McGill Bird Observatory

Annual Report

2023

Migration Monitoring & MAPS Banding Station

Ste-Anne-de-Bellevue, Quebec, Canada

A project of The Migration Research Foundation Inc.

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2023 Season Overview

The 2023 banding season at McGill Bird Observatory was conducted from April through November, encompassing spring migration, the MAPS breeding bird monitoring program, and fall migration monitoring. This report summarizes the results of our standardized monitoring efforts.

6,528
Total Captures

100
Species Recorded

5,244
New Bands

176
Active Days

Capture Summary

Capture Type	Count	Percentage
New Bands	5,244	80.3%
Recaptures (same season)	1,032	15.8%
Returns (previous years)	241	3.7%

Seasonal Distribution

Season	Captures	Species	Days
Spring Migration (Apr–May)	1,352	70	43
MAPS Season (Jun–Jul)	1,264	57	29
Fall Migration (Aug–Nov)	3,583	86	97

Key Highlights

- Peak capture day: Sep with the highest daily totals
- Most abundant species: WTSP (716 captures)
- Species diversity: 100 species recorded across all seasons
- Return rate: 3.7% of captures were returning birds

Spring Migration (April–May)

Spring migration monitoring captured the northward movement of neotropical migrants and short-distance migrants returning to breeding grounds. The spring season recorded1,352 captures of 70 species over 43 monitoring days.

1,352
Spring Captures

70
Species

1,024
New Bands

Top Spring Migrants

Species	Count	% Total	New	Recap
TEWA	208	15.4%	200	8
RCKI	136	10.1%	124	12
YEWA	75	5.5%	43	26
WTSP	72	5.3%	66	6
RWBL	62	4.6%	38	15
MAWA	61	4.5%	49	12
BAOR	49	3.6%	15	27
NOWA	42	3.1%	27	15
AMRO	36	2.7%	29	6
SOSP	36	2.7%	17	10
AMGO	30	2.2%	21	3
CEDW	29	2.1%	29	0
MYWA	29	2.1%	28	1
AMRE	28	2.1%	17	8
COYE	26	1.9%	16	7

MAPS Breeding Season (June–July)

The Monitoring Avian Productivity and Survivorship (MAPS) program operates during the breeding season to assess local breeding bird populations, productivity (young:adult ratios), and survivorship through standardized mist-netting protocols.

1,264
MAPS Captures

57
Species

1,107
New Bands

Age Distribution (Breeding Season)

Age Class	Count	Percentage
0	1	0.1%
1	99	7.8%
2	300	23.7%
4	529	41.9%
5	176	13.9%
6	146	11.6%
7	6	0.5%
8	3	0.2%
Unknown	4	0.3%

Top Breeding Species

Species	Count	New	Returns
TRES	371	371	0
AMKE	106	106	0
SOSP	79	59	6
GRCA	68	55	4
CSWA	45	36	2
YEWA	44	37	3
BCCH	42	33	4
OVEN	41	34	5
EABL	40	40	0
SWSP	32	23	2
COYE	32	21	7
DOWO	27	19	1

Fall Migration (August–November)

Fall migration monitoring tracked the southward passage of breeding adults and hatching-year birds. The fall season is typically the busiest period, with larger numbers of young birds captured as they make their first migratory journey.

3,583
Fall Captures

86
Species

2,956
New Bands

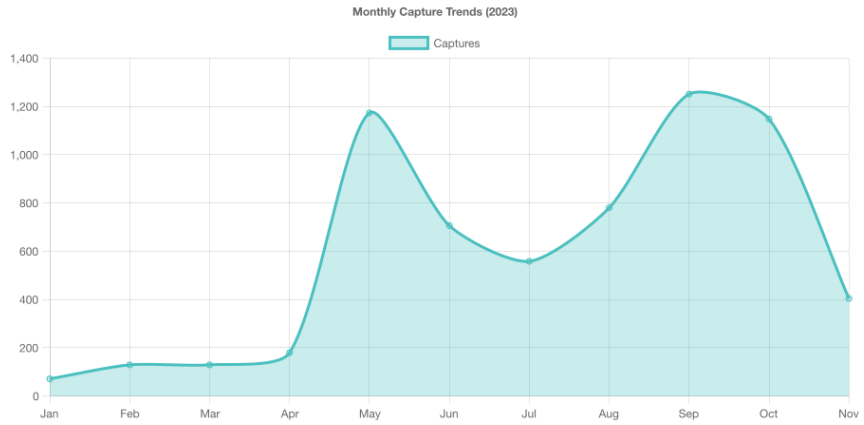


Figure 1. Monthly capture totals for 2023

Top Fall Migrants

Species	Count	% Total	New
WTSP	625	17.4%	529
SCJU	296	8.3%	261
MAWA	226	6.3%	196
RCKI	222	6.2%	196
SWTH	179	5.0%	143
AMRE	158	4.4%	139
AMGO	144	4.0%	128
BCCH	136	3.8%	21
NSWO	128	3.6%	121
SOSP	120	3.3%	99
REVI	102	2.8%	78
GCKI	89	2.5%	88

Notable Species Accounts

The following accounts highlight species of particular interest based on capture numbers, population trends, or conservation significance.

WTSP

Total: 716 | New bands: 609 | Recaptures: 103 | 11.0% of total

WTSP was the most abundant species during the 2023 season, representing 11.0% of all captures. The recapture rate of 14.4% indicates site fidelity during the monitoring period.

TRES

Total: 382 | New bands: 382 | Recaptures: 0 | 5.9% of total

TRES was the #2 most captured species during the 2023 season, representing 5.9% of all captures.

