McGill Bird Observatory

Annual Report

2022

Migration Monitoring & MAPS Banding Station

Ste-Anne-de-Bellevue, Quebec, Canada

A project of The Migration Research Foundation Inc.

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2022 Season Overview

The 2022 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.

9,070
Total Captures

106
Species Recorded

7,703
New Bands

242
Active Days

Capture Summary

Capture Type	Count	Percentage
New Bands	7,703	84.9%
Recaptures (same season)	1,065	11.7%
Returns (previous years)	277	3.1%

Seasonal Distribution

Season	Captures	Species	Days
Spring Migration (Apr–May)	1,449	78	43
MAPS Season (Jun–Jul)	1,091	64	37
Fall Migration (Aug–Nov)	3,988	84	97

Key Highlights

- Peak capture day: Oct with the highest daily totals
- Most abundant species: SNBU (2,452 captures)
- Species diversity: 106 species recorded across all seasons
- Return rate: 3.1% 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 recorded1,449 captures of 78 species over 43 monitoring days.

1,449
Spring Captures

78
Species

1,138
New Bands

Top Spring Migrants

Species	Count	% Total	New	Recap
TEWA	213	14.7%	201	12
RCKI	129	8.9%	117	12
WTSP	106	7.3%	94	12
RWBL	87	6.0%	69	8
SOSP	59	4.1%	30	21
MAWA	59	4.1%	48	11
AMGO	56	3.9%	49	2
SWSP	52	3.6%	35	17
MYWA	44	3.0%	43	1
BCCH	35	2.4%	5	22
AMRE	32	2.2%	26	3
GRCA	31	2.1%	21	7
NOWA	28	1.9%	16	12
AMRO	27	1.9%	16	7
COGR	26	1.8%	21	2

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.

1,091	64	932
MAPS Captures	Species	New Bands

Age Distribution (Breeding Season)

Age Class	Count	Percentage
1	124	11.4%
2	267	24.5%
4	423	38.8%
5	144	13.2%
6	115	10.5%
7	4	0.4%
8	4	0.4%
Unknown	10	0.9%

Top Breeding Species

Species	Count	New	Returns
TRES	270	268	1
AMKE	101	101	0
SOSP	63	53	8
EABL	54	54	0
BCCH	47	35	3
YEWA	46	32	4
GRCA	40	30	6
COYE	40	25	8
SWSP	37	26	2
CSWA	31	21	5
AMRE	29	25	3
DOWO	27	22	2

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.

3,988
Fall Captures

84
Species

3,374
New Bands

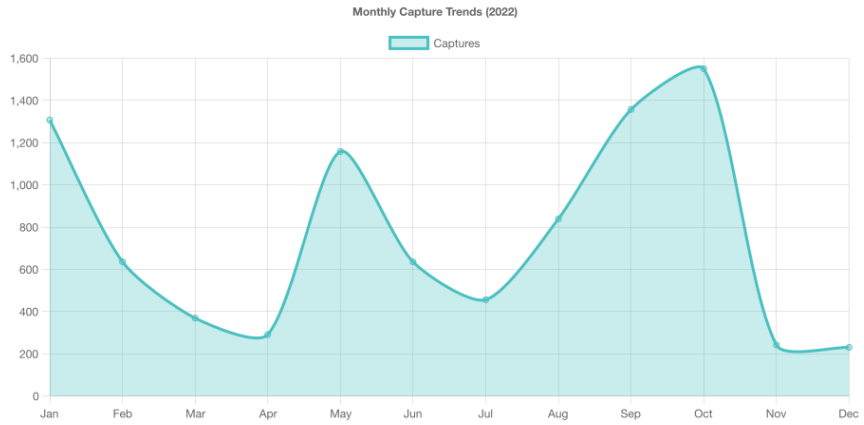


Figure 1. Monthly capture totals for 2022

Top Fall Migrants

Species	Count	% Total	New
WTSP	591	14.8%	522
BCCH	305	7.6%	213
RCKI	263	6.6%	240
SWTH	248	6.2%	205
SCJU	231	5.8%	209
MAWA	195	4.9%	176
AMGO	192	4.8%	178
HETH	172	4.3%	105
AMRO	149	3.7%	148
AMRE	142	3.6%	120
SOSP	109	2.7%	89
GCKI	97	2.4%	95

Notable Species Accounts

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

SNBU

Total: 2452 New bands: 2192 Recaptures: 230 27.0% of total

SNBU was the most abundant species during the 2022 season, representing 27.0% of all captures. The recapture rate of 9.4% indicates site fidelity during the monitoring period.

WTSP

Total: 700 New bands: 619 Recaptures: 80 7.7% of total

WTSP was the #2 most captured species during the 2022 season, representing 7.7% of all captures. The recapture rate of 11.4% indicates site fidelity during the monitoring period.

