ONTARIO BIRDS

VOLUME 35 NUMBER 3
DECEMBER 2017

JOURNAL OF THE ONTARIO FIELD ORNITHOLOGISTS

ONTARIO BIRDS

JOURNAL OF THE ONTARIO FIELD ORNITHOLOGISTS

VOLUME 35 NUMBER 3
DECEMBER 2017
PAGES 121 –160

Cover: Ivory Gull by Barry Kent MacKay

ISSN 0822-3890
Publications Mail Agreement
No. 40046348

The case for accepting Ontario reports of Barnacle Goose

Mike V.A. Burrell

The Ontario Bird Records Committee (OBRC) has been very consistent in its approach to dealing with reports of Barnacle Goose (*Branta leucopsis*) in the province: assume they are escapees unless proven otherwise. I believe this has been a fair treatment of the species since the perception was that they are relatively common in captivity, records did not seem to fit an expected pattern of vagrancy and the species itself was very rare in North America.

However, I believe the time has come (indeed, the time likely came several years ago with the acceptance of the first record) to update this thinking and at least assume birds in certain geographic areas and temporal periods in the province are wild unless evidence is presented to the contrary. In this article, I summarize some arguments for why this paradigm shift should happen now.

Ontario precedent

On about 20 November 2005, a group of hunters including Jean Buswell, Henri Poupart and Jean-Claude Bermond shot an adult Barnacle Goose at Bais De Atocas, United Counties of Prescott and Russell, Ontario. This bird had been banded as a juvenile in November 2004 in the Loch Gruinart Royal Society for the Protection of Birds reserve on the Isle of Islay, Scotland, a well-documented wintering area for Greenland breeding Barnacle Geese, leaving little doubt as to its origin (Richards 2009). This also leaves absolutely no doubt that genuine vagrant Barnacle Geese have occurred in Ontario. This record was actually a tipping point for many in the northeast to change their thinking on the status of this species (e.g., Hanson 2008, Malosh and Pulcinella 2009). Sherony (2008) listed 124 acceptable reports of Barnacle Goose in eastern North America.

Barnacle Goose at Grimsby Harbour, Niagara Regional Municipality on 27 December 2009.
Photo: Chris L. Wood.

Until a draft of the current article was circulated to the OBRC, the Bais De Atocas record remained the only OBRC-accepted record of Barnacle Goose in Ontario. After reviewing the draft article, the OBRC subsequently accepted a 2015 record of two birds observed from 3-4 May 2015 at Mohrs Corner, City of Ottawa (Burrell *et al.* 2017).

Increasingly breeding in eastern Greenland near or alongside Barnacle Geese, the Pink-footed Goose (*Anser brachyrhynchus*) (Wildfowl and Wetlands Trust 2017a) has shown similar increasing trends in vagrancy to northeastern North America (Sherony 2008), but because it is rare in captivity, vagrant sightings are not questioned as are those of Barnacle Goose. Ontario now has three accepted records of Pink-footed Goose: one at Tayside, United Counties of Stormont, Dundas and Glengarry from 30 October-26 December 2015 (Burrell and Charlton 2016), one from Frontenac County on 11 March 2016 and one from United Counties of Stormont, Dundas and Glengarry on 31 October to 7 November 2016 (both accepted by the 2016 OBRC, Burrell *et al* 2017). The 2016 record from United Counties of Stormont, Dundas and Glengarry is almost certainly the same individual as 2015 based on unique plumage details and a very similar arrival location and date (Burrell *et al* 2017).

Sherony (2008) listed 17 reports of Pink-footed Goose and 124 acceptable reports of Barnacle Goose in eastern North America, a ratio of 7.5 Barnacle Geese for every Pink-footed Goose. If we extrapolate the three Ontario records of Pink-footed Goose, we would expect close to 23 Barnacle Goose records.

I compiled a list of reports of Barnacle Goose in Ontario (regardless of whether they were "accepted") from the

following sources: eBird, OBRC, Ontbirds, Peterborough sightings, Ottawa Field Naturalists' Club bird records committee, Clive Goodwin's Ontario notes, North American Birds (and its predecessors), Weir (2008), Black and Roy (2010) and Curry (2006). The raw data are listed in Table 1.

Table 1. Ontario reports of Barnacle Goose sorted by season

Season	Location, census division	Dates	#	Stay (days)
Spring	Port Royal, Norfolk	26-27 Mar 1977	1	2
Spring	Toronto, Toronto	13 Mar 1982	1	1
Spring	Whitby, Durham	1 Apr 1984	1	1
Spring	Shirley's Bay, Ottawa	29 Apr 1984	1	1
Spring	Long Point, Norfolk	28 Mar 1986	1	1
Spring	Petawawa, Renfrew	17 Jun 1986	1	1
Spring	Aylmer, Elgin	21 Mar 1990	1	1
Spring	Nepean, Ottawa	20-21 Apr 2003	1	2
Spring	Presqu'ile Provincial Park, Northumberland	3 Apr 2004	1	1
Spring	Ottawa, Ottawa	6 May 2006	1	1
Spring	Kingsville, Essex	18 Mar 2011	1	1
Spring	Scugog Point, Durham	19 Apr 2012	1	1
Spring	Mohrs Corner, Ottawa	3-4 May 2015	2	2
Summer	Toronto, Toronto	24 Jul 2006	1	1
Summer	Port Colborne, Niagara	2 Jul 2010	1	1
Summer	Stratford, Perth	10 Aug 2012	1	1
Autumn	Kingsville, Essex	27 Oct-15 Dec 1955	5	49
Autumn	Garden Hill, Northumberland	15 Oct-11 Nov 1978	1	27
Autumn	Toronto, Toronto	15 Nov 1978	1	1
Autumn	Toronto, Toronto	24 Oct 1987	1	1
Autumn	Wolfe Island, Frontenac	20 Dec 1992	1	1
Autumn	Pittock Lake, Oxford	12 Nov 2005	1	1
Autumn	Bais Des Atocas, Prescott and Russell	20 Nov 2005	1	1
Autumn	Port Elgin, Bruce	22-29 Nov 2010	1	8
Autumn	Kingsville, Essex	5 Oct 2012	1	1
Winter*	Mississauga, Peel	6 Feb 1983	1	1
Winter*	Mississauga, Peel	18 Dec 1984-15 Feb 1985	1	59
Winter*	Port Credit, Peel	Winter 1986/1987	1	ca. 60+
Winter**	Beamsville, Niagara	9 Dec 2006-7 Jan 2007	1	29
Winter**	Grimsby, Niagara	19 Dec 2009-22 Jan 2010	1	34
Winter	Kingsville, Essex	6 Jan 2012	1	1
Winter	Whitby, Durham	1 Dec 1981	1	1

* presumably the same returning bird was involved in the three winter records.

** presumably the same returning bird was involved in the two winter records. Black and Roy (2010) mention that a Barnacle Goose was present in this area during the winter months of 2007, 2008, 2009, and 2010 and assume only one bird was involved.

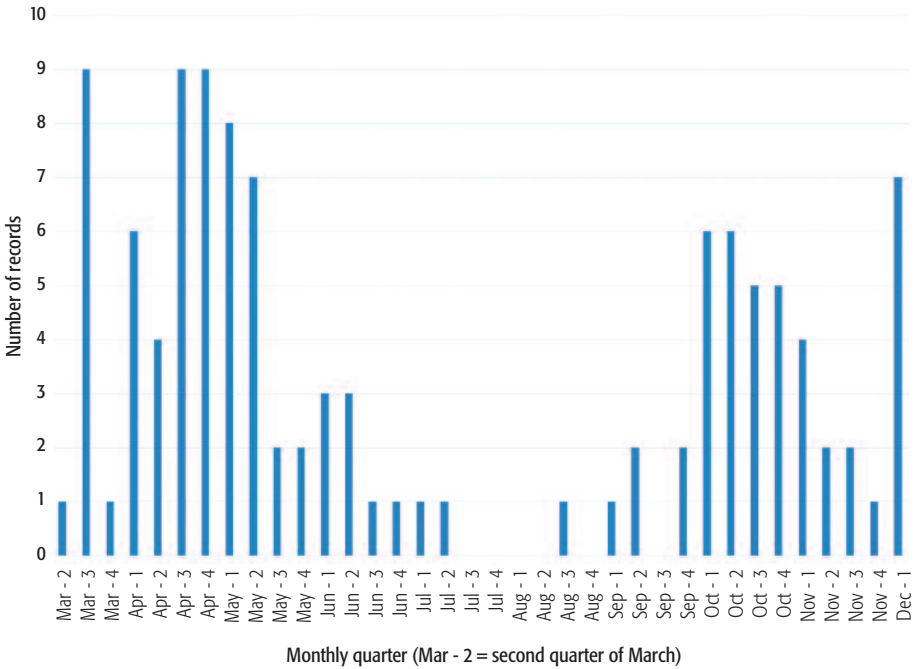


Figure 1. Accepted Barnacle Goose records in Quebec grouped by monthly quarter. There are no records prior to the second quarter of March or after the first quarter of December. *Compiled from Lepage (2017).*

I have classified the June 1986 record as a spring bird as this fits into the timing of the last of the spring sightings from Quebec (Figure 1). Similarly, I grouped the December 1992 record as an autumn bird as it was reported to be with migrant Canada Geese and was not seen later in the winter. The December 1981 bird could likely also be classified as an autumn migrant but no details about the record were available to me. Of the 29 Ontario records, spring birds are most common (13), followed by autumn (9), winter (4), and summer (3).

Spring birds have been detected from 13 March to 17 June (Table 1). The average date of first sighting was 15 April. The average stay-length of spring records is 1.25 days (three records spanned two days, the rest were one day only). The dates of spring records are grouped by geographic area (Figure 2): records from the southwest (Northumberland County west) fall between 13 March and 19 April, and those east of Northumberland County from 20 April to 6 May (plus the June record).

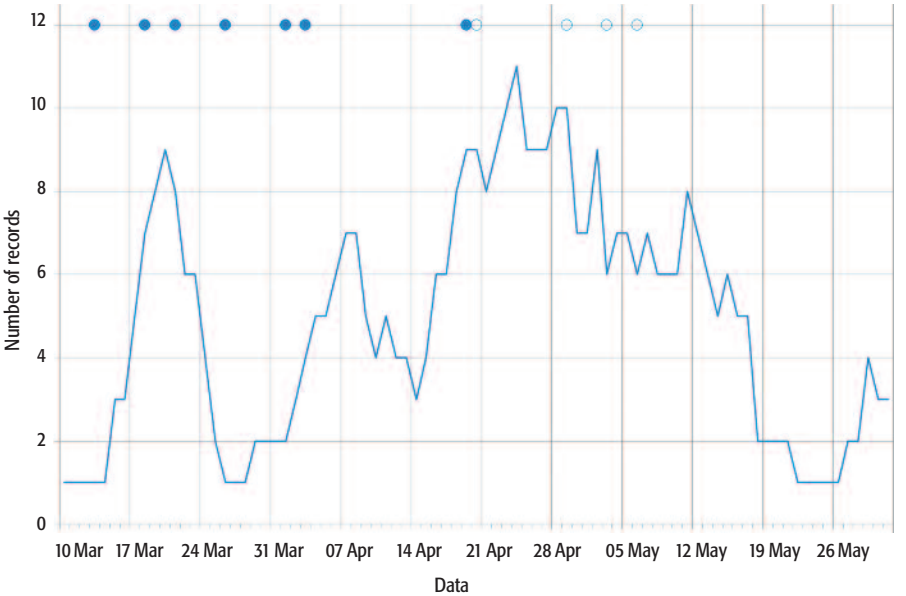


Figure 2. Spring records of Barnacle Goose in Quebec and Ontario. Each Quebec observation is plotted for three days on either side of the reported date to smooth the curve (see text). The filled circles at the top show the dates of spring records of Barnacle Goose in southwestern Ontario while the open circles show the same for southeastern Ontario.