RCKI

Total: 358 | New bands: 320 | Recaptures: 38 | 5.5% of total

RCKI was the #3 most captured species during the 2023 season, representing 5.5% of all captures. The recapture rate of 10.6% indicates site fidelity during the monitoring period.

SCJU

Total: 345 | New bands: 290 | Recaptures: 49 | 5.3% of total

SCJU was the #4 most captured species during the 2023 season, representing 5.3% of all captures. The recapture rate of 14.2% indicates site fidelity during the monitoring period.

BCCH

Total: 316 | New bands: 81 | Recaptures: 194 | 4.8% of total

BCCH was the #5 most captured species during the 2023 season, representing 4.8% of all captures. The recapture rate of 61.4% indicates site fidelity during the monitoring period.

MAWA

Total: 289 | New bands: 247 | Recaptures: 42 | 4.4% of total

MAWA was the #6 most captured species during the 2023 season, representing 4.4% of all captures. The recapture rate of 14.5% indicates site fidelity during the monitoring period.

Complete Banding Totals by Species

Complete capture totals for all species banded during the 2023 season, including breakdown by capture type and demographics.

Species	Total	Banded	Returns	Repeats	M	F	U	HY	AHY+
WTSP	**716**	609	4	103	0	0	716	0	0
TRES	**382**	382	0	0	0	0	382	0	0
RCKI	**358**	320	0	37	0	0	358	0	0
SCJU	**345**	290	6	49	0	0	345	0	0
BCCH	**316**	81	41	194	0	0	316	0	0
MAWA	**289**	247	0	42	0	0	289	0	0
AMGO	**265**	219	21	25	0	0	265	0	0
SOSP	**235**	175	18	42	0	0	235	0	0
TEWA	**235**	226	0	9	0	0	235	0	0
AMRE	**212**	182	5	25	0	0	212	0	0
SWTH	**192**	154	0	38	0	0	192	0	0
GRCA	**144**	109	6	29	0	0	144	0	0
YEWA	**133**	89	9	35	0	0	133	0	0
REVI	**132**	104	10	18	0	0	132	0	0
NSWO	**128**	121	0	7	0	0	128	0	0
AMRO	**117**	108	1	8	0	0	117	0	0
AMKE	**106**	106	0	0	0	0	106	0	0
NOCA	**101**	74	10	17	0	0	101	0	0
COYE	**100**	69	10	21	0	0	100	0	0
OVEN	**96**	76	5	15	0	0	96	0	0
CSWA	**95**	68	9	17	0	0	95	0	0
NOWA	**91**	65	0	26	0	0	91	0	0
GCKI	**91**	90	0	1	0	0	91	0	0
HETH	**88**	64	0	24	0	0	88	0	0
DOWO	**87**	34	17	36	0	0	87	0	0
SWSP	**86**	68	2	16	0	0	86	0	0
BAWW	**72**	58	0	14	0	0	72	0	0
RWBL	**69**	40	12	15	0	0	69	0	0
BAOR	**67**	31	8	28	0	0	67	0	0
CEDW	**64**	62	0	2	0	0	64	0	0
VEER	**61**	39	6	16	0	0	61	0	0
RBGR	**58**	42	5	11	0	0	58	0	0
MYWA	**53**	52	0	1	0	0	53	0	0
EABL	**51**	51	0	0	0	0	51	0	0
NAWA	**45**	42	0	3	0	0	45	0	0

M = Male, F = Female, U = Unknown sex, HY = Hatch Year, AHY+ = After Hatch Year and older

Complete Banding Totals by Species (continued)

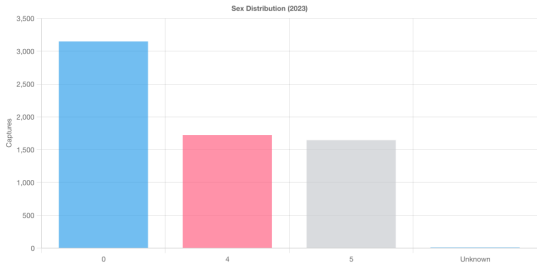
Species	Total	Banded	Returns	Repeats	M	F	U	HY	AHY+
CMWA	**43**	40	0	3	0	0	43	0	0
YBFL	**43**	41	0	2	0	0	43	0	0
HOWR	**40**	21	7	12	0	0	40	0	0
WAVI	**38**	21	3	14	0	0	38	0	0
FOSP	**38**	37	0	1	0	0	38	0	0
TRFL	**37**	27	2	8	0	0	37	0	0
LEFL	**33**	31	0	2	0	0	33	0	0
HOFI	**33**	30	0	3	0	0	33	0	0
BLJA	**32**	25	7	0	0	0	32	0	0
BBWA	**29**	29	0	0	0	0	29	0	0
PUMA	**26**	26	0	0	0	0	26	0	0
WBNU	**26**	10	3	13	0	0	26	0	0
BRCR	**25**	22	0	3	0	0	25	0	0
GCTH	**23**	13	0	10	0	0	23	0	0
PUFI	**21**	19	1	1	0	0	21	0	0
LISP	**20**	19	0	1	0	0	20	0	0
CHSP	**19**	12	1	6	0	0	19	0	0
COGR	**18**	16	2	0	0	0	18	0	0
HAWO	**18**	7	4	7	0	0	18	0	0
WIWA	**18**	18	0	0	0	0	18	0	0
ATSP	**18**	15	0	3	0	0	18	0	0
BLPW	**18**	18	0	0	0	0	18	0	0
CAWA	**18**	17	0	1	0	0	18	0	0
WOTH	**17**	14	0	3	0	0	17	0	0
RTHU	**17**	15	2	0	0	0	17	0	0
EAPH	**16**	12	2	2	0	0	16	0	0
BTBW	**13**	13	0	0	0	0	13	0	0
YBSA	**11**	8	0	3	0	0	11	0	0
CHSW	**11**	11	0	0	0	0	11	0	0
BHVI	**10**	10	0	0	0	0	10	0	0
EWCS	**10**	10	0	0	0	0	10	0	0
YSFL	**9**	8	0	1	0	0	9	0	0
MOWA	**8**	7	0	1	0	0	8	0	0
INBU	**7**	6	0	1	0	0	7	0	0
GCFL	**7**	7	0	0	0	0	7	0	0
TOTALS	**6528**	**5244**	**241**	**1032**	**0**	**0**	**0**	-	-