BCCH

Total: 414 New bands: 264 Recaptures: 115 4.6% of total

BCCH was the #3 most captured species during the 2022 season, representing 4.6% of all captures. The recapture rate of 27.8% indicates site fidelity during the monitoring period.

RCKI

Total: 392 New bands: 357 Recaptures: 35 4.3% of total

RCKI was the #4 most captured species during the 2022 season, representing 4.3% of all captures. The recapture rate of 8.9% indicates site fidelity during the monitoring period.

TRES

Total: 282 New bands: 275 Recaptures: 5 3.1% of total

TRES was the #5 most captured species during the 2022 season, representing 3.1% of all captures. The recapture rate of 1.8% indicates site fidelity during the monitoring period.

AMGO

Total: 280 New bands: 258 Recaptures: 15 3.1% of total

AMGO was the #6 most captured species during the 2022 season, representing 3.1% of all captures. The recapture rate of 5.4% indicates site fidelity during the monitoring period.

Complete Banding Totals by Species

Complete capture totals for all species banded during the 2022 season, including breakdown by capture type and demographics.

Species	Total	Banded	Returns	Repeats	M	F	U	HY	AHY+
SNBU	**2452**	2192	30	218	0	0	2452	0	0
WTSP	**700**	619	1	80	0	0	700	0	0
BCCH	**414**	264	35	114	0	0	414	0	0
RCKI	**392**	357	0	35	0	0	392	0	0
TRES	**282**	275	2	0	0	0	282	0	0
AMGO	**280**	258	7	15	0	0	280	0	0
TEWA	**256**	241	0	15	0	0	256	0	0
MAWA	**255**	225	0	30	0	0	255	0	0
SWTH	**255**	212	0	43	0	0	255	0	0
SCJU	**249**	224	1	24	0	0	249	0	0
SOSP	**235**	176	21	38	0	0	235	0	0
AMRE	**203**	171	7	25	0	0	203	0	0
AMRO	**191**	179	4	8	0	0	191	0	0
HETH	**183**	113	2	68	0	0	183	0	0
GRCA	**168**	110	11	47	0	0	168	0	0
SWSP	**117**	80	2	35	0	0	117	0	0
GCKI	**115**	113	0	2	0	0	115	0	0
RWBL	**102**	82	11	9	0	0	102	0	0
AMKE	**101**	101	0	0	0	0	101	0	0
NOWA	**94**	69	0	25	0	0	94	0	0
COYE	**93**	71	9	13	0	0	93	0	0
OVEN	**81**	66	5	10	0	0	81	0	0
YEWA	**81**	62	5	14	0	0	81	0	0
MYWA	**80**	75	0	5	0	0	80	0	0
REVI	**78**	54	13	11	0	0	78	0	0
NOCA	**78**	47	18	13	0	0	78	0	0
DOWO	**74**	40	17	17	0	0	74	0	0
EABL	**74**	74	0	0	0	0	74	0	0
BLJA	**72**	58	9	5	0	0	72	0	0
RBGR	**69**	55	5	9	0	0	69	0	0
CSWA	**65**	42	10	13	0	0	65	0	0
HOWR	**59**	35	11	13	0	0	59	0	0
CEDW	**59**	57	0	2	0	0	59	0	0
TRFL	**56**	52	1	3	0	0	56	0	0
FOSP	**55**	47	0	8	0	0	55	0	0

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

Complete Banding Totals by Species (continued)

