet Owl, and highlights from MBO research, and on all nights also featured a demonstration of owl banding. The program continued to receive favourable reviews, and we plan to offer it again in 2020.

8.2. Photo documentation

MBO continues to photo document all rarities captured, as well as any individuals showing abnormalities, such as aberrant pigmentation or moult, deformities, or healed injuries. From 2005 through 2014, representative photos of regularly banded species were also posted (with associated descriptive text) in MBO's online Photo ID Library. In early 2015, this resource was migrated to the *Piranga* module of Environment Canada's NatureInstruct website (www.natureinstruct.org), which is designed to be a dynamic and interactive resource for identification of North American birds. The design of *Piranga* allows the material to be more easily viewed on mobile devices, and is set up to allow for easy comparison of photos of different ages, sexes, or even species. All content on *Piranga* is also fully bilingual. The first phase included 60 species accounts and over 1400 photos, with an emphasis on selection of images that are representative, or highlight particularly notable variations. Over the past four years, another 19 species and over 400 more photos have been added.

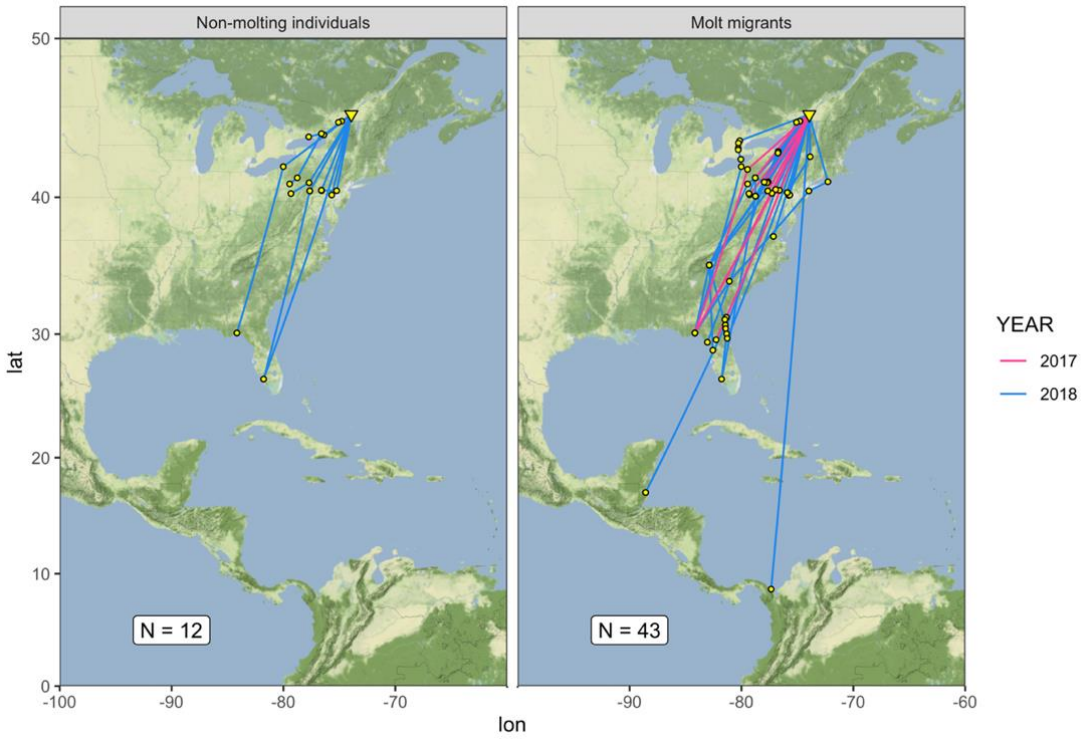
8.3. Research projects

The seasonal monitoring programs are the core of research at MBO, but other projects are always underway as well. In 2019, we continued our studies involving MBO's participation in the Motus Wildlife Tracking System. This is a coordinated network of automated telemetry arrays led by Bird Canada (formerly Bird Studies Canada) that over just a few years has already revolutionized the study of bird movements at a local, regional, and hemispheric scales. Automated telemetry systems allow for constant recording of tag signals from fixed positions on the landscape without the need for recapturing animals. They are increasingly being used in migration studies due to ongoing advances in miniaturization, allowing tags to even be placed on very small organisms such as insects. Motus is unique in that it employs a single radio frequency across all receivers of the

network, allowing tags to be detected at sites maintained by other projects. By the end of 2018, there were over 700 receiver stations distributed across 28 countries on 4 continents. MBO's involvement with Motus started with installation of a receiver on the old windmill near the banding cabin in 2016. In 2018, a second Motus tower was permanently installed on the roof of Macdonald Campus' Stewart Building.

In summer 2019, another two Motus stations were temporarily installed in the Marguerite D'Youville Wildlife Refuge and at a site near Lake Champlain in southern Quebec as part of a collaboration with McGill University's M.Sc. student Kristen Lalla who is studying the post-breeding movements of Purple Martins in Quebec. These towers, in addition to the one in Macdonald Campus, would increase our chances of detecting our tagged birds after departing from MBO, as well as increasing the Motus coverage for many other existing projects across North America.

In 2019, McGill University M.Sc. student Ana Morales completed her Masters project under the joint supervision of Dr. Kyle Elliott and Dr. Barbara Frei, entitled *Migration and stopover ecology of moult migrant Swainson's Thrushes*. The main purpose of her thesis was to examine the ecology of moult migration in Swainson's Thrushes, their nutritional state during migration, and their departure decisions during stopover.



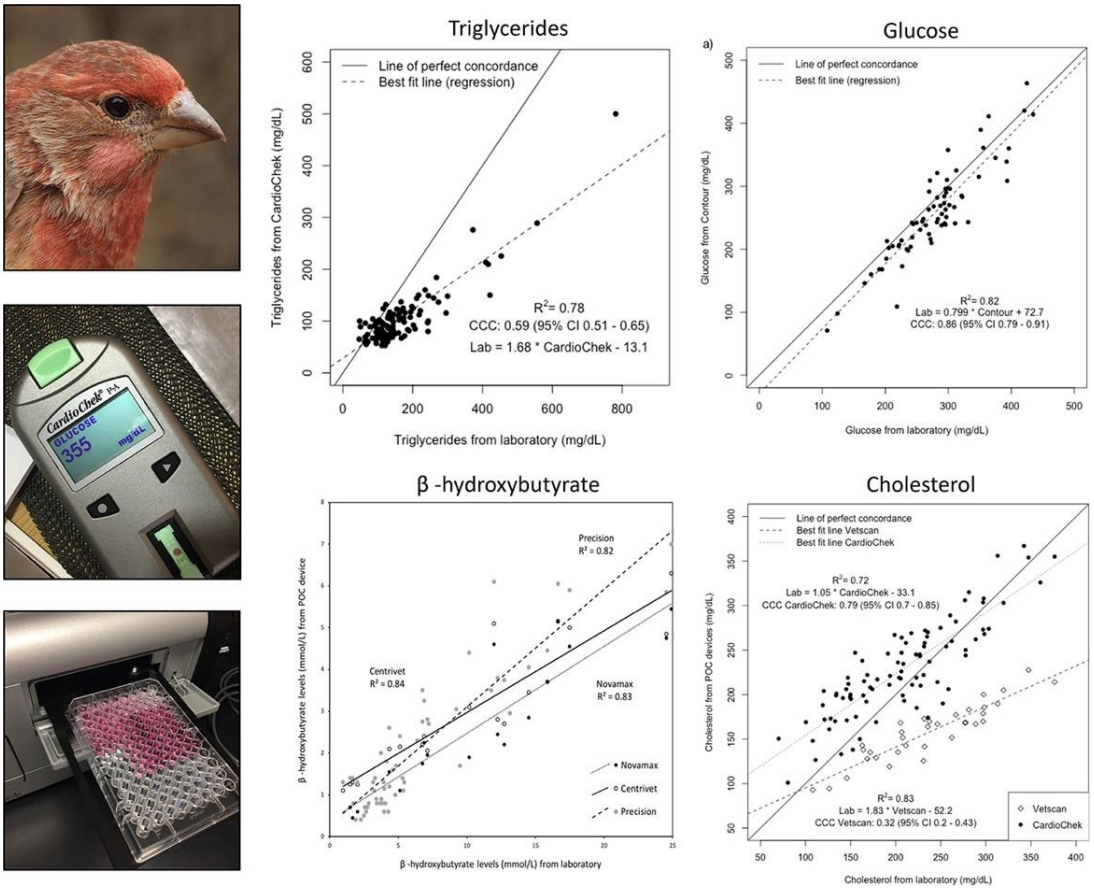
Foreign detections of both regular and molt migrant Swainson's thrushes tagged at MBO during fall 2017 and 2018. Average departure date for all birds was on September 27, and foreign detection dates along their migratory route ranged from September 16 to November 11 (from Morales et al. in prep).

Results from the thesis showed that moult migration accounts for a significant portion of the annual life cycle of Swainson's Thrushes. Indeed, the estimate of 47 days of stopover (average across 2017 and 2018) is twice the length of the breeding season for a single brood (incubation + nestling = ~24 days) and longer than the entire duration of intercontinental migration (~42 days per direction). In addition, the nutritional levels of moult migrants were similar to those of non-moulting birds, with triglyceride levels increasing, and ketones decreasing with time of day for all birds sampled, which indicates that they were equally refueling during both their molting and migratory stopovers. This may suggest that the resources present at MBO during late

summer and early fall are capable of supporting the needs of these birds during two very energetically demanding periods, moult and migration.

This research contributes to the growing evidence that moult migration in this eastern North American neotropical migrants seems to be more common than previously thought, and these findings could potentially be applied to several other species known to undergo this same process. Indeed, technological advances have allowed researchers to discover moult migrations of thousands of kilometers in a variety of avian taxa. Technologies such as automated radio-telemetry, geolocators, satellite transmitters and stable isotopes have the potential to fill information gaps in the annual cycles of species, such as the location of their moulting grounds, as well as the behaviour and ecology of these species at these stopover sites. Identifying these important moulting locations and understanding moult migrant behaviour at these sites could be key in the conservation of migratory birds and their habitats.

In addition, the first chapter of the thesis built upon the previous work done at MBO in 2017 by McGill honours student Casey Leung. The chapter looked at the use of point-of-care devices to determine the nutritional state of several bird species, including those from our moult migrant project. On November 2019, our paper *Point-of-care blood analyzers measure the nutritional state of eighteen free-living bird species* was accepted for publication in *Comparative Biochemistry and Physiology, Part A*. This study was done in collaboration with several other researchers from different projects around Canada and the USA. We found that glucose, ketones, cholesterol and triglycerides measured with point-of-care devices strongly correlated with traditional laboratory measurements. Our findings suggest that we can use these devices to determine the nutritional state of birds by quickly and accurately measuring these metabolites without the need to transport the samples from the field and analyze them in the lab.



Graphical overview from our recently published article that used data from our moult migrant project

Over the years, we have noted that some Tennessee Warblers also stop over at MBO for extended periods, and may also be moult migrants at the site. For this reason, in fall 2019, we switched our moult migrant research focus over to Tennessee Warblers. Overall, there were fewer moult migrants recorded at MBO than in most previous years (7 Tennessee Warblers, 11 Swainson's Thrush), corresponding with the overall low numbers of most migrants in fall 2019. However, we were able to deploy nine 0.4 gram transmitters on Tennessee Warblers (7 molt migrants and 2 non-molting adults). All birds were tracked continuously by the Motus tower and daily by our field technician until the birds migrated south. Some individuals stayed at MBO as long as 38 days, and the last one left the site on October 1.

One of the 9 Tennessee Warblers fitted with a nanotag during the 2019 field season (Photo by Ana Morales)

9. Acknowledgments

The operation of MBO is possible only through the support of many dedicated people volunteering their time throughout the year. More than 4100 hours of service on site were contributed by over 75 participants in our migration monitoring, MAPS, and winter monitoring programs. While many volunteers fulfilled multiple roles, they are listed below only under the first heading that applies to them.

Executive Director: The licensed master permit holder, responsible for overseeing research activities.

Marcel Gahbauer

Director: Sub-permit holder and bander-in-charge (see below for details), responsible for developing policies, updating protocols, overseeing finances, and long-term planning

Barbara Frei

Coordinator: Sub-permit holder and bander-in-charge (see below for details), responsible for coordinating and managing volunteers, data entry and reporting, site maintenance, and implementation of research projects

Simon Duval

Database manager: Responsible for quality control, archiving, and management of data for the website, annual reports, and research projects

David Davey

Webmaster: Responsible for design and maintenance of the website

Simon Duval

Banders-in-charge: Sub-permit holders, responsible for directing the activities of volunteers, ensuring adherence to protocols, prioritizing the safety of birds at all times, banding birds, and directly supervising other trainees who are banding birds.

Ariane Chénard, Gay Gruner, Phillip Mercier, Ana Morales, Rodger Titman

Banders-in-training: Experienced volunteers trained specifically in extraction, capable of safely removing birds from nets with minimal or no supervision. These volunteers are also seasoned observers able to conduct the census and are being trained as banders.

Angelika Aleksieva, Christine Barrie, Martha Bromby, Chris Cloutier, Luke Currin, Stéfany Desroches, Alison Hackney, Kristen Lalla, Laura Tabbakh

Extractors: Experienced volunteers trained specifically in extraction, capable of safely removing birds from nets with minimal or no supervision.

Steve Dumont, Kyle Elliott, Melanie Guigueno, Lance Laviolette, Christiane Tremblay

Census / observation leaders: Experienced birders able to recognize the majority of local species by sight and sound, responsible for conducting the daily census and playing a leadership role in observing birds throughout the morning, and assisting less experienced volunteers with identification.

Émile Brisson-Curadeau, Jean Demers, Wayne Grubert, Frédéric Hareau, Patrick Laniel, Barbara and Don MacDuff, Betsy McFarlane, Catherine Russell, Clémence Soulard, Elise Titman

Assistants: Volunteers and visitors of all levels, responsible for recording data, transporting birds, providing direct assistance to extractors and banders as requested, learning to become extractors, banders, or censusers, and helping with any other observation/monitoring/maintenance tasks that arise.

Annick Béland, Jessica Bao, Pascal Berthelot, Zoe Bonerbo, Marc-Henri Bouchard, Aaron Brisebois, Camille Brochu, Marie-Andrée Castonguay, Charlotte Clement, Claude Cloutier, Katherine Collin, Alyssa DeRubeis, Lyne Demers, Katelyn Depot, Gilles Dufour, Marianne Duhamel, Ilse Esparza, Liette Fortier, Shannon Galbraith,

Michel Greaves, Jean Gregson, Richard Gregson, Mathilde Guglielmi, Mercy Harris, Jake Harvey, Catherine Jarjour, Yeonseon Jeon, Marie-Pierre Langlois, Marcel Lebeau, Enlin Li, Maya Longpré-Coteau, Francine Marcoux, Geneviève Potvin, Tatiana Rokicki, Valérie Roy, Jenna Schlener, Shawna Sevigny, Patricia Stotland , Frédérique Tremblay, Anne Tremblay-Gratton, Francis Van Oordt, Natalie Vieira-Lomasney, François Villeneuve

Maintenance: Last but certainly not least – responsible for maintaining the facilities and trails in good and safe working condition

Malcolm Johnson

Special thanks also to:

Simon Duval, Barbara Frei, Alison Hackney, and Francine Marcoux for important leadership on fundraising.

The leadership team (directors, coordinator, banders-in-charge), who collectively contributed many additional hours to coordinate volunteers, manage data, generate website updates, and advance MBO's research.

All of our dedicated volunteers who put in extra time fundraising, planning, and helping with site maintenance.

In addition, we extend our sincere thanks to all who donated materials or funds to MBO in 2019, especially:

Bird Protection Quebec, for financial support of the Fall Migration Monitoring Program, the hummingbird banding project and the Motus research project, as well as ongoing publicity and continuing to encourage members to become MBO volunteers

The John Hackney Foundation for the Noosphere, for funding in support of migration monitoring

Environment and Climate Change Canada for financial support of migration monitoring programs

Canon Canada for the generous donation of a Canon EOS 6D mark ii as well as an EF 100mm f2.8L Macro IS USM and an EF 100-400 f4.5/5.6L IS II USM lenses.

The MacDuff Family Foundation for the generous donation in support of migration monitoring.

This year's seven teams participating in the 1st Edition of the Cartier Cup, a fundraising effort for MBO as part of the Great Canadian Birdathon, as well as one other independent team and three independent participants (Christopher Dunn, Sharon Hayden, Mathias Mutzl) who collectively raised over $9000 in support of MBO's operations in 2018:

The Return of the in-terns (Simon Duval, Kristen Lalla, Ana Morales)
Team Brisson (Émile Brisson-Curadeau, Jacques Brisson)
Ninja Warbler (Pascal Berthelot, Stéfany Desroches, Phillip Mercier)
The Jay-Walkers (Chris Cloutier, Claude Cloutier)
The Great Boobies (Angelika Aleksieva, Lisa Rosenberger, Francis van Oordt
The Loonatics (Liam Ragan, Anthony Zerafa)
Bike Shrikes (Alison Hackney, Catherine Russell)
Red-eyed Wearios (in southern Quebec and eastern Ontario): Averill Craig, Gay Gruner, Diana McDougall Deakin and Betsy McFarlane

Les Taouins des pins (Amélie Drolet, Laurent De Vriendt et Nicolas Houde) for money raised through their participation in the Grand Défi Québec Oiseaux

All the many individual donors who adopted owls or gave generously in support of other MBO programs

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Lincoln's Sparrow
(Photo by Simon Duval)

11. Appendix A. Seasonal occurrence of species

The charts below summarize the occurrence of each of the 169 species (including 101 passerines) observed during the 2019 Spring and/or Fall Migration Monitoring Programs, which had daily coverage for 10 and 14 weeks, respectively. Where applicable, these are supplemented by observations from winter 2018-19, and summer 2019. This year only two additional species were observed outside of the migration monitoring programs, both of them in winter: a single Tufted Titmouse for the second winter in a row, and three Pine Grosbeaks, a species observed at MBO in only four previous years (2005, 2009, 2013, and 2017).

Species are listed below according to taxonomic revisions by the American Ornithological Society as of 2019 (AOS 2018). The # processed includes individuals banded, returns, and repeats, in that order (or banded only, if no returns or repeats occurred). Summary notes accompany each species account, describing patterns of occurrence throughout the period covered in this report (November 7, 2018 to November 6, 2019), and often comparing them to data presented in the MBO Ten-year Report: 2005-2014 (Gahbauer et al. 2016) and the 2015-2018 Annual Reports (Gahbauer et al. 2017, Gahbauer et al. 2018a, Gahbauer et al. 2018b, Gahbauer et al. 2019).

SNGO: Snow Goose / Oie des neiges (*Anser caerulescens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		8.57	7.29						0.14		**1.60**
# DAYS OBSERVED		1	1						1		**3**
	FIRST OBSERVED: April 7		LAST OBSERVED: May 26			PEAK DATE: April 7			PEAK NUMBER OF INDIVIDUALS: 60		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY											0.14				**0.01**
# DAYS OBSERVED											1				**1**
	FIRST OBSERVED: October 14				LAST OBSERVED: October 14			PEAK DATE: October 14				PEAK NUMBER OF INDIVIDUALS: 1			

Fewer Snow Geese were observed this spring than in any previous year. Most occurred in small flocks on two days in the first half of April. Surprisingly, a lone individual was observed flying past on May 26 among a flock of Canada Geese, a record late date by two weeks. Only one Snow Goose was observed in fall, the lowest count ever, aside from being missed entirely in 2007.

BRAN (ATBR): Atlantic Brant / Bernache cravant (*Branta bernicla*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.14			**0.01**
# DAYS OBSERVED								1			**1**
	FIRST OBSERVED: May 21		LAST OBSERVED: May 21			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 1		

Brant was observed at MBO for only the second time ever this spring – and remarkably, the sighting occurred on exactly the same day (May 21) as the previous record in 2006.

CACG: Cackling Goose / Bernache de Hutchins (*Branta hutchinsii*)

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY													0.14		**0.01**
# DAYS OBSERVED													1		**1**
	FIRST OBSERVED: October 27				LAST OBSERVED: October 30			PEAK DATE: October 27				PEAK NUMBER OF INDIVIDUALS: 76			

Small numbers of Cackling Geese have been observed flying past MBO each fall, except in 2012 and 2018. This year was typical, with a single individual observed in week 13, matching the long-term average for sightings of this species at MBO.

CANG: Canada Goose / Bernache du Canada (*Branta canadensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	130.14	151.43	274.86	106.86	86.71	125.00	45.86	14.00	13.29	4.43	**95.26**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	6	**69**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 4			PEAK DATE: April 12			PEAK NUMBER OF INDIVIDUALS: 1442	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.29	12.57	33.71	22.00	46.57	33.29	105.00	193.43	227.43	210.14	288.43	179.57	449.57	138.71	**138.69**
# DAYS OBSERVED	3	4	6	7	6	7	7	7	7	7	7	7	7	7	**89**
	FIRST OBSERVED: August 4				LAST OBSERVED: November 6			PEAK DATE: October 28				PEAK NUMBER OF INDIVIDUALS: 1190			

For the seventh winter in a row, Canada Goose was the most abundant species in winter, this time comprising 46% of all individuals observed, despite the mean daily count being the lowest since 2013. The mean daily abundance in spring was relatively low for the fifth year in a row, but as usual, numbers were significantly higher over the first six weeks of spring than the final four. Five individuals were observed in summer, the second highest total since 2012. In fall, mean daily abundance was the third lowest ever, ahead of only 2006 and 2016, despite the increase in numbers starting one week earlier than usual in week 7.

WODU: Wood Duck / Canard branchu (*Aix sponsa*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.86	4.57	5.71	5.00	7.57	3.43	5.00	3.57	2.43	**3.81**
# DAYS OBSERVED		2	5	7	7	7	7	7	7	5	**54**
	FIRST OBSERVED: April 7			LAST OBSERVED: June 5			PEAK DATE: May 6			PEAK NUMBER OF INDIVIDUALS: 15	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14	1.00	1.29	0.71	1.43	0.14				0.71				2.29	**0.55**
# DAYS OBSERVED	1	3	3	3	4	1				1				5	**21**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: October 6				PEAK NUMBER OF INDIVIDUALS: 5			

For the sixth time in the past seven years, no Wood Ducks were observed in winter. For the third time in the past five years, spring numbers were significantly below average. The peak in week 6 was later than in any previous spring. For the second year in a row but only the fourth time overall, no Wood Ducks were observed in summer. The fall count was a bit better than last year, but still the third lowest over the past 15 years.

NSHO: Northern Shoveler / Canard souchet (*Spatula clypeata*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29							**0.03**
# DAYS OBSERVED				2							**2**
	FIRST OBSERVED: April 19			LAST OBSERVED: April 21			PEAK DATE: Apr 19, Apr 21			PEAK NUMBER OF INDIVIDUALS: 1	

Northern Shoveler occurs irregularly at MBO, with records in only five previous years (2005, 2006, 2009, 2016, and 2017). This year's two sightings a bit past mid-April were earlier than in all but one other year.

NOPI: Northern Pintail / Canard pilet (*Anas acuta*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.14	0.29					**0.04**
# DAYS OBSERVED					1	1					**2**
	FIRST OBSERVED: April 25			LAST OBSERVED: May 8			PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY													0.71		**0.05**
# DAYS OBSERVED													1		**1**
	FIRST OBSERVED: October 28				LAST OBSERVED: October 28			PEAK DATE: October 28				PEAK NUMBER OF INDIVIDUALS: 5			

This marked the tenth year out of 15 with spring sightings of Northern Pintail. Observations occurred on two days, nearly two weeks apart around the middle of the season, somewhat later than average.

GADW: Gadwall / Canard chipeau (*Mareca strepera*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						1.43	0.71	1.57	2.00	2.00	**0.77**
# DAYS OBSERVED						5	3	6	7	5	**26**
	FIRST OBSERVED: May 3			LAST OBSERVED: June 5			PEAK DATE: June 1			PEAK NUMBER OF INDIVIDUALS: 8	

	AUGUST					SEPTEMBER				OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY						0.29						2.14			**0.17**
# DAYS OBSERVED						1						2			**3**
	FIRST OBSERVED: September 10				LAST OBSERVED: October 22			PEAK DATE: October 19				PEAK NUMBER OF INDIVIDUALS: 14			

Historically, Gadwall has been an irregular species at MBO in spring, with records in only 6 of 14 previous years, and peak counts of 5 in a day and 19 in a season. It was therefore a pleasant surprise this year to have multiple sightings weekly over the second half of the season, with a remarkably late peak of 8 individuals on June 1. Just as surprisingly, 14 individuals were observed over three dates in fall, following only one previous fall sighting last year.