Age and Sex Demographics

Age Distribution

Age	Count	%
0	30	0.5%
1	873	13.4%
2	3129	47.9%
4	537	8.2%
5	1249	19.1%
6	648	9.9%
7	23	0.4%
8	28	0.4%
Unknown	11	0.2%

Sex Distribution



Sex	Count	%
0	3149	48.2%
4	1723	26.4%
5	1645	25.2%
Unknown	11	0.2%

Age Ratios by Species (ne10)

Species	HY	AHY+	Y:A	n

Monthly Effort and Capture Summary

Summary of banding effort and captures by month. Net-hours are estimated based on active days and standard net operation (12 nets × 6 hours/day).

Month	Days	Net-Hours	Total Cap	Banded	Recaps	Species	B/100h
Jan	1	72.0	71	45	26	8	98.6
Feb	3	216.0	129	58	71	11	59.7
Mar	3	216.0	129	54	75	10	59.7
Apr	12	864.0	179	144	35	22	20.7
May	31	2232.0	1173	880	293	66	52.6
Jun	18	1296.0	706	632	74	47	54.5
Jul	11	792.0	558	475	83	46	70.5
Aug	29	2088.0	780	655	125	54	37.4
Sep	28	2016.0	1251	1068	183	65	62.1
Oct	28	2016.0	1148	949	199	43	56.9
Nov	12	864.0	404	284	120	20	46.8

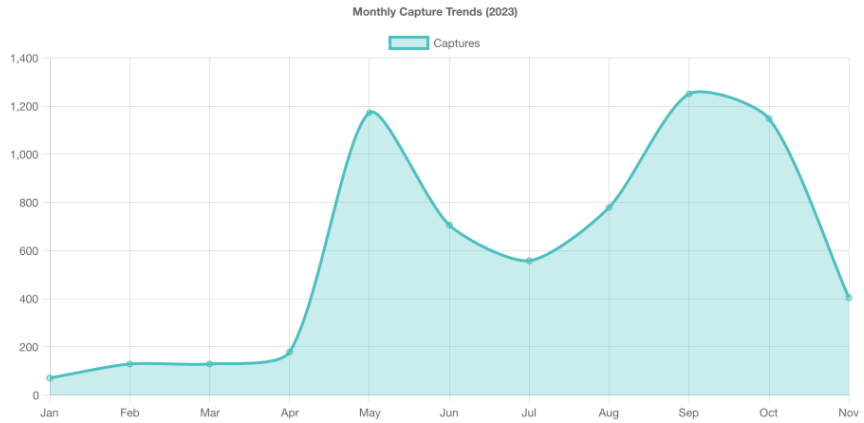


Figure 1. Monthly capture totals for 2023

Sex Ratios by Species (ne10)

Species	Male	Female	Unknown	M:F	n
WTSP	0	0	716	N/A	716
TRES	0	0	382	N/A	382
RCKI	0	0	358	N/A	358
SCJU	0	0	345	N/A	345
BCCH	0	0	316	N/A	316
MAWA	0	0	289	N/A	289
AMGO	0	0	265	N/A	265
SOSP	0	0	235	N/A	235
TEWA	0	0	235	N/A	235
AMRE	0	0	212	N/A	212

Recaptures and Returns

Recapture data provides valuable information on site fidelity, local movements, and minimum longevity. Returns represent birds banded in previous years and recaptured in 2023.

Longevity Records

Species	Recaps	Min Days	Avg Days	Max Days	Max Years
BCCH	4501	1	266	3382	9.26
SOSP	1888	1	238	2812	7.70
WTSP	1668	1	16	757	2.07
GRCA	1284	1	132	2633	7.21
SNBU	1202	1	140	2184	5.98
RCKI	1068	1	3	43	0.12
YEWA	920	1	426	2864	7.84
COYE	840	1	293	3259	8.92
HETH	702	1	8	367	1.00
SCJU	702	1	115	2533	6.93
MYWA	683	1	7	721	1.97
AMGO	661	1	248	2780	7.61

Net Location Efficiency

Net	Captures	Species	New	Recaps	Recap %
E2	430	52	377	47	10.9%
C1	398	56	326	60	15.1%
H2	394	50	336	54	13.7%
E1	393	52	331	51	13.0%
B3	366	50	279	73	19.9%
H1	339	49	287	45	13.3%
C2	335	54	263	57	17.0%
N1	316	51	238	68	21.5%
A2	316	49	258	50	15.8%
B2	314	49	230	75	23.9%

Returns – Spring Migration

List of returns captured during the 2023 spring migration monitoring, sorted by time elapsed since original banding.