Autumn records (Table 1) span 15 October to 20 December, with three in October, four in November, and one in December. The average date of first sighting was 7 November. The 1955 Essex County birds were present for 49 days, the 1978 Northumberland County bird was present for 27 days and the 2010 Bruce County bird for eight; otherwise all records involved birds on single dates only. The three summer records span 2 July to 10 August, with an average date of 22 July. All three records are from the past ten years.

As indicated in Table 1, while there are seven or eight winter records, it appears to involve only four different birds, with one bird in Peel during the winters of 1982/1983 and one in Niagara Regional Municipality during the winters of 2006/2007, 2007/2008, 2008/2009 and 2009/2010. Of all Ontario records, only the autumn 1955 and May 2015 records were of more than a single individual, with five and two birds, respectively.

Status elsewhere

Greenland

Sherony (2008, 2014) summarized the status of Barnacle Goose and other Greenland breeding goose species and it seems to be well accepted that Greenland is the breeding source of Barnacle Geese arriving in North America (Sherony 2008, 2014, Malosh and Pulcinella 2009). This view is logical as Greenland is the closest breeding location to north-eastern Canada and United States.

Barnacle Goose and other goose species have increased greatly in Greenland in the last 50 years (Sherony 2008). Fox *et al.* (2010) provided an estimate of the Greenland population of Barnacle Goose at 70,500 during the winter of 2007/2008, up from 40,000 in the 1990s. This increasing trend has continued with the most recent surveys of the wintering population of Greenland Barnacle Geese in Ireland and Scotland recording 80,670 during the spring 2013 survey, up 14.4% from the previous survey in March 2008 (Mitchell and Hall 2013). Since these spring surveys began, the population of Greenland Barnacle Geese has increased nearly 8.5-fold from 8,321 in 1959 (Mitchell and Hall 2013). The increasing trend has been remarkably steady during the entire time period (Figure 3).

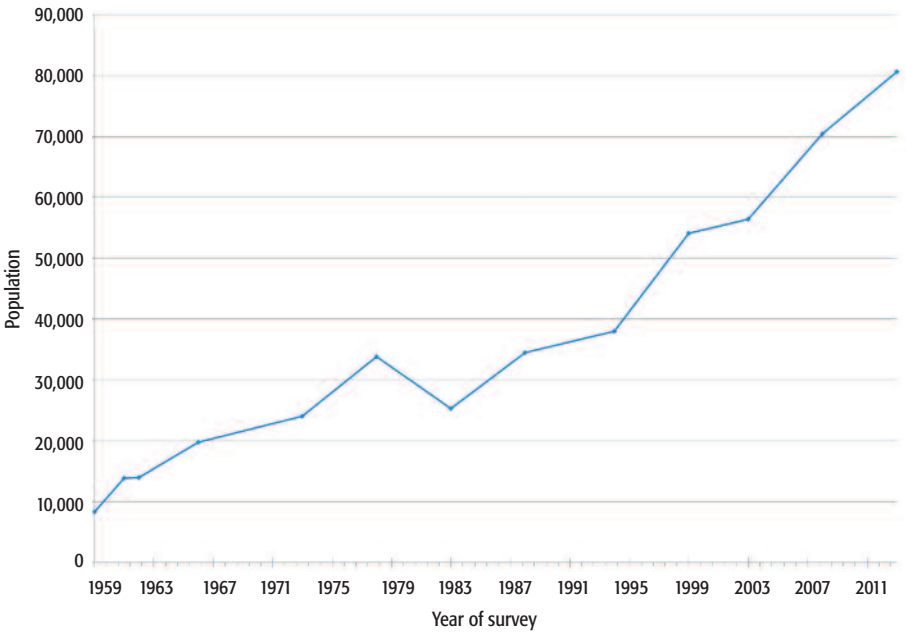


Figure 3. Results of the International Census of Greenland Barnacle Geese wintering in Ireland and Scotland. *Data from Wildfowl and Wetlands Trust (2017b).*

It is important to note that not only is the population of Barnacle Geese breeding on Greenland increasing, but the range of summering/moulting Barnacle Geese is also spreading northward along the eastern coast of the island (Boertman *et al.* 2015). This is of note as it brings Barnacle Geese closer to the Greenland breeding and moulting areas of interior Canada Geese (*Branta canadensis interior*), thereby increasing the chances of birds getting caught up with a migrating flock of Canada Geese and heading for North America rather than to Scotland and Ireland to winter.

Quebec

Based on geography, it stands to reason that western Quebec and upstate New York are the jurisdictions most similar to eastern Ontario in terms of goose migration. The northeastern United States differs in that it has larger numbers of geese, particularly *interior* Canada Geese, in winter, which is when Barnacle and Pink-footed geese are observed there (Sherony 2008).

Lepage (2017) lists 118 records of Barnacle Goose in Quebec, five of which are listed as escaped, rejected, or captive origin. The first record (from 1867) does not have a date. Removing those records leaves 112 for the province. These fall quite nicely into spring and autumn migrants, timed around the movements of migrant Canada Geese—much different than the random pattern one might expect for escapees. The distribution of records in Quebec through the year is shown in Figure 1.

Spring and summer records span 10 March to 15 July and autumn migration spans 23 August to 7 December. There is a spring peak from mid to late March but the densest grouping of spring sightings is from a second peak spanning 17 April to 14 May, which accounts for 33 records. The densest grouping of autumn sightings is from 1 October to 7 November, which accounts for 26 records.

Looking at the data in a slightly different way shows the spring pattern (March to May) a little bit more closely in Figure 2. Here, the number of records within three days either side of a given date is plotted, in an attempt to average out day-to-day variation. There appears to be a peak in mid-late March, but the real bulk of records is in April and May, peaking on 24 April with 11 records within three days (i.e., 21-27 April).

Northeastern United States

In the northeastern United States, Barnacle Geese are now a regular part of the winter avifauna (Appendix 1). Sherony (2008) showed that all Barnacle Goose reports from the east coast of the United States occurred in the time period of 1 October to mid-May. In the Sherony (2014) update, he lists the earliest autumn date for the United States east coast as 6 October with others extending to early April.

Bird records committees in the northeastern United States are all fairly similar in their approach to this species. All of the states from Maine to Virginia were polled and all that replied, with the exception of Virginia, now consider records of this species as wild unless contrary evidence is presented. One state, Connecticut, has now removed this species from its list of reviewable species. Great Lakes states south and west of Ontario have quite a different approach, mostly considering records as

escapees unless evidence to suggest otherwise; not surprisingly with this conservative approach, neither Ohio, Michigan, Wisconsin, nor Minnesota have an accepted record. The summary of responses to my queries about status/treatment of Barnacle Goose records from bird records committees in the northeast is presented in Appendix 1.

Robinson *et al.* (2015) list seven instances of Barnacle Geese banded in the UK being recovered in Canada and the United States: the one Canadian recovery is the Bais De Atocas record and the rest are from the northeastern United States.

Greenland Canada Geese

Canada Geese have been present in Greenland since at least 1864 but have dramatically increased in the past thirty years (Fox *et al.* 2012). The *interior* subspecies is the only subspecies of Canada Goose which has been confirmed on Greenland (Fox *et al.* 2012). Lyngs (2003) states that the species was considered a "scarce vagrant and occasional breeder" prior to the 1970s but since then has rapidly colonized western Greenland. Based on banding recoveries and satellite tracking data, the Canada Geese breeding in western Greenland "cross the Davis Strait in late Sep, passing Labrador, New Brunswick and Massachusetts en route to the wintering grounds in the northeastern United States, primarily Connecticut, New York and Pennsylvania" (Lyngs 2003). Lyngs (2003) summarized their annual movements as follows, "the Canada Geese leave Greenland during the last half of Sep, reaching their general wintering areas in late Oct–early Nov and departing from these by mid Mar."

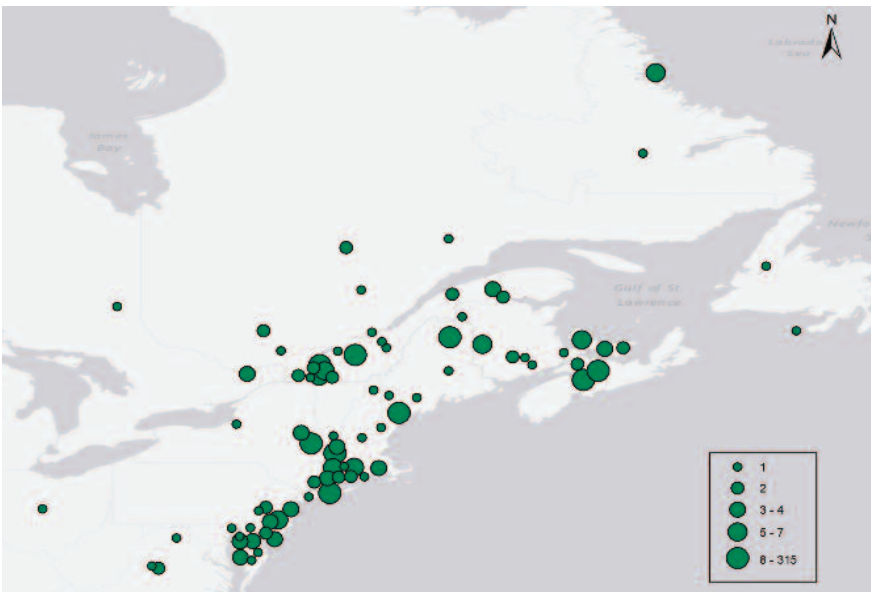


Figure 4. Canada Geese banded in Greenland and recovered or re-sighted in Canada and the United States. *Prepared using data obtained from the Canadian Wildlife Service Bird Banding Office.*

Banding recoveries are the main source of information for determining movement patterns of Greenland Canada Geese; as of 2014, according to data obtained from the Canadian Wildlife Service Bird Banding Office, a total of 233 Canada Geese banded in Greenland had been recovered or re-sighted in Canada or the United States for a total of 787 re-encounters (Figure 4). These re-encounters are concentrated in southern Quebec, easternmost Ontario, New Brunswick, Nova Scotia and the northeastern United States. Also of note, one Canada Goose banded in Pennsylvania was found in Greenland and of particular interest to Ontario birders, a bird banded near Kingsville, Essex County, Ontario, on 4 November 1964, was shot in Greenland the following July (Lyngs 2003).

Some Canada Geese have been satellite-tracked during spring and autumn migration from Greenland to the northeastern United States and Canada. Scribner *et al.* (2003) found that these birds had a similar migration pattern as Canada Geese breeding in the southern Ungava Bay region. That is, they travelled in autumn from southern Ungava Bay, "through central Quebec, eastern New York, western Vermont, Massachusetts, and Connecticut to wintering areas" in New York, Massachusetts, Connecticut, and New Jersey. Greenland-breeding Canada Geese tracked in spring migration also followed an inland route similar to the Ungava Bay breeders, that is, from New York, through the Hudson River and Lake Champlain areas and central Quebec (Scribner *et al.* 2003).

Detection probability

The detection probability of any vagrant species is inherently difficult to calculate as there are a lot of unknowns, chief among them is how many individuals are present but never found. Here I provide some thoughts on this aspect with regards to Barnacle Goose in Ontario.