MALL: Mallard / Canard colvert (*Anas platyrhynchos*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.86	3.86	5.57	3.00	3.43	5.86	5.57	4.29	2.14	**3.46**
# DAYS OBSERVED		2	6	7	7	7	7	7	6	4	**53**
	FIRST OBSERVED: April 6			LAST OBSERVED: June 3			PEAK DATE: April 12			PEAK NUMBER OF INDIVIDUALS: 12	

	AUGUST					SEPTEMBER				OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.57	0.14		0.43	0.29							1.57	1.14	0.29	**0.32**
# DAYS OBSERVED	1	1		2	2							1	2	1	**10**
	FIRST OBSERVED: August 3				LAST OBSERVED: November 3			PEAK DATE: October 19				PEAK NUMBER OF INDIVIDUALS: 11			

For only the second time ever, no Mallards were observed in winter. In spring, Mallard broke a five-year streak of increasingly low numbers, but rebounded only slightly and remained far below the long-term average. For the second year in a row, none were observed in summer. Fall numbers were particularly bleak, setting a record low approximately one-tenth of the long-term average.

ABDU: American Black Duck / Canard noir (*Anas rubripes*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29	0.29	0.86		0.57		0.14	**0.21**
# DAYS OBSERVED				1	1	2		1		1	**6**
	FIRST OBSERVED: April 21			LAST OBSERVED: June 1			PEAK DATE: May 4, May 20			PEAK NUMBER OF INDIVIDUALS: 4	

	AUGUST					SEPTEMBER				OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY													0.86	0.29	**0.08**
# DAYS OBSERVED													3	1	**4**
	FIRST OBSERVED: October 25				LAST OBSERVED: October 31			PEAK DATE: 4 dates				PEAK NUMBER OF INDIVIDUALS: 2			

The mean daily count of American Black Duck this spring was the highest since 2013, and slightly above average. In fall it was typically scarce, and as usual, sightings were concentrated at the end of the season.

GWTE (AGWT): (American) Green-winged Teal / Sarcelle d'hiver (*Anas crecca carolinensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				3.57	1.00	1.00	1.00	0.43	0.29		**0.73**
# DAYS OBSERVED				4	5	3	3	2	2		**19**
	FIRST OBSERVED: April 18			LAST OBSERVED: May 24			PEAK DATE: April 21			PEAK NUMBER OF INDIVIDUALS: 16	

The mean daily count of Green-winged Teal was above the long-term average for spring for the fourth time in the past five years. There was a distinct peak in week 4, accounting for nearly half of the individuals counted this spring. For the second year in a row, and third time in the past four years, there were no fall sightings.

REDH: Redhead / Fuligule à tête rouge (*Aythya americana*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY									1.00		**0.10**
# DAYS OBSERVED									1		**1**
	FIRST OBSERVED: May 23			LAST OBSERVED: May 23			PEAK DATE: May 23			PEAK NUMBER OF INDIVIDUALS: 7	

Redhead was observed at MBO for the first time ever on May 23 this spring, a flock of 7 individuals flying overhead. It became the site's 219th species.

WWSC: White-winged Scoter / Macreuse brune (*Melanitta deglandi*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY									2.14		**0.21**
# DAYS OBSERVED									1		**1**
	FIRST OBSERVED: May 23			LAST OBSERVED: May 23			PEAK DATE: May 23			PEAK NUMBER OF INDIVIDUALS: 15	

White-winged Scoter is rarely observed at MBO, with previous records on just one day in 2006 and two in 2017. Timing has been remarkably consistent, with all observed between May 20 and 28. Similar to all previous sightings, this year's flock of 15 individuals was spotted flying over MBO.

BLSC: Black Scoter / Macreuse à bec jaune (*Melanitta americana*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY									2.43		**0.24**
# DAYS OBSERVED									1		**1**
	FIRST OBSERVED: May 23			LAST OBSERVED: May 23			PEAK DATE: May 23			PEAK NUMBER OF INDIVIDUALS: 17	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							1.71								**0.12**
# DAYS OBSERVED							1								**1**
	FIRST OBSERVED: September 12			LAST OBSERVED: September 12			PEAK DATE: September 12			PEAK NUMBER OF INDIVIDUALS: 12					

Black Scoter is a rare species at MBO, having only been observed once previously in each of spring and fall, both in 2017. This spring, a flock of 17 individuals was observed flying overhead on May 23, three days later than the even larger flock of 120 spotted in spring 2017. Conversely, the fall sighting of a flock of 12 on September 12 was far earlier than the only other fall sighting of 14 individuals on October 21, 2017.

HOME: Hooded Merganser / Harle couronné (*Lophodytes cucullatus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.57	1.71	1.43	0.71	0.14	1.14	0.14	**0.59**
# DAYS OBSERVED				2	5	5	5	1	5	1	**24**
	FIRST OBSERVED: April 19			LAST OBSERVED: May 31			PEAK DATE: Apr 29, Apr 30, May 1			PEAK NUMBER OF INDIVIDUALS: 3	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.43	0.71									0.14	0.14		**0.10**
# DAYS OBSERVED		2	5									1	1		**9**
	FIRST OBSERVED: August 10			LAST OBSERVED: October 24			PEAK DATE: August 13			PEAK NUMBER OF INDIVIDUALS: 2					

Hooded Merganser has been observed at MBO in spring in all but two years (2008 and 2012), but until 2014 was always a rare species, with sightings on an average of two days per year. However, since then it has become more regular, with particularly frequent occurrences spanning much of the season in 2015 and 2018. This year the mean daily count of 0.59 was more than 20% higher than the previous high set last year, and the sightings over 24 days far exceeded the old record of 14, also from 2018. Despite this, no more than three individuals were observed on any day; most sightings were presumably of a single resident pair, yet as in all past years, none were observed in summer. Prior to this year, the only fall record was a single individual on August 2, 2006, so the sightings over seven days in mid-August were quite surprising, as were the two additional observations of individuals in the second half of October.

COME: Common Merganser / Grand Harle (*Mergus merganser*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14	0.57	0.14	0.14				**0.10**
# DAYS OBSERVED				1	2	1	1				**5**
	FIRST OBSERVED: April 22			LAST OBSERVED: May 9		PEAK DATE: April 26			PEAK NUMBER OF INDIVIDUALS: 3		

	AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY												0.14		0.29	**0.03**
# DAYS OBSERVED												1		1	**2**
	FIRST OBSERVED: October 21				LAST OBSERVED: November 6			PEAK DATE: November 6				PEAK NUMBER OF INDIVIDUALS: 2			

Common Merganser is a regular but uncommon migrant past MBO in mid-spring; this year's sightings were close to average with respect to timing and abundance. Similarly, the few sightings late in fall were quite typical for the season.

WITU: Wild Turkey / Dindon sauvage (*Meleagris gallopavo*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.14			**0.01**
# DAYS OBSERVED								1			**1**
	FIRST OBSERVED: May 16			LAST OBSERVED: May 16		PEAK DATE: May 16			PEAK NUMBER OF INDIVIDUALS: 1		

	AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY				0.14											**0.01**
# DAYS OBSERVED				1											**1**
	FIRST OBSERVED: August 26			LAST OBSERVED: August 26				PEAK DATE: August 26				PEAK NUMBER OF INDIVIDUALS: 1			

Wild Turkey was first observed at MBO in November 2014, but then not detected again until this year. The one sighting in mid-May and another in late August were the first ever for spring and fall, respectively.

ROPI: Rock Pigeon / Pigeon biset (*Columba livia*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29	0.71	0.29	0.43	1.86		0.43	**0.40**
# DAYS OBSERVED				1	3	1	1	4		1	**11**
	FIRST OBSERVED: April 18			LAST OBSERVED: May 30		PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 5		

	AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	4.71	0.14	0.57	1.71	6.00	6.29	4.43	1.14	0.43	1.29	2.43	1.86	2.57	**2.43**
# DAYS OBSERVED	2	2	1	1	3	6	4	4	2	1	2	3	3	5	**39**
	FIRST OBSERVED: August 3			LAST OBSERVED: November 5				PEAK DATE: September 13				PEAK NUMBER OF INDIVIDUALS: 32			

For the fourth time in the past six years, no Rock Pigeons were observed in winter, a contrast to the annual sightings over the first nine winters. Spring numbers were somewhat below average, with scattered sightings over the final two-thirds of the season. Rock Pigeon has always been scarce in summer, and this year it was missed during the season for the tenth time in 15 years. In fall, the mean daily count was only slightly lower than last year's record high; the weekly means for weeks 6 and 7 were among the top five at any point in fall over the past 15 years.

MODO: Mourning Dove / Tourterelle triste (*Zenaida macroura*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.29	0.57	0.29	0.43	0.29	0.43	0.29	0.43	1.00	0.14	**0.41**
# DAYS OBSERVED	1	2	2	2	2	2	2	3	3	1	**20**
	FIRST OBSERVED: March 31			LAST OBSERVED: June 1			PEAK DATE: May 23			PEAK NUMBER OF INDIVIDUALS: 3	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	1.00	0.57	0.57	1.14	2.14	3.00	3.00	1.57	1.29	1.00	1.43	2.00	2.00	**1.51**
# DAYS OBSERVED	1	3	3	2	5	4	5	6	6	5	5	3	6	5	**59**
	FIRST OBSERVED: August 7				LAST OBSERVED: November 6			PEAK DATE: Sep 11, Sep 17				PEAK NUMBER OF INDIVIDUALS: 8			

It was a good winter for Mourning Dove, with a mean daily count more than one-third above the long-term average. The species accounted for 8% of all birds observed this winter, a record high. However, only three were banded, slightly below average for the season. In spring, the mean daily count rebounded slightly from last year, but remained far below the long-term average for the season. Just two Mourning Doves were observed in summer, average over the years since 2007, but far fewer than in 2005 or 2006. The mean daily count for fall was triple last year's record low, but still barely more than half the long-term average. Similar to the past two years, the traditional late season peak was absent.

BBCU: Black-billed Cuckoo / Coulicou à bec noir (*Coccyzus erythropthalmus*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY									0.43	0.14	**0.06**
# DAYS OBSERVED									2	1	**3**
# PROCESSED									1		**1**
	FIRST OBSERVED: May 23			LAST OBSERVED: May 31			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43			0.14											**0.04**
# DAYS OBSERVED	3			1											**4**
	FIRST OBSERVED: August 1				LAST OBSERVED: August 27			PEAK DATE: 4 dates				PEAK NUMBER OF INDIVIDUALS: 1			

The number of Black-billed Cuckoos observed this spring was above average for the fourth year in a row, but slightly lower than the past two years. As always, the species arrived at MBO only in late May. One was banded, only the third ever in spring, after single individuals in 2011 and 2013. One was observed in summer, only the sixth year with any records for the season. The species had been banded in fall in 10 of 14 previous years, but was missed this year. The mean daily count was also low, with the fewest observed since 2014.

CONI: Common Nighthawk / Engoulevent d'Amérique (*Chordeiles minor*)

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY					0.14										**0.01**
# DAYS OBSERVED					1										**1**
	FIRST OBSERVED: August 29				LAST OBSERVED: August 29			PEAK DATE: August 29				PEAK NUMBER OF INDIVIDUALS: 1			

Common Nighthawk was observed in fall for the 9th time in 15 years. The single observation on August 29 was right in the middle of the span of past records.

EWPW: Eastern Whip-poor-will / Engoulevent bois-pourri (*Antrostomus vociferus*)

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY						0.14									**0.01**
# DAYS OBSERVED						1									**1**
	FIRST OBSERVED: September 9				LAST OBSERVED: September 9			PEAK DATE: September 9				PEAK NUMBER OF INDIVIDUALS: 1			

An Eastern Whip-poor-will heard calling on September 9 was the first ever at MBO, species #220 for the site.

CHSW: Chimney Swift / Martinet ramoneur (*Chaetura pelagica*)

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14			0.29										**0.03**
# DAYS OBSERVED		1			1										**2**
	FIRST OBSERVED: August 8				LAST OBSERVED: August 31				PEAK DATE: August 31				PEAK NUMBER OF INDIVIDUALS: 2		

Chimney Swift was missed in spring for the first time in the program's 15-year history. However, one was seen in summer, the first for the season since 2015. The three individuals observed over two dates in August represent the second-lowest fall total ever, ahead of only 2010 when just one was seen.

RTHU: Ruby-throated Hummingbird / Colibri à gorge rubis (*Archilochus colubris*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	0.86	2.71	3.00	1.86	**0.86**
# DAYS OBSERVED						1	5	6	7	4	**23**
# PROCESSED							1	7	2	2-1-1	**12-1-1**
	FIRST OBSERVED: May 8			LAST OBSERVED: June 2			PEAK DATE: May 21, May 22			PEAK NUMBER OF INDIVIDUALS: 6	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	4.71	4.71	4.43	4.86	4.00	2.57	0.86	0.29							**1.89**
# DAYS OBSERVED	7	7	7	7	6	7	4	2							**47**
# PROCESSED	7	20-0-1	14	19-1-0	6	6									**72-1-1**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 21			PEAK DATE: August 13			PEAK NUMBER OF INDIVIDUALS: 9					

The mean daily count of Ruby-throated Hummingbird in spring was slightly higher than the previous record set in 2015, thanks to a protracted peak in numbers spanning weeks 8 and 9. The species was banded in spring for the first time this year; the total of 12 was slightly above the long-term spring average of individuals captured and released unbanded. The mean daily count of 1.29 in summer was relatively low compared to recent years, but slightly above average overall; one was banded, the first ever in summer. The mean daily count in fall was slightly above average, with numbers remarkably steady throughout the first five weeks of the season. The 72 banded was more than last year, when banding of the species began at MBO, though it is important to note that effort at the hummingbird trap is not standardized.

VIRA: Virginia Rail / Râle de Virginie (*Rallus limicola*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.29	0.86	0.29	0.86	1.00	**0.33**
# DAYS OBSERVED						2	5	2	4	6	**19**
	FIRST OBSERVED: May 7			LAST OBSERVED: June 5			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 2	

As in several previous years, spring sightings were fairly frequent over the second half of spring; overall numbers were slightly above the long-term average. There was also one summer sighting, like last year.

SORA: Sora / Marouette de Caroline (*Porzana carolina*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.29	0.29	0.86	0.71	**0.21**
# DAYS OBSERVED							2	2	6	5	**15**
	FIRST OBSERVED: May 11			LAST OBSERVED: June 5			PEAK DATE: 15 dates			PEAK NUMBER OF INDIVIDUALS: 1	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.14	0.14							**0.02**
# DAYS OBSERVED							1	1							**2**
	FIRST OBSERVED: September 16			LAST OBSERVED: September 21			PEAK DATE: Sep 16, Sep 21			PEAK NUMBER OF INDIVIDUALS: 1					

Sora has now been observed at MBO annually in spring since 2013, after previously having been detected in only three of the first eight years. The 15 days with records this spring was second only to the high count of 19 in 2016, but no more than one was detected on any day, and the mean daily count for the season therefore tied with 2010 for the third highest, marginally behind 2014, and well short of the record of 0.37 in 2016.

SACR: Sandhill Crane / Grue du Canada (*Antigone canadensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.29		0.14								**0.04**
# DAYS OBSERVED	1		1								**2**
	FIRST OBSERVED: March 28			LAST OBSERVED: April 17			PEAK DATE: March 28			PEAK NUMBER OF INDIVIDUALS: 2	

Prior to this year, Sandhill Crane had only been observed at MBO on five occasions, including four spring records between April 24 and May 12. The two sightings this spring were both earlier, with two birds on the first day of the season (March 28), and another one on the last day of week 3. As in the past, all were seen flying past MBO.

KILL: Killdeer / Pluvier kildir (*Charadrius vociferus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.71	0.86	1.00	0.14	0.43	0.71	0.29	**0.41**
# DAYS OBSERVED				3	4	5	1	3	4	1	**21**
	FIRST OBSERVED: April 19			LAST OBSERVED: June 1			PEAK DATE: 8 dates			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14	0.14		0.14										**0.03**
# DAYS OBSERVED	1	1		1										**3**
FIRST OBSERVED: August 7			LAST OBSERVED: August 27			PEAK DATE: Aug 7, Aug 14, Aug 27			PEAK NUMBER OF INDIVIDUALS: 1					

Killdeer numbers have declined over time, and this year was no exception to the trend. The mean daily count in spring was the third lowest over the past 15 years, ahead of only 2015 and 2017. The species was observed in summer for the third time in the past four years, but only the seventh time overall, the count of two was average. The three sightings in fall was a slight improvement over last year, but otherwise the lowest total since 2014.

AMWO: American Woodcock / Bécasse d'Amérique (*Scolopax minor*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.71	0.29		0.29	0.14			**0.14**
# DAYS OBSERVED				4	2		2	1			**9**
	FIRST OBSERVED: April 18			LAST OBSERVED: May 20			PEAK DATE: April 19			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY				0.29	0.14									**0.03**
# DAYS OBSERVED				1	1									**2**
# PROCESSED					1									**1**
FIRST OBSERVED: August 23			LAST OBSERVED: August 30			PEAK DATE: August 23			PEAK NUMBER OF INDIVIDUALS: 2					

American Woodcock encounters were unusually frequent at MBO this spring, slightly behind only 2012 and 2013. All sightings this year were within a span of just over one month spanning the middle of the season, a shorter period than in the other peak years. There were only three observations in fall, all in late August; one was banded, only the sixth ever at MBO, all of them since 2013.

WISN: Wilson's Snipe / Bécassine de Wilson (*Gallinago delicata*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14			0.14				**0.03**
# DAYS OBSERVED				1			1				**2**
	FIRST OBSERVED: April 22			LAST OBSERVED: May 11			PEAK DATE: Apr 22, May 11			PEAK NUMBER OF INDIVIDUALS: 1	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14	0.14												**0.02**
# DAYS OBSERVED	1	1												**2**
FIRST OBSERVED: August 4			LAST OBSERVED: August 11			PEAK DATE: Aug 4, Aug 11			PEAK NUMBER OF INDIVIDUALS: 1					

Wilson's Snipe was observed in spring for the first time since 2016; the two sightings were just under three weeks apart, and consistent with the typical mid-season timing for this uncommon species at MBO. The species was typically rare in fall, with just two observations in the first half of August.

SPSA: Spotted Sandpiper / Chevalier grivelé (*Actitis macularius*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.29	0.57	0.57		0.14	**0.16**
# DAYS OBSERVED						2	4	2		1	**9**
	FIRST OBSERVED: May 6			LAST OBSERVED: May 31			PEAK DATE: May 21, May 22			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14														**0.01**
# DAYS OBSERVED	1														**1**
	FIRST OBSERVED: August 6				LAST OBSERVED: August 6			PEAK DATE: August 6				PEAK NUMBER OF INDIVIDUALS: 1			

Although still quite uncommon, Spotted Sandpiper was in above average numbers in spring for the fourth year in a row, matching last year's record high mean daily count. As has been the case in recent years, numbers peaked in mid-May. A lone individual was observed in fall, on August 6, typical in timing and not unusual in rarity given a long-term average of just two sightings per year for the season.

SOSA: Solitary Sandpiper / Chevalier solitaire (*Tringa solitaria*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	1.57	4.86	1.57		**0.81**
# DAYS OBSERVED						1	6	6	5		**18**
# PROCESSED								2			**2**
	FIRST OBSERVED: May 7			LAST OBSERVED: May 29			PEAK DATE: May 22			PEAK NUMBER OF INDIVIDUALS: 8	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14			0.29											**0.03**
# DAYS OBSERVED	1			1											**2**
	FIRST OBSERVED: August 5				LAST OBSERVED: August 27			PEAK DATE: August 27				PEAK NUMBER OF INDIVIDUALS: 2			

The mean daily count of Solitary Sandpiper in spring was only slightly below the record high set last year, with a particularly pronounced peak of migration in week 8, including a new record high single-day count of 8 individuals on May 22. For the first time ever, two individuals were banded in the same season, increasing the all-time total for the species to just 8. Conversely, only three individuals were observed in fall, fewer than in any previous years except 2006 and 2018.

LEYE: Lesser Yellowlegs / Petit Chevalier (*Tringa flavipes*)

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14														**0.01**
# DAYS OBSERVED	1														**1**
	FIRST OBSERVED: August 4				LAST OBSERVED: August 4			PEAK DATE: August 4				PEAK NUMBER OF INDIVIDUALS: 1			

Lesser Yellowlegs is a rare visitor to MBO, with previous records only from 2008, 2011, 2012, and 2018. Most of these have been in spring; prior to this year there was only one other fall sighting, a lone individual on August 10, 2008.

GRYE: Greater Yellowlegs / Grand Chevalier (*Tringa melanoleuca*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14		0.57	0.29	1.00			**0.20**
# DAYS OBSERVED				1		3	2	2			**8**
	FIRST OBSERVED: April 21			LAST OBSERVED: May 20			PEAK DATE: May 17			PEAK NUMBER OF INDIVIDUALS: 6	

Greater Yellowlegs is somewhat more frequently observed at MBO than Lesser Yellowlegs, with at least one record each year except 2009. However, it has typically occurred in very low numbers; the mean daily count this spring was a record high, more than quadruple the long-term average for the season. However, for the second year in a row, none were observed in fall.

RBGU: Ring-billed Gull / Goéland à bec cerclé (*Larus delawarensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	2.00	6.86	9.29	28.71	18.57	19.00	15.14	26.00	38.57	38.43	**20.26**
# DAYS OBSERVED	4	7	6	7	7	7	7	7	7	7	**66**
	FIRST OBSERVED: March 29			LAST OBSERVED: June 5			PEAK DATE: June 4			PEAK NUMBER OF INDIVIDUALS: 100	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
0.57	0.71	0.29	0.43	0.43	0.14	0.86	0.57	0.57	0.14	0.43	1.00	8.00	9.43	**1.68**
2	1	2	1	2	1	4	2	4	1	2	2	3	4	**31**
FIRST OBSERVED: August 4			LAST OBSERVED: November 6			PEAK DATE: October 29			PEAK NUMBER OF INDIVIDUALS: 51					

In winter, Ring-billed Gull was more numerous than the past two years, but slightly below average overall. The mean daily count in spring was nearly identical to last year, and again slightly below average. Only 9 individuals were observed in summer, less than half the long-term average, and the fewest since 2012. In fall, the mean daily count was slightly above the record lows of the past two years, but still less than one-third of the long-term average, and notable flocks were not observed until the final two weeks of the season.

HERG: Herring Gull / Goéland argenté (*Larus argentatus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.29	0.14	0.57	0.57	1.14	0.14			0.14	**0.30**
# DAYS OBSERVED		1	1	3	3	3	1			1	**13**
	FIRST OBSERVED: April 8			LAST OBSERVED: June 1			PEAK DATE: May 4			PEAK NUMBER OF INDIVIDUALS: 4	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
									0.14	0.29		0.29	0.14	**0.06**
									1	1		1	1	**4**
FIRST OBSERVED: October 5			LAST OBSERVED: November 4			PEAK DATE: Oct 12, Oct 24			PEAK NUMBER OF INDIVIDUALS: 2					

Herring Gull was observed in winter for the first time in three years, and the mean daily count of 0.47 was a new record high for the season. For the second year in a row, spring sightings of Herring Gull were more numerous than average. The mean daily count this year was the highest for the season since 2008. This did not carry over to fall, when sightings were somewhat fewer than usual.

GBBG: Great Black-backed Gull / Goéland marin (*Larus marinus*)

AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
						0.29	0.14				0.14			**0.04**
						1	1				1			**3**
FIRST OBSERVED: September 15			LAST OBSERVED: October 21			PEAK DATE: September 15			PEAK NUMBER OF INDIVIDUALS: 2					

Two Great Black-backed Gulls were seen in winter, but the species was missed in spring for the fourth time in the past five years. The species was uncommon and irregular in fall, as usual.

COTE: Common Tern / Sterne pierregarin (*Sterna hirundo*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.29			**0.03**
# DAYS OBSERVED								1			**1**
	FIRST OBSERVED: May 17			LAST OBSERVED: May 17			PEAK DATE: May 17			PEAK NUMBER OF INDIVIDUALS: 2	

For the sixth time in the past seven years, Common Tern was observed during the spring program. Two individuals were observed flying overhead on May 17; across all years, 71% of individuals spotted in spring have been during week 8.

COLO: Common Loon / Plongeon huard (*Gavia immer*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29	1.71	3.00	1.29	1.14	0.71	0.14	**0.83**
# DAYS OBSERVED				2	5	6	3	4	3	1	**24**
	FIRST OBSERVED: April 21			LAST OBSERVED: May 30		PEAK DATE: Apr 25, May 8			PEAK NUMBER OF INDIVIDUALS: 7		

The mean daily count of Common Loon was high this spring, second only to the record of 1.07 in 2015. The frequency of sightings and number of individuals were particularly high in late April and early May, which is typical. For the first time since 2006, there were no fall observations.

DCCO: Double-crested Cormorant / Cormoran à aigrettes (*Phalacrocorax auritus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.14	1.86	1.00	0.29	1.29	0.14	**0.47**
# DAYS OBSERVED					1	2	2	1	2	1	**9**
	FIRST OBSERVED: April 29			LAST OBSERVED: June 1		PEAK DATE: May 6, May 27			PEAK NUMBER OF INDIVIDUALS: 7		

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29		0.14	0.29	0.43		2.43	1.86		0.14				**0.40**
# DAYS OBSERVED	1		1	2	2		1	1		1				**9**
FIRST OBSERVED: August 11			LAST OBSERVED: October 10				PEAK DATE: September 25				PEAK NUMBER OF INDIVIDUALS: 17			

After three straight years of increases, the mean daily count of Double-crested Cormorant dropped back to near average this spring. Fall numbers were above average for the fifth year in a row, but as usual, most sightings were relatively scattered throughout the first two-thirds of the season.

