



Migration Monitoring at TTPBRS 2025 Annual Report

Prepared by Shane Abernethy

December 2025

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INTRODUCTION

The Tommy Thompson Park Bird Research Station (TTPBRS) was established in April 2003 and is operated by Toronto and Region Conservation Authority (TRCA). It is located on Peninsula D within Tommy Thompson Park. The primary objectives of TTPBRS are to aid bird conservation efforts at local, national, and international levels through monitoring, research, and education. This is achieved through participation in the Canadian Migration Monitoring Network following a standard protocol for spring and fall migration monitoring including standard observation and standard capture methodologies.

Annual Summary

During the 2025 field season, TTPBRS conducted three main projects: spring migration monitoring, fall migration monitoring, and Monitoring Avian Productivity and Survivorship (MAPS) during the summer. Active mist netting efforts took place on 103 days across all three programs, during which we recorded 5,639 capture events and banded 4,445 birds. Daily operations were overseen by Bander-in-Charge Shane Abernethy, and assisted by Field Staff Connor Wooldridge and Wai Lun (Ivan) Tse, as well as 43 volunteers, who contributed 2,804 total hours.

SECTION 1: SPRING 2025

1.1 Summary

The spring migration monitoring season ran for 70 days between April 1 and June 9, with 66 total days of coverage. Active capture and banding efforts occurred on 41 days during the season, during which we accumulated 2,056 net-hours across 20 mist nets. 770 staff and 1,420 volunteer hours resulted in the detection of 161 species, 72 of which were captured. 2,083 birds were captured over the course of the season, for a seasonal capture rate of 101.3 captures/100 net-hours.



A pair of Cedar Waxwings banded in late spring

Spring Migration Summary

Staff and volunteer hours	2,190
Total recorded species	161
Total capture events	2,083
Total species captured	72
Birds banded	1,531
Birds recaptured	510
Birds released unbanded	42
Total net-hours (adjusted)	2,056.25
Total net-hours (9m mist nets)	2,201
Total net-hours (12m mist nets)	378
Capture rate	101.3/100 net-hours
Recorded visitors	839

Personnel

Bander-in-Charge	Shane Abernethy	
Field Staff	Connor Wooldridge	
Social Media Liaison	Cassie Pellerin	
Environmental Technologist	McLean Smith	
Senior Project Manager	Andrea Chreston	
Senior Manager	Karen McDonald	
Volunteers	Jess Benavides Lauren Bertucci Erin Blake Susan Blayley Tabris Cao Brian Chan Scott Da Rocha Shahd Daoud Carly Davenport Naveen David Petra Dreiser Helen Fong Lynne Freeman Vedant Gattani Jillian Haight Theo Jaquin Nina-Marie Lister	Ariel Lovejoy Mary Newberry John Nishikawa Anne Purvis Meg Reid Lisa Richman Daniela Rupolo Esperanza Salas Hannah Scott Natalie See Clara Siu Bumika Sri Donald Taylor George Thorman Ivan Tse Ana Urosevic



Spring highlights. From left to right: a Northern Rough-winged Swallow, held in the swallow-specific “ice cream” grip, Black-throated Blue Warbler, Black-billed Cuckoo

1.2 Spring Migration Monitoring

The spring was plagued by poor and unpredictable weather, and wind directions against the path of migration. While this hampered capture efforts, it also resulted in an unusually high rate of vagrancy, in which birds from other regions end up off course. Several of these were spotted in the study area, although most were elsewhere in the park. The support of a consistent Field Staff during the spring allowed for a substantial increase in mist-netting effort, which allowed us to exceed last year’s total despite lower overall density.

Highlights

The main highlight this spring was a series of surprises all in one: in early May, we captured a Northern Rough-winged Swallow. Catching swallows is uncommon since they have keen eyesight and enough maneuverability to avoid the nets in most cases. The second surprise was that she had already been banded – seven years earlier. The third only came when compiling data at the end of the season: this bird was a record-breaker, beating the longevity record for her species by at least eight months.

Another highlight was a Black-billed Cuckoo, the first captured at the station in a couple years. This isn’t because they’re rare – they’ve been confirmed to breed in the park – but rather because they’re just a little too big to be reliably captured.

A trio of uncommon to rare warblers were also spotted but not captured throughout spring. These were a Blue-winged Warbler, a female Golden-winged Warbler, and a vagrant Prairie Warbler, typically found south of the Great Lakes.