One assumes a vagrant Barnacle Goose to be in the company of other geese. Through personal communication with members of bird records committees elsewhere in northeastern North America, this is most likely to be *interior* Canada Geese, with a lesser probability of being in the company of Greater Snow Geese (*Anser caerulescens atlantica*). In essence, Canada/Snow Geese are the haystack you have to look through to find the needle. Due to the migration patterns of Canada Geese in Ontario, the size of the haystack one would have to sift through to search for a Barnacle Goose varies considerably between southwestern and southeastern Ontario. To illustrate this point, I extracted all of my eBird data from when spring migration of geese is most prevalent from two census divisions in Ontario: Norfolk County in the southwest and the United Counties of Stormont, Dundas and Glengarry in the southeast (Table 2).

With less than half the effort, I have detected more than seventeen times more Canada Geese in southeastern Ontario versus southwestern Ontario. This imbalance in number versus effort is even more obvious with Snow Geese (82,111 times more in southeastern Ontario). Finding a Barnacle Goose in a flock of several hundred Canada Geese is a realistic prospect. On the contrary,

Table 2. The author's eBird data for spring migration of Canada and Snow Geese in two parts of Ontario.

Metric	Norfolk (March-April) Southwest	Stormont, Dundas and Glengarry (March-May) Southeast
Checklists (n)	470	197
Effort (minutes)	4450	1192
Canada Goose individuals, (checklists)	11,551 (n=252)	193,224 (138)
Snow Goose individuals, (checklists)	5 (3)	410,556 (30)

scanning through a field of thousands (more likely tens of thousands) of Canada Geese searching for a Barnacle Goose is a very daunting task. This problem was exemplified with Ontario's first Pink-footed Goose that was present in a huge flock of Snow Geese in autumn 2015 (Burrell and Charlton 2016). Dozens of observers staked out this flock all day long on the first few days, yet the Pink-footed Goose was visible for only short glimpses a few times a day—even though the bird was known to be in a single flock of geese in a single field! That a brown goose in a flock of mostly white geese could disappear for hours on end was excruciating for some observers, so if Barnacle Geese are expected to show up in large flocks of Canada Geese in eastern Ontario, the task is indeed daunting; we can only speculate how many Barnacle Geese have gone undetected in this part of the province!

Another factor affecting detection probability of Barnacle Goose is observer effort. While it is hard to compare observer effort in various places across the province, we can look at the occurrence patterns of other wild Eurasian waterfowl (Eurasian Wigeon, *Mareca penelope*; Eurasian Green-winged Teal, *Anas crecca crecca*; and Tufted Duck, *Aythya fuligula*), which show up in large (relative) numbers on the east coast and should show a decreasing pattern of occurrence as one moves inland, similar to what we might expect for Barnacle Goose. To look at this, I used the OBRC database for the three species and counted the number of accepted records in each region of the province (Table 3). In all three species, the southwest accounted for most of the records, followed by the southeast and then the northwest and northeast.

Table 3. Eurasian waterfowl records accepted by the OBRC by region of the province.

Region	Eurasian Wigeon (pre-1994 only)	Eurasian Green-winged Teal	Tufted Duck	Total
Northeast	2	0	1	3
Northwest	4	0	2	6
Southeast	15	0	4	19
Southwest	48	7	23	78

Summary of analysis

1. Known vagrant (wild) Barnacle Geese have and are occurring in northeastern Canada and the United States, including Ontario.
2. The presumed source population (Greenland) of these known vagrants continues to increase at a rapid rate.
3. Most records in northeastern Canada and United States follow a predictable geographic and temporal pattern, with most records on the eastern seaboard declining inland, and most records in the migration seasons and winter.
4. Most Ontario records fit this pattern.
5. The OBRC lags behind other jurisdictions' bird records committees in adjusting its stance on this species.
6. How OBRC treats this species in Ontario is considerably different from other Eurasian waterfowl such as Eurasian Wigeon, Tufted Duck and Eurasian Green-winged Teal. For all of those species, we know they are kept in captivity but accept that they can also occur as genuine vagrants so we assume wild unless there is a specific reason to doubt it.

Discussion

Based on the ratio of Pink-footed Goose to Barnacle Goose records summarized by Sherony (2008), the number of Barnacle Goose records in Ontario is remarkably similar to what one would predict based on the number of Pink-footed Goose records, especially if one discards problematic records such as the three summer records and long-staying migrants. The predicted number based on the ratio would be 23 and there are 23 records for Ontario, if one removes the problematic records mentioned above. As noted, there may be additional non-submitted records, so the exact match is likely coincidence, but the relative proportion is notable.

One issue that arises when examining the Ontario records is that there are more records in southwestern Ontario than southeastern Ontario, opposite the trend one would expect based on the distribution of Barnacle Geese in northeastern Canada and United States. This could be explained by a large discrepancy in detection probability (more birders with fewer geese to look through in southwestern Ontario). The same trend occurs for Eurasian Wigeon, Eurasian Green-winged Teal, and Tufted Duck.

The timing of spring migrants matches what one would expect if birds are leaving the United States northeast with other geese. The records from southwestern Ontario have been found in March and April, corresponding with when Canada Geese and Tundra Swans (*Cygnus columbianus*) arrive having wintered in the United States southeast and mid-Atlantic states. The records from southeastern Ontario are mostly from late April and early May, corresponding with the large flocks of United States east coast wintering *interior* Canada Geese passing through and similar to the timing seen in Quebec. The timing of autumn migrants matches those listed by Sherony (2008, 2014) quite well, with the first migrants arriving in early October, but most in November. This also matches the timing of Greenland Canada Goose arrival in the United States northeast (Lyngs 2003).

In addition to the dates of arrival in Ontario matching what one would expect, the overall behavior of birds in terms of stay-length (1-2 days in spring or autumn and long-staying in winter) matches the pattern elsewhere.

One big point of concern when looking at Ontario records is that there has not been a large increase in records in recent years, rather there is a relatively steady number of reports since the late 1970s, which is still the key date as it is when *interior* Canada Geese started colonizing western Greenland, providing a mechanism for vagrant Barnacle Geese to reach northeastern Canada and the United States. The trend is different in southeastern Ontario, however, where five of the eight records have occurred since 2003 (one of the pre-2003 records was the long-staying bird in Northumberland County in autumn of 1978, the long-staying nature being a red flag of an escapee.)

Since the overwhelming perception of this species in the province and the position of the OBRC until recently is that most/all records pertain to escapees, there has been less incentive to document any records. Therefore, the list of records for Ontario that has been analyzed is certainly not a complete list.

Recommendations for the OBRC

Based on the gathered evidence, I think there is a strong argument that the OBRC should be accepting this species as wild, unless there is specific evidence to suggest otherwise. Most Ontario records are of one individual and fall into one of two categories: wintering birds and spring and autumn migrants. Birds that do not fit these trends, or which show signs of captivity should be considered suspect. There will never be a perfect solution for this or indeed for most other waterfowl that are kept in captivity, but the evidence here supports treating Barnacle Goose the same as other exotic waterfowl that are kept in captivity but also known to occur as natural vagrants.

The case for wild origin and true vagrancy is very strong for birds east of approximately Durham Regional Municipality, where they should be considered wild unless proven otherwise, but I think there is a good argument here that even birds seen in southwestern Ontario, given the right circumstances (one or two individuals, short stay length, right migration window, with migrant *interior* Canada Geese) should also be strongly considered as wild.

Acknowledgements

Many people helped point me in the direction of the information gathered here. Thanks to Jeff Skevington for providing a list of records in the Ottawa-Gatineau area in Ontario and Quebec. Dominic Sherony provided the data used in his two publications referenced here. Ken Abraham provided me with an update on current applicable publications, access to hard to find references and details of his record from Nunavut. Doug McRae provided information on the first Ontario report. Thanks to Don Sutherland who urged me to write up the research I was doing on this species. Tony Fox provided valuable information on Greenland geese and directed me to many

other good sources of information and contacts. Louise Laurin helped with access to the banding data in North America from the Canadian Wildlife Service Bird Banding Office. The following people provided information about their state or province: Greg Hanisek (Connecticut); Becky Marvil, Louis Bevier (Maine); Phil Davis (Maryland/District of Columbia); Sean Williams (Massachusetts); Adam Byrne (Michigan); Bill Boyle (New Jersey); Tom Burke, Gary Chapin, Willie D'Anna (New York); Alvan Buckley (Newfoundland and Labrador); Dominic Cormier (Nova Scotia); Jim Richards (Nunavut), Holly Merker, Mike Fialkovich, Andrew McGann (Pennsylvania); Denis Lepage (Quebec); Rachel Farrell (Rhode Island); Kent McFarland (Vermont), Wendy Ealding (Virginia); and Nick Anich, Quentin Yoerger and Tom Prestby (Wisconsin).

Literature Cited

Black, J.E. and **K.J. Roy**. 2010. Niagara Birds. Brock University Printing and Digital Services. St. Catharines, Ontario. 703 pp.

Boertmann, D., K. Olsen and **R. Due Nielsen**. 2015. Geese in Northeast and North Greenland recorded on aerial surveys in 2008 and 2009. Dansk Ornitologisk Forenings Tidsskrift 109:206-217.

Burrell, M.V.A. and **B.N. Charlton**. 2016. Ontario Bird Records Committee Report for 2015. Ontario Birds 34:147-177.

Burrell, M.V.A., B.N. Charlton and **K.G.D. Burrell**. 2017. Ontario Birds Records Committee Report for 2016. Ontario Birds 35:58-85.

Curry, R. 2006. Birds of Hamilton and Surrounding Areas. Hamilton Naturalists' Club, Hamilton, Ontario. 647 pp.

Fox, A.D., B.S. Ebbinge, C. Mitchell, T. Heinicke, T. Aarvak, K. Colhoun, P. Clausen, S. Derelieve, S. Faragó, K. Koffijberg, H. Kruckenberg, M.J.J.E. Loonen, J. Madsen, J. Mooij, P. Musil, L. Nilsson, S. Pihl and **H. Van Der Jeugd**. 2010. Current estimates of goose population sizes in western Europe, a gap analysis and an assessment of trends. Ornis Svecica 20:115-127.

Fox, A.D., D.S., J. Baroch, D.A. Stroud, K. Kampp, C. Egevang and **D. Boertman**. 2012. The status of Canada Goose *Branta canadensis* subspecies in Greenland. Dansk Ornitologisk Forenings Tidsskrift 106:87-92.

Hanson, J.W. 2008. Barnacle Goose Update. New Jersey Birds 34:49-50.

Lepage, D. 2017. Les Oiseaux du Quebec: Dates records et liste des mentions rares: Barnacle Goose. http://www.oiseauxqc.org/details.jsp?no=473. Accessed 28 February 2017.

Lyngs, P. 2003. Migration and winter ranges of birds in Greenland: An analysis of ringing recoveries. Dansk Ornitologisk Forenings Tidsskrift 97:1-167.

Malosh, G. and **N. Pulcinella**. 2009. Acceptance of Barnacle Goose to the official list of the birds of Pennsylvania. Pennsylvania Birds 22:194-199.

Mitchell, C. and **C. Hall**. 2013. Greenland Barnacle Geese *Branta leucopsis* in Britain and Ireland: Results of the International Census, Spring 2013. Wildfowl and Wetlands Trust Report. 37 pp.

Richards, I. 2009. Ontario Bird Records Committee Report for 2008. Ontario Birds 27:58-79.

Richards, J.M., and **A.J. Gaston**. (Eds.) in prep. Birds of Nunavut (Unpublished manuscript and data).

