Historical Overview, Seasonal Timing and Abundance of Bonaparte's Gull at Point Pelee, Ontario

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Figure 1. Western Lake Erie showing the location of the study area (Point Pelee Birding Area).

Introduction

The Bonaparte's Gull (*Chroicocephalus philadelphia*) is a widespread and common species across most of North America, where it is usually found in association with both freshwater and coastal marine environments. Despite its abundance and familiarity, it nonetheless is one of the least known of the gulls with respect to breeding (Burger and Gochfeld 2002). Other aspects of the bird's ecology, including migration and winter habits, are also incompletely known (Braune 1989). On a more local basis, in Ontario there have been a few published studies that describe various aspects of the species at specific locations. Such studies include those for the Niagara River (Beardslee 1944, Kirk *et al.* 2008), Durham Regional Municipality (Pittaway 1991) and Point Pelee (Wormington 2001a, 2013a).

The purpose of this paper is to present a comprehensive account on the status of Bonaparte's Gull at Point Pelee, to include detailed information on seasonal timing, abundance, and dynamics of the various age classes. "Point Pelee" refers to the official Point Pelee Birding Area, which is a standard Christmas Bird Count circle (24 km/15 mile diameter) centred just north of Point Pelee National Park; the area includes Wheatley and Wheatley Provincial Park to the northeast, and Leamington and Seacliff Beach to the northwest (Figure 1).

Methods and Sources of Information

Information for this paper is derived from multiple sources. Since the late 1970s, the author has consistently compiled seasonal summaries of bird sightings for the Point Pelee Birding Area; these include both personal sightings and also those of many visiting birders. For the period prior to the late 1970s, a wealth of information exists in the "Stirrett Files" that are housed at Point Pelee National Park. These files were compiled by George M. Stirrett, former Chief Naturalist of Canada's National Park system, and cover the period from the 1870s to the early 1970s. Again, these comprise sightings made by visiting birders, in addition to extensive information gleaned from the published literature. Despite the abundance of information on Bonaparte's Gull at Point Pelee, much of the *useable* data pertains to recent times, since on an annual basis consistent and detailed reporting of all bird species here did not begin until the late 1970s. Thus most of the data on Bonaparte's Gull presented in this paper are based on that general time period to the present.

The interpretation of records rests largely with the author, who has studied in detail the seasonal status of Bonaparte's Gull at Point Pelee since the early 1980s. The interpretation of data can occasionally be subjective; however, over the longer term distinctive seasonal patterns have emerged that can support the various viewpoints that have evolved over time. To describe the various ages of Bonaparte's Gull, for clarity I have elected to use an age-based system rather than a plumage-based system. Thus various groups are discussed and categorized based on their age, even though plumage descriptors are sometimes added for additional clarity. Especially for gulls, the age-based system was first popularized by Grant (1982).

Historical Overview

Further research is required to confirm when Bonaparte's Gull was first recorded at Point Pelee. However, it appears certain that the first *published* record pertains to 20 September 1900, when William E. Saunders and Henry H. Gould noted "Bonaparte gulls" along the Lake Erie shoreline at a location that would be at or close to Hillman Marsh (Gould 1901). Not long afterwards, Taverner and Swales (1907) stated that Bonaparte's Gull was "Without doubt a common and regular migrant." Stirrett (1973a) labelled Bonaparte's Gull as an "Abundant and regular transient" at Point Pelee, and the species is still abundant here today (Wormington 2013b). Thus, it can be concluded that Bonaparte's Gull has always been common (if not abundant) at Point Pelee for at least 100+ years.

Figure 2. A concentration of Bonaparte's Gulls on 26 November 2003 at Wheatley Harbour, a favourite feeding and loafing location for this species within the Point Pelee Birding Area. *Photo: Alan Wormington*

The abundance of Bonaparte's Gull at Point Pelee can be attributed to a number of factors. The waters of the western basin of Lake Erie are both shallow and rich in food sources, and this has always attracted huge numbers of various waterbirds, including gulls. Point Pelee proper hosts a wide range of habitats that specifically attract large numbers of Bonaparte's Gulls. These include abundant offshore waters, long stretches of accessible shoreline (mostly sand beaches), large marshes (Hillman Marsh and Pelee Marsh), several harbours and marinas (Wheatley, Sturgeon Creek and Leamington), and expansive areas of large and very flat agricultural fields. All of these habitats are compacted into a relatively small area, and apparently provide excellent benefits for the species — namely areas for both feeding and loafing (see Figure 2).