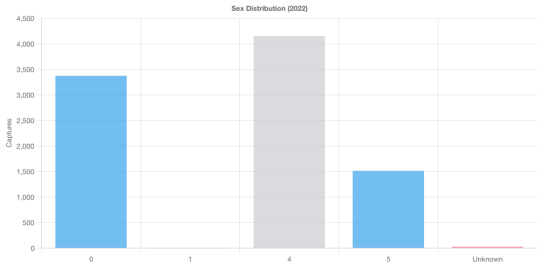
Species	Total	Banded	Returns	Repeats	M	F	U	HY	AHY+
NAWA	**52**	47	0	5	0	0	52	0	0
VEER	**51**	35	9	7	0	0	51	0	0
RTHU	**50**	46	2	2	0	0	50	0	0
COGR	**47**	41	4	2	0	0	47	0	0
BAOR	**42**	32	1	9	0	0	42	0	0
YBFL	**38**	36	0	2	0	0	38	0	0
BAWW	**34**	28	0	6	0	0	34	0	0
WIWA	**34**	29	0	5	0	0	34	0	0
PUFI	**32**	27	0	5	0	0	32	0	0
BHVI	**26**	22	0	4	0	0	26	0	0
BBWA	**26**	25	0	1	0	0	26	0	0
BANS	**26**	26	0	0	0	0	26	0	0
CAWA	**25**	24	0	1	0	0	25	0	0
WAVI	**23**	15	3	5	0	0	23	0	0
LEFL	**22**	22	0	0	0	0	22	0	0
BTBW	**21**	20	1	0	0	0	21	0	0
ATSP	**21**	20	0	1	0	0	21	0	0
BLPW	**21**	21	0	0	0	0	21	0	0
CHSP	**20**	15	1	4	0	0	20	0	0
INBU	**18**	16	2	0	0	0	18	0	0
WOTH	**17**	15	1	1	0	0	17	0	0
BRCR	**17**	15	0	2	0	0	17	0	0
EAPH	**16**	14	1	1	0	0	16	0	0
YSFL	**15**	11	1	3	0	0	15	0	0
HAWO	**15**	8	4	3	0	0	15	0	0
LISP	**14**	13	0	1	0	0	14	0	0
BALO	**13**	0	0	0	0	0	13	0	0
BRTH	**13**	10	1	2	0	0	13	0	0
HOFI	**13**	13	0	0	0	0	13	0	0
BADE	**12**	0	0	0	0	0	12	0	0
WBNU	**12**	6	3	3	0	0	12	0	0
PISI	**11**	10	0	1	0	0	11	0	0
SSHA	**10**	10	0	0	0	0	10	0	0
GCTH	**10**	10	0	0	0	0	10	0	0
MOWA	**9**	7	0	2	0	0	9	0	0
TOTALS	**9070**	**7703**	**277**	**1065**	**0**	**0**	**0**	-	-

Age and Sex Demographics

Age Distribution

Age	Count	%
0	25	0.3%
1	1155	12.7%
2	3564	39.3%
4	439	4.8%
5	2302	25.4%
6	1529	16.9%
7	14	0.2%
8	15	0.2%
Unknown	27	0.3%

Sex Distribution



Sex	Count	%
0	3376	37.2%
1	2	0.0%
4	4152	45.8%
5	1513	16.7%
Unknown	27	0.3%

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	25	1800.0	1307	1129	178	6	72.6
Feb	21	1512.0	636	583	53	8	42.1
Mar	14	1008.0	369	327	42	12	36.6
Apr	14	1008.0	291	229	62	30	28.9
May	29	2088.0	1158	909	249	73	55.5
Jun	22	1584.0	635	549	86	43	40.1
Jul	15	1080.0	456	383	73	51	42.2
Aug	31	2232.0	839	709	130	58	37.6
Sep	30	2160.0	1357	1168	189	61	62.8
Oct	31	2232.0	1550	1281	269	46	69.4
Nov	5	360.0	242	216	26	20	67.2
Dec	5	360.0	230	220	10	2	63.9

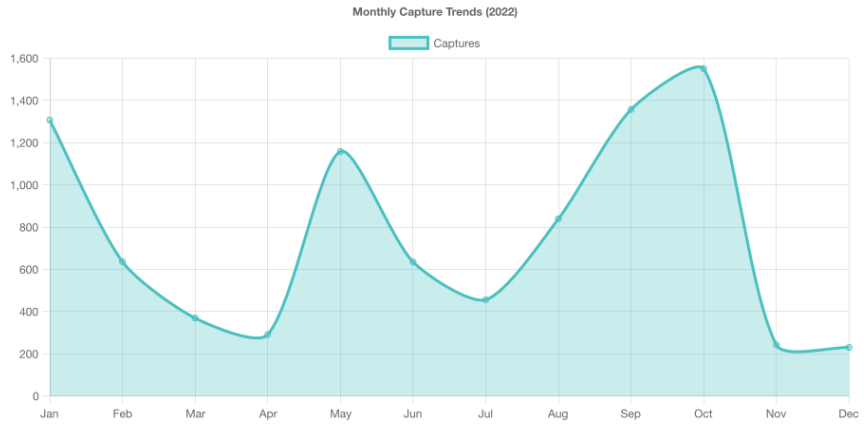


Figure 1. Monthly capture totals for 2022

Sex Ratios by Species (ne10)

Species	Male	Female	Unknown	M:F	n
SNBU	0	0	2452	N/A	2452
WTSP	0	0	700	N/A	700
BCCH	0	0	414	N/A	414
RCKI	0	0	392	N/A	392
TRES	0	0	282	N/A	282
AMGO	0	0	280	N/A	280
TEWA	0	0	256	N/A	256
MAWA	0	0	255	N/A	255
SWTH	0	0	255	N/A	255
SCJU	0	0	249	N/A	249

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 2022.

