



## 2015 Annual Report



*Ruddy Turnstone (Bronwyn Dalziel)*

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## Introduction

Tommy Thompson Park Bird Research Station (TTPBRS) was established in April 2003 and is run by Toronto and Region Conservation (TRCA). The primary objectives of TTPBRS are to aid conservation efforts at local, national and international levels through monitoring, research and education. The core focus of TTPBRS is the Migration Monitoring Program, with additional projects including Shorebird Monitoring and Hawk Monitoring. This report details results of the 2015 spring and fall seasons at TTPBRS.

## Study Site

Tommy Thompson Park (TTP) is located on the Leslie Street Spit, a manmade peninsula on Toronto's waterfront extending 5 km into Lake Ontario. Spit creation began in 1959 by the Toronto Harbour Commission (now PortsToronto) to expand port facilities in anticipation of increased shipping activities in the harbour. A combination of lakefilling and dredging activities created the current landform, and ownership is divided between TRCA and Ontario's Ministry of Natural Resources and Forestry. TTP comprises approximately half of the 500 hectare Spit, including land and water lots, and is owned and managed by TRCA.

Through natural succession and habitat restoration, TTP has been colonized by a variety of plant and animal communities. The geographic situation of the park and its natural features make it suitable for large numbers of breeding and migrating birds. Overall, the park represents the largest area of existing natural habitat on the Toronto waterfront. Tommy Thompson Park is an Environmentally Significant Area and a globally significant Important Bird Area.

The site selected for Migration Monitoring is located on Peninsula D, one of the four peninsulas that branch off the main spine of the Spit. The peninsula borders the Toronto harbor to the north, and a sheltered bay (Embayment C) to the south. The habitat is composed of early succession cottonwood, willow, dogwood, and birch forest. Beach and meadow features are also present in the study area (Appendix A).

## Migration Monitoring Program

### Rationale

Many songbirds breed and winter in remote locations, making it difficult to accurately assess their populations. As such, they are monitored during migration, as they travel through populated areas between their remote destinations. Migration monitoring consists of a daily census count and bird banding. TTPBRS is a member of the Canadian Migration Monitoring Network, one of 26 stations across Canada that collect standardized capture and observation data during spring and fall migration. Data collected through this program is submitted to the national bird banding office and contributes to an international database, which is used to report on North American bird populations and guide

conservation efforts in the Western Hemisphere. Locally, the migration monitoring data is used to study stopover ecology and informs local restoration and conservation projects.

## Methods

Migration Monitoring operates on a daily basis from April 1 to June 9 and August 5 to November 12, for 6 hours from dawn. The TTPBRS Migration Monitoring Protocol outlines the fixed effort census and the fully standardized capture regimen.

## Spring Migration Summary

Spring migration achieved 58 days coverage from April 1 to June 9, with 175 species detected in the study area. Diversity peaked on May 23, with 102 species, compared to a low of 18 species on April 1.

**Table 1 Spring coverage and results**

	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Days with coverage	58	61	65	68	69	65	68	68	67	64	67	69
Total species detected	175	178	176	162	168	152	164	188	178	179	173	161
Birds banded	*2689	*3183	*3008	*2722	1172	1399	1530	1893	2638	2570	2547	2519
Birds recaptured	*746	*982	*986	*469	521	210	271	361	369	470	468	604
Captured unbanded	*67	*226	*110	*32	51	54	34	35	107	54	78	236
Total captures	*3502	*4391	*4104	*3223	1744	1663	1835	2289	3114	3094	3093	3359
Net hours	*6620.5	*7506	*6737.5	*4474	2723.3	3227	3321	4790	4595	4687	5492	5317
Birds banded/net hour	*0.53	*0.58	*0.45	*0.57	0.43	0.43	0.46	0.39	0.57	0.54	0.46	0.47

\*includes standard and non-standard nets

## Banding

A total of 2,689 birds, representing 108 species, were banded in 6620.5 net hours for an average capture rate of 0.53 birds per net hour. The highest banding total was on May 17 with 198 individuals. The least productive day was April 3 with a total of 4 birds banded.

There were 986 recaptures, consisting of individuals and 62 multiple encounters (birds recaptured more than once). 95 individuals were repeats (banded at TTPBRS the same season) and 53 were returns (banded at TTPBRS a previous season). All of the returning birds were species that breed at the park. Although our focus is migration monitoring, the yearly recapture of certain individuals indicates site fidelity, which has positive implications for the habitat quality at TTP.