Seasonal Status and Timing

The seasonal status of Bonaparte's Gull at Point Pelee is extremely complex. On a year-round basis this includes both spring and fall migrations, in addition to populations that also summer and winter here (Figure 3). Depending on the time of year, the behaviour of adult and immature birds can be markedly different, and this further adds to the overall complexity. Also, immature birds form the bulk of the summering population, but this age class is exceedingly rare during the few winters when the species is present. The seasonal status and timing of Bonaparte's Gull at Point Pelee is presented below in separate sections, for both spring and fall migrations, and for summer and winter seasons.

Common (Abundant) Spring and Fall Transient
Common (Often Abundant) Summer Visitor (Non-Breeding)
Irregular Rare to Uncommon (Usually Absent) Winter Visitor

(Winter / February 13, 16, March 1) **March 12 – May 18** (May 25, 26 / Summer)
(Summer / June 28, July 6, 8) **July 12 – January 16** (January 29, 30, February 2 / Winter)

Figure 3. A summary of the status of Bonaparte's Gull at Point Pelee throughout the year.
Dates in bold text indicate "normal" first and last dates for migration (spring and fall); dates not in bold text indicate extreme migration dates. (From Wormington 2013b).

Spring Migration

Bonaparte's Gulls at Point Pelee during spring (and fall) engage in what has been described as a "two-tier" migration (Wormington 2001a, Tozer 2012:150-151). After departing their wintering grounds, birds initially make a long-distance flight to a specific region, where at that location they remain for some time while molting into summer (breeding) plumage. Later they then make another long-distance flight, this time essentially direct to their boreal breeding grounds. Such a migration strategy is undertaken by a number of species, including some gulls, waterfowl and shorebirds.

The earliest three records for spring migrants at Point Pelee are as follows:

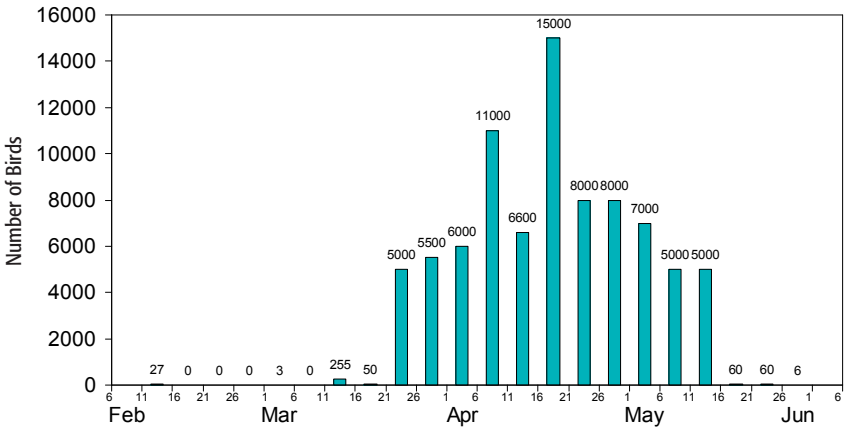
- **13 February 2001:** 27 adults, Wheatley Harbour (Alan Wormington, Henrietta T. O'Neill). Prior to this observation no wintering Bonaparte's Gulls had been present at Point Pelee, and the last fall migrants were reported in late December (Wormington 2001b). For the Lake Erie shoreline in Ohio, none were reported after about 15 January, and that was a single bird only (John V. Pogacnik, pers. comm.). The spring migration of 2001 started exceptionally early at Point Pelee, with 13 species (including Bonaparte's Gull) found on record-early dates up to just 20 February alone (Wormington 2001c).
- **16 February 1990:** one adult, Wheatley Harbour (Alan Wormington). At Point Pelee no other Bonaparte's Gulls had been recorded since the last fall migrant (one only) on 5 January (Wormington 1990). Also, Bonaparte's Gulls were essentially absent all winter from along the Ohio shoreline of Lake Erie (Peterjohn 1990), where hundreds or thousands are sometimes present.
- **1 March 2004:** one adult, Wheatley Harbour (Alan Wormington). No wintering birds had been present at Point Pelee, and the last fall migrants (900) were present 5-13 January inclusive (Wormington 2004).