AMBI: American Bittern / Butor d'Amérique (*Botaurus lentiginosus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14		0.43					**0.06**
# DAYS OBSERVED				1		3					**4**
	FIRST OBSERVED: April 20			LAST OBSERVED: May 6		PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 1		

There were four sightings of American Bittern this spring, with the three in week 6 quite likely involving the same individual on multiple days. The count is average for the season. For the third year in a row and eighth time overall, there were no fall sightings.

GBHE: Great Blue Heron / Grand Héron (*Ardea herodias*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14	0.71	0.14	0.43	0.57	0.57	0.29	0.29	**0.31**
# DAYS OBSERVED			1	2	1	2	4	2	2	2	**16**
	FIRST OBSERVED: April 12			LAST OBSERVED: June 1		PEAK DATE: April 19			PEAK NUMBER OF INDIVIDUALS: 4		

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.00	1.29	0.71	0.29	0.29	0.29	0.29		0.14		0.14			0.14	**0.33**
# DAYS OBSERVED	4	4	2	2	2	2	2		1		1			1	**21**
FIRST OBSERVED: August 1			LAST OBSERVED: November 3				PEAK DATE: Aug 1, Aug 18				PEAK NUMBER OF INDIVIDUALS: 4			

For the fourth time in the past five years, the mean daily count of Great Blue Heron in spring was far below the long-term average; the 16 days with observations was only one more than the record low in 2015. There were five sightings in summer, the most since 2007. The fall mean daily count was more typical, and nearly the same as the past two years. A particularly high percentage of this year's fall sightings were in the first half of the season, but the sighting on November 3 was the latest ever in fall.

GREG: Great Egret / Grande Aigrette (*Ardea alba*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.43	0.14			**0.06**
# DAYS OBSERVED							1	1			**2**
	FIRST OBSERVED: May 13			LAST OBSERVED: May 18			PEAK DATE: May 13			PEAK NUMBER OF INDIVIDUALS: 3	

Great Egret was observed in spring for the sixth year since the first record in 2010. For the first time in any season, three individuals were seen together. The species was missed in fall for the second year in a row, after having been recorded in six of the previous seven years.

GRHE: Green Heron / Héron vert (*Butorides virescens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.29	0.43	0.43	0.29	**0.14**
# DAYS OBSERVED							2	3	3	1	**9**
	FIRST OBSERVED: May 12			LAST OBSERVED: June 3			PEAK DATE: June 3			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.29	0.43	0.43												**0.15**
# DAYS OBSERVED	6	3	3												**12**
# PROCESSED	1														**1**
	FIRST OBSERVED: August 1			LAST OBSERVED: August 19				PEAK DATE: August 7				PEAK NUMBER OF INDIVIDUALS: 3			

For the third time in the past five years, the mean daily count in spring was notably below average. The first observation on May 12 was the latest since 2007, and there was no distinct peak to sightings this year. Only one Green Heron was seen this summer, around one-third of the long-term average. The fall mean daily count was higher than in either of the past two years, but still below the long-term average. The last date of observation matched 2012 for the earliest ever. Nonetheless, there was a big highlight this fall, as the species was banded for the first time ever at MBO, the 127th species for the site.

TUVU: Turkey Vulture / Urubu à tête rouge (*Cathartes aura*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.14	0.43	0.29	1.43	3.29	2.29	2.29	2.14	2.14	0.29	**1.47**
# DAYS OBSERVED	1	2	1	2	5	4	5	5	5	1	**31**
	FIRST OBSERVED: April 2			LAST OBSERVED: May 30			PEAK DATE: May 1			PEAK NUMBER OF INDIVIDUALS: 10	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.86	0.71	1.43	2.14	0.71	2.86	1.71	1.29	0.86	3.29	1.43	0.43		0.43	**1.30**
# DAYS OBSERVED	3	4	4	5	2	5	4	5	2	3	2	1		2	**42**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6				PEAK DATE: October 5				PEAK NUMBER OF INDIVIDUALS: 9			

The mean daily count of Turkey Vulture in spring was only around 10% below the record high set in 2013, thanks to sustained above average counts from week 5 through week 9. The mean daily count of 0.43 in summer was above average. Fall numbers were above average for the fifth year in a row, despite no particularly big flocks of migrants being observed this year. For the third time in the past four years, sightings extended as late as week 14.

OSPR: Osprey / Balbuzard pêcheur (*Pandion haliaetus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.14	0.57	0.14	0.14			**0.10**
# DAYS OBSERVED					1	3	1	1			**6**
	FIRST OBSERVED: April 28			LAST OBSERVED: May 17			PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY				0.14				0.14							**0.02**
# DAYS OBSERVED				1				1							**2**
	FIRST OBSERVED: August 27			LAST OBSERVED: September 25				PEAK DATE: Aug 27, Sep 25				PEAK NUMBER OF INDIVIDUALS: 1			

Osprey was typically uncommon in spring, whereas it was even scarcer than usual in fall, with the total of two individuals observed the fewest since 2013.

NOHA: Northern Harrier / Busard des marais (*Circus hudsonius*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.14	0.14	0.29		0.57	0.71	0.14	0.14		**0.21**
# DAYS OBSERVED		1	1	2		3	2	1	1		**11**
	FIRST OBSERVED: April 5			LAST OBSERVED: May 27			PEAK DATE: May 9			PEAK NUMBER OF INDIVIDUALS: 4	

AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
0.14				0.14		0.57	0.29	0.29	0.14	0.43	0.29	0.14	0.43	**0.20**
1				1		3	1	2	1	3	2	1	3	**18**
FIRST OBSERVED: August 4			LAST OBSERVED: November 6			PEAK DATE: Sep 17, Sep 24			PEAK NUMBER OF INDIVIDUALS: 2					

For the fourth time in the past six years, spring numbers were above average for Northern Harrier, with the mean daily count this year just marginally short of last year's record high. Sightings were quite scattered, ranging from the second earliest sighting ever on April 5 (compared to April 3 in 2009) to the second latest on May 27 (compared to June 1 in 2008). In fall, there was a sighting in week 1 for the first time since 2013, and only the fourth year overall. However, the vast majority of observations were from mid-September onward, though there was no particular peak in records. The mean daily count in fall was marginally below average.

SSHA: Sharp-shinned Hawk / Épervier brun (*Accipiter striatus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14	0.14	0.29					**0.06**
# DAYS OBSERVED				1	1	2					**4**
	FIRST OBSERVED: April 21			LAST OBSERVED: May 3			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 1	

AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
	0.43		0.43	0.57	4.86	2.86	2.00	0.86	1.43	0.86	0.57	0.14	0.57	**1.11**
	2		3	4	6	6	7	4	5	4	2	1	3	**47**
			1		1		1		1					**4**
FIRST OBSERVED: August 11			LAST OBSERVED: November 5			PEAK DATE: September 5			PEAK NUMBER OF INDIVIDUALS: 26					

One Sharp-shinned Hawk was observed in winter, well below average. The mean daily count this spring was just barely more than the record low set during the first year of the program in 2005. All sightings were between weeks 4 and 6, matching the long-term seasonal peak. The number observed in fall was typical, but the number banded was only half of the long-term average. There was a distinct peak this fall in week 6, somewhat earlier than usual, including 26 individuals on September 5, the highest single-day count since September 18, 2014.

COHA: Cooper's Hawk / Épervier de Cooper (*Accipiter cooperii*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14	0.43	0.43	0.57	0.43	0.14			**0.21**
# DAYS OBSERVED			1	3	2	3	2	1			**12**
	FIRST OBSERVED: April 17			LAST OBSERVED: May 21			PEAK DATE: Apr 25, May 7, May 9			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
0.14	0.14		0.29	1.00	1.57	3.00	1.57	1.14	1.57	0.57	0.71	0.43	1.14	**0.95**
1	1		2	4	5	6	6	5	6	3	3	3	6	**51**
FIRST OBSERVED: August 4			LAST OBSERVED: November 6			PEAK DATE: September 12			PEAK NUMBER OF INDIVIDUALS: 7					

There were two Cooper's Hawk sightings this winter, somewhat below average. Spring numbers returned to around the long-term average after spiking to record highs last year. However, the number of days with observations and the mean daily count in fall were both well above average for the second year in a row.

BAEA: Bald Eagle / Pygargue à tête blanche (*Haliaeetus leucocephalus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.29			0.14			**0.04**
# DAYS OBSERVED					1			1			**2**
	FIRST OBSERVED: April 25			LAST OBSERVED: May 18			PEAK DATE: April 25			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY			0.29		0.57	0.43	1.00	0.43	0.43			0.14			**0.23**
# DAYS OBSERVED			2		2	2	3	2	1			1			**13**
	FIRST OBSERVED: August 18			LAST OBSERVED: October 19			PEAK DATE: September 17			PEAK NUMBER OF INDIVIDUALS: 4					

There were three Bald Eagle sightings this spring, close to average. The two individuals observed on April 25 marked the earliest sighting for the season since 2014. Fall numbers continue to increase, with this marking the fourth year in a row that the mean daily count set or tied a record high. This year's total was more than 50% greater than the previous record from the past two years, and sightings were scattered over 13 days, three more than the old high set just last year. As in past years, sightings were fairly scattered, but most frequent during the middle third of the season.

RSHA: Red-shouldered Hawk / Buse à épaulettes (*Buteo lineatus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.71	0.57	0.43	0.14		0.43		**0.23**
# DAYS OBSERVED				3	3	3	1		3		**13**
	FIRST OBSERVED: April 21			LAST OBSERVED: May 27			PEAK DATE: Apr 22, Apr 23, Apr 25			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.43	0.14			0.57	0.71	0.71	0.57		0.14	0.14	0.14	0.29	**0.28**
# DAYS OBSERVED		3	1			4	4	5	1		1	1	1	2	**23**
	FIRST OBSERVED: August 9			LAST OBSERVED: November 6			PEAK DATE: September 27			PEAK NUMBER OF INDIVIDUALS: 4					

Similar to in 2015, spring sightings of Red-shouldered Hawk were unusually scarce, and these are the only two years with no records in weeks 8 or 10. For only the fourth time, there were no summer sightings. In fall, numbers rebounded only slightly from last year's record low, but the species was generally scarce except for somewhat higher counts during a three-week period centered around mid-September.

BWHA: Broad-winged Hawk / Petite Buse (*Buteo platypterus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					1.29	1.57	0.29	0.14			**0.33**
# DAYS OBSERVED					3	2	1	1			**7**
	FIRST OBSERVED: April 25			LAST OBSERVED: May 18			PEAK DATE: May 6			PEAK NUMBER OF INDIVIDUALS: 10	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY				0.57	0.71	35.57	30.57	0.71	0.14						**4.88**
# DAYS OBSERVED				3	3	4	4	2	1						**17**
	FIRST OBSERVED: August 23			LAST OBSERVED: September 30			PEAK DATE: September 9			PEAK NUMBER OF INDIVIDUALS: 242					

The mean daily count of Broad-winged Hawks in spring tends to fluctuate depending on whether one or more good days of migration are observed. This was an intermediate year, with a peak count of 10 individuals on May 6 and almost as many individuals scattered across three dates in week 5, but otherwise few sightings. For only the second time there was a summer sighting, a single individual on June 12. Fall was much better than spring, with the mean daily count approaching the record high set in 2014, thanks to an unusually high count of 242 individuals on September 9 (the third-highest single-day count, behind 300 on September 10, 2011, and 327 on September 18, 2014), and more than 200 additional birds the following week. However, it was a concentrated migration, as for the first time since 2011 none were observed beyond the end of September.

RTHA: Red-tailed Hawk / Buse à queue rousse (*Buteo jamaicensis*)

MARCH	APRIL				MAY				JUNE		
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.14	0.29	0.29	0.57	1.29	0.71	0.14	0.43	0.71		**0.46**
# DAYS OBSERVED	1	2	1	4	4	3	1	2	4		**22**
	FIRST OBSERVED: March 30			LAST OBSERVED: May 29		PEAK DATE: April 30			PEAK NUMBER OF INDIVIDUALS: 4		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.29	0.43	0.86	0.86	2.14	2.43	1.14	1.43	1.71	2.14	2.14	1.57	2.00	**1.37**
# DAYS OBSERVED		2	2	4	3	5	6	3	3	4	5	6	6	4	**53**
	FIRST OBSERVED: August 11			LAST OBSERVED: November 6			PEAK DATE: October 19				PEAK NUMBER OF INDIVIDUALS: 7				

The mean daily count of Red-tailed Hawk this winter was below average for a third consecutive year. In spring, it was lower than the past three years, but still slightly above the long-term average. There was a slight mid-season peak, which is typical. None were observed in summer, for the first time since 2015. Fall abundance was a bit above average, although slightly lower than in the past couple of years. There was a slight peak around mid-September, but numbers were only slightly lower over the second half of the season.

RLHA: Rough-legged Hawk / Buse pattue (*Buteo lagopus*)

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY												0.29			**0.02**
# DAYS OBSERVED												2			**2**
	FIRST OBSERVED: October 19			LAST OBSERVED: October 21			PEAK DATE: Oct 19, Oct 21			PEAK NUMBER OF INDIVIDUALS: 1					

Only three Rough-legged Hawks were observed at MBO this year, one in winter, and two in week 12 of fall. The fall sightings were the earliest in the season since 2010, but typical with respect to abundance.

EASO: Eastern Screech-Owl / Petit-duc maculé (*Megascops asio*)

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / NIGHT									0.14						**0.01**
# NIGHtS OBS.									1						**1**
# PROCESSED									1						**1**
	FIRST OBSERVED: September 28			LAST OBSERVED: September 28			PEAK DATE: September 28			PEAK NUMBER OF INDIVIDUALS: 1					

The only Eastern Screech-Owl observation this year was a hatch-year bird banded during the first week of the owl banding program, on September 28.

GHOW: Great Horned Owl / Grand-duc d'Amérique (*Bubo virginianus*)

MARCH	APRIL				MAY				JUNE		
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.29	0.14	0.29		0.43	0.14	**0.13**
# DAYS OBSERVED					2	1	2		2	1	**8**
	FIRST OBSERVED: April 25			LAST OBSERVED: May 31		PEAK DATE: May 29			PEAK NUMBER OF INDIVIDUALS: 2		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	0.86	0.57	0.86	1.00	1.14	0.71	1.00	1.00	0.86	1.00	0.71	0.43	0.43	**0.78**
# DAYS OBSERVED	2	5	4	5	5	5	3	5	6	5	5	4	3	2	**59**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 4			PEAK DATE: September 22			PEAK NUMBER OF INDIVIDUALS: 3					

One Great Horned Owl was observed in winter, matching the long term mean daily count of 0.02 for the season. The mean daily count in spring was a bit above average, but significantly lower than last year when a nesting pair near the owl nets was observed regularly. For the third time in the past five years, Great Horned Owl was found in all 14 weeks of fall; the mean daily high and number of days with observations both exceeded the previous records set in 2017.

NSWO: Northern Saw-whet Owl / Petite Nyctale (Aegolius acadicus)

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / NIGHT									2.14	5.71	2.86	9.29	4.71	3.43	**2.01**
# NIGHTS OBS.									4	5	5	4	6	6	**30**
# PROCESSED									13	36-2-0	16-4-0	57-6-0	19-12-1	15-9-0	**156-33-1**
	FIRST OBSERVED: September 27				LAST OBSERVED: November 6				PEAK DATE: October 20			PEAK NUMBER OF INDIVIDUALS: 30			

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY										0.14	0.14		0.14		**0.03**
# DAYS OBSERVED										1	1		1		**3**
# PROCESSED										1			1		**2**
	FIRST OBSERVED: October 13				LAST OBSERVED: October 25				PEAK DATE: Oct 13, Oct 25			PEAK NUMBER OF INDIVIDUALS: 1			

The number of Northern Saw-whet Owls banded this fall was the lowest since 2010, and one less than in 2014, reflecting the low point in a four-year cycle that was also reported by many other saw-whet banders in eastern North America this fall. An additional five individuals were captured, that were previously banded elsewhere. The species was also banded during daytime operations for the fifth year in a row, but in numbers slightly below average over that period.

BEKI: Belted Kingfisher / Martin-pêcheur d'Amérique (*Megaceryle alcyon*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14	1.29	0.43	0.57	0.71	0.14	0.14		**0.34**
# DAYS OBSERVED			1	7	3	4	4	1	1		**21**
# PROCESSED				1							**1**
	FIRST OBSERVED: April 14			LAST OBSERVED: May 24			PEAK DATE: Apr 21, Apr 22, May 11			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14		0.29			0.14	0.14		0.14				0.14	0.14	**0.08**
# DAYS OBSERVED	1		2			1	1		1				1	1	**8**
	FIRST OBSERVED: August 5			LAST OBSERVED: November 4			PEAK DATE: 8 dates			PEAK NUMBER OF INDIVIDUALS: 1					

The mean daily count of Belted Kingfisher this spring was higher than in any previous year. Two individuals were observed in summer; prior to this year the species has only been recorded during the season in one previous year, 2011. In fall, the species was typically uncommon, but the last two sightings of the season were both past the previous late record of October 22.

RBWO: Red-bellied Woodpecker / Pic à ventre roux (*Melanerpes carolinus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.29	0.29	1.29	0.86	0.57	1.00	0.71	0.86	0.14		**0.60**
# DAYS OBSERVED	1	2	6	6	3	5	4	5	1		**33**
# PROCESSED								0-1-0			**0-1-0**
	FIRST OBSERVED: March 28			LAST OBSERVED: May 26			PEAK DATE: April 15			PEAK NUMBER OF INDIVIDUALS: 3	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY									0.14		0.14				**0.02**
# DAYS OBSERVED									1		1				**2**
	FIRST OBSERVED: September 27			LAST OBSERVED: October 16			PEAK DATE: Sep 27, Oct 16			PEAK NUMBER OF INDIVIDUALS: 1					

Red-bellied Woodpecker was observed in winter for the third year in a row, and the mean daily count of 0.16 matched the average over the previous two years; it was banded for the first time in the season. This species was first observed at MBO in 2010, and prior to this year there had never been more than four sightings in a single spring (or eight in fall). It was therefore a great surprise to have a ten-fold increase in mean daily abundance this spring, suggesting the presence of a territorial pair, the male of which was recaptured in week 8 after having been banded in winter. However, the species was back to being typically scarce in fall, with just two sightings in late September and mid-October.

BBWO: Black-backed Woodpecker / Pic à dos noir (*Picoides arcticus*)

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY												0.14			**0.01**
# DAYS OBSERVED												1			**1**
	FIRST OBSERVED: October 19				LAST OBSERVED: October 19				PEAK DATE: October 19				PEAK NUMBER OF INDIVIDUALS: 1		

Black-backed Woodpecker has long been expected at MBO, but finally made its first appearance near the end of year 15, on October 19, becoming the 221st species observed on site.

YBSA: Yellow-bellied Sapsucker / Pic maculé (*Sphyrapicus varius*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.14		1.14	1.00	1.14	1.86	1.00	1.71	0.86	0.43	**0.93**
# DAYS OBSERVED	1		3	4	5	6	5	6	5	3	**38**
# PROCESSED							2	2-0-2			**4-0-2**
	FIRST OBSERVED: April 2			LAST OBSERVED: June 1			PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 7	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43		0.29			0.14	0.14		0.14						**0.08**
# DAYS OBSERVED	2		2			1	1		1						**7**
# PROCESSED	1					1									**2**
	FIRST OBSERVED: August 1			LAST OBSERVED: October 1			PEAK DATE: August 5			PEAK NUMBER OF INDIVIDUALS: 2					

It was a good spring for Yellow-bellied Sapsucker, with the highest mean daily count since 2009, and the number of birds banded tying the record high set in 2015. For the fourth year in a row, a single individual was banded in summer; the three individuals observed was above average. In fall, the number banded was average, but the mean daily count was slightly below average, and the lowest since 2013.

DOWO: Downy Woodpecker / Pic mineur (*Dryobates pubescens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	1.14	0.43	1.00	1.57	1.57	3.29	2.57	1.86	2.29	0.57	**1.63**
# DAYS OBSERVED	5	2	5	6	6	7	7	7	7	4	**56**
# PROCESSED					1-1-0	1	0-0-1	0-0-1			**2-1-2**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 9	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	3.43	2.57	1.57	2.43	1.29	1.86	1.86	2.71	2.00	2.29	2.57	2.43	2.71	2.86	**2.33**
# DAYS OBSERVED	7	7	6	7	5	6	7	6	7	6	7	6	6	6	**89**
# PROCESSED	5-0-2	1-0-3	0-0-1	1-1-1		0-0-1		0-1-0	1	1-1-2	1-0-2	0-0-1	3-1-0	1	**14-4-13**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6			PEAK DATE: 5 dates			PEAK NUMBER OF INDIVIDUALS: 5					

In winter, the mean daily count of 0.98 Downy Woodpeckers was slightly below average, and the second-lowest since 2011. However, three were banded, matching the record high from 2013 and 2015. The mean daily count for spring was slightly above average, with particularly high numbers during the first half of May, like last year. This included a single-day record high for spring of 9, on May 8. The two birds banded in spring was typical for the past five years, but below the long-term average of three. Only 8 individuals were observed in summer, the fewest since 2013; just two were banded, the fewest since 2012. In fall, the mean daily count was slightly below the long-term average for the season, but within the range of 2.2 to 3.0 that has been the case in 13 of 15 years. The number of birds banded in fall has also been quite consistent over the years, between 10 and 15 annually since 2008; this year's total of 14 was just above average. As usual, nearly half of the birds were banded in the first two weeks of the season, and then there was a second small wave in the second half of fall.

HAWO: Hairy Woodpecker / Pic chevelu (*Dryobates villosus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.14	0.29	0.43	1.00	0.71	1.00	0.86	0.57	0.57	0.29	**0.59**
# DAYS OBSERVED	1	2	3	4	4	6	4	3	3	2	**32**
# PROCESSED										0-0-1	**0-0-1**
	FIRST OBSERVED: March 31			LAST OBSERVED: June 3			PEAK DATE: April 21			PEAK NUMBER OF INDIVIDUALS: 3	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.71	0.57	0.57	0.86	0.57	0.43	1.00	1.29	1.57	1.43	1.00	2.00	1.29	1.43	**1.05**
# DAYS OBSERVED	3	4	3	5	3	3	4	6	5	5	5	6	6	6	**64**
	FIRST OBSERVED: August 5				LAST OBSERVED: November 6			PEAK DATE: October 19				PEAK NUMBER OF INDIVIDUALS: 4			

The mean daily count of Hairy Woodpecker this winter was 0.63, slightly above the long-term average. Two were banded, bringing the 15-year average to exactly 1.0. In spring, the mean daily count matched the below-average level observed in 2017, and like that year and two others earlier (2010 and 2013), none were banded. One individual was banded in summer, surprisingly the first one ever for the season; including that bird, five were observed, nearly triple the long-term average. In fall, the mean daily count was slightly below average, for the fifth consecutive year. For the first time ever, none were banded in fall.

NOFL (YSFL): Yellow-shafted Flicker / Pic flamboyant (*Colaptes auratus auratus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.14	0.86	2.57	2.43	3.43	0.71	1.29	0.57	0.86	**1.29**
# DAYS OBSERVED		1	4	7	6	7	4	6	4	5	**44**
	FIRST OBSERVED: April 7			LAST OBSERVED: June 3			PEAK DATE: May 6, May 7			PEAK NUMBER OF INDIVIDUALS: 6	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	2.71	2.86	2.43	2.14	1.86	1.43	3.00	3.14	3.00	0.43	0.43	0.57	0.29	0.14	**1.74**
# DAYS OBSERVED	7	7	6	7	6	6	7	7	7	3	3	3	2	1	**72**
# PROCESSED	1	1					1								**3**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 3			PEAK DATE: Sep 18, Sep 22				PEAK NUMBER OF INDIVIDUALS: 8			

Two Yellow-shafted Flickers were observed in winter, matching the record high from 2007 and 2015. For the fifth time in the past seven years, the peak of spring migration was in week 6, after being earlier in all previous years, suggesting a persistent shift in timing. The mean daily count for the season was marginally below average; for the first time since 2014 none were banded. Seven individuals were observed in summer, the fewest since 2015, and slightly below average overall. In fall, the mean daily count was the lowest since 2008, but the number banded was average. The peak of migration was between weeks 7 and 9, consistent with the long-term pattern.