Table 1: 10-year breakdown of mist netting results and effort for spring migration at TTPBRS										
	2025	2024	2023	2022	2021	2020	2019	2018	2017	2016
Birds Banded	1541	1524	1322	2340	2060	---	4070	2240	2659	2621
Birds Recaptured	510	491	435	429	356	---	792	451	595	615
Captured Unbanded	42	43	38	72	49	---	67	53	106	51
Total Captures	2083	2058	1795	2841	2465	---	4929	2744	3360	3287
Net Hours	2056.5	1545.5	1673	2911	2715	---	4026	4526.5	4106	4532
Captures/100 net hours	101.3	111.5	107	97.6	90.8	---	122.4	60.6	81.8	72.5

1.3 Events and Outreach

We hosted 839 recorded visitors at the lab during the spring season. An estimated 370 of these visited during the Spring Bird Festival on May 10, an impressive figure that represented a near doubling of attendance from the previous two years. The remainder were largely incidental visitors and school groups.

A portion of the spring’s visitors specifically cited being drawn in by the station’s social media content, which had great success this year. The first video of the season was a surprise viral hit, accumulating 1.4 million views and jump-starting our content for the year. Subsequent videos consistently pulled in five digit and occasionally six digit viewcounts.



A male Blackburnian Warbler in full breeding plumage

SECTION 2: FALL 2025

2.1 Summary

The fall migration monitoring season ran for 100 days between August 5 and November 12, with 93 total days of coverage. Active capture and banding efforts occurred on 55 days, during which we accumulated 3,212 net-hours across 20 mist nets. 1,007.5 staff and 1,280 volunteer hours resulted in the detection of 154 species, 73 of which were captured. 3,267 birds were captured over the course of the season, for a seasonal capture rate of 101.9 captures/100 net-hours.

Fall Migration Summary

Staff and volunteer hours	2,287.5
Total recorded species	154
Total capture events	3,267
Total species captured	73
Birds banded	2,734
Birds recaptured	461
Birds released unbanded	72
Total net-hours (adjusted)	3,212
Total net-hours (9m mist nets)	3,372.5
Total net-hours (12m mist nets)	682
Capture rate	101.9 captures/100 net-hours
Recorded visitors	458

Personnel

Bander-in-Charge	Shane Abernethy	
Field Staff	Wai Lun Tse	
Social Media Liaison	Cassie Pellerin	
Environmental Technologist	McLean Smith	
Senior Project Manager	Andrea Chreston	
Senior Manager	Karen McDonald	
Volunteers	Sophie Anderson Lauren Bertucci Erin Blake Susan Blayley Tabris Cao Gabby Carew Brian Chan Shahd Daoud Petra Dreiser Helen Fong Lynne Freeman Vedant Gattani Martina Gjevori Jillian Haight Theo Jaquin Zach Khan	Ceana Klump Liam Lesser Mary Newberry John Nishikawa Amanda Nobrega Anne Purvis Meg Reid Lisa Richman Daniela Rupolo Rosstin Saniei Clara Siu Bumika Sri Mackenzie Stewart Donald Taylor Gihyun Yoo

2.2 Fall Migration Monitoring

Unlike spring, fall migration had unusually good weather through much of it. Low capture volume at the beginning of the season made for a slow start. We suspect that an extreme heat wave at the end of June caused an elevated rate of local nest failure, contributing to overall low numbers observed during early migration. Once boreal migrants began to arrive, it picked up to its usual pace, and several sparrow fallouts in October comfortably pushed us over last year's capture total before an early snowstorm impeded capture efforts in November. We also observed two separate irruptive events this fall: an influx of Red-breasted Nuthatches in early September, and a heavy influx of Black-capped Chickadees in mid-October.

Highlights

The season's two primary highlights came less than a week apart. First was a Yellow-billed Cuckoo, a first capture for all on-site personnel. Toronto is at the extreme northern edge of their range, making them rare in the region.

Then, we were surprised again by the unexpected capture of a Golden-winged Warbler, a species at risk with a unique genetic relationship with closely-related Blue-winged Warblers. This unique bird was bookended by a second Yellow-billed Cuckoo that was captured a couple days later.

Other highlights include a vagrant White-eyed Vireo, a bird that had gone the wrong way on migration, a single Wood Thrush (another species at risk) and a surprise Carolina Wren in the last weeks of the season.



Three of fall's highlights. From left to right: Golden-winged Warbler, Yellow-billed Cuckoo, and White-eyed Vireo.