The first spring migrants typically arrive at Point Pelee during the general time frame of 15-25 March. The first migrants are usually few in number, but shortly thereafter there is a surge of arrivals, and this surge of new migrants typically appears in late March or early April. From then until early May or the

middle of May, spring migrants remain abundant at Point Pelee (Figure 4). During this time period the vast majority of birds are adults, since first-summer immatures do not become numerous until early May or later (see section on Summer). At some point in early to mid-May, there is often a sudden exodus of adult birds, and these flights can be triggered by a surge of warm weather arriving from the south. This exodus thus coincides with the passage of Bonaparte's Gulls at more northerly locations, such as southeastern Manitoba where Taylor (1993) stated that most adults pass through quickly during the period of about 10-22 May.

Spring migrants at Point Pelee spend a great deal of time foraging, and during this time they can be found just about anywhere. This includes all shorelines, both inshore and offshore waters of Lake Erie, local harbours, marinas and marshes, and agricultural fields (especially those that are wet or flooded).

Figure 4. Maximum daily counts for Bonaparte's Gull during spring migration at Point Pelee, presented in 5-day intervals.



The highest counts ever reported for spring migrants at Point Pelee are as follows:

- **18,000** – 13 May 1978: Northeast Beach to Tip (Alan Wormington, Keith J. Burk). Unfortunately the number of adult birds (spring migrants) and first-summer immatures (potential summering birds) were not differentiated for this sighting, thus this record is not included in Figure 4. The very late date would suggest that a significant portion of these birds (probably more than 50%) would have been first-summer immatures. Likely most of these immatures continued northward as spring migrants, but some undoubtedly summered at Point Pelee as well.
- **15,000** – 18 April 1983: virtually all adults, Wheatley Harbour including adjacent fields (Donald A. Sutherland). Earlier at the same location, 11,000 birds were counted on 9 April; and the same year 8,000 birds were present on 30 April from Wheatley Harbour to the Onion Fields (Wormington 2013b).

- **7,000** – 7 April 2011: virtually all adults, Wheatley Harbour (Alan Wormington)
- **6,600** – 11 April 2006: virtually all adults, Wheatley Harbour (Alan Wormington)
- **5,500** – 20-22 April 2012: all adults, Wheatley Harbour (Alan Wormington)

The latest three records for spring migrants (adults) at Point Pelee are as follows:

- **26 May 1983:** six summer-plumaged adults, Wheatley Harbour (Alan Wormington). These very late migrants were presumably a result of a spring that was characterized as cold, wet and late, not only at Point Pelee but also across southern Ontario as a whole (Runtz 1983, Weir 1983).
- **25 May 1996**: two summer-plumaged adults, Tip (Alan Wormington).
- **25 May 2008:** 12 summer-plumaged adults, Wheatley Harbour (Alan Wormington, Richard P. Carr). The day before this observation (24 May) an exceptional 60 adults were still present at this location (Wormington 2008); the presence of so many very late adults can be attributed to the very late (cold) spring at the time.

Summer

Taverner and Swales (1907) correctly stated that "A few immatures may remain during the summer." They were, of course, referring to first-summer (one-year-old) immatures (Figure 5), which in modern times can be found almost every summer at Point Pelee in considerable numbers. Favourite locations where summering birds congregate include the Tip, Northeast Beach, Onion Fields, Hillman Marsh, Sturgeon Creek and Leamington Marina including adjacent Seacliff Beach. These summering birds are extremely gregarious, and the majority are likely to concentrate at a single location where they typically remain for several days or longer. For unknown reasons they may then shift to a different (nearby) location. During their stay at Point Pelee, summering birds do not seem to spend much time feeding; instead, they generally pass the day by simply loafing.

A few first-summer immatures may appear early in spring with arriving adults, but significant numbers do not begin to arrive until the first week of May (or sometimes in late April). Tabulations for first-summer immatures are presented for the middle of April through to early August (Figure 6), but not all birds during this period necessarily pertain to those that summered at Point Pelee. Maximum numbers are often present during May, but many of these birds are spring migrants that will eventually depart the area to summer elsewhere. As to when the spring passage of first-summer immatures is over is not precisely known, since each year the latest migrants may pass through slightly later (on average) than the latest adults. However, certainly by the first of June all birds present at Point Pelee can be assumed to be summering. Tabulations for first-summer immatures extend to early August only. After that time it becomes increasingly difficult to isolate these one-year-old birds, since they have molted into second-winter plumage and thus are similar in appearance to adult

Figure 5. A first-summer (one-year-old) immature Bonaparte's Gull at the Tip of Point Pelee on 2 May 2013. *Photo: Joshua D. Vandermeulen*

birds; furthermore, adult birds by this time have arrived *en masse* as fall migrants.

