Migration Monitoring at TTPBRS

2013

Yellow throated vireo (C. England)

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For
Toronto and Region Conservation
Restoration Services

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Toronto and Region Conservation for The Living City

Tommy Thompson Park
Toronto's Urban Wilderness

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A few from the 2013 season

Male American kestrel

Snow bunting

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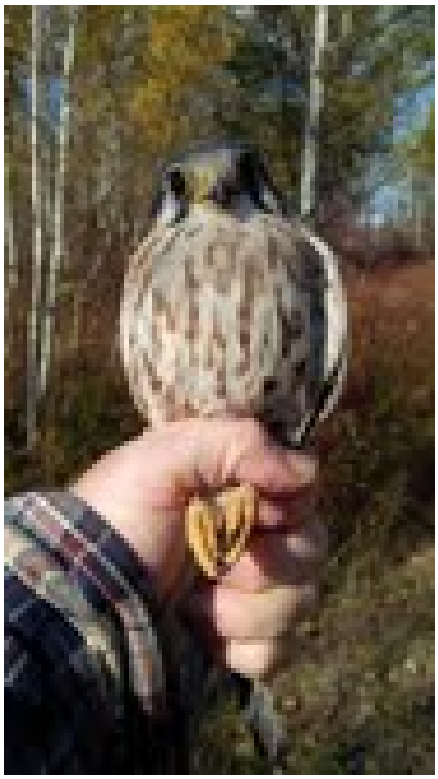


Sharp-shinned hawk

TTPBRS initiated two new projects for the 2013 season, and restarted the Northern saw-whet owl monitoring. The owl monitoring, operating under the Project Owlnet Protocol was restarted after a three year gap.

With the construction of a new berm, isolating embayment D from the inner bay, it has opened up the opportunity to concentrate some effort on monitoring a few other species that either move through, or include the site as a stop-over feeding area. Shorebirds do not frequent our standard banding site, so other than an occasional Spotted sandpiper or American woodcock, this family of birds is not well covered in our monitoring efforts. This is a group of birds that is well studies by many International research groups. A large, extensive data base is being established. These birds are monitored on their breeding grounds in the high arctic, during migration at major stopover sites, and again on the wintering grounds where they concentrate in huge numbers. We had a few limitations but overall the results/effort was very promising. With the operation of a full time Migration Monitoring station, man-power for other side projects is limited by the coverage with qualified personnel. Fortunately for us during the spring and fall seasons, when the shorebirds were present, our main station was slow. This enabled a good effort for the project.
We operated with 2-3 two shelf monofilament nets, with play-back. This proved to be very effective. The birds were concentrating on the shoreline of the berm, so we "walked" them into the nets instead of the shorebirds flying full speed into them. We did not have high numbers, so we caught and banded most of the birds that were there.

Most species were seen during the season, and a few were not banded. We had Ruddy turnstone, American Golden and Black-bellied plover, Baird's and White-rumped sandpiper and Wilson's snipe recorded but not banded. Eleven other shorebird species were banded. Below is the list of totals.

SHOREBIRD TOTALS 2013

Least sandpiper	104
Semi-palmated sandpiper	22
Spotted sandpiper	27
Pectoral sandpiper	1
Stilt sandpiper	1
Solitary sandpiper	3
Lesser yellowlegs	5
Greater yellowlegs	1
Killdeer	29
Semipalmated plover	16
Dunlin	12
American woodcock*	1
TOTAL	**222**

* AMWO was banded at Migration Monitoring site.

Stilt sandpiper

Semiplamated plover

Pectoral sandpiper

Solitary sandpiper
Spotted sandpiper
Least sandpiper

We will continue with this project in 2014. It will be interesting to see how the new site is used as vegetation starts to grow, and it becomes an established feature to the peninsula.

TTPBRS American Pipit Project
(*Anthus rubescens*)

The American pipit, once considered a form of the Old World Water pipit, is the target of our second new project at TTPBRS. This is a bird that summers in our Canadian North, frequenting high arctic / alpine tundra. It migrates through and over TTP and was most often monitored by its calls as it flew over. With the construction of the berm around embayment D, it has not only given us the opportunity to monitor the shorebird migration, but other species of open, shoreline habitat.

