



Toronto Summer Bird Count 2014 Summary



The Toronto Summer Bird Count (SBC) is a joint effort of the Toronto Ornithological Club and Bird Studies Canada. The purpose is to describe the abundance, distribution, and population trends of the breeding bird species of Toronto, while engaging Toronto birders in a meaningful monitoring project in their home community! The protocol for the count is simple: volunteers revisit all of the point count locations from the 2nd Ontario Breeding Bird Atlas (OBBA) that fall within the Toronto Christmas Bird Count Circle (Figure 1). Each point count is visited once for five minutes, and every bird seen or heard during that time is recorded. Counts are conducted in good weather before 11 a.m. between 24 May and 10 July, creating a replicate of the OBBA dataset that allows for direct comparisons. Annually re-sampling the OBBA point count locations allows us to tell the story of how the breeding birds in our city have changed since the OBBA was conducted between 2001-2005, and this story will become more interesting with each year of added data.

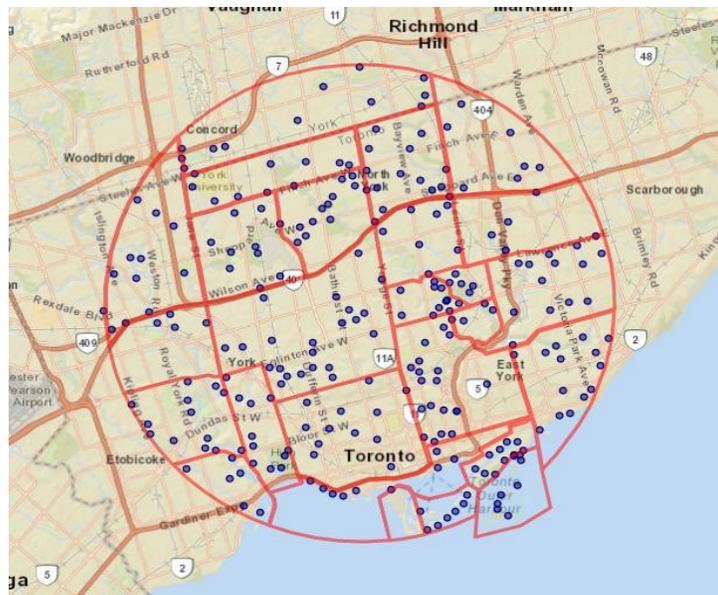


Figure 1. Point count locations from the 2nd OBBA that fall within the Toronto Christmas Bird Count Circle. These locations were originally sampled (1 visit per site), between 2001-2005.

To analyze the count findings, measures of significance were taken from paired double-tailed t-tests. For each species (and meaningful groups of species, such as aerial insectivores or cavity nesters) two t-tests were done: one comparing the average number of birds detected per point between 2013 and 2014, and one comparing the same measures between 2014 and the OBBA.

Overall Results

A total of 262 point counts were conducted in all 26 sectors in 2014. Participants detected 75 species overall (compared to 81 during the OBBA and 76 in 2013). The most diverse sector in 2014 was 5A (Downtown Core) with 37 species observed and an average of seven species per

point count. The sector with the highest average species per count was 14B (Toronto Islands) with an average of 15 species per point count. There were certain notable absences in the species list for 2014. **Bobolinks** were detected on the OBBA but were absent in 2013 and 2014. Several other species were present in 2013 but absent in 2014: **Pine Warbler, Common Loon, Sharp-shinned Hawk, Rose-breasted Grosbeak, and Eastern Meadowlark**. However, some new birds for the count were also detected in 2014: **Eastern Bluebird, Common Raven, Bonaparte's Gull, Canvasback, Orchard Oriole, and Horned Lark**. Moreover, two species not detected since the OBBA were counted in 2014: **Eastern Phoebe and House Wren**. Seven species have been among the most frequently counted on these point counts, with the three most abundant species in Toronto remaining stable since the OBBA (see Table 1).

Table 1. Top 5 species

Species	2014	Species	2013	Species	OBBA
DCCO	4313 on 22 counts	DCCO	2737 on 19 counts	RBGU	1729 on 69 counts
RBGU	1488 on 142 counts	RBGU	2736 on 145 counts	EUST	1068 on 175 counts
HOSP	880 on 147 counts	EUST	778 on 126 counts	HOSP	820 on 158 counts
EUST	717 on 125 counts	HOSP	742 on 116 counts	DCCO	657 on 14 counts
AMRO	524 on 164 counts	CANG	720 on 121 counts	ROPI	455 on 105 counts

Table 1. The recent meteoritic rise of the Double-crested Cormorant is clearly demonstrated since the OBBA, but three species are jostling for position as Toronto's 5th most populous bird: Rock Pigeon, Canada Goose, and American Robin. Species codes are as follows: DCCO: Double-crested Cormorant.; RBGU: Ring-billed Gull; HOSP: House Sparrow; EUST: European Starling; AMRO: American Robin; CANG: Canada Goose; ROPI: Rock Pigeon.

