Ontario SwiftWatch

2012 Summary Report

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BIRD STUDIES CANADA
ÉTUDES D'OISEAUX

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INTRODUCTION

In 2009, Bird Studies Canada partnered with the London SwiftWatch program to conduct a scientific assessment of their monitoring protocol and make recommendations for improving the survey design. In response to interest from other naturalist groups in urban areas across Ontario, Bird Studies Canada launched Ontario SwiftWatch in 2010.

Loss of suitable nesting and roosting habitat is frequently cited as one of the leading causes for Chimney Swift declines. For this reason, in 2010 and 2011 the primary objectives of Ontario SwiftWatch were to determine whether artificial towers are providing a similar microclimate to that of traditional masonry chimneys, determine nest/roost site requirements of Chimney Swifts in Ontario, and determine whether habitat is limiting the recovery of Chimney Swifts in small and medium sized urban areas in Ontario. In 2012, the protocol was simplified and the priority shifted to identifying locations of active nesting/roosting chimneys throughout Ontario.

This report summarizes the work that has been conducted to address these objectives. Much of this work was completed by dedicated SwiftWatch volunteers and community groups across the province. Thank you for helping us to achieve our goals!

METHODS

Ontario SwiftWatch data is gathered by volunteers in communities across Ontario. SwiftWatch volunteers contribute their valuable time to survey chimneys for the occurrence of Chimney Swifts in urban areas throughout Ontario. For many of our SwiftWatch communities, there is a regional coordinator who organizes and communicates with the volunteers in the city. All of the data is entered online by the volunteers or their regional coordinator.

For a full explanation of SwiftWatch's methods of data collection, please see our full protocol on the Bird Studies Canada website *here*.

Data Collection in 2010 and 2011

Chimney Inventory. Chimney inventories involved developing exhaustive lists of all chimneys within defined areas such as the whole community, the downtown core, or a defined survey square. The inventories included both potential chimneys and unsuitable chimneys (e.g., capped chimneys, where swifts were unable to enter). The goal of the chimney inventory was to quantify the number of chimneys potentially available for swifts.

Habitat Assessments. Habitat assessments were conducted by SwiftWatch volunteers at most or all of the chimneys identified during the chimney inventories. Assessments involved identifying the physical and spatial characteristics that make chimneys suitable for nesting or roosting swifts. For example, the following parameters were recorded: dimensions, construction material, number of flues, associated building type, surrounding urban habitat, and any

modification to the structure. Information from habitat assessments was then used to compare characteristics of chimneys used by swifts to characteristics of chimneys not used by swifts.

Data Collection in 2012

Ontario SwiftWatch participants collect two different types of data. The first data type investigates *where* swifts live, which is collected through presence/absence surveys. The second type of data collected is related to local population size or *how many* swifts are in any given area. This information is collected through population monitoring and the national blitz.

Presence/Absence Surveys. During these surveys volunteers walk throughout an area within the city to identify potential chimneys where swifts may be found (following BSC criteria). Following the identification of potential chimneys, volunteers are asked to make follow-up observations at these sites to determine whether the chimney is an active nest or roost site. In addition, BSC solicits casual observations of active chimneys from any location, either within or outside of areas systematically monitored by volunteers (e.g., a citizen happens to see birds entering a chimney).

Population Monitoring. Our focus during 2012 was on presence/absence surveys, particularly to identify new occupied sites. However, we have also started to determine how many swifts use each active chimney. During this kind of monitoring, volunteers watch occupied chimneys starting 30 minutes before sunset until 15 minutes after sunset and record how many swifts enter and/or exit the chimney.

National Population Monitoring Blitz. Volunteers choose a single roost to observe for 3 selected evenings in the spring and again for 3 selected evenings in the fall. Volunteers then report on the total number of Chimney Swifts seen entering the roost for each night of the national blitz.

RESULTS

Since the launch of Ontario SwiftWatch in 2009, BSC has received Chimney Swift data from over 200 volunteers in 46 communities across Ontario. During spring and fall of 2012, Ontario SwiftWatch workshops were conducted in Mississauga, Oakville, Toronto, and Picton.

In 2012, we received more than 500 incidental and formal observations from 138 volunteers identifying a total of 244 nest and/or roost chimneys in 35 communities (Table 1).