PIWO: Pileated Woodpecker / Grand Pic (*Dryocopus pileatus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.57	0.86	1.86	2.00	1.57	1.86	1.43	1.57	1.14	1.14	**1.40**
# DAYS OBSERVED	3	4	6	7	6	6	6	6	6	5	**55**
	FIRST OBSERVED: March 29			LAST OBSERVED: June 5			PEAK DATE: May 7			PEAK NUMBER OF INDIVIDUALS: 4	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.57	0.86	2.14	1.00	0.86	1.86	1.57	1.57	1.71	1.57	1.71	1.57	1.71	2.00	**1.55**
# DAYS OBSERVED	6	5	7	4	3	7	6	6	6	6	6	6	6	7	**81**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: August 7				PEAK NUMBER OF INDIVIDUALS: 4			

The mean daily count of 0.35 in winter matched the long-term average. However, it was a great spring for Pileated Woodpecker, with the number of days observed and mean daily count both setting new record highs. Observations were fairly consistent throughout the season and most presumably involved at least two local breeding pairs. The total of four sightings in summer was one more than average. In fall, the mean daily count was above average, again with fairly consistent sightings throughout the season. For the fourth year in a row, none were banded at any point during the year.

AMKE: American Kestrel / Crécerelle d'Amérique (*Falco sparverius*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14	0.43	0.43		0.14			**0.11**
# DAYS OBSERVED				1	3	2		1			**7**
	FIRST OBSERVED: April 20			LAST OBSERVED: May 19		PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 2		

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.71				0.14	1.14	0.71	0.43	0.43					**0.26**
# DAYS OBSERVED	5				1	4	2	1	3					**16**
FIRST OBSERVED: August 8			LAST OBSERVED: October 8			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 3					

There were eight sightings of American Kestrel this spring over a span of a month in mid-season, the third-highest count in 15 years, behind only 14 in 2014 and 15 in 2017. Fall results were even better, with a record high mean daily count nearly 50% greater than the previous one set in 2015. Unlike that year, there was no particularly big day of migration, but rather there were sightings across 16 days this fall, nearly double the previous high of 9 days in 2012. Curiously there were observations on five days during week 2, then no more for a full month, after which the remainder of sightings were over a five week period spanning September and early October.

MERL: Merlin / Faucon émerillon (*Falco columbarius*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14		0.29	0.14	0.29				**0.09**
# DAYS OBSERVED			1		2	1	2				**6**
	FIRST OBSERVED: April 13			LAST OBSERVED: May 15		PEAK DATE: 6 dates			PEAK NUMBER OF INDIVIDUALS: 1		

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14	0.43	0.43	0.71	0.14	0.57	0.86	0.57	0.29	0.29	0.14		0.29	**0.35**
# DAYS OBSERVED	1	3	2	3	1	3	4	4	2	2	1		2	**28**
FIRST OBSERVED: August 11			LAST OBSERVED: November 6			PEAK DATE: August 29			PEAK NUMBER OF INDIVIDUALS: 3					

Spring Merlin numbers were above average for the fourth consecutive year, though just below the record high set in 2017. As usual, the majority of sightings were in mid-season. The mean daily count was also unusually high in fall, behind only 2014 and 2017, reflecting the overall increasing trend for this species. Sightings were scattered throughout most of the season, with the mean daily count not exceeding 1 in any week.

PEFA: Peregrine Falcon / Faucon pèlerin (*Falco peregrinus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.14	0.29	0.14		**0.06**
# DAYS OBSERVED							1	2	1		**4**
	FIRST OBSERVED: May 14			LAST OBSERVED: May 28		PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 1		

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY					0.29		0.14			0.14				**0.04**
# DAYS OBSERVED					1		1			1				**3**
FIRST OBSERVED: September 10			LAST OBSERVED: October 11			PEAK DATE: September 10			PEAK NUMBER OF INDIVIDUALS: 2					

In three of the past four years, one Peregrine Falcon was observed at MBO in spring; the four individuals this spring matched the record high from 2006. All observations were within a span of 15 days in mid-late May. The four sightings in fall was average, and sightings were scattered as is often the case.

GCFL: Great Crested Flycatcher / Tyran huppé (*Myiarchus crinitus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	0.86	1.71	5.43	4.71	**1.29**
# DAYS OBSERVED						1	4	6	7	7	**25**
	FIRST OBSERVED: May 8			LAST OBSERVED: June 5			PEAK DATE: May 25, May 30			PEAK NUMBER OF INDIVIDUALS: 7	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.43	1.57	0.86	1.29	0.86	0.57	0.29								**0.49**
# DAYS OBSERVED	7	6	4	5	5	3	2								**32**
# PROCESSED				1											**1**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 16			PEAK DATE: August 22			PEAK NUMBER OF INDIVIDUALS: 3					

In spring, the mean daily count was above average for the sixth consecutive year, reflecting a positive trend for Great Crested Flycatcher. However, for the second year in a row, and fifth overall, none were banded. Nearly 80% of sightings were over the final two weeks of the season, similar to 2017, but otherwise far more than in any other year. The mean daily count of 2.0 in summer was the lowest since 2015, but still above average; one was banded, which is below average. In fall, the mean daily count was the lowest since 2013, and the one individual banded was below the long-term average of 2.4.

EAKI: Eastern Kingbird / Tyran tritri (*Tyrannus tyrannus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.43	0.86	2.86	2.43	1.00	**0.76**
# DAYS OBSERVED						2	5	7	7	4	**25**
# PROCESSED								2	4		**6**
	FIRST OBSERVED: May 5			LAST OBSERVED: June 2			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 7	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	0.29	1.57	0.57	0.29	0.29									**0.24**
# DAYS OBSERVED	3	2	5	3	2	1									**16**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 5			PEAK DATE: Aug 19, Aug 20			PEAK NUMBER OF INDIVIDUALS: 3					

Unlike most other flycatchers, Eastern Kingbird was observed in below average numbers this spring, with fairly typical numbers during the peak of week 8 and 9, but fewer than usual during the other weeks. Surprisingly, the 6 individuals banded was a record high, quadruple the long-term average. Only three individuals were observed in summer, fewer than usual. For the fourth time in the past five years, the mean daily count in fall was below the long-term average, in fact just barely above the record low set in 2015. For the ninth time in the past ten years, none were banded in fall.

OSFL: Olive-sided Flycatcher / Moucherolle à côtés olive (*Contopus cooperi*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY										0.57	**0.06**
# DAYS OBSERVED										3	**3**
# PROCESSED										1	**1**
	FIRST OBSERVED: May 31			LAST OBSERVED: June 4			PEAK DATE: June 4			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY					0.14										**0.01**
# DAYS OBSERVED					1										**1**
	FIRST OBSERVED: September 4			LAST OBSERVED: September 4			PEAK DATE: September 4			PEAK NUMBER OF INDIVIDUALS: 1					

Olive-sided Flycatcher has previously been seen at MBO in spring only in 2014 and 2017, with a grand total of four sightings. It was therefore remarkable to match that cumulative total within a span of five days in the final week of this spring. It was also just the second one ever banded at MBO, and the first time that two individuals were observed on the same day. Only one individual was observed in fall, as in eight previous years; it was the third latest ever, one day earlier than the last of eight individuals in 2017, and two days earlier than the lone sighting in fall 2010.

EAWP: Eastern Wood-Pewee / Pioui de l'Est (*Contopus virens*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.29	1.43	1.14	**0.29**
# DAYS OBSERVED								2	7	7	**16**
# PROCESSED								1	1		**2**
	FIRST OBSERVED: May 21			LAST OBSERVED: June 5			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.29	1.57	1.43	1.29	0.29	0.14		0.57							**0.47**
# DAYS OBSERVED	6	6	6	7	2	1		2							**30**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 23			PEAK DATE: August 7			PEAK NUMBER OF INDIVIDUALS: 4					

The mean daily count of Eastern Wood-Pewee in spring was more than 50% higher than the previous highs from 2011 and 2014, and the species was banded during the season for the first time ever. The mean daily count of 0.7 in summer was a record high for the season. The mean daily count in fall was above average for a sixth straight year, though somewhat lower than in 2017 and 2018. As usual, the majority of records were in August; the two in week 8 were relatively late, with fewer than ten sightings in week 8 or beyond across all years.

YBFL: Yellow-bellied Flycatcher / Moucherolle à ventre jaune (*Empidonax flaviventris*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.57	1.14	1.86	**0.36**
# DAYS OBSERVED								3	3	4	**10**
# PROCESSED								2	6	5	**13**
	FIRST OBSERVED: May 20			LAST OBSERVED: June 5			PEAK DATE: June 1			PEAK NUMBER OF INDIVIDUALS: 5	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		1.00	0.71	2.43	1.43	1.29			0.14						**0.50**
# DAYS OBSERVED		4	3	6	4	4			1						**22**
# PROCESSED		6-0-1	5	7-0-1	7	7			1						**33-0-2**
	FIRST OBSERVED: August 8			LAST OBSERVED: October 1			PEAK DATE: August 23			PEAK NUMBER OF INDIVIDUALS: 9					

It was an incredible spring for Yellow-bellied Flycatcher. Over the final three weeks, 25 individuals were observed, almost as many as the cumulative total of 31 over the previous 14 years! The mean daily count nearly quadrupled the previous high set in 2017. Similarly, only 17 individuals had been banded across all previous spring seasons, compared to 13 in less than two weeks this year. For the second time ever, a spring migrant was late enough (June 7) to be counted as part of the summer program. Fall was similarly successful, reflecting an ongoing increasing trend. The mean daily count set a record high for the second year in a row, and the number of birds banded was 10% above the previous record set in 2014. The peak of observations was in week 4 for the fifth consecutive year.

TRFL: Traill's Flycatcher / Moucherolle des saules ou M. des aulnes (*Empidonax traillii* or *alnorum*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.57	2.43	4.43	**0.74**
# DAYS OBSERVED								2	6	6	**14**
# PROCESSED								2	13	20	**35**
	FIRST OBSERVED: May 20			LAST OBSERVED: June 5			PEAK DATE: May 31			PEAK NUMBER OF INDIVIDUALS: 16	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		1.29	1.14	0.29	0.29	0.43		0.29							**0.27**
# DAYS OBSERVED		4	3	2	1	3		1							**14**
# PROCESSED		6	6-0-1		1	1									**14-0-1**
	FIRST OBSERVED: August 8			LAST OBSERVED: September 22			PEAK DATE: Aug 11, Aug 17			PEAK NUMBER OF INDIVIDUALS: 4					

The mean daily count of Traill's Flycatcher was just short of the record high of 0.8 set in 2014. For only the second time in the past ten years, migration peaked in the final week, at a far higher level than ever before in week 10. The 20 banded that week was nearly triple the previous high for that period, contributing to a new spring record, one more than in 2014. Five were banded in summer, tying the high from 2014; the mean daily count nearly matched the record from 2007. In fall, both observations and the number banded were slightly below average, but the two observed on September 22 were unusually late, with only one previous later record, on September 26, 2018.

ALFL: Alder Flycatcher / Moucherolle des aulnes (*Empidonax alnorum*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.14	0.43	1.43	**0.20**
# DAYS OBSERVED								1	2	4	**7**
	FIRST OBSERVED: May 22			LAST OBSERVED: June 5			PEAK DATE: June 5			PEAK NUMBER OF INDIVIDUALS: 5	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
			0.14											**0.01**
			1											**1**
FIRST OBSERVED: August 26			LAST OBSERVED: August 26			PEAK DATE: August 26			PEAK NUMBER OF INDIVIDUALS: 1					

The number of Traill's Flycatchers recognizable as Alder Flycatcher by their vocalizations was average in spring, peaking in the final week of the season as in most years. Two were observed in summer, an average count. The single record in fall was also typical, as the species vocalizes seldom after the breeding season, and most individuals are recognizable only as Traill's Flycatchers. For the third time in the past four years, no Willow Flycatchers were detected.

LEFL: Least Flycatcher / Moucherolle tchébec (*Empidonax minimus*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.57	1.14	6.71	3.57	0.14	**1.21**
# DAYS OBSERVED						2	5	6	6	1	**20**
# PROCESSED						2	2	21	12-0-1		**37-0-1**
	FIRST OBSERVED: May 7			LAST OBSERVED: May 30			PEAK DATE: May 20			PEAK NUMBER OF INDIVIDUALS: 15	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
0.29	0.43	0.14	0.86	0.29	0.71									**0.19**
1	2	1	4	1	3									**12**
1	1	1	4-0-1		4									**11-0-1**
FIRST OBSERVED: August 6			LAST OBSERVED: September 9			PEAK DATE: August 24			PEAK NUMBER OF INDIVIDUALS: 3					

Least Flycatcher was incredibly abundant in spring compared to past years. The mean daily count was roughly double the previous high set in 2014, and the number banded was also far above the old record of 21 from the same year. There was a strong peak in week 8, during which there was a new single-day high count of 15 on May 20, approximately one week later than the average spring peak across all years. For only the fifth time in 15 years, none were observed in summer. As usual, abundance was lower in fall, though both the number observed and banded were close to long-term averages.

EAPH: Eastern Phoebe / Moucherolle phébi (*Sayornis phoebe*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.14	0.71	2.00	0.71	1.00	1.00	0.71	1.00	0.29	**0.76**
# DAYS OBSERVED		1	2	7	3	4	6	4	5	1	**33**
# PROCESSED				2	2						**4**
	FIRST OBSERVED: April 6			LAST OBSERVED: May 30			PEAK DATE: April 19			PEAK NUMBER OF INDIVIDUALS: 4	

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
3.29	1.43	1.14	0.71	1.00	0.29	1.00	1.14	0.71	1.00		0.29	0.29		**0.88**
7	7	5	4	5	2	4	5	4	5		2	2		**52**
7-0-4	0-0-3	1						1	2					**11-0-7**
FIRST OBSERVED: August 1			LAST OBSERVED: October 28			PEAK DATE: August 3			PEAK NUMBER OF INDIVIDUALS: 6					

The mean daily count and number of Eastern Phoebes banded in spring were both close to average. There was a modest peak in numbers in week 4, matching the long-term average, but otherwise numbers were small throughout most of the season. Six were observed in summer, nearly double the long-term average; one was banded. Fall results were very good, with both the mean daily count and the number banded nearly double the long-term averages, and only slightly below the record highs set in 2017. There was an unusually distinct peak in the first week of August, with the mean daily count and number banded both higher than in any previous single week of fall.

NSHR: Northern Shrike / Pie-grièche boréale (*Lanius borealis*)

MARCH	APRIL				MAY					JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14								**0.01**
# DAYS OBSERVED			1								**1**
	FIRST OBSERVED: April 11			LAST OBSERVED: April 11			PEAK DATE: April 11			PEAK NUMBER OF INDIVIDUALS: 1	

Northern Shrike is always scarce at MBO, but was especially so this year, with only four sightings. The first three were in winter, when the mean daily count of 0.06 was only slightly above the record low set in 2013. One more was observed in the third week of spring. It was the lowest count for spring since being missed entirely during the season in 2013 and 2014.

BHVI: Blue-headed Vireo / Viréo à tête bleue (*Vireo solitarius*)

MARCH	APRIL				MAY					JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.14	1.43	0.71	0.57	0.43	0.43	**0.37**
# DAYS OBSERVED					1	3	4	4	3	2	**17**
# PROCESSED						1	1				**2**
	FIRST OBSERVED: May 1			LAST OBSERVED: June 3			PEAK DATE: May 7			PEAK NUMBER OF INDIVIDUALS: 5	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY			0.14		0.43		1.43	0.57	3.14	4.29	1.29	0.43	0.14	0.14	**0.86**
# DAYS OBSERVED			1		2		5	3	5	6	5	1	1	1	**30**
# PROCESSED			1		0-0-1		1	1	11-0-1	10-0-3	1	3	1	1	**30-0-5**
	FIRST OBSERVED: August 18			LAST OBSERVED: November 2			PEAK DATE: October 2			PEAK NUMBER OF INDIVIDUALS: 14					

For the fourth time in the past five years, the mean daily count of Blue-headed Vireo was above average in spring, only slightly fewer than in 2008 and 2017. The peak was in week 6 for the third year in a row, after having been later in 10 of 12 previous years. Fall migration was robust for this species, with the highest mean daily count and greatest number banded since 2009. Over two-thirds of individuals were detected in weeks 9 and 10, matching the typical peak of migration.

PHVI: Philadelphia Vireo / Viréo de Philadelphie (*Vireo philadelphicus*)

MARCH	APRIL				MAY					JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.29		0.14	**0.04**
# DAYS OBSERVED								1		1	**2**
	FIRST OBSERVED: May 21			LAST OBSERVED: June 5			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY						0.29	0.14	0.57					0.14		**0.08**
# DAYS OBSERVED						2	1	3					1		**7**
# PROCESSED						1		3					1		**5**
	FIRST OBSERVED: September 9			LAST OBSERVED: October 24			PEAK DATE: September 24			PEAK NUMBER OF INDIVIDUALS: 2					

Philadelphia Vireo was typically rare in spring, with three individuals observed over the final three weeks of the season. The individual seen on June 5 was the latest ever, and only the third one beyond the end of May across all years. In fall, only eight individuals were observed, the fewest since 2009. Most were within a three-week span in the middle of the season, near the typical peak of migration for Philadelphia Vireo. However, there was one more on October 24, a full 20 days beyond the previous late record of October 4 in 2011. A below-average five individuals were banded, the same as in 2015 and 2017, but otherwise the fewest since 2009.

WAVI: Warbling Vireo / Viréo mélodieux (*Vireo gilvus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	1.29	2.71	5.43	4.00	**1.36**
# DAYS OBSERVED						1	5	7	7	7	**27**
# PROCESSED							1-1-0	0-1-0	2-0-1		**3-2-1**
	FIRST OBSERVED: May 8			LAST OBSERVED: June 5			PEAK DATE: May 26			PEAK NUMBER OF INDIVIDUALS: 8	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.29	0.86	1.14	2.14	1.00	1.86	1.00	0.86	0.14						**0.73**
# DAYS OBSERVED	6	4	6	7	4	7	5	3	1						**43**
# PROCESSED	1	1	1	3		1									**7**
	FIRST OBSERVED: August 1				LAST OBSERVED: September 26			PEAK DATE: 8 dates			PEAK NUMBER OF INDIVIDUALS: 3				

The mean daily abundance of Warbling Vireo in spring has now been above average for nine consecutive years, though this year's count was the lowest since 2014. Sightings were more heavily weighted to the final two weeks of the season than usual. For the fourth year in a row, three individuals were banded, only marginally below the long-term average. For the first time since 2011, none were banded in summer; only two were observed, also the fewest since 2011. However, similar to spring, fall numbers observed were above average, though the lowest since 2014; the count of birds banded was down slightly from last year but still higher than usual.

REVI: Red-eyed Vireo / Viréo aux yeux rouges (*Vireo olivaceus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								1.00	5.29	4.71	**1.10**
# DAYS OBSERVED								3	7	7	**17**
# PROCESSED								1	4		**5**
	FIRST OBSERVED: May 20			LAST OBSERVED: June 5			PEAK DATE: May 29			PEAK NUMBER OF INDIVIDUALS: 11	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	10.29	11.43	12.71	12.43	7.14	5.14	2.71	3.86	1.00	1.00					**4.84**
# DAYS OBSERVED	7	7	7	7	7	7	7	6	4	4					**63**
# PROCESSED	18-4-3	8-2-4	19-4-4	13-1-5	7-1-1	8	2	9-0-1	3	2-0-3					**89-12-21**
	FIRST OBSERVED: August 1				LAST OBSERVED: October 6			PEAK DATE: August 24			PEAK NUMBER OF INDIVIDUALS: 24				

Similar to Warbling Vireo, Red-eyed Vireo recorded a ninth straight year of above average mean daily abundance in spring, but for this species the concentration of sightings in the final two weeks was typical. The number banded was marginally above average. The mean daily count of 2.3 in summer was close to average, but only 4 were banded, the fewest since 2013. As in 2018, the mean daily count in fall was just below the record from 2016, reflecting the general positive trend in recent years. However, the number banded was only slightly above average.

BLJA: Blue Jay / Geai bleu (*Cyanocitta cristata*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	7.43	6.86	6.14	6.86	8.71	7.14	11.57	6.29	8.00	5.14	**7.41**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	**70**
# PROCESSED				0-1-0		3-1-0	2-1-0		0-1-0		**5-4-0**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: May 11			PEAK NUMBER OF INDIVIDUALS: 29	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	9.71	12.00	12.00	10.57	7.57	11.71	14.71	20.43	23.57	20.86	18.86	15.57	15.71	14.29	**14.83**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	7	7	7	7	**98**
# PROCESSED				1		1	1	4-0-1	3	1-1-1	2-0-1	1-0-3	3-0-1	2-1-2	**19-2-9**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: October 2			PEAK NUMBER OF INDIVIDUALS: 41				

The mean daily count of 4.9 Blue Jays was average for winter, but for the first time since 2013 none were banded. In spring, the mean daily count matched the record high from 2013, and the number banded was the most since 2006. In summer, the mean daily count of 4.3 was nearly double the long-term average. For the third year in a row, fall numbers were well below average, although better than last year. Numbers were higher from late September to mid-October, as usual, but the peak was less distinct than in years with a more pronounced fall migration.

AMCR: American Crow / Corneille d'Amérique (*Corvus brachyrhynchos*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	2.71	4.71	3.71	5.14	6.71	5.14	4.71	5.00	6.14	5.71	**4.97**
# DAYS OBSERVED	6	6	7	6	7	7	6	7	7	7	**66**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: May 1			PEAK NUMBER OF INDIVIDUALS: 15	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	4.57	11.57	15.00	12.14	25.29	50.71	55.86	30.00	44.57	36.57	49.43	28.43	22.14	26.86	**29.51**
# DAYS OBSERVED	7	7	7	7	7	7	7	6	7	7	7	6	7	7	**96**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6			PEAK DATE: September 17			PEAK NUMBER OF INDIVIDUALS: 112					

American Crow has been declining in abundance at MBO, but all the same some of this year's results were shockingly low. In winter, the mean daily count of 1.65 was a record low, barely more than one-tenth of the long-term average. In spring, the mean daily count this spring was barely more than half the record low set last year. Numbers varied little throughout the season, and were substantially below average in all weeks. The pattern continued in summer, with a record low mean daily count of 2.3. Fall results similarly reflected the long-term decline, although the mean daily count rebounded slightly from last year's record low of 25.95. Numbers peaked in weeks 6 and 7, earlier than in any previous fall.

CORA: Common Raven / Grand Corbeau (*Corvus corax*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.29	0.14	1.00	2.00	2.29	0.57	1.14	1.29	1.00	**0.97**
# DAYS OBSERVED		2	1	5	6	6	4	6	6	3	**39**
	FIRST OBSERVED: April 4			LAST OBSERVED: June 3			PEAK DATE: May 1, May 8, May 31			PEAK NUMBER OF INDIVIDUALS: 4	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.71	1.57	2.00	1.43	1.43	1.57	2.71	1.29	2.57	1.00	1.43	2.29	1.43	2.43	**1.78**
# DAYS OBSERVED	6	6	5	7	4	7	6	5	6	6	6	5	6	6	**81**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6			PEAK DATE: Sep 17, Nov 2			PEAK NUMBER OF INDIVIDUALS: 8					

The mean daily count of Common Raven in winter was 1.10, nearly double the previous record high. In spring, mean daily abundance was well above average, as it has been every year since 2013. In summer, the mean daily count of 1.14 was the highest since 2011, and more than triple the long-term average. The mean daily count for fall was only marginally below the record of 1.80 in 2017, with sightings fairly consistent throughout the season; the 81 days with observations was five more than the previous record high in 2017.

HOLA: Horned Lark / Alouette hausse-col (*Eremophila alpestris*)

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY													0.29	0.43	**0.05**
# DAYS OBSERVED													1	1	**2**
	FIRST OBSERVED: October 26			LAST OBSERVED: November 6			PEAK DATE: November 6			PEAK NUMBER OF INDIVIDUALS: 3					

Only two small flocks of Horned Larks were seen in the final two weeks of fall, similar to the past four years.

BANS: Bank Swallow / Hirondelle de rivage (*Riparia riparia*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	0.57				**0.07**
# DAYS OBSERVED						1	3				**4**
	FIRST OBSERVED: May 8			LAST OBSERVED: May 15			PEAK DATE: May 15			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY						0.29									**0.02**
# DAYS OBSERVED						1									**1**
	FIRST OBSERVED: September 5			LAST OBSERVED: September 5			PEAK DATE: September 5			PEAK NUMBER OF INDIVIDUALS: 2					

Bank Swallows were observed on four days in the first half of May, somewhat earlier than usual, but in typically low numbers. Only two were seen in fall, both on September 5, the latest ever record for this species at MBO.

TRES: Tree Swallow / Hirondelle bicolore (*Tachycineta bicolor*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			2.00	14.00	19.86	24.00	18.86	20.00	18.86	11.86	**12.94**
# DAYS OBSERVED			4	7	7	7	7	7	7	7	**53**
# PROCESSED				1-1-0	2	3		3-2-0	4		**13-3-0**
	FIRST OBSERVED: April 12			LAST OBSERVED: June 5		PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 40		

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.29			1.14	0.29									**0.12**
# DAYS OBSERVED		2			3	1									**6**
	FIRST OBSERVED: August 9			LAST OBSERVED: September 5			PEAK DATE: Aug 30, Sep 4			PEAK NUMBER OF INDIVIDUALS: 3					

The mean daily count of Tree Swallow in spring increased for a sixth year in a row, reaching the highest level since 2007. Numbers were elevated for a solid five week period from late April through May. The number banded was the most in spring since 2012. For the first time, Tree Swallow was the most abundant species at MBO in summer, with a mean daily count of 6.6, the most since 2007; 33 were banded, the third-highest total ever. Conversely, fall sightings were far below average for a third straight year, and this time set a new all-time low.