Pipits were first noticed this fall season on September 15th. The earliest date recorded for the history of the station is September 5th. We first attempted with playback on October 9th with almost instant reaction. We set up two, two-shelf monofilament nets running parallel along the shore, with the playback placed between them. Early October 10th, we opened the nets and started the playback. We caught only two birds but a lot of others were around. After we moved the nets a few times to try and maximize the catch, we decided on our best configuration, and run the season with the nets in this location. We had a constant flow of birds, but some days we captured a small percentage of what responded, while others we caught them all.

We are in a very exposed, open area which leads to a few problems using nets. High winds made the nets somewhat visible, but the choice of monofilament over regular nylon, helped that. We also used only two panels which kept a low horizon line…..also beneficial with the high winds and open site.

We caught birds on most favorable days with the last being caught on November 3rd. Pipits were still moving over after we closed, but high winds and limited manpower forced an early finish this season.
We finished the year with 62 birds banded. We also managed 3 Snow buntings, and had two different Lapland longspurs down on the site. Out of the 62 birds, 52 were hatch year birds and 10 were adults. This ratio is typical for a fall migration and playback combination. Most birds had either low or no fat present.
This project will be continued in the fall of 2014, giving us a better picture of the movement/migration, both over, and on the peninsula.

Introduction

The Tommy Thompson Park Bird Research Station (TTPBRS) was established in April of 2003 and is run by the Toronto and Region Conservation Authority (TRCA). The primary objectives of TTPBRS are to aid conservation efforts at the local, national and international level through monitoring, research and education. The core focus of the TTPBRS is the Migration Monitoring Program. This report details results of the 2013 spring and fall seasons at TTPBRS.

Study Site

Tommy Thompson Park (TTP) is located on the Leslie Street Spit, a man-made peninsula on Toronto's waterfront which extends 5 km into Lake Ontario. The spit was developed in the 1950's by the Toronto Port Authority for the purpose of expanding port facilities in anticipation of increased shipping activities in the Great Lakes. Since then a combination of lakefilling and dredging activities created the current configuration of the park. TTP now has a land base of approximately 160 hectares and a water surface area of 100 hectares, composed of the western embayments and the inner disposal cells.

Through natural succession and habitat restoration most of TTP has been colonized by a variety of plant and animal communities. The geographic situation of the park and its natural features make it very 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 classified as an Environmentally Significant Area and was designated as an Important Bird Area (IBA) by Birdlife International in 2000.

The site selected for Migration Monitoring is located on peninsula D, which is one of several peninsulas that branch off the main spine of the spit. The peninsula is bordered by the Toronto harbour on the north side and an inner bay on the south side. The habitat is composed of early succession cottonwood, willow, dogwood, and birch forest. Beach and meadow features are also present in the study area. Please refer to Appendix A for a detailed map of the study area.

Toronto and Region Conservation (TRCA)

Toronto and Region Conservation (TRCA) was formed in 1957 for the management and conservation of natural resources in the Greater Toronto Area (GTA). Since its formation TRCA has prepared and delivered programs for the management of the renewable natural resources within its watersheds.

Migration Monitoring Program

Rationale

Migration Monitoring is an effective method for monitoring populations of migratory birds through the standardized capture and counting of migrants. This protocol is particularly useful for monitoring species which breed and winter in areas too remote and inaccessible to survey.

There are approximately 25 Migration Monitoring stations throughout Canada which are coordinated by the Canadian Migration Monitoring Network (CMMN). The data collected by member stations can be analyzed to detect population trends at the local, regional and national scales.

Methods

Migration Monitoring operates on a daily basis from April 1 to June 9 and August 1 to November 10. The protocol employs fixed effort census and point count surveys as well as a fully standardized capture regimen. The protocol for data collection at TTPBRS is detailed in the TTPBRS Migration Monitoring Protocol.

Spring 2013 Migration Summary

Spring migration monitoring commenced on April 1 and ran until June 9 for a total of 65 days of coverage. 176 species were detected within the study area. Diversity peaked on May 12 with 45 species detected, compared to a low of 18 species on April 1.