Band #	Species	Age/Sex 2023	Age/Sex Band	Banding	Prev. Cap	2023	Time Elapsed
2501-10272	HAWO	8-4	2-4	8 Aug 2014	25 May 2021	24 May	8y 9m 1d
2650-45645	BCCH	6-0	2-0	11 Jul 2015	19 Dec 2018	17 Apr	7y 9m 17d
1253-62933	PIWO	8-5	2-5	4 Nov 2015	28 May 2018	30 May	7y 6m 4d
2641-17954	RWBL	1-5	5-5	1 May 2016	12 May 2016	11 May	7y 16d
2741-62949	SOSP	1-0	1-0	18 Sept 2016	14 May 2022	2 May	6y 7m 17d
1803-09942	COGR	1-4	5-4	28 Apr 2017	14 Jul 2021	8 May	6y 11d
2740-77820	AMGO	1-5	2-5	23 Nov 2017	30 Oct 2018	13 Nov	5y 11m 21d
2810-34506	WAVI	6-0	1-5	3 Jul 2017	3 Jul 2017	19 May	5y 10m 16d
2471-50080	DOWO	8-4	2-4	12 Aug 2018	20 Aug 2022	28 Oct	5y 2m 13d
2820-67702	WAVI	6-0	6-0	11 May 2018	12 May 2022	11 May	5y 26d
2810-34538	COYE	6-4	5-4	24 Jun 2018	23 May 2022	14 May	4y 10m 15d
2880-02396	COYE	6-4	6-4	2 May 2019	4 May 2021	8 May	4y 27d
2651-88099	RWBL	6-5	1-5	12 May 2019	18 Jun 2022	12 May	4y 21d
2880-02870	YEWA	6-5	6-5	26 May 2019	17 May 2021	18 May	3y 11m 13d
2880-02657	YEWA	6-4	5-4	23 May 2019	5 Jul 2022	13 May	3y 11m 11d
1513-23535	COGR	1-5	5-5	6 Jun 2019	6 Jun 2019	26 May	3y 11m 10d
2651-91319	RWBL	6-5	5-5	21 May 2019	29 Apr 2022	29 Apr	3y 11m 29d
2830-86233	AMRE	6-4	1-4	31 Jul 2019	31 May 2022	18 May	3y 9m 7d
2781-53403	REVI	6-0	2-0	25 Aug 2019	31 Aug 2020	26 May	3y 9m 20d
2731-16820	RBGR	1-5	1-5	22 Aug 2019	18 Jun 2021	16 May	3y 8m 13d
2920-05079	HOWR	1-4	2-0	6 Sept 2019	15 May 2022	28 May	3y 8m 10d
2920-05113	COYE	6-4	1-4	11 Sept 2019	6 Jul 2021	16 May	3y 8m 23d
2791-60958	SOSP	1-4	5-4	18 Jun 2020	29 May 2022	6 May	2y 10m 2d
2830-86348	CSWA	6-4	5-4	12 Jul 2020	28 Jun 2022	22 May	2y 10m 24d
2920-66075	EAPH	6-0	2-0	24 Aug 2020	28 Jun 2022	14 May	2y 8m 3d
2981-26448	SOSP	0-0	5-0	17 Apr 2021	30 May 2022	11 Oct	2y 5m 7d
2981-26382	WBNU	6-4	1-4	27 Oct 2020	15 May 2022	21 Apr	2y 5m 6d
2960-14158	BCCH	1-0	2-0	18 Aug 2021	16 Oct 2022	2 Nov	2y 2m 26d
2981-51572	DOWO	6-5	2-5	15 Aug 2021	18 May 2022	17 Sept	2y 1m 13d
2981-26485	SOSP	1-4	5-0	30 Apr 2021	11 May 2022	17 May	2y 27d
2981-26494	SOSP	1-5	5-0	2 May 2021	7 Jun 2022	17 May	2y 25d
2991-02808	RWBL	6-5	5-5	24 Apr 2021	4 May 2022	5 May	2y 21d
2920-66792	HOWR	1-0	1-0	16 May 2021	5 Aug 2022	24 May	2y 18d
2920-66744	CHSP	6-4	5-4	13 May 2021	28 May 2022	15 May	2y 12d
2981-51155	WBNU	6-4	6-4	27 May 2021	27 May 2021	26 May	1y 12m 9d

Total spring returns: 84 birds. Longest return: 8 years 9 months 1 day

Returns – MAPS/Breeding Season

List of returns captured during the 2023 MAPS breeding season, sorted by time elapsed.