Table 2 Spring banding totals

Species	Total	Species	Total	Species	Total
AMGO	18	EATO	2	NOWA	12
AMRE	43	EAPH	6	OCWA	3
AMRO	26	EWCP	60	OROR	1
ATSP	29	EWPE	6	OVEN	28
BAOR	15	EUST	8	PHVI	11
BBWA	19	FISP	3	RBGR	1
BAWW	18	FOSP	7	REVI	8
BLBW	25	GCKI	45	RWBL	164
BCCH	1	GCTH	10	SCTA	2
BPWA	15	GRSP	1	SCJU	61
BTBW	18	GRCA	58	SEPL	10
BTNW	19	GCFL	4	SESA	124
BGGN	1	HAWO	2	SOSP	63
BHVI	3	HERG	13	SPSA	10
BLJA	3	HETH	80	SSHA	1
BWWA	3	HOWA	1	STSA	1
BRCR	38	HOWR	2	SWSP	34
BHCO	46	INBU	5	SWTH	104
BRTH	3	KILL	11	TEWA	21
BUFF	3	LEFL	21	TRFL	63
CAWA	14	LESA	45	VEER	15
CMWA	17	LEYE	2	WAVI	13
CATE	1	LISP	45	WEVI	1
CEDW	16	MALL	1	WIWR	8
CSWA	49	MAWA	132	WOTH	6
CHSP	1	MYWA	178	WPWA	29
COGR	30	MODO	1	WTSP	110
COTE	1	MOWA	14	YBFL	20
COHA	1	NAWA	39	YBSA	2
COYE	69	NOCA	2	YEWA	163
DOWO	1	NSWO	1	YSFL	8
DUNL	58	NOPA	18	YTVI	1
EAKI	19	NRWS	1		
				<b>Total</b>	<b>2,689</b>
				<b>Species</b>	<b>108</b>

## *Spring Highlights*

Orchard Oriole	One banded May 16
Hooded Warbler	one banded May 13
Blue-winged Warbler	three banded in May (May 7, 8, 30)



Figure 1 Top right – Cape May Warbler. Middle L-R – Tennessee Warbler, Magnolia Warbler. Bottom L-R – Nashville Warbler, American Redstart, Northern Parula, Northern Parula, Black-throated Green Warbler.

## *First Central American Control*

On May 12, a Red-eyed Vireo was recaptured in a TTPBRS net. While this is not uncommon, the interesting part was that it had a band that was not one of ours. We submitted the record and a few weeks later heard some amazing news... This bird had been banded on April 27, 2015 in Middlesex, Belize! This is our first Central American recovery. Another amazing fact was the bird had completed the journey to TTPBRS in 15 days – a distance of 3,000 km!



Figure 2 Foreign recapture Red-eyed Vireo

## **Fall Migration Summary**

Fall migration monitoring began on August 5 and continued until November 10 with a total of 98 days of coverage. 171 species were detected within the study area. Rain and high winds for the latter weeks of banding, hindered the banding consistency and coverage.

Table 3 Fall coverage and results

	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Days with coverage	87	98	82	77	98	93	96	97	96	87	91	95	84
Net hours	*8865.5	*10,090.5	10,369	*8605	3404	4531	2641	NA	6835	6085	6816	7388	6726
Total species detected	164	170	171	183	163	170	158	127	185	176	180	173	161
Birds banded	*4123	*4151	*4496	*4629	1473	2592	1190	8	3391	4473	4247	3870	3327
Birds recaptured	*537	*473	*543	*616	226	308	120	0	423	429	560	614	623
Captured unbanded	*197	*107	*483	*269	70	86	38	0	125	515	382	429	152
Total captures	*4850	*4731	*5422	*5514	1772	2986	1348	8	3939	5419	5189	4913	4102
Birds banded/net hour	*0.47	*0.41	*0.43	*0.54	0.43	0.57	0.45	NA	0.50	0.74	0.62	0.52	0.49
Birds captured/net hour	*0.55	*0.46	*0.52	*0.64	0.52	0.66	0.51	NA	0.58	0.89	0.76	0.66	0.61

\*includes standard and non-standard nets

## Banding

A total of 4,278 birds were banded, of 99 species, were banded in 8865.5 net hours for a capture rate of 0.55 birds per net hour. There were 537 recaptures of 48 species with 22 return individuals and 156 were repeats. 78 records were multiple captures of the same individuals. The most commonly recaptured birds were Black-capped Chickadees, Golden-crowned Kinglets, Ruby-crowned Kinglets, Song Sparrows and Yellow Warblers. The most productive day was October 8 with 300 birds banded of 22 species. September 25 was the next busiest day, with 213 of 18 species. The least productive day was November 6, with only 4 birds banded of 4 species.