NRWS: Northern Rough-winged Swallow / Hirondelle à ailes hérissées (*Stelgidopteryx serripennis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.14		0.14	0.14	0.14		**0.06**
# DAYS OBSERVED					1		1	1	1		**4**
	FIRST OBSERVED: May 1			LAST OBSERVED: May 26		PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 1		

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY					0.14										**0.01**
# DAYS OBSERVED					1										**1**
	FIRST OBSERVED: September 1			LAST OBSERVED: September 1			PEAK DATE: September 1			PEAK NUMBER OF INDIVIDUALS: 1					

Single Northern Rough-winged Swallows were observed on four days this spring, the most since 2014, but still below the long-term average. The species was observed in fall for the third year in a row and ninth year overall, but limited to a single individual, only the second one ever spotted in September.

PUMA: Purple Martin / Hirondelle noire (*Progne subis*)

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	2.43	0.57		4.00										**0.52**
# DAYS OBSERVED	1	5	2		1										**9**
	FIRST OBSERVED: August 7			LAST OBSERVED: September 4			PEAK DATE: September 4			PEAK NUMBER OF INDIVIDUALS: 28					

For the fourth year in a row and seventh time overall, Purple Martin was missed in spring. However, the number observed in fall was the highest since 2008, and the third-highest overall. This included a single-day record of 28 individuals on September 4, remarkably the first time the species has been observed at MBO past the end of August.

BARS: Barn Swallow / Hirondelle rustique (*Hirundo rustica*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29	0.29	1.00	0.86	1.00	2.43	1.00	**0.69**
# DAYS OBSERVED				2	2	2	3	4	7	4	**24**
	FIRST OBSERVED: April 19			LAST OBSERVED: June 5		PEAK DATE: May 26			PEAK NUMBER OF INDIVIDUALS: 5		

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	2.71	0.43	2.14		0.29									**0.42**
# DAYS OBSERVED	1	3	1	5		1									**11**
	FIRST OBSERVED: August 7			LAST OBSERVED: September 5			PEAK DATE: August 8			PEAK NUMBER OF INDIVIDUALS: 11					

Barn Swallow was unusually common this spring, beating the record high set in 2007; there was a distinct peak in week 9. One was seen in summer, only the fifth year with any sightings. Fall numbers were well above average for the fifth year in a row, though the lowest over that period; the peak in week 4 matched the long-term average.

CLSW: Cliff Swallow / Hirondelle à front blanc (*Petrochelidon pyrrhonota*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						2.29	5.43	7.00	14.43	11.00	**4.01**
# DAYS OBSERVED						3	5	6	7	4	**25**
	FIRST OBSERVED: May 6			LAST OBSERVED: June 3			PEAK DATE: May 31			PEAK NUMBER OF INDIVIDUALS: 39	

Cliff Swallow numbers this spring rebounded from the particularly low levels of the past two years, but remained well below the long-term average. Numbers did not peak until the final two weeks of the season, later than in most years; the mean daily count in week 10 was behind only the record high in 2013. For the first time since 2013 and sixth time overall, none were observed in fall.

BCCH: Black-capped Chickadee / Mésange à tête noire (*Poecile atricapillus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	7.71	4.57	9.43	11.57	9.29	12.71	12.57	11.00	8.57	6.86	**9.43**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	**70**
# PROCESSED				0-5-3	0-1-3	1-2-1	0-6-6		0-0-1		**1-14-14**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 21	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	12.43	12.29	10.00	11.71	9.14	16.43	14.00	15.00	16.29	16.71	13.57	10.14	12.71	12.86	**13.09**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	7	6	7	7	**97**
# PROCESSED	4	4	3-0-1	4-1-1	2-1-0	3-1-3	2-1-0	6-1-11	1-0-2	6-2-10	2-0-13	2-0-4	1-1-6	2-2-9	**42-10-60**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: September 10				PEAK NUMBER OF INDIVIDUALS: 25			

Despite a modest winter banding season overall, the number of Black-capped Chickadees banded (36) was the third-highest total ever; there were also 14 returns and 97 repeats, both also well above average. The mean daily count was 15.1, the most in four years. The mean daily count in spring has been very consistent since 2014, ranging between 9.0 and 10.1 each year; this year's result was just slightly below the average of 9.7 over the first 14 years of the program. Only one individual was banded, far fewer than usual, but there were more returns than in most years. Just two were banded in summer, the fewest since 2013; the mean daily count of 4.3 was somewhat below average for the fourth time in the past six years. For the second time in the past three years, a new record low was set for the mean daily count in fall. The number banded was just slightly under the average of 47 for the other four "odd" years in the past decade, compared to an average of 181 in the five "even" years. The weekly totals this fall reflect the lack of any distinct migration; most of those banded were likely locally-produced juveniles.

RBNU: Red-breasted Nuthatch / Sittelle à poitrine rousse (*Sitta canadensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14	0.43	0.29	0.57	1.86	0.57	0.14	**0.40**
# DAYS OBSERVED				1	3	1	3	6	2	1	**17**
# PROCESSED							1	2			**3**
	FIRST OBSERVED: April 19			LAST OBSERVED: May 30			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 5	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14	0.14		0.14	0.86	0.14	0.29	0.14	0.29	0.29	0.14		0.14	0.14	**0.20**
# DAYS OBSERVED	1	1		1	2	1	2	1	2	1	1		1	1	**15**
	FIRST OBSERVED: August 5				LAST OBSERVED: November 1			PEAK DATE: August 29				PEAK NUMBER OF INDIVIDUALS: 4			

For the first time in seven years, no Red-breasted Nuthatches were observed in winter. In contrast, the species was unusually common this spring, setting a new record high for the mean daily count, roughly four times higher than the long-term average. In the previous 14 years, only one individual had been banded in spring, so banding three over the span of two weeks in mid-May this year was remarkable. Despite observations to the final week of spring and in the first week of fall, the species was missed in summer for the sixth time in the past seven years. Conversely, mean daily abundance in fall was the lowest since 2014, and well below the long-term average for the season. For the second time in the past four years, none were banded in fall.

WBNU: White-breasted Nuthatch / Sittelle à poitrine blanche (*Sitta carolinensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	1.14	0.57	1.29	1.71	0.86	1.57	1.14	0.86	0.57	0.71	**1.04**
# DAYS OBSERVED	3	3	3	5	4	6	4	5	4	3	**40**
	FIRST OBSERVED: March 31			LAST OBSERVED: June 3		PEAK DATE: Apr 2, Apr 17, Apr 21			PEAK NUMBER OF INDIVIDUALS: 5		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	2.14	1.43	2.57	4.86	2.14	3.00	3.29	3.71	1.29	2.14	2.71	2.71	3.57	4.00	**2.83**
# DAYS OBSERVED	5	5	7	7	5	7	7	6	6	7	6	6	6	6	**86**
# PROCESSED					1		1						2		**4**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: August 24				PEAK NUMBER OF INDIVIDUALS: 10			

Three White-breasted Nuthatches were banded in winter, and the mean daily count was 0.94; both were above average. In spring, the mean daily count was far above average for the fourth year in a row, although at the lowest level over that period. However, for the third year in a row, none were banded. The mean daily count of 1.3 in summer was slightly above average, but none were banded. In fall, the mean daily count was high for the fifth consecutive year, marginally eclipsing the previous record set in 2016. The peak of 10 individuals on August 24 was an all-time high for any season. The number banded was just short of the record high of 5 set in 2013 and 2016.

BRCR: Brown Creeper / Grimpereau brun (*Certhia americana*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14	2.29	1.43	0.57	0.14				**0.46**
# DAYS OBSERVED			1	4	5	3	1				**14**
# PROCESSED				8	2-0-2	1					**11-0-2**
	FIRST OBSERVED: April 11			LAST OBSERVED: May 12		PEAK DATE: Apr 21, Apr 23			PEAK NUMBER OF INDIVIDUALS: 5		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY			0.29		0.14	0.29	0.57	0.14	0.29	0.29	0.71	0.14	0.57	0.43	**0.28**
# DAYS OBSERVED			2		1	1	3	1	1	2	5	1	3	3	**23**
# PROCESSED							1	1	1		4	0-0-1	2-0-1	0-0-1	**9-0-3**
	FIRST OBSERVED: August 15				LAST OBSERVED: November 6			PEAK DATE: 4 dates				PEAK NUMBER OF INDIVIDUALS: 2			

A single Brown Creeper was observed in winter, slightly below average. The mean daily count of Brown Creeper in spring was 15% above the previous record from 2015, largely thanks to an unprecedentedly high number in week 4, the traditional peak period of migration. Eight individuals were banded that week, a new single-week record for any season, and more than in any entire previous spring. Overall, this spring's new record total was roughly six times the long-term average. In fall, the mean daily count was very similar to levels observed from 2015 through 2017, and slightly above the long-term average; the number banded was a bit less than usual.

HOWR: House Wren / Troglodyte familier (*Troglodytes aedon*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.71	2.00	6.00	6.57	7.43	7.86	6.57	**3.71**
# DAYS OBSERVED				2	7	7	7	7	7	7	**44**
# PROCESSED					1-1-0	3-1-4	3-1-3	2-0-6	1-0-6	0-0-3	**10-3-22**
	FIRST OBSERVED: April 22			LAST OBSERVED: June 5		PEAK DATE: May 29			PEAK NUMBER OF INDIVIDUALS: 11		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	9.86	8.57	6.86	6.86	4.14	3.57	3.14	2.00	1.29	1.00					**3.38**
# DAYS OBSERVED	7	7	7	7	6	6	7	6	6	4					**63**
# PROCESSED	10-0-1	2-0-4	1-0-2	4	1-0-1	2	2-0-1	2-0-1	1	1					**26-0-10**
	FIRST OBSERVED: August 1				LAST OBSERVED: October 9			PEAK DATE: August 3				PEAK NUMBER OF INDIVIDUALS: 14			

House Wren was more abundant this spring than in any previous year, with sustained high numbers throughout the second half of the season; the number banded was also a record high, one more than in 2012. Only one was banded in summer, but the mean daily count of 2.0 was slightly above average. Fall results were also robust, with the mean daily count slightly above the previous record set in 2009, and the number banded the same as last year, and behind only the higher totals of 32 in 2009 and 36 in 2007.

WIWR: Winter Wren / Troglodyte des forêts (*Troglodytes hiemalis*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.29	0.14	0.43	0.71	0.14						**0.17**
# DAYS OBSERVED	2	1	3	4	1						**11**
	FIRST OBSERVED: April 1		LAST OBSERVED: May 1			PEAK DATE: April 21			PEAK NUMBER OF INDIVIDUALS: 2		

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14						0.14	0.14	0.86	0.86	0.43	0.29	0.86		**0.27**
# DAYS OBSERVED	1						1	1	5	5	3	1	1		**18**
# PROCESSED								1		4			2		**7**
	FIRST OBSERVED: August 5				LAST OBSERVED: October 25			PEAK DATE: October 25				PEAK NUMBER OF INDIVIDUALS: 6			

Winter Wren is always uncommon in spring, but this year's numbers were relatively high, behind only the record count in 2014. Except for one individual on May 1, all sightings were in April, a somewhat earlier and shorter period of observation than in most years. As in every year but 2014, none were banded in spring. Mean daily abundance in fall was average, but included one individual seen on August 5, the earliest ever sighting for the season, suggesting potential breeding at or near MBO. The number banded was just slightly above average.

MAWR: Marsh Wren / Troglodyte des marais (*Cistothorus palustris*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.43		0.14		**0.06**
# DAYS OBSERVED							3		1		**4**
	FIRST OBSERVED: May 11		LAST OBSERVED: May 26			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 1		

Single Marsh Wrens were observed on four dates this spring, all in May – a record number of sightings for the season. As in 12 of 14 previous years, there were no fall observations.

CARW: Carolina Wren / Troglodyte de Caroline (*Thryothorus ludovicianus*)

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.14													0.14	**0.02**
# DAYS OBSERVED	1													1	**2**
# PROCESSED	1														**1**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 4			PEAK DATE: Aug 1, Nov 4				PEAK NUMBER OF INDIVIDUALS: 1			

Carolina Wren was observed for the third year in a row and sixth year overall. Curiously, this year's two sightings nearly book-ended the fall season, with one on the first day, and the other on the second-last. The first one was banded, only the third in MBO's history.

BGGN: Blue-gray Gnatcatcher / Gobemoucheron gris-bleu (*Polioptila caerulea*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14					**0.01**
# DAYS OBSERVED						1					**1**
	FIRST OBSERVED: May 8		LAST OBSERVED: May 8			PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 1		

A Blue-gray Gnatcatcher found on May 8 was the first at MBO since 2013, and just the fourth overall. The only previous spring record was more than a decade ago, on June 1, 2008.

GCKI: Golden-crowned Kinglet / Roitelet à couronne dorée (*Regulus satrapa*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	1.71	1.57	3.86	11.00	3.43	1.00					**2.26**
# DAYS OBSERVED	2	4	5	7	6	3					**27**
# PROCESSED				16-0-4	2						**18-0-4**
	FIRST OBSERVED: March 31			LAST OBSERVED: May 6			PEAK DATE: April 21			PEAK NUMBER OF INDIVIDUALS: 28	

AUGUST					SEPTEMBER				OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.14	0.14	9.14	9.29	11.57	3.86	8.71	2.29	**3.22**
# DAYS OBSERVED							1	1	5	7	7	7	6	4	**38**
# PROCESSED									11	13-0-1	28-0-2	4	39	5	**100-0-3**
	FIRST OBSERVED: September 18				LAST OBSERVED: November 4				PEAK DATE: October 24				PEAK NUMBER OF INDIVIDUALS: 41		

Golden-crowned Kinglet was typically scarce in winter, with just two observed. The mean daily count of Golden-crowned Kinglet in spring was one-third higher than the previous record in 2014, and was substantially above average for the fourth time in the past six years. The number observed in week 4 was a single-week record for spring. The number banded was a record high for the second time in three years, with the total from week 4 alone being one more than in all of 2017. Abundance in fall was marginally above average, with a main push from late September to mid-October, and then a second wave unusually late, in week 13. The 39 individuals banded that week was by far the most ever in a single week past mid-October; the total for the season was the third highest ever, behind 101 in 2013 and 138 in 2016.

RCKI: Ruby-crowned Kinglet / Roitelet à couronne rubis (*Regulus calendula*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.14	0.14	0.14	8.71	25.14	17.00	7.29	5.43	0.43	0.14	**6.46**
# DAYS OBSERVED	1	1	1	6	7	7	7	7	1	1	**39**
# PROCESSED				19-0-3	46-0-8	11-0-10	12-0-2	19-0-1			**107-0-24**
	FIRST OBSERVED: April 2			LAST OBSERVED: May 31			PEAK DATE: April 28			PEAK NUMBER OF INDIVIDUALS: 42	

AUGUST					SEPTEMBER				OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY						0.57	1.43	1.71	14.57	20.43	27.86	29.29	7.86	1.71	**7.53**
# DAYS OBSERVED						2	3	4	6	7	7	7	7	6	**49**
# PROCESSED								1	30	34-0-5	83-0-10	77-0-9	23-0-14	3-0-3	**251-0-41**
	FIRST OBSERVED: September 5				LAST OBSERVED: November 6				PEAK DATE: October 18				PEAK NUMBER OF INDIVIDUALS: 127		

Two Ruby-crowned Kinglets were observed in winter, the first ones since 2015. The species was unusually abundant in spring for the third time in the past four years, though short of the record high set in 2017. Nearly two-thirds of individuals passed through in weeks 5 and 6. The number of individuals banded is second only to the record high of 147 in 2017. Conversely, fall numbers have been consistently below average since 2014. The peak of migration spanned weeks 11 and 12, later than ever before. Although Ruby-crowned Kinglet is always banded in good numbers in fall, the season total was the lowest since 2011.

EABL: Eastern Bluebird / Merlebleu de l'Est (*Sialia sialis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.14	0.14	0.29		**0.06**
# DAYS OBSERVED							1	1	1		**3**
	FIRST OBSERVED: May 9			LAST OBSERVED: May 29			PEAK DATE: May 29			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST					SEPTEMBER				OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14					0.29	0.86	0.29	2.43	0.71	3.14	1.57	9.00	**1.32**
# DAYS OBSERVED		1					1	2	1	2	1	5	3	2	**18**
	FIRST OBSERVED: August 13				LAST OBSERVED: November 6				PEAK DATE: November 4				PEAK NUMBER OF INDIVIDUALS: 41		

Two Eastern Bluebirds were seen in winter, the first since 2015. Four were seen in spring, the most since 2015. In fall, one was seen on August 13, but all others from week 7 onward, more typical for this species. On November 4, several small flocks headed west early in the morning; the total count of 41 was the largest ever in any season and the key factor in the mean daily count being the third-highest for fall. It was also the latest ever fall peak.

VEER: Veery / Grive fauve (*Catharus fuscescens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.14	1.29	0.57	0.14	**0.21**
# DAYS OBSERVED							1	5	2	1	**9**
# PROCESSED								0-1-0			**0-1-0**
	FIRST OBSERVED: May 12			LAST OBSERVED: June 1			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 3	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	2.29	1.71	2.57	1.29	0.86	0.29	0.43	0.43							**0.70**
# DAYS OBSERVED	6	5	7	7	3	2	2	2							**34**
# PROCESSED	7-1-3	3-0-6	6-0-3	3-1-3	4		2								**25-2-15**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 22			PEAK DATE: August 1			PEAK NUMBER OF INDIVIDUALS: 5					

Veery was unusually scarce this spring, with the mean daily count the lowest since 2015, and none banded for only the second time ever, but there was one return, banded as a juvenile last year. Most observations were in week 8, earlier than the usual spring peak. Four were banded and another four observed in summer, close to average. The mean daily count in fall and number banded were both above average for the eighth consecutive year, though the lowest since 2014. As usual, numbers were highest in the first few weeks, and tapered off sharply by September.

GCTH: Gray-cheeked Thrush / Grive à joues grises (*Catharus minimus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.14	0.29		**0.04**
# DAYS OBSERVED								1	2		**3**
# PROCESSED									1		**1**
	FIRST OBSERVED: May 21			LAST OBSERVED: May 25			PEAK DATE: May 21, 24, 25			PEAK NUMBER OF INDIVIDUALS: 1	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY								0.71	0.29						**0.07**
# DAYS OBSERVED								3	2						**5**
# PROCESSED								3							**3**
	FIRST OBSERVED: September 22			LAST OBSERVED: September 28			PEAK DATE: Sep 24, Sep 25			PEAK NUMBER OF INDIVIDUALS: 2					

Only three Gray-cheeked Thrushes were observed this spring, but that was more than in every previous year except 2017. One was banded, only the twelfth ever in spring. In fall, seven individuals were recorded, all within a seven-day span in late September, consistent with the narrow window of migration observed most years. Only three were banded, roughly one-third of the long-term average, and the fewest since 2011.

SWTH: Swainson's Thrush / Grive à dos olive (*Catharus ustulatus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.57	2.43	7.43	1.71	**1.21**
# DAYS OBSERVED							1	5	7	3	**16**
# PROCESSED								7	25-0-4	6-0-2	**38-0-6**
	FIRST OBSERVED: May 11			LAST OBSERVED: June 1			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 15	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.00	0.86	1.14	0.57	0.29	1.00	2.14	2.29	1.71	2.29	0.14				**0.96**
# DAYS OBSERVED	4	4	5	4	2	4	7	6	6	6	1				**49**
# PROCESSED	1-0-1	1	1	2		2	7-1-0	6-0-2	7	6-0-4					**33-1-7**
	FIRST OBSERVED: August 2			LAST OBSERVED: October 11			PEAK DATE: 6 dates			PEAK NUMBER OF INDIVIDUALS: 4					

For the second year in a row, there was a shockingly large increase in spring observations of Swainson's Thrush. The 85 individuals nearly matched the cumulative total of 96 over the previous 14 spring seasons! The single-day high of 15 on May 24 was more than in any previous entire spring except 2018. The number of birds banded doubled last year's record high, and was just shy of the cumulative total of 42 from 2005 through 2018. The species was observed in summer for a fourth straight year, but in smaller numbers, only two this year. The fall mean daily count was slightly below average, and the lowest since 2014; the number banded was less than half the long-term average, and the lowest since 2013. The typical mid-September peak was barely noticeable this year.

HETH: Hermit Thrush / Grive solitaire (*Catharus guttatus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.86	1.43	0.57	0.43	0.14	0.43		**0.39**
# DAYS OBSERVED				4	6	4	2	1	3		**20**
# PROCESSED				1	2	1-0-1					**4-0-1**
	FIRST OBSERVED: April 18			LAST OBSERVED: May 27			PEAK DATE: April 28			PEAK NUMBER OF INDIVIDUALS: 3	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14							0.57	4.43	6.29	6.57	5.14	1.43	**1.76**
# DAYS OBSERVED		1							3	6	7	6	6	4	**33**
# PROCESSED		1							3	14-0-5	20-0-10	22-0-10	11-0-12	2	**73-0-37**
	FIRST OBSERVED: August 11			LAST OBSERVED: November 6				PEAK DATE: October 19				PEAK NUMBER OF INDIVIDUALS: 15			

Hermit Thrush is typically an uncommon spring migrant, often occurring only briefly in the middle of the season. This year was different, with sightings on 20 dates across a 40-day span, six more than in any previous year. The mean daily count was only marginally below the record set in 2012; the four birds banded matched the record high from 2017. In fall, there was one juvenile banded on August 11, suggesting possible breeding near MBO, but then no more sightings until late September. Numbers peaked slightly later than usual, spanning weeks 11 and 12; the mean daily count was slightly below last year's record high. The number banded was the highest since 2014.

WOTH: Wood Thrush / Grive des bois (*Hylocichla mustelina*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.71	2.43	4.86	3.43	2.00	**1.34**
# DAYS OBSERVED						4	6	7	7	7	**31**
# PROCESSED									2	1-1-0	**3-1-0**
	FIRST OBSERVED: May 5			LAST OBSERVED: June 5			PEAK DATE: May 19, May 20			PEAK NUMBER OF INDIVIDUALS: 6	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.71	1.14	0.29	0.57	0.14	0.14	0.14		0.29						**0.24**
# DAYS OBSERVED	3	5	2	2	1	1	1		2						**17**
# PROCESSED	1-0-1	1	1	1	1	1			2						**8-0-1**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 28			PEAK DATE: 7 dates			PEAK NUMBER OF INDIVIDUALS: 2					

It was an incredible spring for Wood Thrush, with the mean daily count more than triple the record high set just last year, and more than six times the long-term average. Numbers remained elevated from week 7 onward, and likely included at least two breeding pairs. Three were banded in summer for the third year in a row, and the total of 10 observed was roughly triple the long-term average. The mean daily count in fall was just below the record high of 0.26 in 2015 and 2018; the number banded was one more than the previous record set in 2015.

AMRO: American Robin / Merle d'Amérique (*Turdus migratorius*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	12.86	12.43	11.71	18.86	12.00	8.29	9.29	5.86	5.57	3.29	**10.01**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	6	**69**
# PROCESSED				2-0-1	4-0-1	1	0-2-0		0-0-3		**7-2-5**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: April 19			PEAK NUMBER OF INDIVIDUALS: 65	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	12.71	16.00	17.57	13.57	6.14	15.43	9.71	14.14	58.14	37.57	62.29	323.71	449.14	782.43	**129.90**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	7	6	7	7	**97**
# PROCESSED	4-0-1	5-0-1	3	3	2			2	4	1	4	11	43	24	**106-0-2**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6			PEAK DATE: November 6			PEAK NUMBER OF INDIVIDUALS: 2985					

The mean daily count of 2.1 in winter was the lowest since 2005. In spring, the mean daily count was average, but the number banded matched the third-lowest total for the season. As in many previous years, numbers observed peaked in week 4. In summer, four were banded, fewer than in any previous year of MAPS; the mean daily count of 4.57 was the lowest since 2011. The mean daily count for fall was the second-highest ever, thanks to a peak of 2985 individuals on the final day of the season, just shy of the single-day record of 3033 from October 30, 2014.

GRCA: Gray Catbird / Moqueur chat (*Dumetella carolinensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.43	4.29	6.71	6.57	2.43	**2.04**
# DAYS OBSERVED						2	7	7	7	6	**29**
# PROCESSED							6-2-2	9-3-5	5-1-3	0-1-3	**20-7-13**
	FIRST OBSERVED: May 7			LAST OBSERVED: June 5			PEAK DATE: May 22			PEAK NUMBER OF INDIVIDUALS: 10	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	4.57	5.00	6.14	5.57	5.00	7.14	5.29	6.29	5.57	1.43					**3.71**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	5					**68**
# PROCESSED	6-1-1	6-0-4	3-0-4	6-0-9	1-0-3	4-0-6	5-1-7	4-0-3	8-0-2						**43-2-39**
	FIRST OBSERVED: August 1			LAST OBSERVED: October 9			PEAK DATE: Sep 9, Sep 22			PEAK NUMBER OF INDIVIDUALS: 10					

The mean daily count of Gray Catbird in spring has fluctuated relatively little over time, so being more than 25% above the previous record from 2012 was quite a surprise. The number banded was above average for the eighth consecutive year, and only one short of the record set in 2012. Only two were banded in summer, fewer than in any previous year of MAPS; the mean daily count of 1.7 was the lowest since 2012. In fall, the mean daily count and number banded were both the lowest since 2011; for the second year in a row there were fewer observed in October than usual.