Band #	Species	Age/Sex 2023	Age/Sex Band	Banding	Prev. Cap	2023	Time Elapsed
2641-17716	RBGR	6-5	5-5	2 Jul 2016	13 May 2022	29 Jun	6y 12m 3d
2771-73243	VEER	6-5	5-5	7 Jun 2019	17 Jul 2022	24 Jul	4y 1m 8d
2651-82519	GRCA	6-4	5-0	16 Jun 2019	4 Jun 2022	18 Jul	4y 1m 23d
2771-73244	SOSP	6-4	5-4	7 Jun 2019	4 Jun 2022	8 Jun	4y 22d
2880-03113	TRFL	6-0	5-0	7 Jun 2019	14 Jul 2020	8 Jun	4y 22d
2771-73257	VEER	6-4	6-4	16 Jun 2019	15 Jun 2021	8 Jun	3y 11m 13d
2791-43108	VEER	6-4	2-0	31 Jul 2019	13 Aug 2019	19 Jul	3y 11m 9d
2920-04906	AMGO	6-4	5-4	11 Jun 2020	11 Jun 2020	29 Jul	3y 1m 3d
2920-04983	COYE	6-4	5-4	3 Jul 2020	11 Jun 2022	18 Jul	3y
2920-04921	COYE	6-4	6-4	12 Jun 2020	21 Jul 2021	24 Jun	3y 27d
2920-62918	COYE	6-5	6-5	14 Jul 2020	3 Jul 2021	18 Jul	3y 19d
2791-60949	SOSP	1-5	5-5	16 Jun 2020	11 Jul 2021	8 Jun	2y 11m 7d
2920-04977	YEWA	6-4	6-4	3 Jul 2020	24 Jun 2022	24 Jun	2y 11m 6d
2791-60967	SOSP	1-4	1-4	25 Jun 2020	25 Jun 2020	8 Jun	2y 11m 28d
2920-62915	BCCH	6-0	2-0	14 Jul 2020	14 Jul 2020	24 Jun	2y 11m 25d
2781-53765	OVEN	6-0	2-0	7 Aug 2020	17 Aug 2020	13 Jul	2y 11m 20d
2791-60996	VEER	6-4	5-4	14 Jul 2020	24 Jun 2022	8 Jun	2y 10m 9d
1462-00680	BLJA	1-0	2-0	12 Aug 2021	20 Oct 2022	2 Nov	2y 2m 2d
2781-53650	SWSP	6-4	5-4	15 Jun 2021	15 Jun 2021	24 Jul	2y 1m 19d
7100-77140	RTHU	1-5	1-5	16 May 2021	16 May 2021	13 Jun	2y 8d
2920-62995	COYE	6-4	6-4	5 Jun 2021	5 Jun 2021	18 Jun	2y 23d
2991-02906	RWBL	1-5	5-5	26 May 2021	26 May 2021	5 Jun	2y 20d
2981-51324	VEER	6-4	5-4	11 Jul 2021	11 Jul 2021	18 Jul	2y 17d
2651-91470	GRCA	6-4	5-4	3 Jul 2021	3 Jul 2021	7 Jul	2y 14d
2920-67116	TRFL	1-4	1-0	22 Jun 2021	22 Jun 2021	24 Jun	2y 12d
2651-91495	GRCA	6-5	5-5	21 Jul 2021	21 Jul 2021	18 Jul	1y 12m 7d
2950-32208	CSWA	6-4	5-4	22 Jun 2021	4 Jun 2022	18 Jun	1y 12m 6d
2791-61566	SOSP	1-4	1-4	15 Jun 2021	15 Jun 2021	8 Jun	1y 11m 3d
2920-67105	COYE	6-4	5-4	15 Jun 2021	15 Jun 2021	8 Jun	1y 11m 3d
2950-32215	CSWA	6-4	5-4	3 Jul 2021	4 Jun 2022	18 Jun	1y 11m 25d
2871-28675	REVI	6-4	1-0	30 Jul 2021	30 Jul 2021	13 Jul	1y 11m 23d
2981-51548	DOWO	7-5	2-5	10 Aug 2021	16 Oct 2022	19 Jul	1y 11m 18d
2960-14575	AMGO	6-5	6-5	25 Mar 2022	25 Mar 2022	29 Jul	1y 4m 11d
2960-36394	WAVI	1-0	5-0	12 May 2022	12 May 2022	19 Jul	1y 2m 13d
1462-02036	RWBL	6-4	6-4	25 Apr 2022	25 Apr 2022	13 Jun	1y 1m 24d

Total MAPS returns: 55 birds. Longest return: 6 years 12 months 3 days

Returns – Fall Migration

List of returns captured during the 2023 fall migration monitoring, sorted by time elapsed.