Table 4 Fall banding totals

Species	Total	Species	Total	Species	Total
AMGO	22	EAPH	30	PISI	13
AMKE	5	EATO	3	PIWA	1
AMRE	36	EAWP	5	PUFI	1
AMRO	20	EUST	24	RCKI	557
ATSP	31	EWCS	10	REVI	42
BAOR	23	FISP	1	RUBL	10
BARS	5	FOSP	7	RWBL	2
BAWW	7	GCFL	2	SCJU	160
BBWA	13	GCKI	873	SCTA	2
BBCU	2	GCTH	35	SESA	4
BCCH	11	GRCA	40	SEPL	1
BEKI	7	GWWA	1	SOSP	30
BGGN	1	HETH	168	SPSA	2
BHVI	36	HOWR	2	SSHA	59
BLBW	8	INBU	2	STSA	1
BLJA	22	LEFL	34	SWSP	18
BLPW	11	LESA	17	SWTH	97
BRCR	78	LISP	6	TEWA	43
BRTH	1	MAWA	126	TRFL	58
BTBW	83	MERL	18	VEER	18
BTNW	38	MOWA	6	WAVI	38
CAWR	1	MYWA	408	WEVI	1
CAWA	10	NAWA	132	WIWA	32
CEDW	37	NOCA	8	WIWR	26
CHSP	2	NOGO	1	WOTH	1
CMWA	15	NOHA	33	WPWA	11
COGR	2	NOPA	22	WTSP	262
COHA	9	NSHR	1	YBFL	17
CORE	4	NOWA	12	YBSA	5
COYE	47	NSWO	24	YEWA	44
CSWA	9	OCWA	10	YSFL	6
DOWO	14	OVEN	25	YTVI	1
EAKI	12	PHVI	5		
				<b>Total</b>	<b>4,278</b>
				<b>Species</b>	<b>92</b>

### *Fall Highlights*

White-eyed Vireo  
Yellow-throated Vireo

second for the station, September 27  
second for the station, September 21



Figure 3 White-eyed Vireo (left), Yellow-throated Vireo (right)

### **Shorebird Monitoring Project**

The Embayment D coastal wetland, northeast of Peninsula D, attracts shorebirds during the migratory season as they move through or stopover to feed on exposed mudflats when water levels are low. The Shorebird Monitoring project began in 2013 following a wetland restoration project in the embayment that led to favourable conditions for shorebirds. Coverage and effort for this project is secondary to the Migration Monitoring Program, and occurs when there additional qualified personnel are available.

During the spring, we operated 2-3 two-shelf monofilament nets, with playback. This proved to be very effective. Eleven species were banded and five others observed (Greater Yellowlegs, Willet, Whimbrel, Sanderling and Black-bellied Plover). Unfortunately, during August, water levels were high and the shoreline was submerged. We managed a few birds on a small strip of beach on the Peninsula D north shore.

**Table 5 Shorebird banding totals**

	Spring	Fall
Least Sandpiper	45	17
Semipalmated Sandpiper	124	4
White-rumped Sandpiper	1	
Spotted Sandpiper	10	2
Solitary Sandpiper	1	
Lesser Yellowlegs	2	
Killdeer	11	
Semipalmated Plover	10	1
Dunlin	58	
Short-billed Dowitcher	2	
Ruddy Turnstone	1	
Stilt Sandpiper	1	
<b>TOTAL</b>	<b>265</b>	<b>25</b>



**Figure 4 Short-billed Dowitchers (left, middle), Semi-palmated Plover (right)**

## Hawk Monitoring Project

A new project was initiated in 2015 to monitor hawk migration at TTP. The project entailed two major components: hawk counting at the base of TTP and hawk banding near the tip of TTP. Although we suspected that hawks were migrating through TTP, until we undertook this project we did not understand how many birds or how they use this migration route.