Robinson, R.A., D.I. Leech and **J.A. Clark**. 2015. The Online Demography Report: Bird ringing and nest recording in Britain and Ireland in 2015. BTO, Thetford, England. http://www. bto.org/ ringing-report. Accessed 28 February 2017.

Scribner, K.T., R.A. Malecki, B.D.J. Batt, R.L. Inman, S. Libants and **H.H. Prince**. 2003. Identification of source population for Greenland Canada Geese: Genetic assessment of a recent colonization. Condor 105:771-782.

Sherony, D.F. 2008. Greenland Geese in North America. Birding May/June 2008: 46-56.

Sherony, D.F. 2014. Barnacle Geese in the eastern United States: an update. Kingbird 64:108-113.

Weir, R.D. 2008. Birds of the Kingston Region (2nd edition). Kingston Field Naturalists. Kingston, Ontario. 611 pp.

Wildfowl and Wetlands Trust. 2017a. Pink-footed Goose. Retrieved from http://monitoring.wwt.org.uk/our-work/goose-swan-monitoring-programme/species-accounts/pink-footed-goose/. Accessed 20 October 2017.

Wildfowl and Wetlands Trust. 2017b. Greenland Barnacle Goose. Retrieved from https://monitoring.wwt.org.uk/our-work/goose-swan-monitoring-programme/species-accounts/greenland-barnacle-goose/. Accessed 10 March 2017.

Appendix 1. Treatment of Barnacle Goose by bird records committees in northeastern Canada and United States.

Region	Reviewable?	Treatment	Notes
Ontario	Yes	Pre-2017: Escapees unless proven otherwise	2 accepted records, 9 origin uncertain, plus at least 18 not reviewed.
Connecticut	No	Wild unless specific contrary evidence	Removed from review list in 2013.
Delaware	No response to request		
Maine	Yes	Wild unless specific contrary evidence	4 accepted records, plus 5 not yet reviewed
Maryland/ Washington D.C.	Yes	Wild unless specific contrary evidence	9 accepted, 7 unknown origin, and 11 unreviewable reports
Massachusetts	Yes	Wild unless specific contrary evidence	14 accepted records dating back to 2002 plus "several" that have not yet been voted on.
Michigan	Yes	Case by case	No records yet accepted as wild.
Minnesota	No response to request		
New Brunswick	No response to request		
New Hampshire	No response to request		
New Jersey	Yes	Wild unless specific contrary evidence	26 accepted records all since 2002. First accepted in 2008
New York	Yes	Wild unless specific contrary evidence	22 accepted or expected to be accepted records since 2006

Region	Reviewable?	Treatment	Notes
Newfoundland and Labrador	n/a (no committee)	n/a (no committee)	3 acceptable records
Nova Scotia	n/a (no committee)	n/a (no committee)	4 acceptable records plus 2 records of family groups that involved escapees.
Nunavut	n/a (no committee)	n/a (no committee)	Three records as follows: August 1924, June 1955, and May 2007 (Richards and Gaston, in prep.).
Ohio	No response to request		
Pennsylvania	Yes	Wild unless specific contrary evidence	38 records prior to 2008 acceptance to state list.
Quebec	No	No committee but Lepage (2017) no longer tracks them.	113 accepted records as of 2016
Rhode Island	Yes	No species-specific policy	1 accepted record, 6 others that have not been submitted yet.
Vermont	Yes	Wild unless specific contrary evidence	4 accepted records since 2007
Virginia	Yes	Provenance uncertain	6 records accepted as provenance uncertain plus a number of records not reviewed.
Wisconsin	Yes	Escapees unless proven otherwise	No records accepted as wild.

Mike V.A. Burrell
Ontario Ministry of Natural Resources and Forestry
300 Water St., 2nd Floor, North Tower
Peterborough, Ontario K9J 8M5
E-mail: mike.burrell@ontario.ca

The Ivory Gull in Ontario, 1887-2016

Brandon R. Holden and D.V. Chip Weseloh

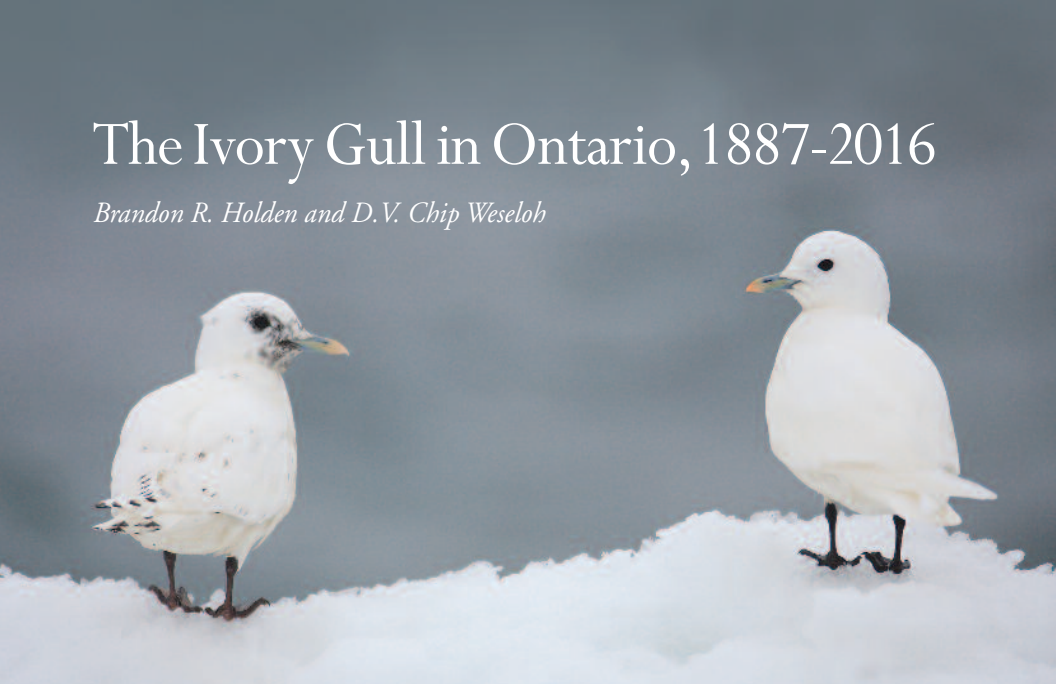


Figure 1. Juvenile (left) and adult (right) Ivory Gulls showing typical plumage features. The black markings found on young birds are variable, whereas adults are always a brilliant white. February 2010 in Saint Carols, Newfoundland and Labrador. *Photo: Brandon R. Holden.*

Introduction

The Ivory Gull (*Pagophila eburnea*) is one of the most sought after birds among Ontario birders, as few species combine such rarity with beauty. It is seldom seen outside of the Arctic Circle and, as an adult, its plumage is entirely white. Listed as Endangered by the Committee on the Status of Endangered Wildlife in Canada, the national breeding population is believed to have declined 80% since 1980 (COSEWIC 2006). This is mirrored with a global listing of Near Threatened by the International Union for the Conservation of Nature's Red List of Threatened Species (IUCN 2015).

This note documents the occurrence of the Ivory Gull in Ontario, based on the complete set of accepted records from the Ontario Rare Birds Committee (OBRC). There are 31 accepted records from the OBRC over the 128 year period from 1887 to 2016. We analyze this information, and the literature, to assess the gull's identification, history of occurrence, trends in frequency of observation and some thoughts on what the future may hold for the species in the province.

Identification

Identification of the Ivory Gull is relatively straightforward, yet pitfalls as rare as the species itself exist. It is a small gull, whose structure and plumage are adapted to life in cold climates (Mallory *et al.* 2008). Its definitive basic (adult) plumage is brilliant white, without any other visible markings (Figure 1, right). Both

adults and juveniles have black legs, black eyes and a pale bill with a yellow tip. Juveniles can be identified by black flecks which are variable in intensity and scattered throughout their white plumage, often concentrated on the face and tips of the flight feathers (Figure 1, left). Tiny black flecks around the face on some individuals have been tentatively identified, from photos, as lice (Order Phthiraptera) (B. Holden, pers. obs.), leading to potential confusion and mis-ageing. The distinctive plumage and colour of the soft parts of the Ivory Gull make it impossible to confuse it with any other regularly occurring species in Ontario. Some juvenile or sub-adult Iceland Gulls (*Larus glaucoides*) or Glaucous Gulls (*Larus hyperboreus*) can show brilliant white plumage, either naturally or through sun bleaching of feathers; however, both species are larger than the Ivory Gull and have a structure similar to our common *Larus* gull species. Some confusion can occur with aberrant individual gulls that show brilliant white plumage through leucism or albinism. This confusion has occurred with Bonaparte's Gulls (*Chroicocephalus philadelphia*) on the Niagara River, where the latter congregate in spectacular numbers each autumn (Beardslee 1944, Black and Roy 2010). As a small slender species, a white Bonaparte's Gull is closer to the size and structure of an Ivory Gull than are other regularly occurring Ontario gull species. Under these circumstances, observers should take care to note the colours of the bare parts (bill, legs, eyes) as well as behavioural observations to ensure the correct identification is made. Perhaps due to their remote breeding and winter ranges, Ivory Gulls are known to be remarkably tame around people. In the right circumstance, this behaviour could provide an additional identification clue.

History of occurrence in Ontario

The 31 accepted records of the Ivory Gull in the files of the OBRC occurred in 24 years during the period 1887-2016. All records were of single birds. Eighteen calendar years had one occurrence, five years had two records per year and one year (1973) had three records (Figure 2, Appendix 1). For "winter seasons" (the November to March periods), the respective numbers were: 18 with one record, three with two and two with three records (see below for the July occurrence). Twenty-seven of the birds observed (87.0%) were identified as first basic/juvenal in plumage; four were definitive basic/adult in plumage.

In terms of seasonal occurrence, of the 26 records for which a specific date was recorded, all occurred between the second week of November and the last week of March. The July record was of a desiccated specimen for which the date of occurrence could not be determined. Within the November to March period, 21 of 26 records (87.1%) occurred between the second week of December and the third week of January (Figure 3). That six-week period is delimited very well with no occurrences during the two weeks before or the two weeks after it.

In terms of an overall temporal trend, there was a significant increase in the number of reports of Ivory Gulls when all records were plotted by year, 1887 - 2016 (Poisson regression, $p<0.0001$; Figure 2). This increase is more obvious when the

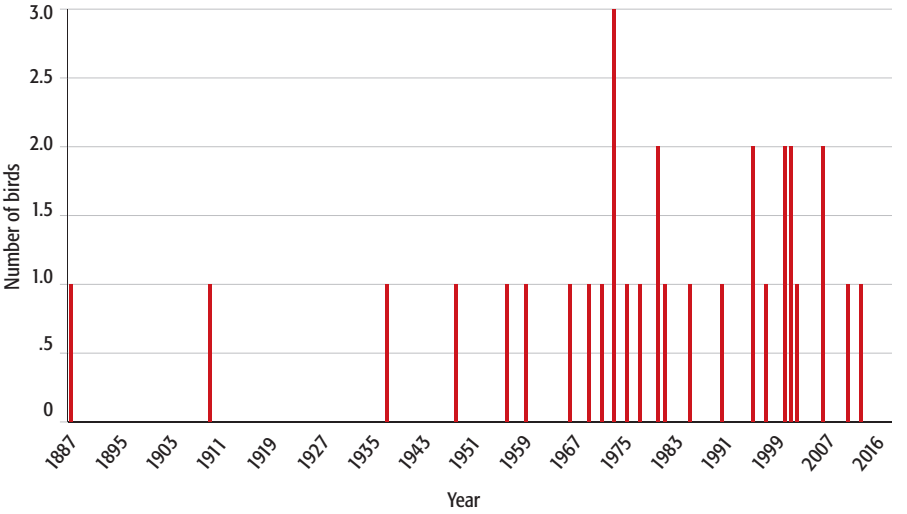


Figure 2. Year and number of reported Ivory Gulls accepted by the Ontario Bird Records Committee up through 2016.