BRTH: Brown Thrasher / Moqueur roux (*Toxostoma rufum*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14	1.14	1.29	2.71	2.29	1.57	2.71	1.57	**1.34**
# DAYS OBSERVED			1	5	6	7	7	7	7	5	**45**
# PROCESSED				1	1		0-1-0		2		**4-1-0**
	FIRST OBSERVED: April 14			LAST OBSERVED: June 5			PEAK DATE: 5 dates			PEAK NUMBER OF INDIVIDUALS: 4	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	1.00	1.43	0.71	1.43	1.29	2.57	3.14	3.29	1.71	0.43					**1.21**
# DAYS OBSERVED	5	7	5	4	7	7	6	7	7	3					**58**
# PROCESSED	1	3		0-0-1	1-0-1	3	1	0-1-2		1					**10-1-4**
	FIRST OBSERVED: August 1			LAST OBSERVED: October 8			PEAK DATE: September 17			PEAK NUMBER OF INDIVIDUALS: 8					

It was a great spring for Brown Thrasher, with the mean daily count more than 60% greater than the old record dating all the way back to 2005, though there was no particularly prominent peak of migration. The number banded was lower than the past two years, but still well above the long-term average. The mean daily count of 1.0 in summer was the second-highest ever, and two were banded, matching the record high from 2013, 2014, and 2016. In fall, the mean daily count was 10% above the previous record high from 2015, and the number banded only two fewer than in that peak year. Numbers were highest in mid-September, as usual.

EUST: European Starling / Étourneau sansonnet (*Sturnus vulgaris*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	0.86	0.57	1.29	2.43	2.71	0.43	0.29	0.57	1.86	0.14	**1.11**
# DAYS OBSERVED	2	2	2	5	2	2	2	2	4	1	**24**
	FIRST OBSERVED: March 31			LAST OBSERVED: May 31			PEAK DATE: April 28			PEAK NUMBER OF INDIVIDUALS: 15	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14				2.43	3.57	31.86	219.71	19.00	68.43	48.00	79.57	148.57	**44.38**
# DAYS OBSERVED		1				2	2	7	7	5	7	6	6	7	**50**
	FIRST OBSERVED: August 13			LAST OBSERVED: November 6			PEAK DATE: September 30			PEAK NUMBER OF INDIVIDUALS: 762					

European Starling was unusually scarce in winter for the second year in a row, though the mean daily count of 6.3 was still enough to rank fifth among all species. For the second time in the past three years, sightings in spring were far below average. For the second year in a row, and fifth time overall, none were seen in summer. In fall, the mean daily count was slightly above average, but influenced strongly by very high numbers in weeks 9 and 14, including a peak of 762 on September 30, the third-highest single-day count in MBO's history. As in five previous years, none were banded at any point in 2019.

BOWA: Bohemian Waxwing / Jaseur boréal (*Bombycilla garrulus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	2.57		4.29	0.29	1.29						**0.84**
# DAYS OBSERVED	2		1	2	2						**7**
	FIRST OBSERVED: March 29			LAST OBSERVED: April 26		PEAK DATE: April 17			PEAK NUMBER OF INDIVIDUALS: 30		

A few Bohemian Waxwings were observed in winter, a mean daily count of 0.49. The species was observed in spring for the tenth time in 15 years, but in below average numbers. For the seventh time, there were no fall sightings.

CEDW: Cedar Waxwing / Jaseur d'Amérique (*Bombycilla cedrorum*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	4.43	3.29	6.00	31.14	31.86	5.14	0.86	2.71	17.43	35.43	**13.83**
# DAYS OBSERVED	5	2	3	7	7	4	2	5	7	7	**49**
# PROCESSED				23	1		1		7-0-1	13	**45-0-1**
	FIRST OBSERVED: March 29			LAST OBSERVED: June 5		PEAK DATE: April 25			PEAK NUMBER OF INDIVIDUALS: 125		

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	9.14	9.86	9.29	10.00	7.57	3.57	6.00	5.14	14.71	5.29	6.43	5.43	10.71	7.86	**7.93**
# DAYS OBSERVED	7	7	7	7	6	6	5	5	7	3	4	5	6	6	**81**
# PROCESSED	5	5-0-2	2	1	1	1						1			**16-0-2**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: September 28				PEAK NUMBER OF INDIVIDUALS: 29			

The mean daily count of 0.55 Cedar Waxwings in winter was well below average. In spring, numbers fluctuate wildly from one year to another, but in 2019 the mean daily count was slightly above average, and the number banded a bit below average. There were two distinct peaks of migration, the second half of April, and the first week of June; in between there was a week in the first half of May with hardly any sightings. For the second year in a row, Cedar Waxwing was the third-most abundant species of summer, though the mean daily count of 4.7 was below average; three were banded, also slightly less than usual. In fall, the mean daily count was the third-lowest ever, just slightly more than last year; the number banded was the fewest since 2008.

AMPI: American Pipit / Pipit d'Amérique (*Anthus rubescens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY					0.29	1.57	0.14				**0.20**
# DAYS OBSERVED					1	3	1				**5**
	FIRST OBSERVED: April 30			LAST OBSERVED: May 9		PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 5		

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.86	0.29	0.86	0.71	0.43	0.71	3.57	1.43	**0.63**
# DAYS OBSERVED							1	1	3	2	1	1	3	3	**15**
	FIRST OBSERVED: September 17				LAST OBSERVED: November 6			PEAK DATE: October 30				PEAK NUMBER OF INDIVIDUALS: 18			

For the third time in the past four years, American Pipit was observed in above average numbers this spring. As usual, all observations were within a short period in mid-season. This species is typically observed in somewhat higher numbers in fall, and 2019 was no exception. There were weekly sightings from week 7 through week 14 for the third time in the past five years, and the mean daily count was above average.

EVGR: Evening Grosbeak / Gros-bec errant (*Coccothraustes vespertinus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						1.29	0.29	0.29			**0.19**
# DAYS OBSERVED						2	1	1			**4**
# PROCESSED						1					**1**
	FIRST OBSERVED: May 7			LAST OBSERVED: May 16		PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 8		

An Evening Grosbeak was banded in winter for the first time ever, and the mean daily count of 0.53 was much higher than the only previous winter with sightings, 2011. The species was observed in spring for the first time since 2013; the peak count of eight on May 8 was nearly equal to the cumulative total of nine across four previous years with spring sightings. All sightings were between May 7 and May 16, later than all previous spring records.

HOFI: House Finch / Roselin familier (*Haemorhous mexicanus*)

MARCH	APRIL				MAY				JUNE		
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.43	0.43	0.57	0.29	0.14				**0.19**
# DAYS OBSERVED			1	2	3	1	1				**8**
	FIRST OBSERVED: April 14			LAST OBSERVED: May 12		PEAK DATE: April 14			PEAK NUMBER OF INDIVIDUALS: 3		

	AUGUST				SEPTEMBER			OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		1.57		0.29			0.43		0.57	1.43	2.86	2.86	2.86	5.57	**1.32**
# DAYS OBSERVED		5		2			2		2	5	4	6	5	6	**37**
	FIRST OBSERVED: August 8				LAST OBSERVED: November 6			PEAK DATE: October 12			PEAK NUMBER OF INDIVIDUALS: 11				

For the second winter in a row, House Finch was exceptionally rare. The mean daily count of 0.25 was barely more than 5% of the long-term average; just one was banded, compared to an average of 38 across all previous winter banding seasons. House Finch was typically uncommon in spring; all sightings were within a span of less than one month in mid-season, a somewhat unusual pattern. As in all previous years, none were banded in spring. For the sixth year in a row, mean daily abundance in fall was above average, but for the first time since 2011 none were banded during the season.

PUFI: Purple Finch / Roselin pourpré (*Haemorhous purpureus*)

MARCH	APRIL				MAY				JUNE		
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29	1.29	2.14	1.14	2.29	0.43	0.57	**0.81**
# DAYS OBSERVED				2	5	7	5	7	3	4	**33**
# PROCESSED						1	0-1-0	1			**2-1-0**
	FIRST OBSERVED: April 23			LAST OBSERVED: June 5		PEAK DATE: May 18			PEAK NUMBER OF INDIVIDUALS: 5		

	AUGUST				SEPTEMBER			OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	0.86	1.14	1.29	1.29	2.14	0.86	0.57	0.57	2.71	5.29	4.00	4.71		**1.84**
# DAYS OBSERVED	1	3	5	6	4	5	4	3	3	3	7	6	6		**56**
# PROCESSED	1		1	0-0-1	4-1-1	3-0-1	1	0-0-1		5-0-1	12-0-4	1			**28-1-9**
	FIRST OBSERVED: August 7			LAST OBSERVED: October 30			PEAK DATE: October 19			PEAK NUMBER OF INDIVIDUALS: 14					

Three Purple Finches were observed in winter, somewhat fewer than average. For the sixth consecutive year, mean daily abundance of Purple Finch was above average in spring, but only two were banded, which is below average. One was observed in summer, which is average. Fall numbers were above average for the fifth year in a row, with both the mean daily count and number banded the fourth-highest across the 15 years of the program. Numbers peaked in early to mid-October, which is typical.

CORE: Common Redpoll / Sizerin flammé (*Acanthis flammea*)

MARCH	APRIL				MAY				JUNE		
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	1.14			0.43							**0.16**
# DAYS OBSERVED	3			1							**4**
	FIRST OBSERVED: March 30			LAST OBSERVED: April 19		PEAK DATE: March 30			PEAK NUMBER OF INDIVIDUALS: 6		

The mean daily count of 1.57 Common Redpolls was well below average for the fourth year in a row; only two were banded. The species was observed in spring for the first time in three years. Most were in the first week of the season, but there was a flock of three on April 19, the latest ever sighting in spring. For the second time in the past three years but only the fifth time overall, there were no fall sightings.

WWCR: White-winged Crossbill / Bec-croisé bifascié (*Loxia leucoptera*)

	AUGUST				SEPTEMBER			OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY											0.14				**0.01**
# DAYS OBSERVED											1				**1**
	FIRST OBSERVED: October 12			LAST OBSERVED: October 12			PEAK DATE: October 12			PEAK NUMBER OF INDIVIDUALS: 1					

White-winged Crossbill was observed in fall for the second year in a row, and seventh out of 15 fall seasons. There was only one individual this year, on October 12, close to the average date of sightings in the past.

PISI: Pine Siskin / Tarin des pins (*Spinus pinus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	2.14					0.71	0.29	1.00			**0.41**
# DAYS OBSERVED	1					2	2	2			**7**
	FIRST OBSERVED: April 1			LAST OBSERVED: May 21			PEAK DATE: April 1			PEAK NUMBER OF INDIVIDUALS: 15	

	AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.43					1.71	0.14	0.14	**0.17**
# DAYS OBSERVED							1					3	1	1	**6**
	FIRST OBSERVED: September 14			LAST OBSERVED: November 2			PEAK DATE: October 21			PEAK NUMBER OF INDIVIDUALS: 7					

One Pine Siskin was banded this winter, and the mean daily count was 0.2, well below average. In contrast, the spring mean daily count was the third highest across all years, but far from the levels observed in 2009 (1.60) and 2016 (5.34). However, for the sixth time in the past eight years, none were banded in spring. In fall, there was an unusually early flock of three on September 14, then the remainder of observations were over the final three weeks of the season. Overall, abundance was far below average in fall.

AMGO: American Goldfinch / Chardonneret jaune (*Spinus tristis*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	5.29	2.86	2.29	3.57	3.14	3.43	4.86	10.43	10.71	10.71	**5.73**
# DAYS OBSERVED	7	5	2	6	5	7	6	7	7	7	**59**
# PROCESSED				2		1	2	3	11-2-1	2-1-0	**21-3-1**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: May 29			PEAK NUMBER OF INDIVIDUALS: 25	

	AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	13.29	12.57	13.00	13.29	12.29	17.71	13.29	11.29	13.00	9.14	8.29	5.57	6.57	15.86	**11.80**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	6	7	6	6	7	**95**
# PROCESSED	2-0-1					3-1-0		14	4	1	1	3	3	3	**34-1-1**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6			PEAK DATE: November 4			PEAK NUMBER OF INDIVIDUALS: 32					

American Goldfinch was the fourth-most abundant species this winter, though the mean daily count of 6.5 was nearly one-third below the long-term average. For the fourth year in a row and ninth time overall, it was banded in greater numbers (72) than any other species this winter. The mean daily count in spring was the lowest since 2013, and roughly one-third below the long-term average; only the final three weeks were close to normal. Similarly, the count of birds banded was the lowest since 2013, and less than half of the long-term average. In summer, the mean daily count of 5.9 was again one-third below the long-term average, though slightly higher than last year and numerous enough to be the second-most abundant bird of the season. Four were banded, which is average for MAPS. Fall was also poor, with the fewest American Goldfinches observed and banded since 2011. Curiously, numbers observed were generally higher in the first half of the season, but 85% of individuals banded this fall were during the second half of the season, with nearly half of those during week 8.

SNBU: Snow Bunting / Plectrophane des neiges (*Plectrophenax nivalis*)

	AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY														1.14	**0.08**
# DAYS OBSERVED														2	**2**
	FIRST OBSERVED: November 3			LAST OBSERVED: November 4			PEAK DATE: Nov 3, Nov 4			PEAK NUMBER OF INDIVIDUALS: 4					

Snow Bunting was observed in winter for the third year in a row, but this time just a single individual was seen flying past. The only other sightings this year were during the final week of fall. Small flocks of four individuals were observed on each of November 3 and 4, smaller numbers than in most years, though similar to 2018.

CHSP: Chipping Sparrow / Bruant familier (*Spizella passerina*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.57	0.86	2.43	2.57	3.29	2.71	2.14	1.14	**1.57**
# DAYS OBSERVED			3	2	7	7	6	7	7	4	**43**
# PROCESSED						1	1-1-0			0-0-1	**2-1-1**
	FIRST OBSERVED: April 15			LAST OBSERVED: June 5			PEAK DATE: May 11			PEAK NUMBER OF INDIVIDUALS: 6	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	0.57	0.14				1.29	0.29	0.71	0.86	2.57	0.71	0.14	0.14	**0.55**
# DAYS OBSERVED	2	3	1				4	2	4	1	6	1	1	1	**26**
# PROCESSED	1						1	1							**3**
	FIRST OBSERVED: August 4			LAST OBSERVED: November 4			PEAK DATE: October 10			PEAK NUMBER OF INDIVIDUALS: 8					

For the past five years, the mean daily count of Chipping Sparrows in spring has ranged from 1.4 to 1.8, so this year's result is average over that period, though much higher than was typically observed during MBO's first decade. However, the number banded was the fewest since being missed entirely in 2011. For only the third time in 15 years, there were no summer observations of Chipping Sparrow. The species was less abundant than usual in fall, with the lowest mean daily count since 2013. It appears there was a gap between observations of local birds over the first three weeks, and migrants from week 7 through to the end of fall. For the third year in a row, the number banded was less than in any of the first 12 fall seasons.

FISP: Field Sparrow / Bruant des champs (*Spizella pusilla*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14			0.14	0.14			0.14	**0.06**
# DAYS OBSERVED			1			1	1			1	**4**
	FIRST OBSERVED: April 17			LAST OBSERVED: June 5			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 1	

Field Sparrow was observed for the first time since 2015, and in spring for the sixth year out of 15. The four sightings this spring, scattered over much of the season, was more than in any previous year. Both the earliest observation on April 17 and the latest on June 5 established new seasonal extremes of occurrence.

FOSP: Fox Sparrow / Bruant fauve (*Passerella iliaca*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			2.29	6.86	12.14	5.71	0.14				**2.71**
# DAYS OBSERVED			5	7	7	5	1				**25**
# PROCESSED				6	17-0-1	11-0-2					**34-0-3**
	FIRST OBSERVED: April 13			LAST OBSERVED: May 9			PEAK DATE: May 1			PEAK NUMBER OF INDIVIDUALS: 19	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY											0.71	1.57	2.86	2.43	**0.54**
# DAYS OBSERVED											4	4	7	7	**22**
# PROCESSED											2	4	5	3-0-2	**14-0-2**
	FIRST OBSERVED: October 12			LAST OBSERVED: November 6			PEAK DATE: November 6			PEAK NUMBER OF INDIVIDUALS: 5					

Four Fox Sparrows were observed in winter, somewhat fewer than usual. It was a great spring for Fox Sparrow, with the third-highest mean daily count across all years, behind only 2013 and 2015. The peak of migration was later than usual, in week 5 for only the third time in 15 years. The number banded was more than double the long-term average, and tied for the third-most ever, behind 42 in 2013 and 47 in 2015. In fall, the first observation was not until October 12, later than in any previous year other than 2017. For the third time in the past five years, the mean daily count was substantially below the long-term average for fall. Only 14 were banded, well below average. There has now been a decade-long alternating pattern, with far more banded in "even" years since 2010 (average 40.8) than in "odd" years over that period (average 9.8).

ATSP: American Tree Sparrow / Bruant hudsonien (*Spizelloides arborea*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	3.00	1.57	3.71	5.43	1.00	0.14		0.14			**1.50**
# DAYS OBSERVED	3	4	6	7	4	1		1			**26**
# PROCESSED				10-0-4	1-0-2			1			**12-0-6**
	FIRST OBSERVED: March 30			LAST OBSERVED: May 22		PEAK DATE: April 3			PEAK NUMBER OF INDIVIDUALS: 12		

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY												0.29	0.86	4.00	**0.37**
# DAYS OBSERVED												2	3	5	**10**
# PROCESSED													5-0-1	12-0-1	**17-0-2**
	FIRST OBSERVED: October 19			LAST OBSERVED: November 6			PEAK DATE: November 3			PEAK NUMBER OF INDIVIDUALS: 9					

The mean daily count of American Tree Sparrow in winter was 1.8, the lowest since 2009; 10 were banded, similar to the past couple of years but below average overall. In spring, the mean daily count was somewhat above average; similar to 2016, the peak was not until week 4, compared to earlier in all 13 other years. The number banded was the third-highest across all years, and more than double the long-term average. The last record of the season was a bird banded on May 22, 12 days beyond the previous latest record, in both 2005 and 2017. Fall observations were unusually late and scarce for a second straight year, with the mean daily count higher than only the record low in 2013. The number banded in fall was less than half the long-term average for the third year in a row.

DEJU (SCJU): Dark-eyed (Slate-colored) Junco / Junco ardoisé (*Junco hyemalis hyemalis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	2.29	1.86	4.43	6.71	7.86	2.43	0.29	0.14			**2.60**
# DAYS OBSERVED	5	5	4	6	7	6	2	1			**36**
# PROCESSED				8	11		1				**20**
	FIRST OBSERVED: March 29			LAST OBSERVED: May 17		PEAK DATE: April 14			PEAK NUMBER OF INDIVIDUALS: 19		

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY								0.43	1.00	3.29	3.29	18.14	14.57	13.71	**3.89**
# DAYS OBSERVED								2	2	5	5	6	7	7	**34**
# PROCESSED									4	3		11	3	19	**40**
	FIRST OBSERVED: September 21			LAST OBSERVED: November 6			PEAK DATE: October 22			PEAK NUMBER OF INDIVIDUALS: 58					

It was a quiet winter for Dark-eyed Junco, with the mean daily count of 3.3 the lowest since 2005, and only 28 banded, the fewest since 2014. In spring, the mean daily count was also below average, but the number banded was the fourth-highest ever. This is a function of timing, as the peak this year was in week 5 as in 2015 and 2017, both of which also had high banding totals, compared to during the first three weeks in many other years, when the banding program is not yet operating. In fall, observations were unusually scarce for the second time in the past three years, and the number banded was less than one-quarter of the long-term average for a third year in a row.

WCSP (EWCS): (Eastern) White-crowned Sparrow / Bruant à couronne blanche (*Zonotrichia leucophrys leucophrys*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.57	0.43	0.57	2.43	1.14	2.86	0.29		**0.83**
# DAYS OBSERVED			1	3	4	2	7	4	2		**23**
# PROCESSED							1	1	1		**3**
	FIRST OBSERVED: April 15			LAST OBSERVED: May 27		PEAK DATE: May 7			PEAK NUMBER OF INDIVIDUALS: 14		

AUGUST				SEPTEMBER			OCTOBER				NOVEMBER			
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.14		0.14	1.71	1.14	0.71		0.14	**0.29**
# DAYS OBSERVED							1		1	4	5	3		1	**15**
# PROCESSED							1			3	2	1			**7**
	FIRST OBSERVED: September 18			LAST OBSERVED: November 4			PEAK DATE: October 8			PEAK NUMBER OF INDIVIDUALS: 5					

Two White-crowned Sparrows were observed in winter, the first since 2012. The spring mean daily count was the highest since 2015, but the number banded tied last year's record low. Fall results were very poor, with the number observed and banded both far below the previous record lows, and less than one-quarter of long-term averages.

WTSP: White-throated Sparrow / Bruant à gorge blanche (*Zonotrichia albicollis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14	11.14	13.00	27.71	28.00	8.29	2.00	0.71	**9.10**
# DAYS OBSERVED			1	7	7	7	7	7	4	3	**43**
# PROCESSED				13-0-1	18-0-1	36-0-1	33-0-4	13-0-2	1		**114-0-9**
	FIRST OBSERVED: April 17			LAST OBSERVED: June 5		PEAK DATE: May 8			PEAK NUMBER OF INDIVIDUALS: 76		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.29	0.43	0.43	1.14	3.00	3.86	9.43	24.14	57.57	42.57	32.71	29.43	19.00	**16.00**
# DAYS OBSERVED		2	3	2	4	7	6	7	7	7	7	7	7	7	**73**
# PROCESSED		1	1	1	2-0-2	3-0-3	5-0-1	18-0-6	43-0-2	68-0-11	60-0-21	31-0-8	17-0-14	7-0-4	**257-0-72**
	FIRST OBSERVED: August 12				LAST OBSERVED: November 6			PEAK DATE: October 9			PEAK NUMBER OF INDIVIDUALS: 119				

Few White-throated Sparrows stayed at MBO this winter, with the mean daily count of 0.3 the lowest since 2012; 4 were banded, also fewer than average. Spring migrants arrived slightly later than usual, and the peak spanning weeks 6 and 7 was roughly one week later than average. Numbers during those two weeks were far higher than usual, resulting in an overall mean daily count for spring that ranked third across all years, behind 2016 and 2017. The number banded was second only to the record high of 138 in 2016. For the first time since 2009 and only the third time overall, none were observed in summer. In fall, it was the first time ever that White-throated Sparrows was not observed in each week of the season, with none in week 1. The mean daily count for fall was the lowest since 2013, despite a fairly strong peak in weeks 10 and 11, one week later than average. More White-throated Sparrows were banded this fall than any other species, yet the season total was the lowest since 2011.

SAVS: Savannah Sparrow / Bruant des prés (*Passerculus sandwichensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14		0.29	1.00	0.14	0.71	0.86	1.14	**0.43**
# DAYS OBSERVED			1		2	3	1	2	4	4	**17**
# PROCESSED									1		**1**
	FIRST OBSERVED: April 13			LAST OBSERVED: June 5		PEAK DATE: May 7, May 22, Jun 1			PEAK NUMBER OF INDIVIDUALS: 4		

Savannah Sparrow has been rare at MBO since 2010; the number observed this spring was by far the most over that period, though less than during the peak years of 2007 to 2009. The peak count of four individuals was recorded on three dates; the first time since 2008 that so many have been seen in a single day. For the third time in the past five years, and sixth time overall, Savannah Sparrow was missed in fall.

SOSP: Song Sparrow / Bruant chanteur (*Melospiza melodia*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	8.43	12.14	13.00	16.43	12.14	12.71	10.14	11.43	11.43	10.86	**11.87**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	**70**
# PROCESSED				13-5-3	5-1-4	1-2-2	0-0-2	3-0-4	1-1-5	1	**24-9-20**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5		PEAK DATE: Apr 7, May 8			PEAK NUMBER OF INDIVIDUALS: 22		

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	11.00	10.71	9.00	5.71	3.29	3.71	4.86	5.29	8.00	9.00	13.00	10.29	6.71	2.57	**7.37**
# DAYS OBSERVED	7	7	7	7	7	7	6	7	7	7	7	6	7	6	**95**
# PROCESSED	29-0-7	16-1-8	12-1-6	7-0-3	2	3-1-2	4	6-0-1	6-1-3	10-2-6	19-0-2	4	6	3	**127-6-38**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: October 14			PEAK NUMBER OF INDIVIDUALS: 29				

Song Sparrow was observed in winter for the first time in three years; the mean daily count of 0.12 was close to average, while the total of 4 banded was the second-highest ever for the season. In spring, it was only the second time in the past five years that the mean daily count was above average; as in many years there was a modest peak in week 4. The number banded was also slightly above average. The summer mean daily count of 2.86 was the lowest ever, and only 7 were banded, also far below average. In fall, observations were below average for the fifth year in a row, though a bit higher than from 2015 through 2017. More so than in some years, there was a distinct decline in numbers between the initial pulse of local juveniles in the first three weeks of August, versus the peak passage of migrants from late September to mid-October. The number banded was the fewest ever.