Band #	Species	Age/Sex 2023	Age/Sex Band	Banding	Prev. Cap	2023	Time Elapsed
2691-45623	DOWO	8-4	2-4	3 Jul 2015	8 Nov 2022	9 Nov	8y 4m 21d
2521-95297	REVI	1-4	1-0	15 Aug 2016	29 Aug 2019	19 Aug	7y 10d
2561-09493	BAOR	6-5	2-5	1 Aug 2016	25 Aug 2021	5 Aug	7y 10d
2521-74073	REVI	1-0	6-0	3 Jul 2017	5 Jul 2022	6 Aug	6y 1m 5d
2810-34609	BCCH	1-0	2-0	8 Aug 2017	24 Oct 2022	19 Aug	6y 12d
2740-77820	AMGO	1-5	2-5	23 Nov 2017	30 Oct 2018	13 Nov	5y 11m 21d
2471-50080	DOWO	8-4	2-4	12 Aug 2018	20 Aug 2022	28 Oct	5y 2m 13d
2471-50082	VEER	1-0	1-0	12 Aug 2018	5 Jul 2022	2 Sept	5y 17d
2830-68086	CSWA	1-4	1-4	16 Aug 2018	9 Aug 2020	5 Sept	5y 16d
2930-10060	AMRE	1-5	2-0	17 Aug 2019	17 Aug 2019	19 Sept	4y 1m 24d
2631-76182	REVI	1-5	1-5	2 Aug 2019	2 Aug 2019	2 Aug	4y 21d
2920-62802	AMGO	1-5	1-5	22 Nov 2019	25 Nov 2019	14 Nov	3y 11m 13d
2781-53371	REVI	1-0	2-0	19 Aug 2019	10 Aug 2021	10 Aug	3y 11m 12d
2281-72792	DOWO	8-5	5-5	25 Nov 2019	7 Aug 2022	13 Nov	3y 11m 9d
2281-72792	DOWO	8-5	5-5	25 Nov 2019	7 Aug 2022	13 Nov	3y 11m 9d
2920-55046	BCCH	1-0	2-0	2 Nov 2019	19 Nov 2021	18 Oct	3y 11m 6d
1372-81847	BLJA	1-0	2-0	4 Sept 2020	28 May 2022	18 Oct	3y 1m 29d
2781-53628	REVI	1-0	5-0	21 Jul 2020	21 Jul 2022	7 Aug	3y 2d
2920-66387	SCJU	1-4	2-4	24 Oct 2020	26 Oct 2021	9 Nov	3y 1d
2920-66636	BCCH	1-0	5-0	22 Feb 2021	2 Mar 2021	11 Nov	2y 8m 2d
2920-66703	AMGO	6-4	5-4	17 Apr 2021	17 Apr 2021	9 Nov	2y 6m 6d
2981-26448	SOSP	0-0	5-0	17 Apr 2021	30 May 2022	11 Oct	2y 5m 7d
2501-44983	HAWO	8-4	8-4	6 May 2021	2 Aug 2021	24 Oct	2y 5m 1d
1462-00680	BLJA	1-0	2-0	12 Aug 2021	20 Oct 2022	2 Nov	2y 2m 2d
2871-19294	REVI	1-0	1-0	31 May 2021	31 May 2021	18 Aug	2y 2m 29d
2960-14158	BCCH	1-0	2-0	18 Aug 2021	16 Oct 2022	2 Nov	2y 2m 26d
2981-51572	DOWO	6-5	2-5	15 Aug 2021	18 May 2022	17 Sept	2y 1m 13d
2920-67076	BCCH	1-0	2-0	2 Sept 2021	8 Nov 2022	30 Sept	2y 8d
2950-32410	AMRE	1-4	2-4	15 Aug 2021	15 Aug 2021	7 Sept	2y 3d
2871-28749	REVI	1-0	1-0	19 Aug 2021	19 Aug 2021	26 Aug	2y 17d
2950-32431	CSWA	1-4	1-4	17 Aug 2021	13 Aug 2022	20 Aug	2y 13d
2960-14175	AMGO	1-5	6-5	21 Aug 2021	21 Aug 2021	9 Aug	1y 11m 28d
2960-14570	SCJU	1-4	5-4	9 Feb 2022	1 Nov 2022	11 Nov	1y 9m 10d
2960-14572	BCCH	1-0	5-0	9 Feb 2022	9 Feb 2022	11 Nov	1y 9m 10d
2960-14567	BCCH	1-0	5-0	9 Feb 2022	9 Feb 2022	28 Oct	1y 8m 26d

Total fall returns: 53 birds. Longest return: 8 years 4 months 21 days

Net Usage and Capture Rates

Analysis of net efficiency and capture rates by net location. Capture rates are expressed as birds per 100 net-hours. Shaded rows indicate subtotals for grouped net locations.

Net	Hours Open	New Captures	Returns + Repeats	Total Captures	Birds/100h New	Birds/100h Total
1	24.0	11	0	11	45.8	45.8
01	42.0	81	25	106	192.9	252.4
2	24.0	9	0	9	37.5	37.5
02	42.0	55	8	63	131.0	150.0
3	6.0	1	0	1	16.7	16.7
03	42.0	28	9	37	66.7	88.1
4	6.0	1	0	1	16.7	16.7
04	42.0	18	6	24	42.9	57.1
5	12.0	2	0	2	16.7	16.7
05	36.0	28	9	37	77.8	102.8
6	6.0	1	0	1	16.7	16.7
06	30.0	5	5	10	16.7	33.3
7	12.0	2	0	2	16.7	16.7
07	42.0	28	7	35	66.7	83.3
8	12.0	3	0	3	25.0	25.0
08	36.0	9	4	13	25.0	36.1
9	12.0	2	0	2	16.7	16.7
09	42.0	11	3	14	26.2	33.3
10	42.0	25	4	29	59.5	69.0
11	30.0	47	1	48	156.7	160.0
12	18.0	2	1	3	11.1	16.7
- TOTAL	**1008.0**	**369**	**82**	**451**	**36.6**	**44.7**
A1	474.0	117	22	139	24.7	29.3
A2	624.0	258	58	316	41.3	50.6
A - TOTAL	**1380.0**	**375**	**80**	**455**	**27.2**	**33.0**
B	6.0	1	0	1	16.7	16.7
B2	558.0	230	84	314	41.2	56.3
B3	612.0	279	87	366	45.6	59.8
B - TOTAL	**2106.0**	**510**	**171**	**681**	**24.2**	**32.3**
C1	678.0	326	72	398	48.1	58.7
C2	582.0	263	72	335	45.2	57.6
C - TOTAL	**1488.0**	**589**	**144**	**733**	**39.6**	**49.3**
D	6.0	2	0	2	33.3	33.3
D1	498.0	155	40	195	31.1	39.2
D2	426.0	103	26	129	24.2	30.3
D3	462.0	130	36	166	28.1	35.9
D4	342.0	83	20	103	24.3	30.1
D - TOTAL	**3660.0**	**473**	**122**	**595**	**12.9**	**16.3**
E1	660.0	331	62	393	50.2	59.5
E2	672.0	377	53	430	56.1	64.0
E - TOTAL	**1560.0**	**708**	**115**	**823**	**45.4**	**52.8**
F	6.0	1	0	1	16.7	16.7
G	6.0	2	0	2	33.3	33.3
H1	606.0	287	52	339	47.4	55.9
H2	636.0	336	58	394	52.8	61.9
H - TOTAL	**1464.0**	**623**	**110**	**733**	**42.6**	**50.1**