Table 1 – A summary of 2012 Ontario SwiftWatch activities

Community	Nest/roost chimneys identified
Aurora	5
Bancroft	1
Barrie	19
Belle River	1
Brockville	6
Burlington	18
Cambridge	2
Campbellville	2
Elgin	1
Elmvale	1
Exeter	1
Fort Erie	12
Hamilton	1
Ingersoll	1
Kingston	1
London	22
Milton	5
Mitchell	3
Oakville	19
Ottawa	5
Paris	1
Parry Sound	1
Pembroke	3
Peterborough	1
Picton	6
Port Burwell	2
Port Colborne	1
Ridgeway	1
Schomberg	1
Seaforth	1
Simcoe	2
Stratford	28
Sudbury	1
Toronto	70
Wiarton	2

Table 2 – Results of the National Population Monitoring Blitz in Ontario

Community	May 29 # swifts	June 02 # swifts	June 06 # swifts	July 24 # swifts	July 28 # swifts	Aug 01 # swifts
Stratford	16	38	27	33	35	37
London	82	110	40	X	X	X
London	80	123	50	81	158	X
Barrie	24	101	17	68	66	55
Bancroft	120	190	190	150	60	65
Peterborough	78	100	86	X	X	X
Cambridge	43	90	0	X	X	X
Parry Sound	71	20	92	X	X	X
London	158	378	127	X	X	X
Burlington	28	30	26	24	28	14
Milton	3	30	12	44	28	37
Oakville	93	129	94	118	119	91
Oakville	15	29	23	10	15	11

X – survey not completed

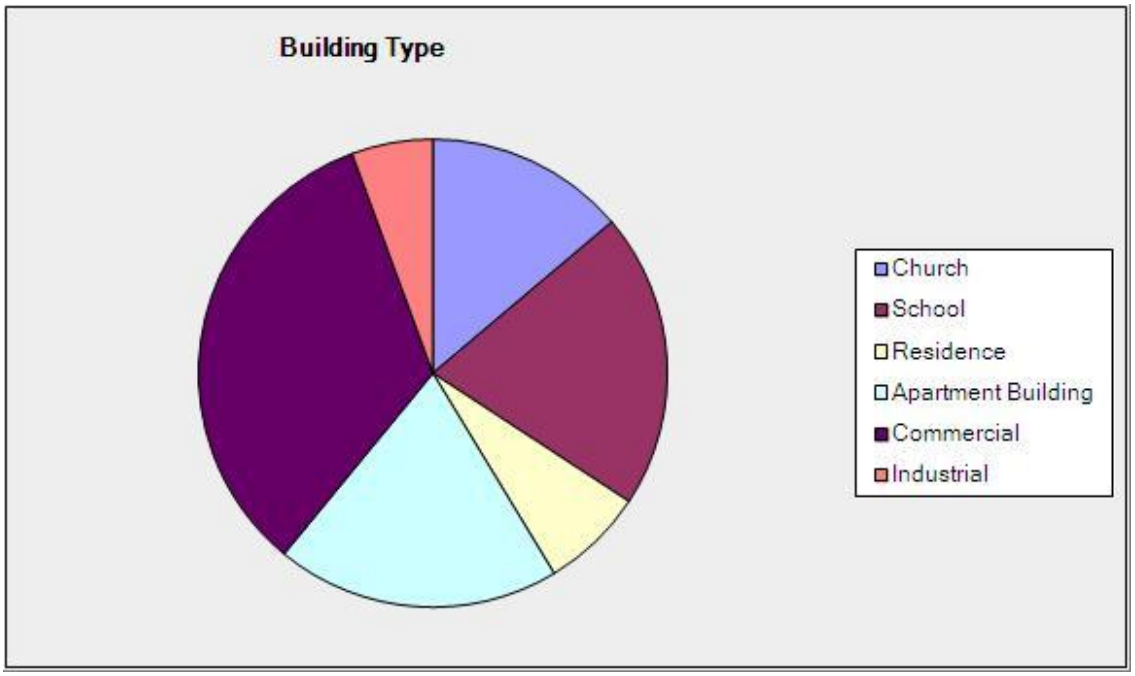

Figure 1 – Types of buildings with chimneys being used by swifts observed in 2012

Chimney Swift Detectabilty Study – Identifying occupied Chimney Swift nest sites

During the summer of 2011, Keelin Stanbury from University of Western Ontario joined our team to work on a detectability study that used footage from wireless video cameras placed in active swift nesting chimneys. Five cameras were placed in various locations throughout Norfolk and Oxford County; 4 in nesting chimneys and 1 in a roost chimney.

Using the footage we were able to develop guidelines describing the minimum observation time required to reliably assign occupancy to nesting-only chimneys, where birds make entrances and exits throughout the day. We found that 45 minutes of continuous observations at any time during the day in June or July and 20 minutes of continuous observation at any time during the day in August will generally provide reliable assessments of activity at nesting-only chimneys in Ontario.

Habitat Assessments – Is habitat loss a factor limiting Chimney Swift populations?