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	550	62	481	60	10.9%
H2	491	55	429	47	9.6%
H1	466	58	396	58	12.4%
C1	464	61	381	66	14.2%
N1	380	53	311	61	16.1%
C2	374	60	301	61	16.3%
A2	340	55	282	52	15.3%
E1	338	44	278	48	14.2%
B3	329	54	266	53	16.1%
B2	291	49	234	51	17.5%

Returns – Spring Migration

List of returns captured during the 2022 spring migration monitoring, sorted by time elapsed since original banding.

Band #	Species	Age/Sex 2022	Age/Sex Band	Banding	Prev. Cap	2022	Time Elapsed
2561-09311	NOCA	1-4	2-4	20 Nov 2013	28 Apr 2021	23 May	8y 6m 16d
1433-37760	COGR	1-4	1-4	22 May 2015	31 May 2019	27 May	7y 12d
1433-37755	COGR	1-4	1-4	13 May 2015	13 May 2015	16 May	7y 10d
1372-11211	BLJA	6-0	5-0	26 Apr 2016	8 May 2018	2 May	6y 7d
2641-17716	RBGR	6-5	5-5	2 Jul 2016	12 May 2021	13 May	5y 10m 11d
2631-76237	INBU	6-4	2-4	7 Sept 2016	17 Aug 2021	31 May	5y 8m 22d
2741-62949	SOSP	1-4	1-0	18 Sept 2016	27 Apr 2021	14 May	5y 7m 24d
2810-34609	BCCH	1-0	2-0	8 Aug 2017	14 Oct 2021	24 Oct	5y 2m 13d
2651-66776	RBGR	6-4	5-4	17 May 2017	17 May 2021	11 May	4y 12m 20d
2810-33799	BCCH	6-0	2-0	31 Jul 2017	20 May 2021	23 Apr	4y 8m 17d
2651-66977	NOCA	1-4	0-4	15 Oct 2017	31 Jul 2021	10 May	4y 6m 18d
2810-34654	BCCH	1-0	5-0	27 Jan 2018	13 Oct 2021	14 Aug	4y 6m 10d
2471-50080	DOWO	8-4	2-4	12 Aug 2018	27 Aug 2019	20 Aug	4y 29d
2820-67702	WAVI	6-0	6-0	11 May 2018	6 Sept 2021	12 May	4y 22d
2651-67034	RWBL	6-5	5-5	12 May 2018	26 May 2018	12 May	4y 21d
2810-34538	COYE	6-4	5-4	24 Jun 2018	24 May 2021	23 May	3y 11m 19d
2791-42015	DOWO	8-5	5-5	3 May 2019	3 May 2019	13 May	3y 26d
2651-88085	RWBL	6-5	6-5	3 May 2019	2 May 2021	8 May	3y 21d
2880-02657	YEWA	6-4	5-4	23 May 2019	28 Jun 2021	19 May	2y 12m 12d
2880-02727	AMGO	6-4	5-4	23 May 2019	27 May 2019	9 May	2y 11m 2d
1372-78916	RWBL	6-4	6-4	19 May 2019	19 May 2019	29 Apr	2y 11m 26d
2651-91319	RWBL	6-5	5-5	21 May 2019	15 May 2021	29 Apr	2y 11m 24d
2830-86233	AMRE	6-4	1-4	31 Jul 2019	24 May 2021	31 May	2y 10m 15d
2631-76171	OVEN	6-4	1-0	1 Aug 2019	31 Jul 2021	22 May	2y 9m 5d
2281-72792	DOWO	6-5	5-5	25 Nov 2019	2 Nov 2021	7 Aug	2y 8m 26d
2920-05079	HOWR	6-4	2-0	6 Sept 2019	6 Sept 2019	15 May	2y 8m 22d
1513-23569	BLJA	6-0	2-0	20 Oct 2019	12 Aug 2021	5 May	2y 6m 28d
2920-62953	BCCH	1-0	2-0	29 Jul 2020	22 Oct 2021	20 Sept	2y 1m 3d
2791-60958	SOSP	1-0	5-4	18 Jun 2020	6 Oct 2021	30 Apr	1y 10m 21d
2410-20722	AMRE	6-4	2-4	11 Aug 2020	17 Aug 2021	22 May	1y 9m 19d
2791-62261	YBSA	8-5	6-5	31 Jul 2020	28 Jun 2021	9 May	1y 9m 17d
2981-26040	SOSP	1-0	1-5	13 Aug 2020	26 Sept 2021	21 May	1y 9m 16d
1372-81847	BLJA	6-0	2-0	4 Sept 2020	4 Sept 2020	28 May	1y 8m 1d
2920-66040	HOWR	1-0	1-5	15 Aug 2020	19 May 2021	7 May	1y 8m
2410-20809	AMRE	6-5	1-5	1 Sept 2020	1 Sept 2020	15 May	1y 8m 21d

Total spring returns: 95 birds. Longest return: 8 years 6 months 16 days

Returns – MAPS/Breeding Season

List of returns captured during the 2022 MAPS breeding season, sorted by time elapsed.