Long-term trends since the 2nd OBBA

Abundance measures for a number of passerines have declined significantly since the OBBA, notably for **Blue Jay, European Starling, Common Grackle, Baltimore Oriole, Northern Cardinal, and House Finch**. In stark contrast, the aerial insectivores, a group experiencing widespread decline, have actually increased in the count area since the OBBA, with many species exhibiting a statistically significant upwards trend (see Table 2). Many of these species utilize human-made structures as habitat, so Toronto certainly offers a good choice of nesting sites. This factor, combined with our municipal pesticide ban, may account for the increases seen in **Bank Swallow, Barn Swallow, Chimney Swift, Northern Rough-winged Swallow, Purple Martin, and Tree Swallow**. This increase has been particularly notable for **Chimney Swifts** (see Figures 2 and 3), which were only detected on 8% of OBBA point counts for a total of 40 birds between 2001-2005, but were detected on 26% and 27% of counts in 2013 and 2014, with over 200 individuals counted each year.

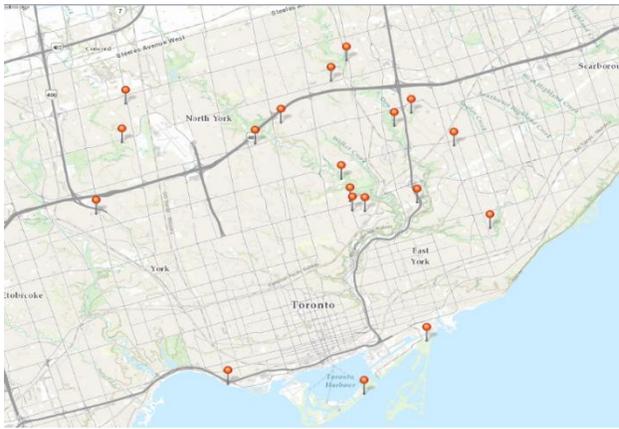


Figure 2. Point Counts with Chimney Swift Detections: OBBA 2001-2005

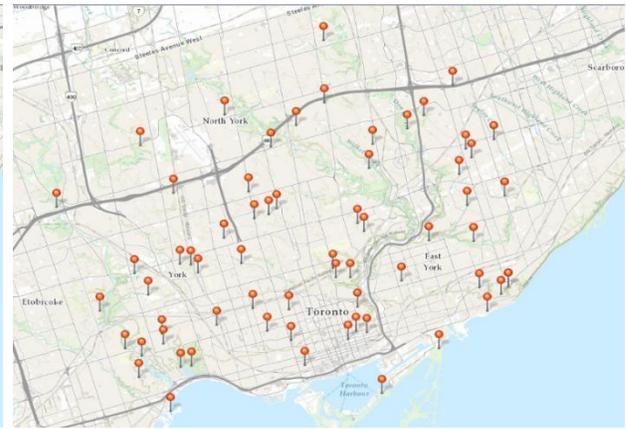


Figure 3. Point Counts with Chimney Swift Detections: Summer Bird Count 2014

Comparisons of Species Totals: 2014 vs 2013			
Significant Increases		Significant Decreases	
Species	P- Value	Species	P- Value
AMGO	0.022	YEWA	0.011
BARS	0.043	HAWO	0.014
HOWR	0.045	RBGU	0.031
HERG	0.048		
CLSW	0.056 (near significant)		

Table 2. Statistically significant increases and decreases were detected for the species above. These data have not been controlled for the effects of observation date. Species codes are as follows: AMGO; American Goldfinch; BARS: Barn Swallow; HOWR: House Wren; HERG: Herring Gull; CLSW: Cliff Swallow; YEWA; Yellow Warbler; HAWO: Hairy Woodpecker; RBGU: Ring-billed Gull.

The data collected in 2014 showed some interesting changes since 2013. **Ring-billed Gull**, **Hairy Woodpecker**, and **Yellow Warbler** observations declined significantly. **Barn Swallow** observations were significantly higher than last year and **Cliff Swallow** observations were elevated but not quite significantly so ($p=0.056$). An interesting result without a readily apparent cause was a significant increase in **American Goldfinch** observations. Tree cavity nesting birds (woodpeckers, nuthatches, chickadees, wrens, and **Great Crested Flycatchers**) experienced a statistically significant increase ($p=0.0055$) as a group from 2013-2014 despite a overall decrease since the OBBA ($p=0.0817$). This trend might be explained by increased available nesting snags due to the extreme weather of the previous winter, but this will require more study in future years.

What to watch for in 2015

It will be interesting in future count years to continue to monitor the status of the aerial insectivores, which seem to be doing well locally despite a widespread decline. Similarly, we may start to see significant recovery in corvid species such as the **American Crow** and **Blue Jay** that suffered heavily due to West Nile Virus in the early 2000s but seem to be returning to urban areas. Cavity nesters will continue to be looked at carefully to determine how extreme winter weather affects nesting habitat and foraging opportunities.

Acknowledgments

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