Using the chimney inventory and the habitat assessments conducted by volunteers, 928 chimneys, either used or unused by swifts, were described in 36 selected communities across Ontario. These descriptions revealed that Chimney Swifts preferentially used chimneys with a greater length exposed above the roofline of the building and a greater inside area than those available to be used. The average chimney used by swifts extended 2.86 m above the roofline and had an internal area of 1.0079 m^2.

We also found that 73% of active chimneys were found on non-residential buildings. Interestingly, the majority of building types surveyed by volunteers were residential houses (63%), followed by commercial buildings. However, the building types with the highest number of sites occupied by swifts were commercial (mostly found in downtown urban habitat), churches and schools.

Lastly, we tested how the use of chimneys by swifts is related to chimney availability within three communities that had complete chimney inventories of all open and closed chimneys and whether they were being used by swifts. Our focus was to determine whether swifts were using all of the available nest habitat within the communities or whether unoccupied nest habitat was available. We found that among 139 open and suitable habitat chimneys available, only 24.4% were actually occupied by swifts. These results suggest that in urban areas there is more nesting habitat available than being used by Chimney Swifts and it is likely that declines in Ontario's swift population are primarily driven by a process other than habitat loss, such as prey abundance and availability. However, suitable nesting habitat is a finite resource and will continue to decline over time as chimneys are capped, modified, or destroyed. Thus, it is possible that Chimney Swifts may end up using all of the available nesting chimneys in Ontario communities at some point in the future.

Use of natural cavities by Chimney Swifts: habitat selection and forestry practice implications

During the summer of 2012, Carolyn Zanchetta from McMaster University joined our team to investigate natural Chimney Swift nesting and roosting habitat. She described natural Chimney Swift nesting and roosting habitat, assessed the current availability of natural nest/roost sites, and determined whether natural sites are limiting the Chimney Swift population in Ontario. BSC has now established the largest database describing natural cavities used by Chimney Swifts in North America, with 63 reports ranging from 1840 until 2012. This was done by performing a range-wide review of primary literature, breeding bird atlases, nest record schemes, regional bird books, online birding list serves and forums, researchers, volunteer monitoring programs, and other similar resources to develop descriptions of all known natural nest/roost sites.

Deciduous trees hosted 24 used sites, whereas 17 used sites were in coniferous trees. The most commonly encountered tree species to host nesting or roosting Chimney Swift were: white pine, sycamore, yellow birch, and cypress. In three reports, the entrance used by the Chimney Swifts was an entrance previously created by Pileated Woodpeckers. Based on the results of our review, the vast majority of trees currently deemed to be suitable for use by Chimney Swifts do not seem to be used suggesting that natural nest/roost sites are not currently limiting swift populations. Although our estimates suggest that suitable nesting and roosting trees were somewhat less common in logged compared to unlogged forests, there still appears to be good numbers of suitable unoccupied nesting and roosting trees in logged forests. In addition, forestry guidelines appear to provide adequate retention of trees suitable for Chimney Swift use.

School SwiftWatch

In 2011 Bird Studies Canada began developing School SwiftWatch, an environmental education program that engages elementary and secondary students in hands on avian conservation efforts. School SwiftWatch was launched in spring 2012. BSC installed 3 cameras; facilitated workshops for three educators at Commonwealth Public School and two educators at Stratford Middle Years to introduce them to School SwiftWatch and the curriculum-linked Chimney Swift activities; and set up public viewing areas at all the host chimney sites.

Although the pilot year had many challenges, we were able to engage over 250 students in urban birds at risk conservation and stewardship activities. Additionally, with the installation of cameras at Elgin United Church and Halton Conservation, we were able to educate over 200 individuals of the general public about Chimney Swifts and urban birds at risk.

OBJECTIVES FOR THE 2013 SWIFTWATCH SEASON

For the upcoming 2013 Ontario SwiftWatch season, we plan to continue building our knowledge of active nest and/or roosting chimneys within the province of Ontario. The more we know

about locations where Chimney Swifts are nesting and roosting, the better the chances of protecting them are.

If you are interested in participating in Ontario SwiftWatch within your community, please contact Kathy Jones, Ontario Programs Volunteer Coordinator at 519-586-3531 ext. 124 or email volunteer@birdscanada.org.

ACKNOWLEDGMENTS

Ontario SwiftWatch could not be conducted without the help of the many dedicated individuals. A big thank you goes out to the Ontario SwiftWatch volunteers who have grown too numerous to mention individually. Each has shown strong commitment and interest in the welfare of Chimney Swifts, and continues to make Ontario SwiftWatch a success.

A sincere thank you also goes to all of the Ontario SwiftWatch Regional Coordinators, without your perseverance and dedication to the program we would not be able to collect the calibre and quantity of data we have:

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