Band #	Species	Age/Sex 2022	Age/Sex Band	Banding	Prev. Cap	2022	Time Elapsed
2810-33783	BCCH	1-0	2-0	13 Nov 2016	19 Nov 2021	16 Oct	5y 11m 3d
2521-74073	REVI	1-4	6-0	3 Jul 2017	23 Jul 2021	5 Jul	5y 28d
2521-74089	REVI	6-5	5-0	29 Jul 2017	23 Aug 2019	5 Jul	4y 11m 2d
2631-99388	REVI	6-5	6-0	30 May 2018	20 Jul 2018	12 Jul	4y 1m 4d
2651-67089	NOCA	1-4	2-4	31 Jul 2018	8 Jun 2021	12 Jul	3y 11m 2d
2471-50082	VEER	6-5	1-0	12 Aug 2018	12 Aug 2018	5 Jul	3y 10m 13d
2651-87969	GRCA	6-4	1-0	12 Sept 2018	3 Aug 2019	7 Jun	3y 8m 14d
2771-73243	VEER	1-0	5-5	7 Jun 2019	21 Jul 2021	17 Jul	3y 1m 26d
2651-88099	RWBL	6-5	1-5	12 May 2019	12 May 2019	18 Jun	3y 1m 23d
2791-42060	YBSA	8-4	8-4	11 May 2019	20 Jun 2019	7 Jun	3y 13d
2651-82573	RBGR	6-4	5-4	21 Jul 2019	5 Jun 2021	25 Jul	3y 20d
2771-73241	VEER	6-4	6-4	7 Jun 2019	21 Jul 2021	4 Jun	2y 12m 13d
2771-73244	SOSP	1-4	5-4	7 Jun 2019	7 Jun 2019	4 Jun	2y 12m 13d
2810-34595	TRFL	6-0	5-0	7 Jun 2019	3 Jul 2021	4 Jun	2y 12m 13d
2880-03238	COYE	6-4	5-4	21 Jul 2019	5 Jun 2021	17 Jul	2y 12m 12d
2651-82519	GRCA	6-4	5-0	16 Jun 2019	3 Jul 2019	4 Jun	2y 11m 4d
2550-58496	AMRE	6-5	6-5	14 Jul 2019	30 Jul 2021	24 Jun	2y 11m 26d
2651-82542	WOTH	6-4	5-4	3 Jul 2019	3 Jul 2021	11 Jun	2y 11m 24d
2880-03252	COYE	6-5	5-5	21 Jul 2019	3 Jul 2021	4 Jun	2y 10m 29d
2631-76173	OVEN	6-4	6-0	1 Aug 2019	7 Sept 2020	7 Jun	2y 10m 21d
2501-44978	HAWO	8-4	8-4	12 Jun 2020	15 Jun 2021	30 Jul	2y 1m 28d
2501-44979	HAWO	8-5	7-5	25 Jun 2020	25 Jun 2020	30 Jul	2y 1m 15d
2920-04968	YEWA	1-4	6-4	25 Jun 2020	25 Jun 2020	25 Jul	2y 1m 10d
2920-04994	WAVI	1-0	5-4	4 Jul 2020	4 Jul 2020	21 Jul	2y 27d
2781-53608	REVI	1-5	1-5	3 Jul 2020	14 Jul 2020	17 Jul	2y 24d
2781-53628	REVI	1-5	5-0	21 Jul 2020	21 Jul 2020	21 Jul	2y 10d
2791-60938	SOSP	1-4	1-4	12 Jun 2020	15 Jun 2021	11 Jun	1y 12m 9d
2920-04952	YEWA	6-4	6-4	25 Jun 2020	15 Jun 2021	24 Jun	1y 12m 9d
2651-91415	GRCA	6-4	5-0	3 Jul 2020	3 Jul 2021	1 Jul	1y 12m 8d
2920-04976	COYE	6-4	6-4	3 Jul 2020	21 Jul 2021	1 Jul	1y 12m 8d
2721-86094	SWSP	6-4	1-4	16 Jun 2020	3 Jul 2020	4 Jun	1y 11m 28d
2781-53811	TRES	1-5	4-0	20 Jun 2020	20 Jun 2020	7 Jun	1y 11m 27d
2791-61545	SOSP	1-4	2-0	30 Jul 2020	30 Jul 2020	17 Jul	1y 11m 27d
2830-86348	CSWA	6-4	5-4	12 Jul 2020	31 Aug 2021	28 Jun	1y 11m 26d
2791-60996	VEER	6-4	5-4	14 Jul 2020	3 Jul 2021	24 Jun	1y 11m 20d

Total MAPS returns: 83 birds. Longest return: 5 years 11 months 3 days

Returns – Fall Migration

List of returns captured during the 2022 fall migration monitoring, sorted by time elapsed.