LISP: Lincoln's Sparrow / Bruant de Lincoln (*Melospiza lincolnii*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.57	1.14	3.71	2.14	0.14	**0.77**
# DAYS OBSERVED						2	5	7	5	1	**20**
# PROCESSED						1	1	12-0-1	9-0-3	1	**24-0-4**
	FIRST OBSERVED: May 7			LAST OBSERVED: May 31			PEAK DATE: May 20			PEAK NUMBER OF INDIVIDUALS: 11	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.14	0.14	0.43	0.14					**0.06**
# DAYS OBSERVED							1	1	3	1					**6**
# PROCESSED							1	1	1						**3**
	FIRST OBSERVED: September 18			LAST OBSERVED: October 9			PEAK DATE: 6 dates			PEAK NUMBER OF INDIVIDUALS: 1					

It was an incredible spring for Lincoln's Sparrow. The mean daily count was above average for the fourth time in the past five years, but nearly triple the previous record high set in 2015. The peak of 11 individuals on May 20 was nearly double the previous single-day high for spring, of 6 on May 5, 2014. The number banded was nearly double the previous high from 2016, and almost four times above the long-term average; more were banded in week 8 alone than in the entire spring season in 11 previous years. The situation was reversed in fall, with only six individuals observed, fewer than in any other year. The number banded tied the record low from 2013 and 2018.

SWSP: Swamp Sparrow / Bruant des marais (*Melospiza georgiana*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.86	2.14	2.43	7.29	5.14	4.43	2.14	1.57	**2.60**
# DAYS OBSERVED			3	6	5	7	7	7	7	7	**49**
# PROCESSED				4	6-1-1	14-0-3	5-0-2	5-0-1	1		**35-1-7**
	FIRST OBSERVED: April 15			LAST OBSERVED: June 5			PEAK DATE: May 7			PEAK NUMBER OF INDIVIDUALS: 16	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	1.14	0.86	0.29	1.00	0.29	0.43	0.57	0.43	1.86		1.00	2.00	0.29	**0.74**
# DAYS OBSERVED	2	5	5	2	4	2	3	4	3	5		5	7	1	**48**
# PROCESSED		2	1		2-0-2	0-0-1	1-0-1	1-0-1	3	3-0-4		1-0-1	6-0-3		**20-0-13**
	FIRST OBSERVED: August 5			LAST OBSERVED: October 31			PEAK DATE: Oct 4, Oct 24			PEAK NUMBER OF INDIVIDUALS: 4					

The mean daily count of Swamp Sparrow in spring was just short of the peak years of 2005 and 2014, but the number banded was a new record high, eight more than in 2016. The peak of migration was in the first half of May, slightly later than average. Only one Swamp Sparrow was banded in summer, fewer than in any previous MAPS year; the mean daily count of 1.57 was only slightly below average. Similar to other sparrows, fall numbers were poor. The mean daily count has been declining since 2014, and this year reached a new record low, with small numbers throughout the season. The number banded was barely more than half the long-term average, tying the record low set in 2010.

EATO: Eastern Towhee / Tohi à flancs roux (*Pipilo erythrophthalmus*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY									0.14	0.14	**0.03**
# DAYS OBSERVED									1	1	**2**
	FIRST OBSERVED: May 26			LAST OBSERVED: June 1			PEAK DATE: May 26, Jun 1			PEAK NUMBER OF INDIVIDUALS: 1	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY														0.14	**0.01**
# DAYS OBSERVED														1	**1**
	FIRST OBSERVED: November 6			LAST OBSERVED: November 6			PEAK DATE: November 6			PEAK NUMBER OF INDIVIDUALS: 1					

For the second year in a row, Eastern Towhee was observed in both spring and fall, after having previously been missed entirely for three consecutive years. The two spring sightings were nearly one week apart, near the end of the season. The lone fall sighting was on the last day of the season, nearly three weeks beyond the previous latest record for MBO, on October 16, 2014.

BOBO: Bobolink / Goglu des prés (*Dolichonyx oryzivorus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	0.43	0.43	0.43		**0.14**
# DAYS OBSERVED						1	2	3	3		**9**
	FIRST OBSERVED: May 7			LAST OBSERVED: May 27			PEAK DATE: May 15			PEAK NUMBER OF INDIVIDUALS: 2	

The relatively few Bobolink observations this spring was typical over the past six years, though lower than in MBO's earlier years. For the first time since 2011 and fourth time overall, none were observed in fall.

BAOR: Baltimore Oriole / Oriole de Baltimore (*Icterus galbula*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						1.14	5.00	8.86	10.14	6.29	**3.14**
# DAYS OBSERVED						4	7	7	7	7	**32**
# PROCESSED							2-2-2	2-2-2	4-3-5	0-0-1	**8-7-10**
	FIRST OBSERVED: May 5			LAST OBSERVED: June 5			PEAK DATE: May 22			PEAK NUMBER OF INDIVIDUALS: 14	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	3.00	3.00	7.29	1.71	0.43		0.14								**1.11**
# DAYS OBSERVED	7	7	7	5	3		1								**30**
# PROCESSED	3	2	6												**11**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 17				PEAK DATE: August 17				PEAK NUMBER OF INDIVIDUALS: 17			

The mean daily count of Baltimore Orioles in spring was slightly above the range of 2.96 to 3.10 over the past three years, but marginally below the long-term average for the season. The number banded was fewer than in any previous years other than 2011 and 2013. The mean daily count of 1.71 in summer was the third-lowest ever, better than only 2010 and 2012; only one was banded, a sharp decline from last year's record high of 17, and well below the MAPS average of 5. In fall, the mean daily count was slightly above the record low set in 2015; the number banded was less than half the long-term average, and higher than only the totals from 2014 and 2015.

RWBL: Red-winged Blackbird / Carouge à épaulettes (*Agelaius phoeniceus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	24.57	22.86	33.29	37.71	31.29	31.00	25.71	24.00	25.29	19.71	**27.54**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	**70**
# PROCESSED				6-1-0	3	8-2-0	9-3-0	8-1-1	5	1-1-0	**40-8-1**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: April 17			PEAK NUMBER OF INDIVIDUALS: 64	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	6.86	5.29	1.86	2.86	2.43	0.57	5.29	32.14	23.86	88.57	142.00	120.00	221.00	112.43	**54.65**
# DAYS OBSERVED	7	7	4	2	4	2	3	4	6	7	7	6	7	7	**73**
# PROCESSED	1												6	1	**8**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6				PEAK DATE: October 28				PEAK NUMBER OF INDIVIDUALS: 770			

One Red-winged Blackbird was banded this winter, the first in three years. The mean daily count of 1.37 was more than double that of last winter, but still less than one-sixth of the long-term average. After declining annually from 2013 through 2018, the mean daily count in spring rebounded slightly from last year's record low of 24.03. The peak of migration was somewhat earlier than average, in week 4. The number banded was below average for the sixth year in a row, and was only slightly above the record low of 36 in 2017. For the fourth year in a row, a single Red-winged Blackbird was banded in summer; the mean daily count of 3.57 was roughly one-quarter of the long-term average, and the lowest since 2010. In fall, the mean daily count rebounded by nearly 25% from last year, but nonetheless was otherwise at its lowest level since 2006. Numbers were typically low over the first half of the season and built toward a peak in mid-late October as usual, although numbers during that period were not as high as in most years. The number banded was close to average, and as usual most of them were near the end of the season.

BHCO: Brown-headed Cowbird / Vacher à tête brune (*Molothrus ater*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY		0.43	1.29	5.71	2.43	1.86	2.14	3.29	1.86	1.00	**2.00**
# DAYS OBSERVED		1	3	7	7	6	6	7	5	5	**47**
# PROCESSED					0-1-0		1	1	0-0-2		**2-1-2**
	FIRST OBSERVED: April 10			LAST OBSERVED: June 5			PEAK DATE: April 21			PEAK NUMBER OF INDIVIDUALS: 12	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.57	0.29	0.14		0.14					0.43			0.14	**0.12**
# DAYS OBSERVED		2	1	1		1					2			1	**8**
# PROCESSED		1													**1**
	FIRST OBSERVED: August 9			LAST OBSERVED: November 3			PEAK DATE: August 14			PEAK NUMBER OF INDIVIDUALS: 3					

The mean daily count of Brown-headed Cowbird and the number banded in spring both remained below average for the eighth consecutive year. The mean daily count of 0.9 in summer was average. The number observed in fall was more than the past two years, but still well below the long-term average. However, one was banded in early August, only the third ever in fall.

RUBL: Rusty Blackbird / Quiscale rouilleux (*Euphagus carolinus*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.57	3.29	1.14	5.29	3.14	0.29			**1.37**
# DAYS OBSERVED			2	4	3	5	5	2			**21**
# PROCESSED						1					**1**
	FIRST OBSERVED: April 12			LAST OBSERVED: May 18			PEAK DATE: May 7			PEAK NUMBER OF INDIVIDUALS: 19	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							1.71	18.00	0.43	4.57	2.14	2.57	2.57	2.29	**2.45**
# DAYS OBSERVED							2	3	2	4	4	4	5	5	**29**
# PROCESSED														1	**1**
	FIRST OBSERVED: September 17			LAST OBSERVED: November 6			PEAK DATE: September 25			PEAK NUMBER OF INDIVIDUALS: 65					

Four Rusty Blackbirds were observed in winter, close to average. The mean daily count of Rusty Blackbird in spring was well above average for the sixth year in a row, and at its fourth-highest level ever, behind 2014, 2015, and 2017. One was banded in spring, bringing the cumulative total for the season to 17. Numbers in fall were above average, with the mean daily count the third-highest since 2009, and one banded, only the sixth in the 15-year history of the program. The peak of 65 on September 25 matched the number observed on October 4, 2016, and was exceed on only two previous dates, September 27, 2005 (68), and September 25, 2006 (166).

COGR: Common Grackle / Quiscale bronzé (*Quiscalus quiscula*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	1.86	1.29	3.00	9.00	6.43	7.43	5.14	6.29	10.14	9.71	**6.03**
# DAYS OBSERVED	6	3	6	7	7	7	7	7	7	7	**64**
# PROCESSED							4	2	6	4-3-0	**16-3-0**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: April 19			PEAK NUMBER OF INDIVIDUALS: 30	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	5.29	5.00	2.71	7.29	25.43	4.00	52.29	61.29	202.00	156.43	36.29	40.43	79.29	3.71	**48.67**
# DAYS OBSERVED	7	7	6	6	6	7	5	3	6	7	7	6	7	7	**87**
# PROCESSED										13					**13**
	FIRST OBSERVED: August 1			LAST OBSERVED: November 6			PEAK DATE: October 2			PEAK NUMBER OF INDIVIDUALS: 959					

The mean daily count of Common Grackle in winter was 0.25, slightly below average. Spring numbers were unusually poor, with the mean daily count the second-lowest since 2011, and the number banded the second-fewest since 2013. The summer mean daily count of 3.1 was the lowest since 2009; two were banded. In fall, the count of Common Grackles varies considerably from year to year; for 2019 it was slightly below average. However, the number banded was slightly above average, and the most since 2014. Curiously, all were banded in week 10, which aligns with the peak of migration across all years.

OVEN: Ovenbird / Paruline couronnée (*Seiurus aurocapilla*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14	0.71	3.43	2.29	1.43	**0.80**
# DAYS OBSERVED						1	4	7	7	6	**25**
# PROCESSED							2	3	2		**7**
	FIRST OBSERVED: May 7			LAST OBSERVED: June 5			PEAK DATE: May 18			PEAK NUMBER OF INDIVIDUALS: 5	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	2.14	2.29	2.14	3.14	2.29	2.57	1.00	1.57	0.57				0.14		**1.28**
# DAYS OBSERVED	6	6	6	7	5	6	6	5	2				1		**50**
# PROCESSED	12-0-2	12-0-1	10-0-5	16-0-4	10-0-5	13-0-3	6	9-0-1	4				1		**93-0-21**
	FIRST OBSERVED: August 1			LAST OBSERVED: October 25			PEAK DATE: Aug 2, Aug 12			PEAK NUMBER OF INDIVIDUALS: 6					

For the fourth year in a row, the spring mean daily count was above average, and actually the third-highest ever behind 2010 and 2017. Despite being regularly observed in spring, Ovenbird has only been banded during the season in half of the previous 14 years; the number banded this year was two more than the previous record high set in 2016. The summer mean daily count was 0.71, an above-average result for the sixth time in the past seven years; three were banded, which is average for MAPS. In fall, Ovenbird abundance was above average for a fifth consecutive year, with the mean daily count nearly 10% higher than the previous record set in 2017. The number banded reached a new record high for the third time in the past five years, and was exactly double the long-term average.

NOWA: Northern Waterthrush / Paruline des ruisseaux (*Parkesia noveboracensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29	0.71	2.57	4.29	9.71	7.57	1.71	**2.69**
# DAYS OBSERVED				2	4	5	7	6	7	4	**35**
# PROCESSED				1	2-0-1	8	1-0-3	26-0-6	21-0-12	2-0-7	**61-0-29**
	FIRST OBSERVED: April 22			LAST OBSERVED: June 3			PEAK DATE: May 20			PEAK NUMBER OF INDIVIDUALS: 28	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	1.57	1.14	0.86	1.14	1.14	0.57								**0.49**
# DAYS OBSERVED	4	7	5	4	5	4	2								**31**
# PROCESSED	2-0-1	8-0-2	3-0-5	6	7-0-1	7	4								**37-0-9**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 13			PEAK DATE: September 7			PEAK NUMBER OF INDIVIDUALS: 4					

The mean daily count of Northern Waterthrush was above average for the seventh year in a row, exceeding the previous record from 2014 by more than 60%. The number banded was also a record high, 13 more than in 2014. Despite being seen almost to the end of spring and from the beginning of the fall season, there were no summer observations for the 14th consecutive year. In fall, both the number observed and banded were close to average, and were fairly steady over most of the first half of the season. The final sighting on September 13 was the earliest since 2013.

BRWA: Brewster's Warbler / Paruline de Brewster (*Vermivora chrysoptera x cyanoptera*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.14			**0.01**
# DAYS OBSERVED								1			**1**
# PROCESSED								1			**1**
	FIRST OBSERVED: May 21			LAST OBSERVED: May 21			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 1	

For the second year in a row, a hybrid warbler was banded in spring. This time it was a recognized form – Brewster's Warbler, the offspring of a Blue-winged Warbler and a Golden-winged Warbler. Both parent species are rare at MBO, with only six previous Golden-winged Warbler sightings, and three Blue-winged Warbler records.

BAWW: Black-and-white Warbler / Paruline noir et blanc (*Mniotilta varia*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.29	0.57	3.71	2.29	0.14	**0.70**
# DAYS OBSERVED						1	2	7	6	1	**17**
# PROCESSED						1	1	7-0-1	2		**11-0-1**
	FIRST OBSERVED: May 8			LAST OBSERVED: May 30			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 8	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29	0.57	1.00	0.43	0.86	0.71	0.57	0.43	0.71						**0.40**
# DAYS OBSERVED	2	3	5	3	5	3	2	2	4						**29**
# PROCESSED	2	4	2-0-2	2	3-0-2	2	3	2	1-0-2						**21-0-6**
	FIRST OBSERVED: August 2			LAST OBSERVED: September 29			PEAK DATE: Sep 5, Sep 12			PEAK NUMBER OF INDIVIDUALS: 3					

The number of Black-and-white Warblers observed this spring was the second-highest ever, behind only 2006. The number banded was a record high, more than triple the long-term average. After being observed in summer the past two years, Black-and-white Warbler was missed this year for the eighth time overall. The mean daily count in fall was below average, and the lowest since 2013, but the number banded was nearly average. The daily maximum of three individuals matched the record low from 2012 and 2013.

TEWA: Tennessee Warbler / Paruline obscure (*Leiothlypis peregrina*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								2.86	34.00	9.43	**4.63**
# DAYS OBSERVED								4	7	6	**17**
# PROCESSED								1	135-0-8	30-0-2	**166-0-10**
	FIRST OBSERVED: May 18			LAST OBSERVED: June 5			PEAK DATE: May 24, May 27			PEAK NUMBER OF INDIVIDUALS: 52	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	0.71	0.57	0.86	1.43	2.29	4.71	15.14	6.00	0.57					**2.34**
# DAYS OBSERVED	2	3	4	4	3	6	6	7	7	3					**45**
# PROCESSED	1-0-1	2	2		3	7-0-1	9	78-0-5	16-0-1	1					**119-0-8**
	FIRST OBSERVED: August 2			LAST OBSERVED: October 6			PEAK DATE: September 22			PEAK NUMBER OF INDIVIDUALS: 34					

The mean daily count and number of Tennessee Warblers banded in spring both remained far above the long-term averages for a sixth consecutive year. As in 2017, migration was particularly concentrated, with over 100 individuals banded in the peak week, though this year it was week 9, compared to week 8 in 2017. Three Tennessee Warblers were observed this summer, matching the record high from 2005. In fall, the mean daily count and number banded were both the highest since 2014, and slightly above average overall. The peak of migration was unusually sharp, with nearly half of individuals observed and nearly two-thirds of individuals banded during week 8.

OCWA: Orange-crowned Warbler / Paruline verdâtre (*Leiothlypis celata*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.57	0.71		**0.13**
# DAYS OBSERVED								3	3		**6**
# PROCESSED								3	1-0-2		**4-0-2**
	FIRST OBSERVED: May 20			LAST OBSERVED: May 28			PEAK DATE: May 23			PEAK NUMBER OF INDIVIDUALS: 3	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY								0.14	0.14	0.43			0.14		**0.06**
# DAYS OBSERVED								1	1	3			1		**6**
# PROCESSED								1	1	1			1		**4**
	FIRST OBSERVED: September 25			LAST OBSERVED: October 28			PEAK DATE: 6 dates			PEAK NUMBER OF INDIVIDUALS: 1					

Orange-crowned Warbler is always a rare bird in spring at MBO; even though there were only nine sightings this year, that was more than in any previous spring. They all occurred within a span of nine days in late May, a few days later than average. A record high four individuals were banded, bringing the cumulative total over 15 spring seasons to 12. Conversely, the mean daily count in fall was unusually low for the second time in the past three years, and was the third-lowest ever. The number banded was below average, but more than in either of the past two years.

NAWA: Nashville Warbler / Paruline à joues grises (*Leiothlypis ruficapilla*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.29	0.57	2.57	1.71		**0.51**
# DAYS OBSERVED						1	4	6	4		**15**
# PROCESSED							1	1	2-0-1		**4-0-1**
	FIRST OBSERVED: May 8			LAST OBSERVED: May 29			PEAK DATE: May 21, May 26			PEAK NUMBER OF INDIVIDUALS: 5	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.29		0.43	0.43	1.57	1.43	2.43	0.57	0.43	0.29	0.29			**0.58**
# DAYS OBSERVED		2		2	2	5	6	5	3	2	2	1			**30**
# PROCESSED		2		1-0-1	1	5	2	11-1-0	3		1	2			**28-1-1**
	FIRST OBSERVED: August 9			LAST OBSERVED: October 18			PEAK DATE: September 21			PEAK NUMBER OF INDIVIDUALS: 6					

Observations of Nashville Warbler in spring were close to the long-term average, but the number banded was just one more than the record low in 2017, and less than half of the long-term average. Migration was shifted roughly one week later than usual. One was observed in summer, only the seventh ever. In fall, the mean daily count dropped to a new record low for the fourth time in the past five years. The species was particularly scarce early in the season, with just two observations (both banded) over the first three weeks, far fewer than in any previous year. There was a distinct peak in migration in week 8, but at much lower levels than over MBO's first decade. The number banded was more than in 2016 or 2017, but less than one-third of the long-term average.

MOWA: Mourning Warbler / Paruline triste (*Geothlypis philadelphia*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.71	4.57	1.57	**0.69**
# DAYS OBSERVED								2	7	3	**12**
# PROCESSED								2	20-0-6	8-0-2	**30-0-8**
	FIRST OBSERVED: May 20			LAST OBSERVED: June 1			PEAK DATE: May 28			PEAK NUMBER OF INDIVIDUALS: 10	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14	0.14	0.57		0.14		0.14							**0.08**
# DAYS OBSERVED		1	1	4		1		1							**8**
# PROCESSED		1	1	3-0-1											**5-0-1**
	FIRST OBSERVED: August 12			LAST OBSERVED: September 21			PEAK DATE: 8 dates			PEAK NUMBER OF INDIVIDUALS: 1					

It was an absolutely incredible spring for Mourning Warbler at MBO. The mean daily count was more than double the previous high from 2014, and over seven times the long-term average; the number banded was even more impressive, as it nearly matched the cumulative total of 34 over the previous 14 years! The peak of migration was similar to in other years, just more pronounced. One was observed in summer, only the second ever. The mean daily count and number banded in fall were both below average for the third time in the past four years.

COYE: Common Yellowthroat / Paruline masquée (*Geothlypis trichas*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.71	3.71	12.00	16.57	6.00	**3.90**
# DAYS OBSERVED						3	7	7	7	7	**31**
# PROCESSED						2-0-2	3-1-0	28-2-5	25-5-15	1-2-3	**59-10-25**
	FIRST OBSERVED: May 3			LAST OBSERVED: June 5			PEAK DATE: May 20			PEAK NUMBER OF INDIVIDUALS: 25	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	2.29	4.43	5.43	5.14	2.14	6.43	4.14	2.43	1.43	0.14					**2.43**
# DAYS OBSERVED	5	7	7	7	5	7	7	5	4	1					**55**
# PROCESSED	1-1-0	2	8-0-1	7-0-2	2-0-1	3-2-3	8-1-0	4	4						**39-4-7**
	FIRST OBSERVED: August 3			LAST OBSERVED: October 5			PEAK DATE: Sep 6, Sep 11			PEAK NUMBER OF INDIVIDUALS: 9					

Common Yellowthroat also had a great spring, with both the mean daily count and number banded exceeding the previous records from 2014 by a substantial margin; the peak of migration spanned weeks 8 and 9 as in most years. The mean daily count of 2.86 and 4 individuals banded in summer were both slightly below average. In sharp contrast to spring, the mean daily count and number banded in fall were both the lowest ever.

HOWA: Hooded Warbler / Paruline à capuchon (*Setophaga citrina*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.29	0.29	0.14			**0.07**
# DAYS OBSERVED						2	2	1			**5**
# PROCESSED						1					**1**
	FIRST OBSERVED: May 7			LAST OBSERVED: May 16			PEAK DATE: May 7			PEAK NUMBER OF INDIVIDUALS: 3	

A male Hooded Warbler was banded on May 7, and subsequently observed again on another four dates over the next nine days. It was the 218th species observed at MBO, and the 126th species banded.

AMRE: American Redstart / Paruline flamboyante (*Setophaga ruticilla*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.14	8.14	12.43	3.00	**2.37**
# DAYS OBSERVED							1	6	7	6	**20**
# PROCESSED								20-3-4	29-0-12	4	**53-3-16**
	FIRST OBSERVED: May 10			LAST OBSERVED: June 5			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 26	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	9.00	11.43	12.86	6.57	6.29	9.00	3.43	2.57	1.00						**4.44**
# DAYS OBSERVED	7	7	7	7	7	7	7	6	3						**58**
# PROCESSED	36-0-1	40-0-5	55-2-6	26-0-5	26-0-4	31-0-3	10-0-1	10-0-1	2-0-1						**236-2-27**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 28			PEAK DATE: August 17			PEAK NUMBER OF INDIVIDUALS: 28					

American Redstart had a new record high mean daily count in spring for the fifth year in a row, and amazingly it was more than 50% above last year's amount. That was largely thanks to week 9, which had a mean daily count more than double any other spring week in MBO's history, and included a single day peak of 26 individuals on May 21, nearly double the old record of 14 on May 13, 2011. The number banded was also nearly double the previous record of 28 in 2015. The peak of migration was in weeks 8 and 9 as usual, but only one individual was observed prior to that, which is unusual. The summer mean daily count of 1.71 was lower than the past two years, but still double the long-term average; the 5 banded was average for MAPS. In fall, it was the first time since 2014 that the mean daily count did not increase compared to the previous year, but it was still the third-highest ever. Similarly, the number banded grew annually from 2014 through 2018, but this year slipped back slightly, to one less than the 2017 total. Numbers increased over the first three weeks of the season, then dropped sharply before a second smaller peak in early September, before tapering off by the end of the month.