The highest counts ever reported for first-summer immatures at Point Pelee, during specific summer seasons (and on or after 1 June), are as follows:

- **2,300** – 21 June 2006: Leamington Marina (Alan Wormington)
- **2,200** – 18 July 1995: Tip (Alan Wormington, David J. Milsom); the same year 1,400 birds were counted on 19 June, with 900 at the Tip and 500 at SW Hillman Marsh (Wormington 1995a).
- **2,200** – 24 June 2007: west side of Tip (Alan Wormington *et al.*); the same year 1,800 birds were counted on 14 July at the east side of the Tip, and 1,300 were present on 8 June at Hillman Marsh (Wormington 2007a)
- **1,600** – 1 June 2012: 900 at Onion Fields and 700 at Leamington Marina (Alan Wormington); the same year 800 birds were found on 20 July at Seacliff Beach (Wormington 2012a).
- **800** – 21 June 2003: Tip (Alan Wormington)

Most years there is a sizable population of summering birds at Point Pelee, but some summers there are considerably fewer. An example is 2001, when the maximum daily count for the entire season was only 15 birds on 14 June, and no other observation exceeded two birds on any single date (Wormington 2001d).

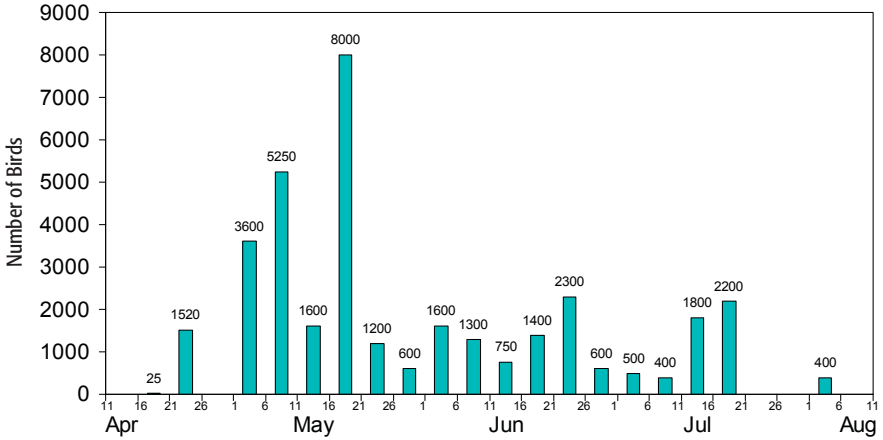


Figure 6. Maximum daily counts for first-summer (immature) Bonaparte's Gulls at Point Pelee, presented in 5-day intervals.

Birds that appear to be "adult-like" are occasionally found amongst the flocks of typical first-summer immatures. There is no reason why a healthy, adult Bonaparte's Gull would summer at Point Pelee, and close examination of such individuals always demonstrates that they do not fall into this category. These birds invariably pertain to (1) true adults that are either sick or injured; or (2) birds that appear to be adults, but when observed closely are actually second-summer immatures (and thus are not sexually mature). An oddity that is also sometimes encountered amongst the summering birds pertains to apparent adults that are in "winter" plumage, entirely lacking a black head (and some of these individuals might in fact be second-summer birds).

Fall Migration

The fall migration of Bonaparte's Gull at Point Pelee extends over a remarkable length of time, often from the middle of July to the middle of January — half a year or more (Figure 7). During this period adult birds initially arrive in breeding plumage, complete with a black hood; while at Point Pelee they then undergo a complete wing and body molt before eventually leaving the area in fresh winter plumage. Similar to spring migration, birds during fall again engage in a "two-tier" migration strategy as described previously. For Bonaparte's Gull specifically, Howell and Dunn (2007:302-305) refer to this migration pattern as a "bimodal fall passage."