Band #	Species	Age/Sex 2022	Age/Sex Band	Banding	Prev. Cap	2022	Time Elapsed
2691-45623	DOWO	8-4	2-4	3 Jul 2015	2 Mar 2021	8 Nov	7y 4m 15d
2741-62860	VEER	1-0	2-0	4 Aug 2016	9 Aug 2020	12 Aug	6y 9d
2810-33783	BCCH	1-0	2-0	13 Nov 2016	19 Nov 2021	16 Oct	5y 11m 3d
2810-34609	BCCH	1-0	2-0	8 Aug 2017	14 Oct 2021	24 Oct	5y 2m 13d
2810-34654	BCCH	1-0	5-0	27 Jan 2018	13 Oct 2021	14 Aug	4y 6m 10d
2880-02119	BCCH	1-0	1-0	14 Oct 2018	29 Nov 2018	30 Oct	4y 7d
2471-50080	DOWO	8-4	2-4	12 Aug 2018	27 Aug 2019	20 Aug	4y 29d
2501-44975	HAWO	6-5	5-5	13 Mar 2019	9 Oct 2021	24 Sept	3y 6m 1d
2880-02330	BCCH	1-0	5-0	13 Mar 2019	13 Mar 2019	16 Sept	3y 6m 23d
1352-95498	BLJA	1-0	6-0	4 May 2019	4 May 2019	15 Oct	3y 5m
2791-41636	SOSP	1-5	1-0	20 Apr 2019	21 Apr 2019	2 Aug	3y 3m
2791-43113	SOSP	1-0	2-0	31 Jul 2019	15 Aug 2019	18 Oct	3y 2m 5d
1372-81704	BLJA	1-0	2-0	28 Sept 2019	18 Aug 2020	21 Oct	3y 9d
2920-05263	BCCH	1-0	2-0	8 Oct 2019	2 Nov 2021	16 Oct	3y 24d
2631-76169	REVI	1-5	2-0	31 Jul 2019	3 Aug 2021	1 Aug	3y 17d
2731-16835	NOCA	1-5	2-0	6 Sept 2019	29 Oct 2019	7 Aug	2y 11m 16d
2281-72746	DOWO	1-4	2-4	24 Oct 2019	24 Oct 2019	1 Aug	2y 9m 22d
2281-72792	DOWO	6-5	5-5	25 Nov 2019	2 Nov 2021	7 Aug	2y 8m 26d
2920-62953	BCCH	1-0	2-0	29 Jul 2020	22 Oct 2021	20 Sept	2y 1m 3d
2920-66239	BCCH	1-0	2-0	27 Sept 2020	31 May 2021	19 Oct	2y 2d
1513-23583	YSFL	6-4	2-4	21 Sept 2020	21 Sept 2020	2 Sept	1y 11m 21d
2981-25482	SOSP	1-5	2-0	6 Oct 2020	6 Oct 2020	4 Aug	1y 10m 7d
2981-26450	DOWO	6-5	5-5	17 Apr 2021	11 May 2021	24 Oct	1y 6m 15d
2981-26442	DOWO	7-4	5-4	23 Feb 2021	23 Feb 2021	17 Aug	1y 5m
2981-51117	WBNU	1-4	6-4	14 May 2021	14 May 2021	24 Oct	1y 5m 18d
2991-02936	NOCA	1-4	2-4	31 Jul 2021	9 Oct 2021	23 Oct	1y 2m 29d
2991-02892	GRCA	1-5	5-0	21 May 2021	19 Aug 2021	2 Aug	1y 2m 18d
2960-14117	AMGO	1-5	5-5	14 Aug 2021	14 Aug 2021	24 Oct	1y 2m 16d
2981-51548	DOWO	5-5	2-5	10 Aug 2021	7 Oct 2021	16 Oct	1y 2m 12d
2960-14126	BCCH	1-0	2-0	14 Aug 2021	14 Aug 2021	16 Oct	1y 2m 8d
2840-86504	BCCH	1-0	2-0	23 Jul 2021	14 Oct 2021	22 Sept	1y 2m 6d
1462-00680	BLJA	1-0	2-0	12 Aug 2021	7 Oct 2021	30 Sept	1y 1m 24d
2960-14249	BCCH	1-0	2-0	10 Sept 2021	23 Oct 2021	14 Oct	1y 1m 9d
2960-14158	BCCH	1-0	2-0	18 Aug 2021	19 Nov 2021	15 Sept	1y 3d
2981-51503	VEER	1-0	2-0	31 Jul 2021	1 Aug 2021	24 Aug	1y 29d