CMWA: Cape May Warbler / Paruline tigrée (*Setophaga tigrina*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								1.14	3.86	0.14	**0.51**
# DAYS OBSERVED								5	5	1	**11**
# PROCESSED								5	16-0-1		**21-0-1**
	FIRST OBSERVED: May 18			LAST OBSERVED: May 31			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 13	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY				0.29	0.29	0.71	1.14	0.57							**0.21**
# DAYS OBSERVED				2	2	3	3	3							**13**
# PROCESSED				2	1	2		1							**6**
	FIRST OBSERVED: August 23			LAST OBSERVED: September 24			PEAK DATE: Sep 12, Sep 18			PEAK NUMBER OF INDIVIDUALS: 3					

For the fifth time in the past seven years, Cape May Warbler abundance was above average this spring, but by a far wider margin than ever before, as the mean daily count was more than double the previous record from 2015. The number banded was even more impressive, with 21 this spring, compared to a cumulative total of 19 over the previous 14 spring seasons. Numbers peaked in week 9, later than usual. In fall, all observations were over a span of just more than one month, and the mean daily count was close to average. However, the number banded was roughly half the long-term average.

NOPA: Northern Parula / Paruline à collier (*Setophaga americana*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.14		2.14	2.29		**0.46**
# DAYS OBSERVED						1		5	5		**11**
# PROCESSED								1	1		**2**
	FIRST OBSERVED: May 8			LAST OBSERVED: May 28			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 7	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14	0.14			0.71	0.86	0.29	0.29	0.29					**0.19**
# DAYS OBSERVED		1	1			3	4	2	1	1					**13**
# PROCESSED			1			1	1	1							**4**
	FIRST OBSERVED: August 10			LAST OBSERVED: October 3			PEAK DATE: September 10			PEAK NUMBER OF INDIVIDUALS: 3					

The mean daily count of Northern Parula this spring was slightly above the previous record set in 2007, and more than double the long-term average. One individual was observed on May 8, tied for the second-earliest across all years, but all others were in weeks 8 and 9, a one-week shift later than usual. The species was banded in spring for the first time in three years, with the two individuals slightly above average. The mean daily count was lower in fall, but the highest since 2012; the number banded was the most in fall since 2014. There were two unusually early sightings in mid-August; the peak was in mid-September as usual.

MAWA: Magnolia Warbler / Paruline à tête cendrée (*Setophaga magnolia*)

MARCH	APRIL					MAY					JUNE
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.57	9.71	31.71	3.14	**4.51**
# DAYS OBSERVED							3	5	7	4	**19**
# PROCESSED								38	127-0-26	8-0-6	**173-0-32**
	FIRST OBSERVED: May 11			LAST OBSERVED: June 5			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 90	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY			0.14	0.71	4.00	25.14	9.43	15.71	3.14	0.57					**4.20**
# DAYS OBSERVED			1	4	4	7	7	7	6	4					**40**
# PROCESSED				5	15-0-1	102-0-6	28-0-5	74-0-11	13-0-2	4					**241-0-25**
	FIRST OBSERVED: August 17			LAST OBSERVED: October 8			PEAK DATE: September 21			PEAK NUMBER OF INDIVIDUALS: 46					

It was a record-breaking spring for Magnolia Warbler, with the mean daily count two-thirds higher than last year's previous record, and the number banded just a few shy of doubling last year's record high of 88. Incredibly, 127 were banded in week 9 alone, nearly triple the long-term average. The mean daily count that week was more than double that of any single week in previous years. In fall, the mean daily count was slightly above average, despite being observed on the fewest days since 2008. This was largely thanks to a single-week record high mean daily count in week 6, during which the number banded was just below the single week record of 109 in week 6 of 2008. Overall, the number banded was 20% above average.

One of the many Magnolia Warblers banded in spring 2019 (Photo by Simon Duval)

BBWA: Bay-breasted Warbler / Paruline à poitrine baie (*Setophaga castanea*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								1.29	9.29	0.29	**1.09**
# DAYS OBSERVED								3	7	2	**12**
# PROCESSED									30-0-2	1	**31-0-2**
	FIRST OBSERVED: May 18			LAST OBSERVED: June 1			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 32	

AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.14		0.29	0.29	2.57	1.14	0.29							**0.34**
# DAYS OBSERVED		1		2	2	5	3	2							**15**
# PROCESSED		1		1	1	10	2	2							**17**
	FIRST OBSERVED: August 12			LAST OBSERVED: September 22			PEAK DATE: September 8			PEAK NUMBER OF INDIVIDUALS: 6					

Like some other warblers, Bay-breasted Warbler had a spectacular spring. In week 9 alone, the 83 individuals observed surpassed the cumulative total of 80 over the previous 14 years! Similarly, the number of Bay-breasted Warblers banded that week was more than double the cumulative total of 14 across all other years, and was particularly surprising given that none had been banded in spring since 2015. The peak in week 9 was similar to last year, but later than almost all previous years. Strong results carried over to fall for this species, with a new single-day high count of 6 on September 8 (one more than on August 26, 2018), and an overall mean daily count 40% more than last year's record high. Nearly 80% of observations were in weeks 6 and 7, somewhat later than usual. The number banded was a record high for the second year in a row, and more than triple the long-term average.


Male Bay-breasted (left) and Blackburnian (right) Warblers banded in spring 2019 (photos by Simon Duval)

BLBW: Blackburnian Warbler / Paruline à gorge orangée (*Setophaga fusca*)

MARCH	APRIL				MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.71	3.00		**0.37**
# DAYS OBSERVED								1	6		**7**
# PROCESSED								2	6		**8**
	FIRST OBSERVED: May 21			LAST OBSERVED: May 28			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 7	

AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY					0.14	0.14	0.43	0.29							**0.07**
# DAYS OBSERVED					1	1	3	2							**7**
# PROCESSED					1	1	1	1							**4**
	FIRST OBSERVED: September 4			LAST OBSERVED: September 22			PEAK DATE: 7 dates			PEAK NUMBER OF INDIVIDUALS: 1					

Blackburnian Warbler also had an unprecedentedly strong spring season thanks to an intense migration in week 9. The 21 individuals observed that week included a single-day record high of seven on May 24, and was a higher count than in any previous full spring season; overall, the mean daily count more than doubled the previous record set in 2015. Banding results were even more surprising, as only three had ever been banded in spring before this year, one each in 2005, 2009, and 2013. However, Blackburnian Warbler was typically scarce in fall, with only seven individuals observed over a span of 19 days in September. Four of those were banded, the most in any fall since 2011, and more than double the long-term average.

YEWA: Yellow Warbler / Paruline jaune (*Setophaga petechia*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.57	4.00	18.57	21.29	12.29	**5.67**
# DAYS OBSERVED						2	6	7	7	7	**29**
# PROCESSED							0-1-0	28-3-4	38-2-16	4-1-6	**70-7-26**
	FIRST OBSERVED: May 7			LAST OBSERVED: June 5			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 36	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	7.43	9.00	4.71	1.43	0.14		0.14	0.14							**1.64**
# DAYS OBSERVED	7	7	6	6	1		1	1							**29**
# PROCESSED	26-0-4	24-0-1	10-0-2	2-1-0	1										**63-1-7**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 21			PEAK DATE: Aug 7, Aug 14			PEAK NUMBER OF INDIVIDUALS: 16					

For the first time since 2013, the spring mean daily count of Yellow Warbler was slightly above average, driven by record high numbers in week 9. It was only the fifth time in 15 years that the peak was beyond week 8. The number banded increased for the fourth straight year, jumping to a new record 50% above the previous high count from MBO's first season in 2005. Seven were banded in summer, average for MAPS if excluding the exceptional count of 61 in 2012; the mean daily count was well below average, as it has been every year since 2013. In fall, the mean daily count was the highest since 2012, with the peak in week 2 for only the third time. The number banded was close to double the long-term average, and second only to the record of 75 in 2011.

CSWA: Chestnut-sided Warbler / Paruline à flancs marron (*Setophaga pensylvanica*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.57	2.86	9.57	2.43	**1.54**
# DAYS OBSERVED							2	5	7	6	**20**
# PROCESSED								6-0-1	20-0-1	0-0-2	**26-0-4**
	FIRST OBSERVED: May 11			LAST OBSERVED: June 5			PEAK DATE: May 25			PEAK NUMBER OF INDIVIDUALS: 19	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.86	0.86	0.86	1.14	2.14	1.29	0.71	0.57							**0.60**
# DAYS OBSERVED	4	5	4	6	4	3	3	3							**32**
# PROCESSED	4	1-0-1	3-0-1	4-0-2	6-0-4	3		3							**24-0-8**
	FIRST OBSERVED: August 3			LAST OBSERVED: September 25			PEAK DATE: August 31			PEAK NUMBER OF INDIVIDUALS: 7					

The new record high mean daily count of Chestnut-sided Warbler in spring was 20% higher than in 2016, driven by a peak in week 9 more than twice as great as in any previous single week. The number banded that week exceeded the season totals from all previous years, and this year's sum was nearly quadruple the long-term average. One was banded in summer; no others were observed. The mean daily count in fall was the lowest since 2015, but still slightly above average. The number banded matched the long-term average.

BLPW: Blackpoll Warbler / Paruline rayée (*Setophaga striata*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.14	8.57	2.29	**1.10**
# DAYS OBSERVED								1	7	3	**11**
# PROCESSED									15-0-1	4	**19-0-1**
	FIRST OBSERVED: May 22			LAST OBSERVED: June 4			PEAK DATE: May 25			PEAK NUMBER OF INDIVIDUALS: 16	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY						1.00	1.86	1.00	0.14						**0.29**
# DAYS OBSERVED						3	6	4	1						**14**
# PROCESSED						6	6-0-1	3	1						**16-0-1**
	FIRST OBSERVED: September 7			LAST OBSERVED: September 26			PEAK DATE: 4 dates			PEAK NUMBER OF INDIVIDUALS: 3					

After three straight years of sharp decline, the mean daily count in spring rebounded to just above the long-term average, peaking strongly in week 9 as in most previous years. The number banded was the most since 2012, and slightly above average. A late spring migrant became the first banded in summer; two others were also observed

in the first week of summer. In fall, the mean daily count and number banded were both the highest since 2014 but still below average. All sightings were with a 20-day span in September, the most concentrated migration ever.

BTBW: Black-throated Blue Warbler / Paruline bleue (*Setophaga caerulescens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.29	1.43	4.43	2.14	0.29	**0.86**
# DAYS OBSERVED						1	5	7	7	1	**21**
# PROCESSED						1	1	7	6		**15**
	FIRST OBSERVED: May 8			LAST OBSERVED: June 5			PEAK DATE: May 22			PEAK NUMBER OF INDIVIDUALS: 6	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	0.29	0.57		0.43	1.57	1.43	1.57	1.29	1.86		0.29			**0.69**
# DAYS OBSERVED	2	2	2		1	6	6	5	4	4		1			**33**
# PROCESSED	1		1-0-2			5	4	6	8	7-0-1		2			**34-0-3**
	FIRST OBSERVED: August 3			LAST OBSERVED: October 19			PEAK DATE: Sep 12, Sep 21, Sep 29			PEAK NUMBER OF INDIVIDUALS: 5					

After the mean daily count of Black-throated Blue Warbler reached a new record high in 2015, it declined substantially over the next three years, before rebounding this year to a level roughly 20% higher than in 2015. The number of individuals observed in week 8 was far more than in any previous week at MBO, in any season. The number banded was a record high for the second year in a row, by a large margin – 250% more than last year. In fall, the mean daily count and number banded were both slightly above average, and the highest since 2014.

WPWA: Western Palm Warbler / Paruline à couronne rousse (forme de l'Ouest) (*Setophaga palmarum palmarum*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.14			0.29	0.43			**0.09**
# DAYS OBSERVED				1			2	2			**5**
# PROCESSED							1	1			**2**
	FIRST OBSERVED: April 22			LAST OBSERVED: May 22			PEAK DATE: May 21			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER					OCTOBER				NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							0.57	0.43	1.14	0.57					**0.19**
# DAYS OBSERVED							3	2	4	2					**11**
# PROCESSED								1	2	1					**4**
	FIRST OBSERVED: September 13			LAST OBSERVED: October 9			PEAK DATE: Sep 27, Oct 5			PEAK NUMBER OF INDIVIDUALS: 3					

Unlike most other warblers, Western Palm Warbler was typically scarce at MBO this spring, although the first individual observed on April 22 was notable for being the second-earliest ever, one day later than in 2012. The number banded was slightly above average, as there have been only 10 across the previous 14 years. In fall, all observations were within a span of 27 days, a narrow window of migration similar to the past several years. The mean daily count declined for the third year in a row, and was around half the long-term average. The number banded tied the record low from 2006, 2011, and 2018.

YPWA: Yellow Palm Warbler / Paruline à couronne rousse (forme de l'Est) (*Setophaga palmarum hypochrysea*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.29							**0.03**
# DAYS OBSERVED				1							**1**
# PROCESSED				1							**1**
	FIRST OBSERVED: April 22			LAST OBSERVED: April 22			PEAK DATE: April 22			PEAK NUMBER OF INDIVIDUALS: 2	

	AUGUST				SEPTEMBER				OCTOBER					NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY									0.14						**0.01**
# DAYS OBSERVED									1						**1**
	FIRST OBSERVED: October 2			LAST OBSERVED: October 2			PEAK DATE: October 2			PEAK NUMBER OF INDIVIDUALS: 1					

Yellow Palm Warbler was observed in spring for the first time since 2012, and banded for only the third time ever, the previous occurrences being in 2008 and 2010. This year both observations were on April 22, two days earlier than in any previous year. In fall, there was just one sighting, like last year but six days later.

PIWA: Pine Warbler / Paruline des pins (*Setophaga pinus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY			0.14			0.14					**0.03**
# DAYS OBSERVED			1			1					**2**
	FIRST OBSERVED: April 14			LAST OBSERVED: May 7			PEAK DATE: Apr 14, May 7			PEAK NUMBER OF INDIVIDUALS: 1	

After being missed entirely in 2017 and 2018, and also in spring in 2016, the two observations of Pine Warbler this spring were a pleasant surprise.

YRWA (MYWA): Yellow-rumped (Myrtle) Warbler / Paruline à croupion jaune (*Setophaga coronata coronata*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY				0.71	0.86	2.29	5.71	41.57	32.43	1.29	**8.49**
# DAYS OBSERVED				3	4	4	6	7	7	4	**35**
# PROCESSED				1	1		8	51-0-8	110-0-7	0-0-2	**171-0-17**
	FIRST OBSERVED: April 19			LAST OBSERVED: June 2			PEAK DATE: May 17			PEAK NUMBER OF INDIVIDUALS: 59	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY							3.14	5.43	8.43	10.14	7.14	5.86	2.57	0.29	**3.07**
# DAYS OBSERVED							3	6	7	7	7	6	6	2	**44**
# PROCESSED							1	1	14	13	11-0-1	6	1-0-1		**47-0-2**
	FIRST OBSERVED: September 16			LAST OBSERVED: November 6				PEAK DATE: October 9				PEAK NUMBER OF INDIVIDUALS: 27			

It was a spectacular spring for Yellow-rumped Warbler. The mean daily count was just barely below the record high of 8.50 set in 2011. However, the peak of migration was more intense this year, with 86% of individuals observed in weeks 8 and 9; the mean daily counts in each of those weeks were higher than in any previous week of spring in MBO's history. In most years the peak of migration has been in week 7, with good numbers carrying over into week 8; this year it was shifted one week later. At the same time though, the first arrival on April 19 was the earliest across all 15 seasons. The number banded in week 9 was more than in any entire previous spring; the total for spring 2019 was more than 50% greater than the old record set just last year. In sharp contrast, the mean daily count in fall was the lowest ever, and less than one-quarter of the long-term average. The number banded was nearly 50% more than last year, but still the second-lowest total ever, and barely more than one-tenth of the long-term average of 423, although that value is skewed by the exceptional totals of 1732 in 2008 and 2359 in 2010; without those the average across the other 12 previous years is still 153. This fall's peak of migration spanned weeks 9 to 11, roughly one week later than usual.

BTNW: Black-throated Green Warbler / Paruline à gorge noire (*Setophaga virens*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						0.43	0.57	2.00	1.43	0.29	**0.47**
# DAYS OBSERVED						2	2	5	5	2	**16**
# PROCESSED									1		**1**
	FIRST OBSERVED: May 7			LAST OBSERVED: June 5			PEAK DATE: May 19, 21, 25			PEAK NUMBER OF INDIVIDUALS: 4	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.29		0.14			0.71	0.43	0.71	1.14						**0.24**
# DAYS OBSERVED	2		1			3	2	4	4						**16**
# PROCESSED	1		0-0-1					3	3						**7-0-1**
	FIRST OBSERVED: August 6			LAST OBSERVED: October 2				PEAK DATE: October 1				PEAK NUMBER OF INDIVIDUALS: 5			

The mean daily count of Black-throated Green Warbler this spring was the same as the record high set in 2006 and matched in 2016. The peak of migration was over weeks 8 and 9; as with many other warblers, this was shifted one week later than average. Despite the relatively high number observed, only one was banded, the same as in the past two years, bringing the cumulative total for the season to only 10. In fall, both the mean daily count and number banded remained substantially below average for a fifth consecutive year. There were two unusually early migrants in the first week, one of which was recaptured in week 3; otherwise all sightings were mid-season.

CAWA: Canada Warbler / Paruline du Canada (*Cardellina canadensis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								1.86	6.71	1.71	**1.03**
# DAYS OBSERVED								4	7	3	**14**
# PROCESSED								8	29-0-5	6	**43-0-5**
	FIRST OBSERVED: May 18			LAST OBSERVED: June 1			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 9	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY		0.43	0.43	1.43	0.86	0.86		0.43							**0.32**
# DAYS OBSERVED		2	2	5	4	5		3							**21**
# PROCESSED		2	3	6-0-3	4-0-2	2		2-0-1							**19-0-6**
	FIRST OBSERVED: August 9			LAST OBSERVED: September 25			PEAK DATE: August 24				PEAK NUMBER OF INDIVIDUALS: 3				

Like many other warblers, Canada Warbler had an exceptional spring. The mean daily count was nearly quadruple the previous record high set in 2017, driven by a tremendous count in week 9, during which the daily average was more than five times higher any previous week in spring. Canada Warbler is always a late migrant at MBO, so in this case the timing of the peak in week 9 was typical. The number banded in week 9 alone was nearly triple the previous season record of 10 in 2011; the total for 2019 was more than eight times the long-term average. However, both the mean daily count and the number banded in fall were very close to the long-term averages for the season. The final observation on September 25 was five days beyond the previous late date, from 2015.

WIWA: Wilson's Warbler / Paruline à calotte noire (*Cardellina pusilla*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								2.14	9.43	3.71	**1.53**
# DAYS OBSERVED								3	7	3	**13**
# PROCESSED								9-0-3	33-0-23	12-0-6	**54-0-32**
	FIRST OBSERVED: May 20			LAST OBSERVED: June 1			PEAK DATE: May 27			PEAK NUMBER OF INDIVIDUALS: 14	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY				0.14	0.14	3.29	0.43	0.43	0.29						**0.34**
# DAYS OBSERVED				1	1	7	3	2	1						**15**
# PROCESSED				1	1	13-0-2	2	2							**19-0-2**
	FIRST OBSERVED: August 23			LAST OBSERVED: September 27			PEAK DATE: September 7				PEAK NUMBER OF INDIVIDUALS: 5				

The mean daily count of Wilson's Warbler in spring was nearly 50% more than the previous record of 1.06 in 2015; as with most warblers, the results were strongly driven by a big peak of migration in week 9. Although that timing is typical for Wilson's Warbler, more carried over into week 10 than ever before. The number banded also broke the 2015 record, when there were 39. In contrast, fall numbers remained below average for a seventh straight year. Migration peaked in week 6, consistent with the long-term average, and both the number observed and banded that week were slightly above average, but numbers before and after were substantially lower than usual.

SCTA: Scarlet Tanager / Piranga écarlate (*Piranga olivacea*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY								0.29	1.14		**0.14**
# DAYS OBSERVED								2	6		**8**
	FIRST OBSERVED: May 20			LAST OBSERVED: May 28			PEAK DATE: May 26, May 27			PEAK NUMBER OF INDIVIDUALS: 2	

AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	0.43	0.43	0.29			0.14	0.14	0.14							**0.11**
# DAYS OBSERVED	2	3	2			1	1	1							**10**
# PROCESSED		1													**1**
	FIRST OBSERVED: August 2			LAST OBSERVED: September 22			PEAK DATE: August 2				PEAK NUMBER OF INDIVIDUALS: 2				

The mean daily count of Scarlet Tanager in spring was above average for the fourth time in the past five years, but well below the record of 0.24 in 2016; as in all previous years except 2018, none were banded. In fall, the mean daily count was below average, but the number banded matched the record low from 2008, 2010, 2011, and 2013.

NOCA: Northern Cardinal / Cardinal rouge (*Cardinalis cardinalis*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY	7.71	6.14	7.29	10.14	8.14	8.57	7.71	6.71	9.71	8.57	**8.07**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	**70**
# PROCESSED				1		1	2-1-0		5-0-1	1	**10-1-1**
	FIRST OBSERVED: March 28			LAST OBSERVED: June 5			PEAK DATE: April 21			PEAK NUMBER OF INDIVIDUALS: 16	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	7.57	7.86	7.14	6.57	7.71	9.43	6.57	7.71	7.86	7.00	7.71	8.86	10.14	10.57	**8.05**
# DAYS OBSERVED	7	7	7	7	7	7	7	7	7	7	7	6	7	7	**97**
# PROCESSED	2-1-1	4-0-3	3-0-2	4-0-3	0-0-3	1-0-3	1-0-3	1-0-1	1-0-1	1-1-1	3-0-2	4-0-3	7-0-2	3-0-3	**35-2-31**
	FIRST OBSERVED: August 1				LAST OBSERVED: November 6			PEAK DATE: October 23				PEAK NUMBER OF INDIVIDUALS: 16			

Only three Northern Cardinals were banded in winter, the fewest since 2009, but the mean daily count of 4.92 was above average. For the fourth time in the past five years, the mean daily count in spring reached a new high, and for the first time ever there was a week with an average count of more than 10 per day. The number banded was four more than the previous record set in 2016; the high count in week 9 suggested some were moving through at that time. Just one was banded in summer, but the mean daily count of 3.14 was above average. The mean daily count in fall was nearly identical to spring, and also a new high, approximately 25% more than over the past three years. Numbers peaked late in fall, as usual. For the fifth year in a row, the number banded was far above average.

RBGR: Rose-breasted Grosbeak / Cardinal à poitrine rose (*Pheucticus ludovicianus*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY						1.29	3.86	7.00	5.57	3.00	**2.07**
# DAYS OBSERVED						4	7	7	7	7	**32**
# PROCESSED							2-2-0	5-1-0	0-0-3	2	**9-3-3**
	FIRST OBSERVED: May 5			LAST OBSERVED: June 5			PEAK DATE: May 22			PEAK NUMBER OF INDIVIDUALS: 12	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	3.14	4.57	4.57	1.86	1.00	1.57	0.86	1.00	0.14						**1.34**
# DAYS OBSERVED	7	7	7	6	5	6	3	5	1						**47**
# PROCESSED	6	6-0-2	7-0-3	3	1	2	1-0-1	1-1-1							**27-1-7**
	FIRST OBSERVED: August 1			LAST OBSERVED: September 27			PEAK DATE: Aug 8, Aug 17			PEAK NUMBER OF INDIVIDUALS: 7					

The mean daily count in spring was more than one-third higher than the previous record set in 2006; overall timing was typical, though more were seen in week 6 than ever before. The number banded was above average, tied for third place across all years. The summer mean daily count of 2.29 and 6 banded were both above average. In fall, the mean daily count was the lowest since 2012, and the number banded the lowest since 2011.

INBU: Indigo Bunting / Passerin indigo (*Passerina cyanea*)

MARCH	APRIL					MAY				JUNE	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	**TOTAL**
# BIRDS / DAY							0.14	1.29	4.57	2.29	**0.83**
# DAYS OBSERVED							1	4	7	4	**16**
# PROCESSED									0-1-0		**0-1-0**
	FIRST OBSERVED: May 13			LAST OBSERVED: June 3			PEAK DATE: May 24			PEAK NUMBER OF INDIVIDUALS: 8	

	AUGUST				SEPTEMBER			OCTOBER						NOVEMBER	
	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12	WEEK 13	WEEK 14	**TOTAL**
# BIRDS / DAY	2.14	3.57	2.71	1.86	0.71	1.14	0.71	0.29		0.43					**0.97**
# DAYS OBSERVED	7	7	7	7	4	6	4	1		2					**45**
# PROCESSED	1-1-0	3-0-2	3-0-1	2		2-1-0	2								**13-2-3**
	FIRST OBSERVED: August 1			LAST OBSERVED: October 8			PEAK DATE: August 13			PEAK NUMBER OF INDIVIDUALS: 6					

In spring, the mean daily count of Indigo Bunting was the highest since 2015, and somewhat above average. However, for the first time since 2014 none were banded. For the first time ever, none were observed in summer. As in spring, the mean daily count in fall was the best since 2015, but in this case still below average; the number banded was below average for the sixth straight year.