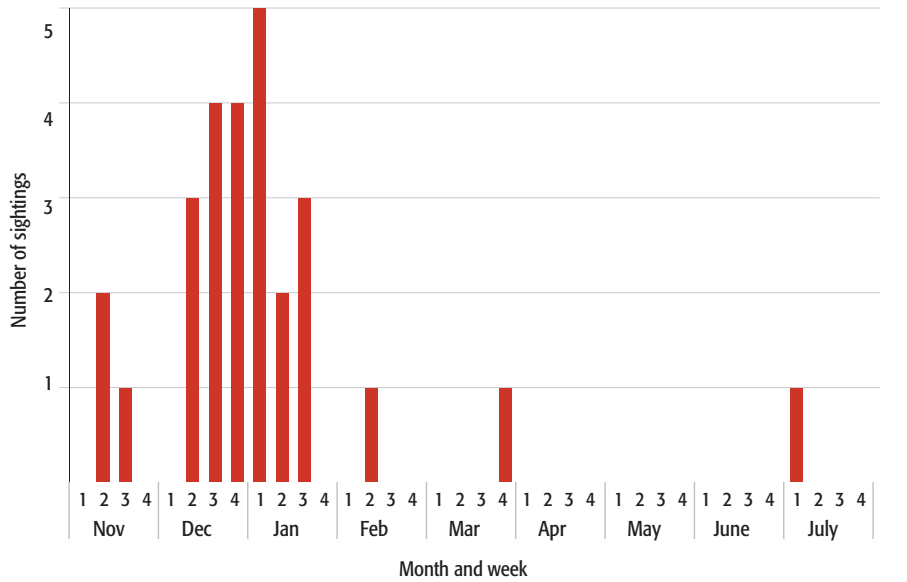


Figure 3. Ivory Gull sightings by month and week.

number of records was plotted by decade; the significant increase in that rate of sighting (Poisson regression, $p<0.0003$) reached a peak (seven occurrences) during 2000-2009 (Figure 4). This increasing rate of sighting is further confirmed when the observation period, 1887-2016, is simply divided into two equal periods; from 1887 to 1952, Ivory Gulls were reported in Ontario at a rate of one occurrence every 16 years. During 1953-2016, they were reported at one occurrence every 2.3 years. Of course, many factors such as numbers of birders, equipment used, collecting observations and publicizing sightings have changed over this period. Thus, this increase may only reflect greater awareness and directed effort at locating Ivory Gulls. There was no trend in the data from 1960 to 2012, a period which includes the continental decline of the species in its core range (Mallory *et al.* 2008).

Of the 31 records detailed in this account, 12 (38.7%) occurred in just five winter seasons: winter 1966-67 (2), December 1973 (3), November-December 1995 (2), winter 2000-2001 (3) and January-March 2006 (2) (see Appendix 1). These groupings of records suggest that specific conditions, e.g., responses to the environment or weather events, may be required to bring the Ivory Gull to Ontario. Thanks to documentation provided in OBRC reports, eBird and associated materials, we have the ability to detect events correlated with the occurrences of the Ivory Gull in our province. An adult Ivory Gull at Toronto on 15 February 2010 (Wormington and Cranford 2011) was the only record in Ontario for that winter but it coincided with a spectacular invasion of hundreds of Ivory Gulls to inland Labrador and northern Newfoundland (Anonymous 2010, Brinkley 2010, eBird 2016). This invasion occurred when sea ice conditions in that

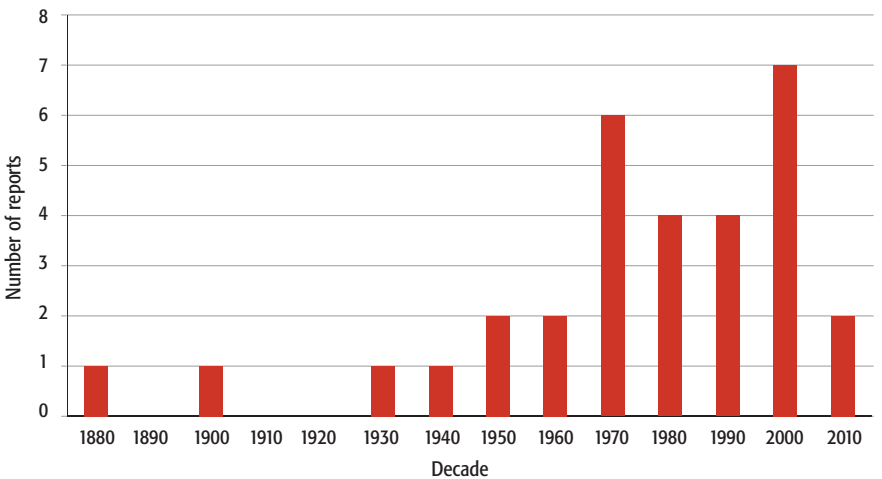


Figure 4. Reports of Ivory Gull by decade, 1880-2010.

Figure 5. General distribution of reported Ontario Ivory Gull records, 1887-2015.

Map prepared by Sarah Hagey

region were considerably below normal, potentially related to an ongoing El Niño event and strong amplitude in the Arctic Oscillation (Cohen *et al.* 2010). Compounding the effect of low sea ice was a powerful extratropical cyclone which, on 14 February 2010, was centered on SW Newfoundland and may have pushed the birds onshore and inland far enough for this one individual to reach Lake Ontario.

Determining noteworthy geographic patterns of Ivory Gulls is challenging in a province as large as Ontario, where the human population and the majority of birders are heavily concentrated around the lower Great Lakes and birding intensity has likely increased since the 1960s. This challenge is illustrated when these recent occurrences are mapped; they are all scattered in the southern and eastern regions of Ontario along rivers and the Great Lakes shoreline (red dots in Figure 5). Ivory Gulls are known for their scavenging at seal whelping sites and carcasses left by Polar Bears (*Ursus maritimus*) (Mallory *et al.* 2008). Thus, it is possible that they occur along the James Bay and

Hudson Bay coasts during sea ice formation in late autumn and winter at times when and where polar bears are present. Recorded bird observations from the northern borders of Ontario and the offshore location of the ice edge and bears during December-January are virtually nonexistent due to the near inaccessibility to anyone visiting the region. Local traditional knowledge in Nunavut was significant in the identification of national declines in breeding populations (Mallory *et al.* 2003). A similar approach in Ontario's Far North (Hudson Bay Lowland) may not prove as fruitful for documenting the occurrence of this vagrant species because First Nations residents there do not have a maritime hunting tradition similar to that of Inuit in Nunavut. However, Ivory Gulls may be attracted to carcasses and animal remains at remote landfills at these First Nations communities, as they are in the High Arctic (Mallory *et al.* 2003). Thus, local knowledge may indeed contribute to documentation of occasional records. For the purposes of this analysis, the steady coverage of the lower Great Lakes provides confidence in detecting long term patterns and trends in occurrence.

It is interesting that there are at least six Ivory Gull records from the coasts of James or Hudson Bays (see Appendix 1). Two additional records come from the interior of northern Ontario and are probably of Hudson/James Bay origin and finally, there are at least four records from the upper Ottawa River valley, an area that is well known for vagrant seabirds that are assumed to be travelling from James Bay towards the Atlantic Ocean. Thus, 12 of 31 records (38.7%) strongly suggest connections to Hudson or James Bay. So, although many of the observed birds may arrive in Ontario from the northeast (the St. Lawrence River valley) clearly many others may be coming straight from the north.

If the national decline of the Ivory Gull continues, one can speculate that occurrences in Ontario may decrease as

well. The federal recovery strategy published in 2014 lists a long term goal of increasing the national population by 25% (Environment Canada 2014). If this is effective, we can hope to see an increase in occurrences of the Ivory Gull in Ontario. We encourage birders to contribute records to readily accessible databases such as the OBRC and eBird, which were instrumental in the creation of this account.

Acknowledgements

We wish to thank Dave Moore for the statistical analysis, Sarah Hagey for constructing the map and Jeff Costa for preparation of the graphic figures. Mark Mallory and Mike Burrell provided insight on the discussion of winter habits and possible migration routes of Ivory Gulls, respectively.

Literature Cited

Anonymous. 2010. Atlantic Provinces and St. Pierre et Miquelon. North American Birds 64:225.

Beardslee, C.S. 1944. Bonaparte's Gull on the Niagara River and Eastern Lake Erie. Wilson Bulletin 56:9-14.

Black, J.E. and **K.J Roy**. 2010. Niagara Birds. Brock University Printing and Digital Services, St. Catharines, Ontario. 703 pp.

Brinkley, E.S. 2010. Gulls and living rooms. North American Birds 64:213-232.

Cohen, J., J. Foster, M. Barlow, K. Saito and **J. Jones**. 2010. Winter 2009–2010: A case study of an extreme Arctic Oscillation event. Geophysical Research Letters 37:6.

COSEWIC. 2006. COSEWIC assessment and update status report on the Ivory Gull *Pagophila eburnea* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa, Ontario. 48 pp.

eBird. 2016. eBird data accessed by Brandon Holden, January 2016. Ivory Gull for Ontario from 1990 to 2015. http://ebird.org/ebird/map/ ivogul?neg=true&env.minX=-147.8549504&env.minY=29.488231464795447&env.maxX=-21.644012900000007&env.maxY=64.22111800683966&zh=true&gp=false&ev=Z&mr=112&bmo=1&emo=12&yr=range&byr=1990&eyr=2015

Environment Canada. 2014. Recovery Strategy for the Ivory Gull (*Pagophila eburnea*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa, Ontario. 21pp.

IUCN. 2015. International Union for Conservation of Nature, *Pagophila eburnea*. Status report http://www.iucnredlist.org/details/biblio/22694473/0. Accessed January 2016.

Mallory, M., H.G. Gilchrist, A.J. Fontaine and **J.A. Akearok**. 2003. Local ecological knowledge of Ivory Gull declines in Arctic Canada. Arctic 56:293-298.