Total fall returns: 56 birds. Longest return: 7 years 4 months 15 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
01	42.0	74	13	87	176.2	207.1
02	42.0	52	17	69	123.8	164.3
03	42.0	28	10	38	66.7	90.5
04	36.0	11	5	16	30.6	44.4
05	42.0	13	10	23	31.0	54.8
06	30.0	10	2	12	33.3	40.0
07	42.0	24	7	31	57.1	73.8
08	30.0	3	5	8	10.0	26.7
09	30.0	7	1	8	23.3	26.7
10	42.0	28	6	34	66.7	81.0
11	42.0	32	5	37	76.2	88.1
12	12.0	1	1	2	8.3	16.7
- TOTAL	**504.0**	**283**	**82**	**365**	**56.2**	**72.4**
A1	570.0	155	40	195	27.2	34.2
A2	642.0	282	58	340	43.9	53.0
A - TOTAL	**1500.0**	**437**	**98**	**535**	**29.1**	**35.7**
B	6.0	0	1	1	0.0	16.7
B2	642.0	234	57	291	36.4	45.3
B3	648.0	266	63	329	41.0	50.8
B - TOTAL	**2322.0**	**500**	**121**	**621**	**21.5**	**26.7**
C1	714.0	381	83	464	53.4	65.0
C2	720.0	301	73	374	41.8	51.9
C - TOTAL	**1596.0**	**682**	**156**	**838**	**42.7**	**52.5**
D1	486.0	158	42	200	32.5	41.2
D2	498.0	152	29	181	30.5	36.3
D3	486.0	178	46	224	36.6	46.1
D4	474.0	140	26	166	29.5	35.0
D - TOTAL	**3024.0**	**628**	**143**	**771**	**20.8**	**25.5**
E1	624.0	278	60	338	44.6	54.2
E2	726.0	481	69	550	66.3	75.8
E - TOTAL	**1572.0**	**759**	**129**	**888**	**48.3**	**56.5**
H1	708.0	396	70	466	55.9	65.8
H2	702.0	429	62	491	61.1	69.9
H - TOTAL	**1596.0**	**825**	**132**	**957**	**51.7**	**60.0**
HT	78.0	27	4	31	34.6	39.7
K	6.0	0	1	1	0.0	16.7
M1	30.0	5	2	7	16.7	23.3
M2	42.0	13	8	21	31.0	50.0
M3	42.0	8	9	17	19.0	40.5
M4	24.0	3	1	4	12.5	16.7
M5	42.0	75	11	86	178.6	204.8
M6	24.0	4	4	8	16.7	33.3
M7	42.0	31	10	41	73.8	97.6
M8	24.0	2	2	4	8.3	16.7
M9	30.0	8	4	12	26.7	40.0
M - TOTAL	**378.0**	**149**	**51**	**200**	**39.4**	**52.9**

N1	684.0	311	69	380	45.5	55.6
N3	546.0	226	54	280	41.4	51.3
N - TOTAL	**1512.0**	**537**	**123**	**660**	**35.5**	**43.7**
O	6.0	0	1	1	0.0	16.7
T	114.0	164	0	164	143.9	143.9
U	12.0	0	2	2	0.0	16.7
V	6.0	0	2	2	0.0	33.3
V3	18.0	57	15	72	316.7	400.0
V4	18.0	43	3	46	238.9	255.6
V5	18.0	42	12	54	233.3	300.0
V - TOTAL	**96.0**	**142**	**32**	**174**	**147.9**	**181.3**
GRAND TOTAL	**10884.0**	**5133**	**1075**	**6208**	**47.2**	**57.0**