Table 1. Spring Coverage and Results

Unit	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Days with coverage	65	68	69	65	68	68	67	64	67	69
Total Species Detected	176	162	168	152	164	188	178	179	173	161
Birds Banded	*3008	*2722	1172	1399	1530	1893	2638	2570	2547	2519
Birds Recaptured	*986	*469	521	210	271	361	369	470	468	604
Captured Unbanded	*110	*32	51	54	34	35	107	54	78	236
Total Captures	*4104	*3223	1744	1663	1835	2289	3114	3094	3093	3359
Net Hours	*6737.5	*4474	2723.3	3227	3321	4790	4595	4687	5492	5317
birds banded/net hour	*0.45	*0.57	0.43	0.43	0.46	0.39	0.57	0.54	0.46	0.47

*included standard and non-standard nets

Banding

99 species were banded during spring 2013. A total of 3008 birds were banded in 6737.5 net hours for an average capture rate of 0.45 birds per net hour. The highest banding total was on May 17 when 198 birds were banded. The least productive day was April 3 with a total of 4 birds banded.

Table 2. Spring Banding Totals

SPECIES	TOTAL	SPECIES	TOTAL	SPECIES	TOTAL
AMGO	24	EAPH	21	RBWO	1
AMKE	1	EWCS	53	REVI	46
AMRE	52	EAWP	3	RTHA	2
AMRO	28	EUST	4	RWBL	231
ATSP	77	FISP	12	RCKI	50
AMWO	1	FOSP	5	SAVS	2
BAOR	11	GWCS	2	SESA	2
BARS	3	GCKI	50	SPPL	3
BBWA	13	GCTH	14	SCTA	3
BAWW	17	GRCA	45	SSHA	1
BBCU	1	GCFL	3	SCJU	47
BLBW	16	HAWO	1	SOSP	89
BCCH	5	HETH	46	SPSA	12
BLPW	14	HOWR	18	SWTH	59
BTBW	13	INBU	3	SWSP	44
BTNW	22	KILL	4	TEWA	29
BGGN	2	LEFL	39	TRFL	85
BLJA	4	LESA	29	TRES	16
BRCR	22	LISP	31	VEER	15
BHCO	76	MALL	1	WAVI	17
BRTH	9	MAWA	151	WPWA	48
CAGO	1	MYWA	193	WTSP	254
CAWA	17	MOWA	17	WIWA	50
CMWA	4	NAWA	35	WIWR	7
CEDW	204	NOCA	18	WOTH	5
CSWA	40	NOMO	1	YBFL	17
CHSP	1	NOPA	5	YBSA	1
COGR	47	NRWS	2	YBCU	1
COHA	1	NOWA	8	YSFL	12
COYE	80	OCWA	2	YTVI	1
DOWO	4	ORORR	1	YEWA	179
DUNL	11	OVEN	25		
EAKI	32	PHVI	23		
EATO	5	RBGR	8		
				SPECIES	**99**
				TOTAL	**3008**

Recaptures

During spring 2013 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 TTPBRS. Please refer to Appendix B for

detailed recapture totals for spring 2013. 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.

Highlights

Orchard oriole – multiple sightings, one banded June 6th
Worm-eating warbler – one sighted April 30th
Yellow-throated vireo – one banded May 16th * first banded at TTPBRS
Bald eagle – one sighted June 7th

Fall 2013 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.

Table 3. Fall Coverage and Results

UNIT	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Days with coverage	82	77	98	93	96	97	96	87	91	95	84
Net Hours	*10,369	*8605	3404	4531	2641	NA	6835	6085	6816	7388	6726
Total Species Detected	171	183	163	170	158	127	185	176	180	173	161
Birds Banded	*4496	*4629	1473	2592	1190	8	3391	4473	4247	3870	3327
Birds Recaptured	*543	*616	226	308	120	0	423	429	560	614	623
Captured Unbanded	* 483	*269	70	86	38	0	125	515	382	429	152
Total Captures	*5422	*5514	1772	2986	1348	8	3939	5419	5189	4913	4102
Birds banded/net hour	*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	*0.52	*0.64	0.52	0.66	0.51	NA	0.58	0.89	0.76	0.66	0.61