Mallory, M.L., I.J. Stenhouse, G. Gilchrist, G. Robertson, J.C. Christopher and **S.D. Macdonald**. 2008. Ivory Gull (*Pagophila eburnea*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/175

Wormington, A. and **M.H. Cranford**. 2011. Ontario Bird Records Committee

Brandon R. Holden
1709-301 Frances Ave.
Stoney Creek, Ontario L8E 3W6
E-mail: peregrine13@gmail.com

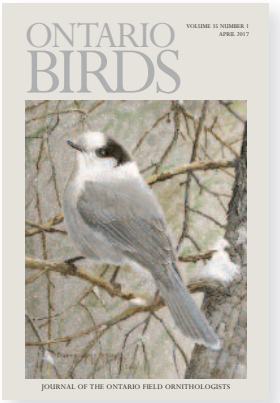
D.V. Chip Weseloh
1391 Mt. Pleasant Rd.
Toronto, Ontario M4N 2T7

Appendix 1. Location, date of first sighting, plumage and finder/reporter of sighting. For additional details, please contact the Ontario Bird Records Committee

	Location, (Reg. Municipality, District or County)	Date	Plumage	Finder[1]
1	Toronto, Toronto	December 25, circa 1887	1st winter	W. Loane
2	Fort Albany, Cochrane	spring, 1909	1st basic	unknown collector
3	Cameron Lake, Algoma	12 December 1937	1st basic	D.E. MacMillan
4	Port Burwell, Elgin	28 December 1948	1st basic	F. Bodsworth
5	Albany River mouth, Cochrane	January, 1956	1st basic	W.B. Anderson
6	Severn Lake, Kenora	15 January 1959	Def. basic	J. Brown
7	Fort Severn, Kenora	December, 1966	1st basic	L. Stoney
8	Brighton, Northumberland	02 January 1967	1st basic	D.C. Sadler
9	Oshawa Harbour, Durham	03 January 1971	1st basic	G.A. Scott
10	London, Middlesex	19 December 1973	1st basic	W.R. Jarmin
11	Oshawa Harbour, Durham	24 December 1973	1st basic	D.D. Calvert
12	Niagara Falls, Niagara	29 December 1973	1st basic	W.C. Vaughan
13	Winisk, Kenora	Winter, 1975	1st basic	unknown collector
14	Amherst Island, Lennox and Addington	09 December 1977	1st basic	G. and M. Mathews
15	Beaverton and Thorah Beach, Durham	23 January 1980	1st basic	G. Bellerby
16	Niagara Falls, Niagara	22 December 1980	1st basic	M.E. Gustafson
17	Netitishi Point, Cochrane	13 November 1981	Def. basic	R.D. McRae
18	West Pen Island, Kenora	05 July 1985	1st basic	D. Shepherd
19	Brighton, Northumberland	22 November 1990	1st basic	D. Shanahan
20	Lake Dore, Renfrew	12 November 1995	1st basic	M. Fluegel and K. Hooles
21	Courtright, Lambton	23 December 1995	1st basic	B.A. Mann
22	multiple, Durham and Northumberland	01 January 1997	1st basic	M., P.and S. Holder
23	multiple, Toronto and Halton	23 January 2000	1st basic	J. Edwards
24	Toronto, Toronto	17 December 2000	1st basic	L. Schlichter
25	multiple, Hamilton	01 January 2001	1st basic	W.F. Smith
26	multiple, Lennox and Addington	03 January 2001	1st basic	D.C. Craighead
27	Deep River, Renfrew	16 December 2002	1st basic	R. Metcalfe
28	multiple, Essex	08 January 2006	1st basic	A. and R. Hall
29	Pembroke, Renfrew	28 March 2006	Def. basic	M. Dojczman
30	Toronto, Toronto	15 February 2010	Def. basic	J. Iron and P. Prior
31	Lake Madawaska, Renfrew/Lanark/Ottawa	15 December 2012	1st basic	M.W.P. Runtz

[1.] Or, if unknown, 1st reporter

Want to be an author? Publish in *Ontario Birds*



- **Have you observed unusual behaviours of birds?**
- **Have you been monitoring a local hotspot for several years?**
- **Have you investigated the haunts and habits of your favorite species?**
- **Have you got a keen interest in the status of a particular species or group?**

If the answer to any of these questions is yes, the editors of *Ontario Birds* would like to invite you to submit your formal studies and behavioural and casual observations of note on birds in Ontario to *Ontario Birds*. *Ontario Birds* is the journal of the Ontario Field Ornithologists and is published three times per year: April, August and December. Guidelines for publishing and back issues are posted on the OFO web page (www.ofo.ca). Consult a recent copy of *Ontario Birds* for guidance on style and format. The editors are always available to assist in the preparation of notes and articles, and to assist in literature searches and suggest methods of data analysis, if needed. All submitted material is reviewed by the editors in a collaborative, back and forth manner. We also encourage the submission of good quality photographs and graphic portrayal of observational information and field data with written submissions.

Please consult the editors for further information.

Chip Weseloh (chip.weseloh@canada.ca)
Chris Risley (risleych@gmail.com)
Ken Abraham (kenabra@sympatico.ca)

First record of Least Bittern nesting at Tommy Thompson Park in Toronto, Ontario

Marc Dupuis-Désormeaux, Ian Sturdee, Don Johnston and Paul Xamin

Introduction

The Least Bittern (*Ixobrychus exilis*) is the smallest member of the heron family in North America. It is considered a Threatened species in Canada and in Ontario. In Canada, it ranges from Manitoba to Nova Scotia. The Canadian population is estimated at 1500 pairs and both Environment and Climate Change Canada and the Ontario Ministry of Natural Resources and Forestry have active recovery strategies in place to reduce the threats and aid in reversing the downward population trend (Environment Canada 2011, Ontario Ministry of Natural Resources and Forestry 2016).

Least Bitterns are notoriously difficult to see, as they are small, secretive and well camouflaged. However, their distinctive and loud call makes them much more likely to be heard. They nest in dense vegetation making nest discovery difficult and thus estimation of nesting pairs is usually performed by call-back surveys and still they are not always well detected (Tozer *et al.* 2007, Jobin *et al.* 2011).

Observation Site

Tommy Thompson Park (TTP), is located on the Leslie Street Spit (43.633ºN, 79.329ºW), a 500 ha artificial peninsula that extends approximately 5 km into Lake Ontario (Figure 1). Starting in 1959, Ports Toronto (formerly the Toronto Port Authority) built the long breakwater to create additional lands for port infrastructure in conjunction with the opening of the St. Lawrence Seaway. Toronto waterfront land-use needs changed over the decades, and natural colonization created a wilderness area on the Spit, which is now officially parkland. As of 2017, the park had regenerated into an early successional forest, with areas of maturing forest at the base and a gradient of younger shrubs and early pioneer

Figure 1. Map of Tommy Thompson Park. *Photo: TRCA*

plants closer to its tip. Toronto Region Conservation Authority (TRCA) has created ponds, hemi-marshes and embayments to design a multi-wetland complex at TTP. Three hundred and twenty bird species have been identified at TTP, and 69 species have been recorded breeding (Johnston and Sturdee 2016). Notably, TTP hosts one of the world's largest colonies of Double-crested Cormorant (*Phalacrocorax auritus*), as well as significant Ring-billed Gull (*Larus delawarensis*) and Black-crowned Night-Heron (*Nycticorax nycticorax*) colonies and is recognized as an Important Bird Area (Wilson and Cheskey 2001).

Figure 2. Least Bittern nest with five eggs discovered at Tommy Thompson Park on 1 June 2017.
Photo: M. Dupuis-Désormeaux

Methods

Volunteer naturalists, as well as TRCA staff, have monitored breeding birds at TTP since 2005 (Johnston and Sturdee 2016). TRCA also conducts bird migration monitoring, including bird banding at TTP (Shaw 2014). Breeding birds are recorded using two methods: variable circular plot counts (VCP) (Reynolds *et al.* 1980) and nest searching. The VCP method documents all birds seen or heard over a five-minute period at nine predetermined locations, while the nest searching method documents nests found by actively searching trees, shrubs and wetlands. The nest searching survey method is valuable to bird conservation because it provides indicators of breeding success and parasitism/predation rates. The researchers document nest location (using handheld GPS units), habitat, bird species, height of nest, construction material, number of eggs, evidence of parasitism and also note anything unusual.

Results

In 2017, 37 species were detected using VCP and 32 species using nest searching. Volunteer naturalists recorded the presence of Least Bittern by casual observations over various dates starting on 3 May 2017. In June, two Least Bittern nests were discovered in different wetlands within the park. Both nests were found during routine Red-winged Blackbird (*Agelaius phoeniceus*) nest searches. On 1 June 2017, the first Least Bittern nest was discovered in a dense patch of invasive common reed (*Phragmites australis*) in one of the embayments of the park. The nest contained five eggs and was built over an old Red-winged Blackbird nest (Figure 2).

Figure 3. Least Bittern on nest at Tommy Thompson Park, 2 June 2017. *Photo: M. Dupuis-Désormeaux*

Figure 4. Juvenile Least Bittern captured at Tommy Thompson Park on 7 August 2017. *Photo: Nigel Shaw*

A cautious return to the area of the first nest on 2 June to verify that the nest was active, and observation from a distance of 20 m, confirmed one adult on the nest (Figure 3).

As part of the active nest monitoring protocol, the first nest was checked on 19 June and was found to have an adult sitting on the nest. When the first nest was checked again on 5 July, the nest was detached from its reed structure and resting at an angle much closer to the water. Further, one egg was discovered floating in the water. However, there were no overt signs of predation and it is possible that the weight of adults and chicks might have eventually broken the nest structure as has been previously noted (Weller 1961).

On 7 June, the second Least Bittern nest was discovered in a different location, in a small pond approximately 1.5 km away from the first location, also in a dense area of common reed. This second nest was identical in construction to the first nest but had no eggs; however, an adult was observed a few metres from the nest while another called from across the pond. The second nest had disappeared when checked on 17 July.

On 7 August, staff at the bird research station banded a juvenile Least Bittern from a mist net located in the same embayment as the first detected nest, leading to speculation that this juvenile was from the nearby nest (Figure 4).

Discussion

The discovery of Least Bittern nests at TTP was the cumulative effort of volunteer naturalists working closely with TRCA staff using a combination of monitoring methods: VCP, casual observation, nest searching and banding. These

combined activities allowed for the detection and monitoring of the first nesting of this species at the park. Least Bitterns nesting at TTP bodes well for the continued wetland enhancement work performed by TRCA. These results could eventually lead to TTP being identified as a site with Least Bittern Critical Habitat (Environment Canada 2011).

Literature Cited

Environment Canada. 2011. Recovery strategy for the Least Bittern (*Ixobrychus exilis*) in Canada. Species at Risk Act Recovery Strategy Series, Environment Canada, Ottawa, Ontario. 34 pp.

Jobin, B., R. Bazin, L. Maynard, A. McConnell, A. and **J. Stewart**. 2011. Least Bittern (*Ixobrychus exilis*) survey protocol. Waterbirds 34:225-233.

Johnston, D. and **I. Sturdee**. 2016. The breeding birds of Tommy Thompson Park. Toronto, Ontario. Toronto and Region Conservation Authority, Toronto, Ontario. 45 pp.

Ontario Ministry of Natural Resources and Forestry. 2016. Recovery strategy for the Least Bittern (*Ixobrychus exilis*) in Ontario. Ontario Recovery Strategy Series. Prepared by the Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. v + 5 pp. + Appendix.

Reynolds, R.T., J.M. Scott and **R.A. Nussbaum**. 1980. A variable circular-plot method for estimating bird numbers. Condor 82:309-313. doi:10.2307/1367399

Shaw, N. 2014. Migration monitoring at Tommy Thompson Park Bird Research Station. Toronto and Region Conservation Authority. Toronto, Ontario. 15 pp.

Tozer, D.C., K.F. Abraham and **E. Nol**. 2007. Short call-broadcasts fail to detect nesting least bitterns (*Ixobrychus exilis*). Northeastern Naturalist 14:637-642. doi:10.1656/1092-6194(2007)14 [637:scftdn]2.0.co;2

Weller, M.W. 1961. Breeding biology of the Least Bittern. Wilson Bulletin 73:11-35.

Wilson, W.G. and **E.D. Cheskey**. 2001. Leslie Street Spit – Tommy Thompson Park Important Bird Area Conservation Plan. Canadian Nature Federation, Bird Studies Canada, Federation of Ontario Naturalists. Toronto, Ontario. 56 pp.