Table 2: 10-year breakdown of mist netting results and effort for fall migration at TTPBRS

	2025	2024	2023	2022	2021	2020	2019	2018	2017	2016
Birds Banded	2734	2590	1972	3459	4529	3975	3172	4592	2430	3396
Birds Recaptured	461	513	352	301	438	458	469	583	390	313
Captured Unbanded	72	52	36	79	111	98	190	259	45	42
Total Captures	3267	3155	2360	3839	5078	4531	3831	5434	2865	3751
Net Hours	3212	3223	2072	3048	5035	2639.4	5854	5127	3810	5457
Captures/100 net hours	101.9	97.8	113.9	125.9	100.8	145.1	65.4	106	75.2	68.7

2.3 Events and Outreach

We recorded 458 visitors during the fall season. The majority of these were incidental visitors and school groups. We anticipated a large turnout during the Monarch Butterfly Festival on August 23, but high temperatures and humidity prevented many from making the long trek to the research station, resulting in a low count of 27.

Our social media outreach continued to show great success over fall. The spring videos resulted in steady follower growth, and was reflected in a gradual increase in average viewcounts from the low to mid five digits. At the end of October, thanks to fortuitous timing with the success of the Toronto Blue Jays in the World Series, a video featuring Blue Jays became our second to surpass 1 million views.

We also piloted a publicly accessible owl banding night. While owl banding is typically very limited due to staff and volunteer availability, we were able to organize a one-night event giving the public the opportunity to see these birds up close. The single Saw-whet Owl we captured that night was recaptured in Maryland two weeks later!

SECTION 3: OTHER PROGRAMS

3.1 Monitoring Avian Productivity and Survivorship (MAPS)

Background

MAPS (Monitoring of Avian Productivity and Survivorship) is a specialized banding protocol targeted at breeding birds during the summer months, developed by the Institute for Bird Populations and followed by stations across North America. This protocol allows TTPBRS staff to monitor local breeding birds. A single MAPS station operates once every 10 days, with a monitoring period that depends on the latitude and length of the local breeding season. The rationale is to band and thereby track breeding adults, monitor their condition during the nesting season, then band and assess chicks as they fledge, which can provide insights into breeding success and species composition.

Summary

The 2025 MAPS season involved the continued operation of a single station, designated TBRS. It comprises eight 12-metre mist nets, and has a study area that overlaps with the migration monitoring survey area. MAPS banding occurred on 7 days this season, on June 2, June 16, June 30, July 4, July 11, July 23 and July 30, accumulating 324 net-hours. This resulted in 289 captures and a seasonal capture rate of 88.6 captures/100 net-hours.

Table 3: Top five captures by species during MAPS

Species	Number Captured	% of Total
Yellow Warbler	114	39.5
Gray Catbird	23	8
Song Sparrow	22	7.6
American Robin	19	6.6
Red-winged Blackbird	14	4.9

Yellow Warblers continued to be the most common species in the study area, although at a reduced density relative to previous years. Overall capture volume and rate was substantially lower than previous years. An extreme heat wave that occurred in late June is a likely culprit, and may have resulted in a high rate of local nest failure, contributing to lower than usual numbers.

Volunteers and Visitors

Due to the more sensitive and infrequent nature of MAPS banding, the lab is not officially open to visitors during the summer. However, we informally noted a small handful of visitors to the study area. Several volunteers also assisted with MAPS operations, contributing 104 total hours.

3.2 Stable Isotope Collaboration

During the spring and fall season we continued to collaborate with a large-scale joint project between Environment and Climate Change Canada (ECCC) and Birds Canada, during which we sampled tail feathers from select species for stable isotope analysis. This project aims to enhance insights on the specific origin points and breeding communities of birds migrating through various Canadian migratory hotspots.



A very young Black-billed Cuckoo, likely from a local nest, captured during MAPS

3.3 Winter Bird Series

Bird banding during the winter is infeasible due to weather conditions and low local volume. So, for the winter TTPBRS staff shift to an educational role, and since 2023 have been developing public workshops on birding, bird ecology and other topics. This year, we experimented with both a transition to a paid model and began a collaboration with Toronto Public Libraries. We look forward to a continuation of this collaboration and further expansion of the program in 2026.