*included standard and non-standard nets

Banding

102 species were banded during fall 2013. 4496 birds were banded in 10,369 net hours for a capture rate of 0.52 birds per net hour. The most productive day overall 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	1	EAPH	25	PHVI	19
AMKE	1	EATO	2	RBGR	1
AMPI	62	EAWP	7	RBGU	1
AMRE	63	EUST	110	RBNU	2
AMRO	48	FISP	4	RCKI	592
ATSP	22	FOSP	9	REVI	27
BAOR	7	GCFL	1	RUBL	4
BARS	7	GCKI	946	RTHA	1
BAWW	12	GCTH	46	SAVS	1
BBWA	7	GRCA	45	SCJU	146
BCCH	9	GRYE	1	SCTA	1
BEKI	7	HEGU	6	SESA	20
BGGN	2	HETH	158	SEPL	13
BHCO	1	HOWR	2	SNBU	3
BHVI	13	KILL	25	SOSA	3
BLBW	3	LEFL	33	SOSP	54
BLJA	2	LESA	75	SPSA	15
BLPW	16	LEYE	5	SSHA	3
BRCR	125	LISP	14	STSA	1
BTBW	34	MALL	21	SWSP	23
BTNW	27	MAWA	132	SWTH	87
CATE	1	MOWA	7	TEWA	31
CAWA	6	MYWA	194	TRFL	72
CEDW	17	NAWA	135	VEER	7
CHSP	1	NOCA	5	WAVI	97
CMWA	5	NOPA	16	WCSP	20
COGR	4	NOMO	1	WIFL	2
COHA	2	NOWA	34	WIWA	43
COYE	33	NSWO	29	WIWR	69
CSWA	13	OCWA	7	WOTH	1
DOWO	4	OVEN	26	WPWA	13
DUNL	1	PESA	1	WTSP	242
EABL	6			YBFL	11
EAKI	15			YBSA	7
				YEWA	102
				YSFL	4
				SPECIES	**102**
				TOTAL	**4496**

Recaptures

There were 226 recaptures in fall 2013. Of 226 recaptures, 22 were "return" individuals banded in a previous season at TTPBRS and 156 were "repeats", birds banded during a previous season at TTPBRS. 47 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.

Highlights

Surf Scoter – sighted on November 2
Cackling Goose – sighted on Sept 14
Lapland Longspur – sighted on October 23, November 6
Northern Shrike– sighted November 3
Tundra Swan – sighted on November 1
Stilt sandpiper – one banded on August 25
Northern goshawk – an adult female sighted on November 14

Education and Outreach

TTPBRS continues to engage the community through educational programming. Banding demonstrations and interpretive talks were given to over 1000 people at TTPBRS in 2013. This figure includes park visitors, students and special groups.

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 4,891 hours to the migration monitoring program! Although some volunteers move on or move away, most of our crew is made up of long-term volunteers who commit to one or more days per week, year after year. 18 of the 20 people who volunteered this year were people returning from previous seasons.

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

Table 5. Volunteer Effort 2013

VOLUNTEER	TOTAL HOURS
Amanda Guercio	496.5
Bronwyn Dalziel	795
Charlotte England	816.5
Courtney Shaw	222
Denise Potter	260.5
Don Johnston	42
Bruce Wilson	133
Rachael Zacharias	121
Ian Sturdee	216.5
John Crawford	150
Josh Shook	100.5
Deborah Buehler	148.5
Lisa Myslicki	55.96
Mark Field	42.5
Maya Ricker-Wilson	186
Paul Xamin	843.5
Stephanie Topp	96.5
Tom Flinn	26
Tianna Burke	96.5
Julia Zarankin	42
TOTAL HOURS	***4891***

Weekly Bird Walks

Bird walks were offered every Sunday morning during spring and fall migration, led by volunteers Bob Kortright and Tom Flinn. 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 greenspace and to further the mission of TTPBRS.

Winged Migration

Winged Migration combines an in-class lesson in bird biology with a field trip to Tommy Thompson Park, where children experience the life of birds firsthand. During the fall of 2013 we offered the Winged Migration program.

The highlight of the trip is a visit to the Tommy Thompson Park Bird Research Station where they get to see a bird banding demonstration and learn about migration monitoring.

Media

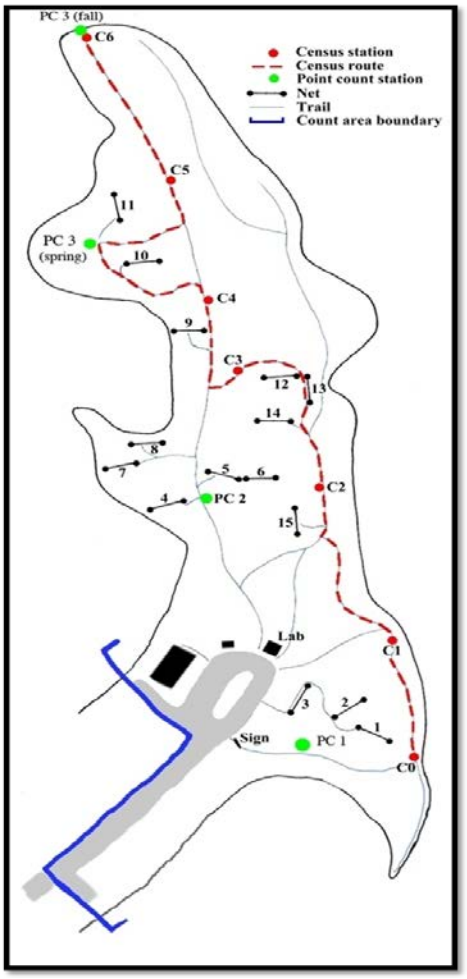
TTPBRS was featured on CP24 in spring 2013. This allowed TTPBRS to expand its reach to the broader public.