Marc Dupuis-Désormeaux
York University,
Department of Biology
4700 Keele St.
Toronto, Ontario M3J 1P3
E-mail: marcd2@me.com

Ian Sturdee
Toronto and Region Conservation Authority
5 Shoreham Drive
Toronto, Ontario M3N 1S4

Don Johnston
Toronto and Region Conservation Authority
5 Shoreham Drive
Toronto, Ontario M3N 1S4

Paul Xamin
Toronto and Region Conservation Authority
5 Shoreham Drive
Toronto, Ontario M3N 1S4

Tennessee Warbler
Photo: Sandra and Frank Horvath

Changes in abundance of migrant warblers at Port Weller, Ontario: an update

John E. Black

Introduction

Recently, Black and Crewe (2016) presented a comparison of warbler counts on the Port Weller west pier for 1993-1995 and 2013-2015, which concluded that:

> *Our study has nevertheless answered the simple question raised in the introduction: did the number of warblers detected using the west pier during migration change between 1993-1995 and 2013-2015? We see that the number of warblers detected using the west pier during migration increased! It will be most interesting to see if the conclusions reached here persist when the final two years, 2016 and 2017, of data are included.*

In this update, I present the results for the final two years of the study and compare warbler counts for 1993-1997 and 2013-2017. The results are shown in Table 1. See Black and Crewe (2016) for details of sampling methods. For the complete study see the article *Final Port Weller West Migration Study July 2017* at http://www.brocku.ca/tren/niagarabirds.

Table 1: Total counts of warblers using the Port Weller west pier over 31 days of sampling in May of each year. Numbers in bold indicate statistically significant changes between periods.

	Annual Count										Cumulative Totals			
Species	1993	1994	1995	1996	1997	2013	2014	2015	2016	2017	1993 -1995	2013 -2015	1993 -1997	2013 -2017
Ovenbird *Seiurus aurocapilla*	4	5	7	33	8	4	1	2	5	0	**16**	**7**	57	12
Northern Waterthrush *Parkesia noveboracensis*	2	5	2	20	14	7	12	6	4	11	**9**	**25**	43	40
Black-and-White Warbler *Mniotilta varia*	9	3	30	57	21	10	17	14	10	17	42	41	120	68
Tennessee Warbler *Oreothlypis peregrine*	3	2	2	2	1	9	6	5	13	9	**7**	**20**	**10**	**42**
Nashville Warbler *Oreothlypis ruficapilla*	3	6	15	27	21	6	46	5	9	12	24	57	72	78
Mourning Warbler *Geothlypis philadelphia*	2	0	0	0	0	3	1	2	0	0	2	6	2	6
Common Yellowthroat *Geothlypis trichas*	40	24	33	39	21	47	59	60	27	22	**97**	**166**	157	215
American Redstart *Setophaga ruticilla*	72	37	59	36	14	40	49	65	44	26	168	154	218	224
Cape May Warbler *Setophaga tigrina*	32	31	9	15	3	2	7	9	0	4	**72**	**18**	90	22
Northern Parula *Setophaga americana*	1	11	3	10	5	6	16	20	3	20	**15**	**42**	30	65
Magnolia Warbler *Setophaga magnolia*	62	29	33	45	25	40	77	92	11	39	124	209	194	259
Bay-breasted Warbler *Setophaga castanea*	42	13	10	4	4	3	14	17	6	12	65	34	73	52
Blackburnian Warbler *Setophaga fusca*	6	1	11	20	13	3	13	20	5	4	18	36	51	45
Chestnut-sided Warbler *Setophaga pensylvanica*	38	12	33	31	5	24	29	28	10	21	83	81	119	112
Blackpoll Warbler *Setophaga striata*	22	9	7	6	0	64	17	100	21	29	**38**	**181**	**44**	**231**

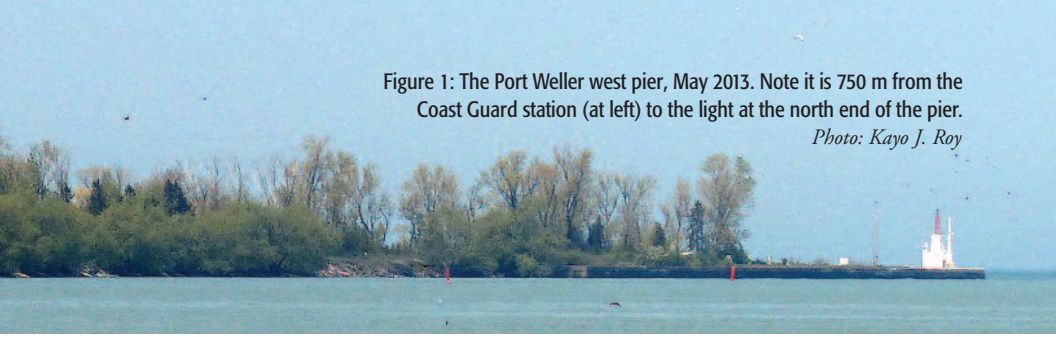


Figure 1: The Port Weller west pier, May 2013. Note it is 750 m from the Coast Guard station (at left) to the light at the north end of the pier.
Photo: Kayo J. Roy

	Annual Count										Cumulative Totals			
Species	1993	1994	1995	1996	1997	2013	2014	2015	2016	2017	1993 -1995	2013 -2015	1993 -1997	2013 -2017
Black-throated Blue Warbler *Setophaga caerulescens*	18	26	47	53	25	11	22	27	12	23	91	60	169	95
Palm Warbler *Setophaga palmarum*	43	44	24	82	89	60	98	84	36	33	**111**	**242**	282	311
Black-throated Green Warbler *Setophaga virens*	8	9	13	37	2	13	8	10	5	19	30	31	69	55
Canada Warbler *Cardellina canadensis*	5	1	3	3	0	6	1	7	0	3	9	14	12	17
Wilson's Warbler *Cardellina pusilla*	13	3	7	16	1	12	17	11	1	3	23	40	40	44
Totals (Exclude Yellow-rumped Warbler and Yellow Warbler)	425	271	348	536	272	370	510	584	222	307	1044	1464	1852	1993
Yellow-rumped Warbler *Setophaga coronata*	295	276	226	1401	435	139	271	372	149	364	797	782	2633	1295
Yellow Warbler *Setophaga petechia*	268	208	208	266	239	373	761	950	764	789	**684**	**2084**	**1189**	**3637**
Totals (Include Yellow-rumped Warbler and Yellow Warbler)	988	755	782	2203	946	882	1542	1906	1135	1460	2525	4330	5674	6925

The increase in Cumulative Totals (Including and Excluding Yellow-rumped and Yellow warblers) from 1993-1995 to 2013-2015 was much reduced in the five-year results. Much of this reduction can be attributed to the large number of warblers counted in 1996. For this update, a simple analysis of variance showed that increases for Tennessee, Blackpoll and Yellow warblers (bold in Table 1) are statistically significant at or below the 5% level. The decrease in Cape May Warblers is very close to statistically significant at 5.5%.

The results of the five-year study can be compared with the results of the more robust statistical analysis in the three-year study (Black and Crewe 2016):

> *Our analysis also supported an increase in counts between time periods for 7 of 22 species: Northern Waterthrush, Tennessee Warbler, Common Yellowthroat, Northern Parula, Blackpoll Warbler, Palm Warbler and Yellow Warbler and a decline in counts for Cape May Warbler and Ovenbird (bold in Table 1). If we consider species with a posterior probability ≥0.95 (increase in counts) or ≤0.05 (decline in counts), our results further supported an increase in count between time periods for Magnolia Warbler, Nashville Warbler, Blackburnian Warbler and Wilson's Warbler and a decline in count for Bay-breasted and Yellow-rumped Warblers. In the case of the Yellow-rumped Warbler, the apparent decline was likely the result of a decline in extreme counts between time periods, as opposed to a decline in the median or mean count over time.*

Note that the direction of changes in numbers observed from 1993-1997 to 2013-2017 is unchanged from that observed from 1993-1995 to 2013-2015 for the warblers in the above paragraph except for Northern Waterthrush and Blackburnian Warbler.

Note also that the statistical tests used differ between the Black and Crewe (2016) and this update so significance is not directly comparable.

Conclusions

Site based migration counts can fluctuate widely among years, and as a result, counts made over a small number of years can have substantial variation (e.g., the large numbers detected in just one year (1996) influenced the magnitude of the relative increase in cumulative totals for the five-year period compared to the three-year period). Nevertheless, the trend of an increase in overall warbler totals from 1993-1995 to 2013-2015 reported in Black and Crewe (2016) remains in the comparison of 2013-2017 to 1993-1997.

Acknowledgements

The author wishes to thank the 25 enthusiastic birders who counted birds on the Port Weller Piers during the two five-year periods. Also, to thank Tara Crewe for helpful comments about this article. The support of the Canadian Coast Guard is much appreciated.

Literature Cited

Black, J.E. and **T.L. Crewe**. 2016. Changes in abundance of migrant warblers at Port Weller, Ontario, from 1993-1995 to 2013-2015. Ontario Birds 34:178-197.

John E. Black
Physics Department, Brock University
500 Glenridge Avenue
St. Catharines, Ontario L2S 3A1
E-mail: jblack3@brocku.ca

Distinguished Ornithologist
Dan Strickland

Ron Tozer

Dan Strickland received the Ontario Field Ornithologists' (OFO) Distinguished Ornithologist Award for 2017. It was my honour and pleasure to present this award to Dan, my long-time friend and Algonquin Provincial Park colleague, during the OFO Convention at Long Point in September. His outstanding record of scientific research on the Gray Jay (*Perisorius canadensis)* and his long and accomplished career in communicating Algonquin Park's natural history make him a very worthy recipient of this award.

Dan was born in Toronto in 1942 and moved to Burlington when he was four years old. His birding skills developed as a member of the Juniors in the Hamilton Naturalists' Club during the late 1950s. Dan recalls finding a Razorbill (*Alca torda*) with Red-necked Grebes (*Podiceps grisigrena*) off Brant Street in Burlington on 31 May 1957 when he was just fifteen years old. He also remembers his relief and satisfaction when George North, the Dean of Hamilton birders, later came to view the bird through his old telescope and pronounced that it was indeed a Razorbill .

He first worked as a seasonal park naturalist in 1960, in Quetico Provincial Park. Dan became a summer naturalist in Algonquin Provincial Park in 1965. He was the Chief Park Naturalist in Algonquin by 1970, a post which he held for thirty years until his retirement in 2000. Dan mentored many seasonal naturalists over the years who went on to distinguished careers involving the environment. In one of his greatest accomplishments, Dan was responsible for the overall concept, site, story line, exhibit planning and writing for the Algonquin Park Visitor Centre, a 26,000-square foot, diorama-based natural and human history museum opened in 1993 to celebrate Algonquin Park's centenary.

Dan has been recognized for his park naturalist work through the presentation of a number of awards. In 1976, he received the Richards Education Award from the Federation of Ontario Naturalists (now Ontario Nature) for work in Algonquin Park promoting greater public understanding and appreciation of Ontario's natural history and resources. Dan was given the Amethyst Award (for "outstanding achievement by Ontario Public Servants") "in recognition of (his) professional work to make Algonquin Park an educational natural attraction and a model for other parks in Canada."

Ron Tozer (left) presents OFO's Distinguished Ornithologist Award for 2017 to Dan Strickland.
Photo: Jean Iron.

In 1999, the Shan Walshe Award was presented to him for "excellence in interpretation in Ontario's Provincial Parks." In that same year, he was given the MNR Excellence in Leadership Award for "outstanding dedication and commitment to the ongoing recovery of Ontario's Peregrine Falcon population" in recognition of his contributions to the reintroduction program in Algonquin from 1977 to 1986. Dan received the Federal Provincial Parks Council Merit Award for "Meritorious Service to Canadian Parks" in 2000.