ACKNOWLEDGEMENTS

A bird research station is far from a one-person endeavour, and many hands collaborated to make this year's work possible. Thanks to Andrea Chreston, McLean Smith, Hillary Stead, and Karen McDonald for their supervision, oversight, and administrative work. Thanks to Liam Graham and the Tommy Thompson Park Field Team for support in maintaining the study site. Thanks to John Nishikawa, Lynne Freeman, and Will Heikoop for taking on the daily census.

And thanks to the volunteers who assisted with day-to-day operation this year: Brian Chan, Carly Davenport, Donald Taylor, Erin Blake, Lynne Freeman, Esperanza Salas, John Nishikawa, Mary Newberry, Vedant Gattani, Meg Reid, Anne Purvis, Theo Jaquin, Jillian Haight, Daniela Rupolo, Susan Blayley, Ana Urosevic, Lauren Bertucci, Jess Benavides, Clara Siu, George Thorman, Petra Dreiser, Tabris Cao, Nina-Marie Lister, Naveen David, Bumika Sri, Ariel Lovejoy, Natalie See, Shahd Daoud, Hannah Scott, Lisa Richman, Scott Da Rocha, Helen Fong, Ivan Tse, Rosstin Saniei, Gihyun Yoo, Amanda Nobrega, Mackenzie Stewart, Ceana Klump, Liam Lesser, Martina Gjevori, Gabby Carew, Zach Khan, and Sophie Anderson.



SECTION 4: APPENDICES**Table 4: Total number and type of capture per species for spring migration monitoring at TTPBRS**

Species	Band	Recap	Unband	Total
Alder Flycatcher	5			5
American Goldfinch	38	10		48
American Redstart	39	6		45
American Robin	16	26		42
American Tree Sparrow	17	3		20
Baltimore Oriole	8	8		16
Barn Swallow	3			3
Bay-breasted Warbler	33	1		34
Black-and-white Warbler	6	1		7
Black-billed Cuckoo	1			1
Blackburnian Warbler	33			33
Black-capped Chickadee	6	21	1	28
Blackpoll Warbler	9			9
Black-throated Blue Warbler	10	1		11
Black-throated Green Warbler	14			14
Blue-headed Vireo	2			2
Brown Creeper	14	2	1	17
Brown Thrasher	1			1
Brown-headed Cowbird	12	7		19
Canada Warbler	13	1		14
Cape May Warbler	16			16
Cedar Waxwing	3			3
Chestnut-sided Warbler	27	2		29
Common Yellowthroat	26		1	27
Dark-eyed Junco	29	2	1	32
Downy Woodpecker	2			2
Eastern Phoebe	10			10
Eastern Wood-Pewee	4			4
Field Sparrow	6			6
Fox Sparrow	5			5
Golden-crowned Kinglet	35	2	2	39
Gray Catbird	42	19	1	62
Gray-cheeked Thrush	2			2
Great Crested Flycatcher	3			3
Hairy Woodpecker	2	1		3
Hermit Thrush	10	2		12

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House Wren	2	7	1	10
Least Flycatcher	35	4		39
Lincoln's Sparrow	10			10
Magnolia Warbler	70	5		75
Mourning Warbler	4			4
Myrtle Warbler	84	1	2	87
Nashville Warbler	83	5	1	89
Northern Cardinal	4	6		10
Northern Parula	11	2		13
Northern Rough-winged Swallow	3	1		4
Northern Waterthrush	10			10
Orange-crowned Warbler	2			2
Ovenbird	10			10
Philadelphia Vireo	12			12
Purple Finch	1	1		2
Red-eyed Vireo	42			42
Red-winged Blackbird	28	28	2	58
Rose-breasted Grosbeak	6			6
Ruby-crowned Kinglet	50	5	1	56
Ruby-throated Hummingbird			8	8
Song Sparrow	42	35	3	80
Swainson's Thrush	25			25
Swamp Sparrow	21	1	2	24
Tennessee Warbler	44		1	45
Traill's Flycatcher	33	6	3	42
Tree Swallow	34	18	1	53
Veery	1		1	2
Warbling Vireo	14	33		47
Western Palm Warbler	22	2		24
White-crowned Sparrow	7			7
White-throated Sparrow	143	22	4	169
Willow Flycatcher	2			2
Wilson's Warbler	19	5		24
Winter Wren	1			1
Wood Thrush	2			2
Yellow Warbler	137	208	5	350
Yellow-bellied Flycatcher	14			14
Yellow-bellied Sapsucker	1			1
Total	1531	510	42	2083