During this pilot year, staff and volunteers banded 122 raptors (plus 1 Northern Shrike) covering six species at the banding station near the tip of the park; and volunteers counted 1,285 raptors covering 11 species at the count site at the base of TTP. Raptors were also counted at the banding location, which revealed interesting comparable data. For example, the flight of Sharp-shinned Hawk and

Northern Harrier are very different at the base compared to the tip. Staff hypothesized that the birds would encounter the count site at the base and then follow the peninsula using the shoreline, however the data indicate the birds are actually flying over the water from the shoreline east of the park, and encountering the peninsula southwest the count site at the base resulting in much higher numbers at the banding location. This differs from Turkey Vulture, which had much higher totals near the base versus the tip.

Another interesting observation was Peregrine Falcons. While most bird observed were likely local breeders, staff and volunteers captured a SY bird that was banded as a chick in New Jersey in 2014.

Hawk monitoring was undertaken following HMANA protocols and guidelines. The hawk banding station followed North American Banding Council guidelines and protocols.

**Table 6 Hawk count results**

Species	Count Site	Banding Site	Total
Turkey Vulture	1026	145	1171
Osprey	9	6	15
Bald Eagle	15	5	20
Northern Harrier	20	311	331
Sharp-shinned Hawk	85	521	606
Coopers Hawk	36	35	71
Northern Goshawk	0	1	1
Red-shouldered Hawk	4	6	10
Red-tailed Hawk	59	7	66
Broad-winged Hawk	0	4	4
Golden Eagle	0	2	2
American Kestrel	8	50	58
Merlin	13	45	58
Peregrine Falcon	10	24	34
<b>TOTAL</b>	<b>1285</b>	<b>1162</b>	<b>2447</b>

**Table 7 Hawk banding totals**

Species	Total
Northern Harrier	33
Sharp-shinned Hawk	55
Cooper's Hawk	9
Northern Goshawk	1
American Kestrel	5
Merlin	19
Northern Shrike	1
<b>TOTAL</b>	<b>123</b>





Figure 5 male Sharp-shinned Hawk (left), male Northern Harrier (right)



Figure 6 female Peregrine Falcon (left), male Merlin (right)

## **Outreach and Education**

TTPBRS continues to engage the community through educational programming. Banding demonstrations and interpretive talks were given to over 1000 people at TTPBRS in 2015. This figure includes park visitors, students and special groups.

### **Weekly Bird Walks**

This year TTPBRS started to offer bird walks each Saturday, led by volunteers Bob Kortright and Mikal Lawton. Participants met at the entrance at 8:00 and were guided through the base lands before heading up the road to the research station, where they got to see bird banding demonstrations. The bird walks have been a great way to educate people about the importance of urban green space and to further the mission of TTPBRS. Over the course of the spring and fall, over 150 participants enjoyed bird walks.

### **Media**

TTPBRS was featured in local, national and international media in 2015, including CP24, CTV News and Reuters Earthprints: Leslie Street Spit.

### **Volunteerism**

Providing educational opportunities for those interested in bird research is a critical role for the research station, as venues for hands-on learning are hard to find. Many of our trainees have gone on to bright futures in the environmental field through experience at TTPBRS.

With only one paid staff person, TTPBRS truly is volunteer-driven. This year 20 volunteers contributed a total of 3,297 hours to the monitoring program and projects! Although some volunteers move on or move away, most of our crew consists of long-term volunteers who commit to one or more days per week, year after year. Eighteen of the 20 people who volunteered this year returned from previous seasons!

Thank you to all of our committed volunteers who make this program possible!

**Table 8 Volunteer effort**

<b>Volunteer</b>	<b>Hours</b>	<b>Volunteer</b>	<b>Hours</b>
Paul Xamin	502	Jennifer Baici	84
Jim Mackiewicz	374	Josh Shook	72
Lynda Mackiewicz	374	Julia Zarankin	70
Bruce Wilson	208.5	Deborah Buehler	64
Charlotte England	190	Ian Sturdee	59.5
Denise Potter	141.5	Kevin Hawkshaw	57
Malcolm Wilson	139	Priscilla Lai	57
Karl Heide	129	Stephanie Topp	56.5
Lisa Myslicki	120	Sunny Zhai	34
Meesha	115	Tom Flinn	28
Taeko Knockhart	106.5	Amanda Guercio	24.5
Rachael Zacharias	105	Denise Jespersen	20.5
Courtney Shaw	103.5	Garth B	18.5
Caroline Biel	91	Jackie Shaw	16.5
	<b>TOTAL</b>		<b>3543.5</b>

## Appendix 1 – Station Map