HT	24.0	11	0	11	45.8	45.8
I	6.0	2	0	2	33.3	33.3
J	6.0	1	0	1	16.7	16.7
L	18.0	3	0	3	16.7	16.7
M	6.0	3	0	3	50.0	50.0
M1	42.0	9	6	15	21.4	35.7
M2	42.0	27	8	35	64.3	83.3
M3	24.0	6	4	10	25.0	41.7
M4	24.0	3	2	5	12.5	20.8
M5	42.0	49	13	62	116.7	147.6
M6	30.0	5	7	12	16.7	40.0
M7	48.0	16	16	32	33.3	66.7
M8	24.0	6	5	11	25.0	45.8
M9	36.0	9	4	13	25.0	36.1
M - TOTAL	**540.0**	**133**	**65**	**198**	**24.6**	**36.7**
N	12.0	2	0	2	16.7	16.7
N1	606.0	238	78	316	39.3	52.1
N3	564.0	208	38	246	36.9	43.6
N - TOTAL	**2052.0**	**448**	**116**	**564**	**21.8**	**27.5**
O1	66.0	13	1	14	19.7	21.2
O2	60.0	17	0	17	28.3	28.3
O3	72.0	17	0	17	23.6	23.6
O4	90.0	26	2	28	28.9	31.1
O6	42.0	11	2	13	26.2	31.0
O - TOTAL	**690.0**	**84**	**5**	**89**	**12.2**	**12.9**
P	12.0	3	0	3	25.0	25.0
Q	6.0	1	0	1	16.7	16.7
R	6.0	2	0	2	33.3	33.3
T	12.0	5	0	5	41.7	41.7
U	12.0	2	0	2	16.7	16.7
V	6.0	1	0	1	16.7	16.7
V3	84.0	98	78	176	116.7	209.5
V4	84.0	111	98	209	132.1	248.8
V5	84.0	91	87	178	108.3	211.9
V - TOTAL	**360.0**	**301**	**263**	**564**	**83.6**	**156.7**
X	6.0	1	0	1	16.7	16.7
GRAND TOTAL	**10608.0**	**4647**	**1273**	**5920**	**43.8**	**55.8**

[1] – Total captures include new captures, returns, repeats, and foreign recaptures. Net hours estimated at 6 hours per active day per net.

Morphometric Measurements

Average weight and wing chord measurements for species with adequate sample sizes (ne10). Standard deviation (SD) indicates variation within each species.

Species	Avg Wt (g)	Wt SD	Wt Range	Avg Wing	Wing SD	Wing Range	n
WTSP	25.8	2.3	8.7-33.9	70.4	2.7	63-78	711
RCKI	6.5	0.5	5.3-9.1	56.5	2.0	51-62	357
SCJU	19.1	1.8	12.0-25.9	73.7	2.5	67-81	343
BCCH	11.2	0.9	8.9-19.9	64.1	2.1	59-69	311
MAWA	8.4	0.6	6.7-10.3	57.3	1.9	53-62	288
AMGO	13.3	1.3	10.9-28.5	70.2	2.0	65-76	261
TEWA	10.4	1.1	8.5-13.9	61.4	4.6	1-69	234
SOSP	20.2	1.6	15.5-24.6	63.2	2.3	56-71	227
AMRE	7.9	0.4	6.2-9.2	60.3	2.0	56-66	211
SWTH	31.1	1.9	27.1-36.1	95.3	3.2	86-104	191
GRCA	36.8	2.8	32.0-48.6	87.8	2.6	79-94	142
REVI	17.1	1.3	14.1-21.9	77.1	2.8	68-83	131
YEWA	9.5	0.6	8.3-12.2	60.2	2.4	53-65	131
NSWO	94.2	8.3	75.5-115.1	136.3	4.3	126-148	128
AMRO	82.2	7.1	61.0-99.9	124.9	4.0	110-137	117
COYE	10.9	6.1	7.9-70.9	53.4	2.0	49-59	98
NOCA	44.6	4.5	19.8-56.2	89.9	3.1	84-97	96
OVEN	18.8	1.8	8.5-21.5	72.0	2.6	67-78	95
CSWA	9.5	0.7	4.4-10.9	61.4	2.3	56-67	95
NOWA	17.2	1.6	10.8-20.6	73.0	2.7	66-79	91

Weight by Age and Sex (ne20)

Species	Male	Female	HY	AHY+	n
WTSP	N/A	N/A	N/A	N/A	711
RCKI	N/A	N/A	N/A	N/A	357
SCJU	N/A	N/A	N/A	N/A	343
BCCH	N/A	N/A	N/A	N/A	311
MAWA	N/A	N/A	N/A	N/A	288
AMGO	N/A	N/A	N/A	N/A	261
TEWA	N/A	N/A	N/A	N/A	234
SOSP	N/A	N/A	N/A	N/A	228
AMRE	N/A	N/A	N/A	N/A	211
SWTH	N/A	N/A	N/A	N/A	191
GRCA	N/A	N/A	N/A	N/A	143
YEWA	N/A	N/A	N/A	N/A	132

Body Condition Index (Weight/Wing)

Species	Avg BCI	CV (%)	Avg Wt	Avg Wing	n
WTSP	36.70	7.9	25.8	70.4	711
RCKI	11.57	7.4	6.5	56.5	357
SCJU	25.85	8.5	19.1	73.7	343
BCCH	17.41	7.3	11.2	64.1	311
MAWA	14.70	6.8	8.4	57.3	288
AMGO	18.97	9.4	13.3	70.2	261
TEWA	20.89	294.6	10.4	61.4	234

SOSP	31.88	7.1	20.2	63.2	227
AMRE	13.07	5.3	7.9	60.3	211
SWTH	32.60	5.8	31.1	95.3	191

BCI = Body Condition Index (weight/wing × 100). CV = Coefficient of Variation.