Seasonal naturalist Russ Rutter began colour-banding Gray Jays in Algonquin Park during 1964, starting one of the world's longest-running studies of an individually marked bird population (54 years, from 1964 to 2017, and counting). Rutter's research inspired Dan to undertake his own Gray Jay study in Quebec during the late 1960s, for which he earned a Master's Degree in 1969 from the University of Montreal. After Russ's death in 1976, Dan took over and expanded the Algonquin Park Gray Jay study. More than 1500 birds have been colour-banded and over 950 nests have been found during this research. Dan's Gray Jay study has revealed significant features of its life history. For example, partial dispersal of juveniles occurs in June. The dominant juvenile (usually a male) drives its siblings away from the parental territory. This behaviour reflects the limitation of a territory to support Gray Jays through the long winter. Adults actively prevent the surviving juvenile on their territory from helping feed nestlings, but allow the juvenile to feed the young after they leave the nest. This behaviour probably helps reduce the attraction of land-based predators (such as Red Squirrels) to the nest. Finally, Gray Jays survive up to six months of boreal winter by living off food they have stored during late summer and fall. Climate

change (especially winter thaws) is apparently causing the rotting of stored food and a decline in the Gray Jay population at the southern edge of its Ontario range, including along the Highway 60 Corridor of Algonquin Park. As of 2014, only 19 (44%) of 43 Gray Jay territories occupied in 1970 were still active in the Corridor. Occupied territories had extensive conifers, especially black spruce. Formerly occupied mixed conifer-hardwood forest territories were vacant by 2014. Dan's research showed that stored food survived longer and retained more food value when placed against the bark of black spruce and other conifers, indicating the anti-bacterial effect of exposure to the resin of these trees.

Dan Strickland is the recognized world authority on the Gray Jay. He wrote the Gray Jay species accounts in both of the Ontario Breeding Bird Atlases and in the Quebec atlas. In 1993, Dan and coauthor Henri Ouellet wrote the Gray Jay account in *The Birds of North America*, and Dan updated and revised the account in the online version in 2011. Based on his study of the Gray Jay, he has authored or coauthored 22 peer-reviewed research papers. From 1974 to 2009 (36 years), Dan wrote 34 popular books and 368 articles in *The Raven* (Park newsletter) about Algonquin's natural and cultural heritage, including birds. He has authored five articles in *Ontario Birds*. The most recent was a detailed account of why there was no valid taxonomic or nomenclatural reason for the American Ornithologists' Union to have changed the name Canada Jay to Gray Jay.

Dan has studied jays far beyond Algonquin Park since his retirement. In 2001, he was invited to assist in field work on the rare Sichuan Jay (*Perisoreus internigrans*), sponsored by the Chinese Government. Dan conducted research during the fall of 2001 and the spring and fall of 2002 on Anticosti Island in the Gulf of Saint Lawrence to assess Gray Jay nesting behaviour there in the absence of Red Squirrels. At 75 years of age, Dan has now launched a new Gray Jay research project in Strathcona Provincial Park on Vancouver Island in British Columbia, involving *Perisoreus canadensis obscurus/griseus* subspecies. These Gray Jays have notably different appearance, genetics, behaviour and social organization than the boreal/eastern subspecies (*P. c. canadensis*) which occurs here in Ontario. Dan believes there may be sufficient evidence to support these western jays being restored to their former status as a distinct species, *P. obscurus*, separate from *P. canadensis*.

After reading this brief overview concerning some of Dan Strickland's accomplishments, I am confident you will agree that he is indeed an outstanding recipient of the Distinguished Ornithologist Award.

Selected Publications

Strickland, D. 1987. Gray Jay. Pp. 284-285 *In* Atlas of the Breeding Birds of Ontario (M.D. Cadman, P.J.F. Eagles, and F.M. Helleiner, eds.). Federation of Ontario Naturalists and Long Point Bird Observatory, University of Waterloo Press, Waterloo, Ontario. xxii + 617 pp.

Addison, E.M., R.D. Strickland and **D.H.J. Fraser**. 1989. Gray Jays, *Perisoreus canadensis* and Common Ravens, *Corvus corax*, as predators of winter ticks, *Dermacentor albopictus*. Canadian Field-Naturalist 103:406-408.

Strickland, D. 1991. Juvenile dispersal in Gray Jays: dominant brood member expels siblings from natal territory. Canadian Journal of Zoology 69:2935-2945.

Strickland, D. 1992. Finding (and watching) Gray Jays in Algonquin Park. Ontario Birds 10:1-10.

Strickland, D. and **H. Ouellet**. 1993. Gray Jay. *In* The Birds of North America, No. 40. (A. Poole, P. Stettenheim, and F. Gill, eds.) Philadelphia: The Academy of Natural Sciences, Washington, D.C. The American Ornithologists' Union.

Strickland, D. and **R. Rutter**. 1993. The Best of The Raven. The Friends of Algonquin Park. Whitney, Ontario. iv + 220 pp.

Strickland, D. 1996. Gray Jay. Pp. 718-721 *In* The Breeding Birds of Quebec (J. Gauthier and Y. Aubry, eds.). Association québécoise des groupes d'ornithologues, Province of Quebec Society for the Protection of Birds, Canadian Wildlife Service, Environment Canada, Quebec Region, Montréal, Quebec. xvii +1302 pp.

Tozer, R., D. Strickland and **D. Tozer**. 1996. Unusual nesting of the Swainson's Thrush. Ontario Birds 14:117-119.

Waite, T.A. and **D. Strickland**. 1997. Cooperative breeding in Gray Jays: philopatric offspring provision juvenile siblings. Condor 99:523-525.

Strickland, D. and **T.A. Waite**. 2001. Does initial suppression of allofeeding in small jays help to conceal their nests? Canadian Journal of Zoology 79:2128-2146.

Strickland, D. 2002. Ontario Gray Jays help on the world stage: Part 1. Ontario Birds 20:130-138.

Strickland, D. 2003. Ontario Gray Jays help on the world stage: Part 2. Ontario Birds 21:15-22.

Waite, T.A. and **D. Strickland**. 2006. Climate change and the demographic demise of a hoarding bird living at the edge. Proceedings of the Royal Society (B) 273:2809-2813.

Strickland, D. 2007. Gray Jay. Pp. 376-377 *In* Atlas of the Breeding Birds of Ontario, 2001-2005 (M.D. Cadman, D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier, eds.). Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto. xxii + 706 pp.

Yu Jing, Yun Fang, D. Strickland, Nan Lu and **Yue-hua Sun**. 2009. Alloparenting in the rare Sichuan Jay (*Perisoreus internigrans*). Condor 111:662-667.

Strickland, D. and **H. Ouellet**. 2011. *In* The Birds of North America, (P. G. Rodewald, ed.). Cornell Lab of Ornithology, Ithaca, New York. Retrieved from The Birds of North America Online: https://doi.org/10.2173/bna40.

Strickland D., B. Kielstra and **R. Norris.** 2011. Experimental evidence for a novel mechanism driving variation in habitat quality in a food-caching bird. Oecologia 167:943-950.

Norris, D.R., D.T.T. Flockhart and **D. Strickland**. 2013. Contrasting patterns of survival and dispersal in multiple habitats reveal an ecological trap in a food-caching bird. Oecologia 173:827-835.

Derbyshire, R., D. Strickland and **D.R. Norris**. 2013. Experimental evidence and 43 years of monitoring data support the food limitation hypothesis in a boreal food caching songbird. Ecology 96:3005-3015.

Sechley, T.H., D. Strickland and **D.R. Norris**. 2014. Causes and consequences of pre-laying weight gain in a food-caching bird that breeds in late winter. Journal of Avian Biology 45:85-93.

Strickland, D. 2014. A half century of Canadian Gray Jay studies. BirdWatch Canada 67:8-11.

Strickland, D. 2014. The Best of The Raven. Volume 2:1993–2000. The Friends of Algonquin Park. Whitney, Ontario. iv + 210 pp.

Strickland, D. 2015. Trying to understand the amazing Gray Jay. BirdWatch Canada 71:8-11.

Sechley, T.H., D. Strickland and **D.R. Norris**. 2015. Linking the availability of cached food to climate change: an experimental test of the hoard-rot hypothesis. Canadian Journal of Zoology 93:411-419.

Strickland, D. and **D.R. Norris**. 2015. An example of phenotypic adherence to the island rule? – Anticosti gray jays are heavier but not structurally larger than mainland conspecifics. Ecology and Evolution 5:3687-3694.

Sutton, A.O., D. Strickland and **D.R. Norris**. 2016. Food storage in a changing world: implications of climate change for food-caching species. Climate Change Responses 3:12.

Whelan, S., D. Strickland, J. Moran-Farron and **R. Norris**. 2016. Male experience buffers female laying date plasticity in a winter-breeding, food-storing passerine. Animal Behaviour 121:61-70.

Strickland, D. 2016. Birds of Algonquin Provincial Park. The Friends of Algonquin Park. Whitney, Ontario. 40 pp.

Strickland, D. 2017. How the Canada Jay lost its name and why it matters. Ontario Birds 35:2-16.

Whelan, S., D. Strickland, J. Moran-Ferron and **D.R. Norris**. 2017. Reduced reproductive performance associated with warmer ambient temperatures during incubation in a winter-breeding, food-storing passerine. Ecology and Evolution 7:3029-3036.

Ron Tozer
1017 Spring Lake Road
Dwight, Ontario P0A 1H0
E-mail: rtozer@vianet.ca

ONTARIO BIRDS

The aim of *Ontario Birds* is to provide a vehicle for documentation of the birds of Ontario. We encourage the submission of full length articles and short notes on the status, distribution, identification, and behaviour of birds in Ontario, as well as location guides to significant Ontario birdwatching areas, and similar material of interest on Ontario birds.

Submit material for publication by e-mail attachment (or CD or DVD) to either:
chip.weseloh@ec.gc.ca
kenabra@sympatico.ca
risleych@gmail.com

Please follow the style of this issue of *Ontario Birds*. All submissions are subject to review and editing and may be submitted to peer review beyond that of the editors. For photographic material used in *Ontario Birds,* the copyright remains in the possession of the photographers.

Printing: DTP Inc.,Concord, Ontario

© Mixed Sources
Product group from well-managed forests, controlled sources and recycled wood or fibre
www.fsc.org Cert no. SW-COC-003090
© 1996 Forest Stewardship Council
FSC

bullfrogpowered
Printing by DTP Inc. is bullfrogpowered

OFO Ontario Field Ornithologists

Ontario Field Ornithologists (OFO) is dedicated to the study of birdlife in Ontario

OFO was formed in 1982 to unify the ever-growing numbers of field ornithologists (birders/birdwatchers) across the province, and to provide a forum for the exchange of ideas and information among its members.

The Ontario Field Ornithologists officially oversees the activities of the Ontario Bird Records Committee (OBRC); publishes a newsletter *(OFO News)* and this journal (*Ontario Birds*); operates a bird sightings listserv (ONTBIRDS), coordinated by Mark Cranford; hosts field trips throughout Ontario; and holds an Annual Convention and Banquet in the autumn. Current information on all OFO activities is on the OFO website (www.ofo.ca), coordinated by Doug Woods. Comments or questions can be directed to OFO by e-mail (ofo@ofo.ca).

All persons interested in bird study, regardless of their level of expertise, are invited to become members of the Ontario Field Ornithologists. Membership rates can be found on the OFO website. All members receive *Ontario Birds* and *OFO News*.

Ontario Field Ornithologists www.ofo.ca
PO Box 116, Station F, Toronto, Ontario M4Y 2L4