Table 5: Total number and type of capture for each species banded at TBRS during the MAPS program

Species	Banded	Recap	Unband	Total
American Goldfinch	2	3		5
American Redstart	5	1		6
American Robin	12	7		19
Baltimore Oriole	1	6		7
Black-and-white Warbler	1			1
Black-billed Cuckoo	1			1
Blackburnian Warbler	2			2
Blackpoll Warbler	2			2
Canada Warbler	3			3
Cedar Waxwing	1			1
Downy Woodpecker	1			1
Eastern Wood-Pewee	5	1		6
European Starling	1			1
Gray Catbird	11	12		23
Hairy Woodpecker	1			1
House Wren	6	4		10
Least Flycatcher	1	2		3
Magnolia Warbler	5			5
Northern Cardinal	1	1		2
Philadelphia Vireo	1			1
Red-eyed Vireo	12			12
Red-winged Blackbird	3	12		15
Ruby-throated Hummingbird			1	1
Song Sparrow	13	9		22
Swainson's Thrush	1			1
Trail's Flycatcher	9	2		11
Tree Swallow		1		1
Warbling Vireo		5		5
Wilson's Warbler	2			2
Yellow Warbler	72	42		114
Yellow-bellied Flycatcher	5			5
Total	180	108	1	289

Table 6: Total number and type of capture for each species banded during fall migration

Species (Fall)	Banded	Recap	Unband	Total
American Goldfinch	14	4	1	19
American Redstart	60	4	1	65
American Robin	10	4		14
American Tree Sparrow	4	1		5
Baltimore Oriole	4	2	1	7
Bay-breasted Warbler	34	1		35
Black-and-white Warbler	7			7
Blackburnian Warbler	5			5
Black-capped Chickadee	161	82	6	249
Blackpoll Warbler	25	1		26
Black-throated Blue Warbler	13			13
Black-throated Green Warbler	9	3		12
Blue Jay	1			1
Blue-headed Vireo	8		1	9
Brown Creeper	16			16
Brown Thrasher	1			1
Canada Warbler	11	2		13
Cape May Warbler	23	2	1	26
Carolina Wren	1			1
Chestnut-sided Warbler	20	3		23
Common Yellowthroat	24	2		26
Downy Woodpecker	9	13		22
Eastern Kingbird	4			4
Eastern Phoebe	17			17
Eastern Towhee	1			1
Eastern White-crowned Sparrow	4			4
Eastern Wood-Pewee	9			9
Fox Sparrow	12	1		13
Golden-crowned Kinglet	221	23	11	255
Golden-winged Warbler	1	1		2
Gray Catbird	64	41		105
Gray-cheeked Thrush	45	13		58
Great Crested Flycatcher	2			2
Hairy Woodpecker		1		1
Hermit Thrush	137	20	6	163
House Wren	8	8		16
Least Flycatcher	43	4		47

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Lincoln's Sparrow	7			7
Magnolia Warbler	138	23	1	162
Myrtle Warbler	69	1	8	78
Nashville Warbler	47	3	1	51
Northern Cardinal	15	8		23
Northern Parula	40	2	1	43
Northern Saw-whet Owl	3			3
Northern Waterthrush	33	8		41
Orange-crowned Warbler	4			4
Ovenbird	35	4		39
Philadelphia Vireo	33	8	1	42
Purple Finch	8			8
Red-breasted Nuthatch	14	2		16
Red-eyed Vireo	65	3		68
Red-winged Blackbird	2	1		3
Rose-breasted Grosbeak	5			5
Ruby-crowned Kinglet	286	41	8	335
Ruby-throated Hummingbird			11	11
Slate-colored Junco	110		2	112
Song Sparrow	67	19	1	87
Swainson's Thrush	136	9	1	146
Swamp Sparrow	13			13
Tennessee Warbler	38			38
Traill's Flycatcher	56	4		60
Veery	21	3		24
Warbling Vireo	34	15		49
Western Palm Warbler	8	1		9
White-eyed Vireo	1			1
White-throated Sparrow	318	42	8	368
Willow Flycatcher	1			1
Wilson's Warbler	17	5		22
Winter Wren	4		1	5
Wood Thrush	1	1		2
Yellow Warbler	43	21		64
Yellow-bellied Flycatcher	18			18
Yellow-bellied Sapsucker	8			8
Yellow-billed Cuckoo	2			2
Yellow-shafted Flicker	6	1		7
Total	2734	461	72	3267



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