Acknowledgements

TRCA would like to thank all the volunteers who made 2013 Migration Monitoring possible:

Charlotte England, Bob Kortright, Bronwyn Dalziel, Don Johnston, Ian Sturdee, John Crawford, Josh Shook, Lisa Myslicki, Mark Field, Denise Potter, Maya Ricker-Wilson, Paul Xamin, Priscilla Lai, Tom Flinn, Amanda Guercio, Rachael Zacharias, Tianna Burke, Stephanie Topp, Deborah Buehler, Ian Sturdee, and Julia Zarankin.

Appendix A. Count Area Map



Appendix B. 2014 Recaptures

Species	Repeat Individuals	Return Individuals	Multiples	Foreign	Total
AMGO	3	2	1	0	6
AMRO	5	2	3	0	10
ATSP	3	1	1	0	5
BAOR	5	1	1	0	7
BCCH	2	4	2	0	8
BGGN	1	0	0	0	1
BHCO	1	2	2	0	5
BLPW	1	0	0	0	1
BRCR	2	0	0	0	2
BRTH	0	1	0	0	1
CAWA	2	0	0	0	2
COGR	0	2	0	0	2
DOWO	1	2	2	0	5
EAKI	0	2	0	0	2
EAPH	2	0	1	0	3
FISP	1	0	0	0	1
FOSP	2	0	0	0	2
GCKI	20	0	5	0	25
GCTH	2	0	0	0	2
GRCA	2	6	5	0	13
HETH	6	0	2	0	8
HOWA	1	0	0	0	1
LEFL	1	1	1	0	3
MAWA	2	0	0	0	2
MOWA	1	0	0	0	1
MYWA	7	0	0	0	7
RCKI	5	0	0	0	5
RWBL	5	9	2	0	16
SCJU	6	0	0	0	6
SOSP	13	2	11	0	26
SWSP	4	0	0	0	4
TRES	0	0	0	1	1
TRFL	0	1	2	0	3
WAVI	2	5	3	0	10
WCSP	2	0	0	0	2
WIFL	1	0	0	0	1
WIWR	1	0	0	0	1
WPWA	4	0	1	0	5
WTSP	4	0	0	0	4
YEWA	14	14	30	0	58
TOTAL	**134**	**57**	**75**	**1**	**267**

Appendix C. Top Ten Species Banded 2003-2013

Rank	2003	2004	2005	2006	2007	2008	2009	2010	2012	2013
1	GCKI	GCKI	GCKI	GCKI	WTSP	WTSP	GCKI	GCKI	MYWA	GCKI
2	WTSP	WTSP	RCKI	RCKI	RCKI	MYWA	WTSP	MYWA	GCKI	RCKI
3	RCKI	RCKI	BCCH	WTSP	GCKI	MAWA	RCKI	BCCH	RCKI	WTSP
4	HETH	MYWA	WTSP	MYWA	MYWA	RWBL	MYWA	WTSP	WPWA	MYWA
5	SWTH	HETH	MYWA	MAWA	HETH	SWTH	SWTH	HETH	SWTH	MAWA
6	MYWA	MAWA	SWTH	NAWA	SWTH	SOSP	HETH	SWTH	NAWA	YEWA
7	BRCR	SWTH	HETH	SWTH	MAWA	RCKI	YWAR	RCKI	BCCH	RWBL
8	SCJU	YWAR	MAWA	HETH	SCJU	YWAR	SCJU	MAWA	HETH	CEDW
9	NAWA	NAWA	SCJU	SCJU	BRCR	COYE	RWBL	SCJU	MAWA	HETH
10	MAWA	TRFL	BRCR	BRCR	NAWA	HETH	SOSP	NAWA	TRFL	SCJU