[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
SNBU	36.9	2.4	4.2-46.9	108.0	2.8	97-117	2391
WTSP	26.2	2.4	2.9-36.6	71.3	2.7	61-78	696
BCCH	10.8	0.7	7.8-12.7	63.6	2.1	57-68	407
RCKI	6.6	0.6	5.1-8.5	57.0	1.9	52-62	391
AMGO	13.0	0.8	11.0-15.3	69.7	2.1	59-76	277
MAWA	8.3	0.6	7.0-10.4	57.4	2.1	51-64	254
TEWA	10.3	1.2	7.4-14.2	61.4	2.2	55-67	254
SWTH	32.1	19.5	21.8-339.0	95.5	3.4	82-104	252
SCJU	19.1	1.3	16.2-23.2	74.0	2.6	68-81	247
SOSP	20.5	1.6	17.3-26.4	63.3	2.4	57-70	223
AMRE	7.9	0.5	6.7-9.3	59.8	2.1	54-66	200
AMRO	80.1	5.4	67.8-95.0	124.6	4.0	116-136	182
HETH	30.5	2.0	26.1-36.6	88.8	2.8	81-98	181
GRCA	37.1	2.6	18.2-45.0	87.3	2.7	81-98	167
SWSP	16.5	1.3	13.8-19.4	58.6	2.0	53-62	115
GCKI	6.1	0.4	5.3-7.0	56.5	1.8	52-61	115
RWBL	54.7	13.1	21.0-82.0	107.9	11.0	67-126	99
NOWA	17.3	1.6	14.6-20.9	73.4	2.6	67-79	94
COYE	11.4	10.5	8.6-110.0	53.5	2.1	49-58	89
OVEN	19.1	1.5	15.9-25.8	72.9	2.5	68-80	80

Weight by Age and Sex (ne20)

Species	Male	Female	HY	AHY+	n
SNBU	N/A	N/A	N/A	N/A	2392
WTSP	N/A	N/A	N/A	N/A	696
BCCH	N/A	N/A	N/A	N/A	408
RCKI	N/A	N/A	N/A	N/A	391
AMGO	N/A	N/A	N/A	N/A	277
TEWA	N/A	N/A	N/A	N/A	255
MAWA	N/A	N/A	N/A	N/A	254
SWTH	N/A	N/A	N/A	N/A	253
SCJU	N/A	N/A	N/A	N/A	247
SOSP	N/A	N/A	N/A	N/A	223
AMRE	N/A	N/A	N/A	N/A	200
AMRO	N/A	N/A	N/A	N/A	182

Body Condition Index (Weight/Wing)

Species	Avg BCI	CV (%)	Avg Wt	Avg Wing	n
SNBU	34.17	6.0	36.9	108.0	2391
WTSP	36.80	7.8	26.2	71.3	696
BCCH	16.98	5.5	10.8	63.6	407
RCKI	11.56	7.8	6.6	57.0	391
AMGO	18.64	5.8	13.0	69.7	277
MAWA	14.53	6.5	8.3	57.4	254
TEWA	16.80	11.2	10.3	61.4	254

SWTH	33.65	63.2	32.1	95.5	252
SCJU	25.86	6.5	19.1	74.0	247
SOSP	32.41	7.3	20.5	63.3	223

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 (2022)

A total of 106 species were recorded during the 2022 monitoring season. The following table lists all species in order of abundance.

Species	n	Species	n
SNBU	2452	CHSP	20
WTSP	700	INBU	18
BCCH	414	WOTH	17
RCKI	392	BRCR	17
TRES	282	EAPH	16
AMGO	280	YSFL	15
TEWA	256	HAWO	15
MAWA	255	LISP	14
SWTH	255	BALO	13
SCJU	249	BRTH	13
SOSP	235	HOFI	13
AMRE	203	BADE	12
AMRO	191	WBNU	12
HETH	183	PISI	11
GRCA	168	SSHA	10
SWSP	117	GCTH	10
GCKI	115	MOWA	9
RWBL	102	PHVI	9
AMKE	101	NOPA	8
NOWA	94	PUMA	7
COYE	93	CMWA	7
OVEN	81	LALO	7
YEWA	81	GCFL	6
MYWA	80	WIWR	6
REVI	78	CHSW	6
NOCA	78	YBSA	5
DOWO	74	SAVS	5
EABL	74	BTNW	5
BLJA	72	EAWP	5
RBGR	69	HOLA	5
CSWA	65	EWCS	5
HOWR	59	SNOW	4
CEDW	59	PEFA	3
TRFL	56	RUBL	3
FOSP	55	OCWA	3
NAWA	52	EAKI	3
VEER	51	COHA	2
RTHU	50	PIWO	2
COGR	47	RBWO	2
BAOR	42	AMWO	2
YBFL	38	BLBW	2

BAWW	34	FISP	2
WIWA	34	SCTA	2
PUFI	32	RTHA	1
BHVI	26	BBCU	1
BBWA	26	MODO	1
BANS	26	GWWA	1
CAWA	25	BWWA	1
WAVI	23	WIFL	1
LEFL	22	SOSA	1
BTBW	21	BHCO	1
ATSP	21	EATO	1
BLPW	21	EVGR	1

Acknowledgements

The McGill Bird Observatory's 2022 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
STD	1263	42	68
ACM	1179	58	75
RDT	851	25	4
SID	757	38	65
GEG	713	24	11
SLS	546	28	63
MPB	472	32	56
LIF	467	35	2
CIB	459	22	64
ALH	351	20	62

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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