Long-term Population Trends

Multi-year data allows assessment of population trends and changes in species composition over time. The following tables summarize key metrics across recent years of monitoring.

Annual Summary (Last 10 Years)

Year	Total	Species	New	Returns	Y:A
2016	9,268	109	7,541	264	0.00
2017	7,945	94	6,613	206	0.00
2018	8,417	112	6,850	266	0.00
2019	9,203	117	7,696	222	0.00
2020	7,262	100	6,101	188	0.00
2021	10,521	105	8,848	252	0.00
2022	9,070	106	7,703	277	0.00
2023	6,528	100	5,244	241	0.00
2024	2,088	77	1,553	128	0.00
NaN	91	2	0	0	0.00

Capture Effort Analysis

Year	Days	Total	Per Day	Spp/Day
2016	238	9,268	38.94	0.46
2017	210	7,945	37.83	0.45
2018	226	8,417	37.24	0.5
2019	228	9,203	40.36	0.51
2020	197	7,262	36.86	0.51
2021	254	10,521	41.42	0.41
2022	242	9,070	37.48	0.44
2023	176	6,528	37.09	0.57
2024	63	2,088	33.14	1.22
NaN	1	91	91	2

Species Diversity Analysis

Species diversity indices provide quantitative measures of community structure. The Shannon diversity index (H') accounts for both species richness and evenness, with higher values indicating more diverse and stable communities.

Diversity Indices Over Time

Year	Richness	Shannon H'	Evenness	Captures
2016	109	3.407	0.726	9,268
2017	94	3.259	0.717	7,945
2018	112	3.637	0.771	8,417
2019	117	3.626	0.761	9,203
2020	100	3.326	0.722	7,262
2021	105	3.419	0.735	10,521
2022	106	3.325	0.713	9,070
2023	100	3.731	0.81	6,528
2024	77	3.062	0.705	2,088
NaN	2	0.641	0.925	91

Top Species Trends

1. SNBU

2018	2019	2020	2021	2022	2023	2024	NaN
1417	1876	1766	2620	2452	0	0	0

2. WTSP

2018	2019	2020	2021	2022	2023	2024	NaN
491	461	356	706	700	716	150	0

3. RCKI

2018	2019	2020	2021	2022	2023	2024	NaN
422	423	339	602	392	358	600	0

Complete Species List (2023)

A total of 100 species were recorded during the 2023 monitoring season. The following table lists all species in order of abundance.

Species	n	Species	n
WTSP	716	LISP	20
TRES	382	CHSP	19
RCKI	358	COGR	18
SCJU	345	HAWO	18
BCCH	316	WIWA	18
MAWA	289	ATSP	18
AMGO	265	BLPW	18
SOSP	235	CAWA	18
TEWA	235	WOTH	17
AMRE	212	RTHU	17
SWTH	192	EAPH	16
GRCA	144	BTBW	13
YEWA	133	YBSA	11
REVI	132	CHSW	11
NSWO	128	BHVI	10
AMRO	117	EWCS	10
AMKE	106	YSFL	9
NOCA	101	MOWA	8
COYE	100	INBU	7
OVEN	96	GCFL	7
CSWA	95	BALO	6
NOWA	91	SSHA	5
GCKI	91	BADE	5
HETH	88	WIWR	5
DOWO	87	RUBL	4
SWSP	86	BRTH	4
BAWW	72	PISI	4
RWBL	69	EAKI	4
BAOR	67	BITH	4
CEDW	64	MODO	3
VEER	61	CLSW	3
RBGR	58	FISP	3
MYWA	53	BTNW	3
EABL	51	BHCO	3
NAWA	45	SCTA	3
CMWA	43	CONI	2
YBFL	43	BLBW	2
HOWR	40	YPWA	2
WAVI	38	EATO	2
FOSP	38	BDOW	1
TRFL	37	PIWO	1

LEFL	33	RBWO	1
HOFI	33	EUST	1
BLJA	32	KILL	1
BBWA	29	BBCU	1
PUMA	26	NOPA	1
WBNU	26	GWWA	1
BRCR	25	CORE	1
GCTH	23	BANS	1
PUFI	21	PHVI	1

Acknowledgements

The McGill Bird Observatory's 2023 banding operations were made possible through the dedication of our staff, volunteers, and supporters. We extend our sincere gratitude to everyone who contributed to this season's success.

Banding Staff

Bander	Captures	Days	Species
SLS	3300	122	87
CIB	692	27	67
LAT	564	35	58
SID	365	15	58
KML	322	19	46
PAB	257	17	3
ACM	248	19	21
LNA	201	18	43
ALH	130	10	42
MPB	94	10	31

About the Observatory

The McGill Bird Observatory is a project of The Migration Research Foundation Inc., a registered charitable organization dedicated to the study and conservation of migratory birds. Located at the western tip of the Island of Montreal, the observatory has been conducting standardized migration monitoring since 2004.

McGill Bird Observatory
A project of The Migration Research Foundation Inc.
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www.migrationresearch.org
Registered Charity: 899163505RR0001

Permits and Protocols

Bird banding activities were conducted under federal and provincial scientific collection permits. All operations followed standardized protocols established by the Canadian Wildlife Service and The Institute for Bird Populations (MAPS program).

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