The start of fall migration is very early and involves adult birds in immaculate summer (breeding) plumage. The earliest arrivals are presumably failed breeders. One needs to be cautious when trying to detect the first fall migrants at Point Pelee, since occasional "adult-like" birds also summer here (see previous section on Summer). The arrival of the first

adult and juvenile birds during fall migration has been monitored very closely at Point Pelee since 1980 (Table 1). Much of these data were originally published by Wormington (2001a), covering the years 1980 to 2001 inclusive; at that time it was calculated that adult birds predate those of the first juveniles by a mere 10.5 days on average. Wormington (2001a) also described observations that indicate adult birds may retain pair-bonds up until at least the end of July, thus the first fall migrants often involve mated pairs (or multiples thereof). Excluding a single exception on 1 September 2010 (Wormington 2013a), during the entire fall migration period adult Bonaparte's Gulls always outnumber all other age classes combined.

The earliest three records for fall migrants at Point Pelee are as follows:

- **28 June 2005:** four summer-plumaged adults (two pairs?), NW Hillman Marsh (Alan Wormington, Dean J. Ware). The following day (29 June) an additional five early adults were found, with three at Seacliff Beach and two at Sturgeon Creek Marina (Wormington 2005).
- **6 July 2001:** 18 summer-plumaged adults, NE Hillman Marsh (Dean J. Ware, Alan Wormington)

Table 1. Fall arrival date and number for the first adult and juvenile Bonaparte's Gulls recorded at Point Pelee, for the years 1980 to 2013 inclusive.

Year	First Adults (#)	First Juveniles (#)	Year	First Adults (#)	First Juveniles (#)
1980	no data	5 August (3)	1997	29 July (35)	31 July (1)
1981	no data	3 August (2)	1998	10 July (4)	20 July (1)
1982	22 July (12)	2 August (1)	1999	18 July (35)	24 July (15)
1983	19 July (6)	9 August (3)	2000	30 July (500)	3 August (2)
1984	19 July (3)	27 July (3)	2001	6 July (18)	23 July (2)
1985	21 July (2)	31 July (3)	2002	10 July (14)	5 August (7)
1986	25 July (5)	3 August (3)	2003	27 July (3)	14 August (5)
1987	11 July (3)	27 July (1)	2004	1August (4)	7 August (4)
1988	20 July (16)	28 July (1)	2005	28 June (4)	24 July (2)
1989	20 July (25)	28 July (3)	2006	12 July (1)	20 July (3)
1990	16 July (1)	4 August (7)	2007	14 July (53)	21 July (1)
1991	21 July (12)	27 July (2)	2008	20 July (30)	27 July (2)
1992	15 July (2)	30 July (2)	2009	11 July (2)	28 July (1)
1993	17 July (4)	27 July (4)	2010	18 July (6)	24 July (4)
1994	23 July(2)	26 July (3)	2011	13 July (6)	24 July (1)
1995	8 July (1)	23 July (1)	2012	9 July (4)	19 July (1)
1996	15 July (2)	28 July (1)	2013	13 July (3)	27 July (1)

- **8 July 1995:** one summer-plumaged adult, Tip (Alan Wormington). It is interesting that this adult bird was reluctant to mix with the summering immatures that were also present. Also of note, the earliest juvenile Bonaparte's Gull ever recorded at Point Pelee, up to the time, was also in 1995, on 23 July (Wormington 2001a).

The behaviour of fall migrants at Point Pelee is variable, depending on the time period involved. For the period when Bonaparte's Gulls first arrive *en masse* (late July or shortly thereafter), and through much of August, birds are often sedentary. Huge flocks often congregate at specific sites where they remain for extended periods, and here they seem to be largely inactive; the only exception being short feeding sessions made to the nearby waters of Lake Erie. Favoured sites during this time period often include Seacliff Beach, the Onion Fields (located directly north of Point Pelee National Park), Pelee Marsh, and the Tip.

September is an interesting month for Bonaparte's Gull at Point Pelee. It is common knowledge locally that adult Bonaparte's Gulls during September can be strangely elusive, if not virtually absent at times. It is not unusual for several days to pass without encountering a single bird. Most years the vast majority of juvenile birds have already departed by early September (Wormington 2013a), but the whereabouts of adult birds remain largely unaccounted for. It is highly unlikely that the population has vacated Lake Erie (including Point Pelee) by migrating south, since the species as a whole is not regular any distance south of the Great Lakes until later in the fall (Howell and Dunn 2007:302-305).

Exactly where the adult population is residing during much of September remains largely a mystery, but since this is when they are completing their molt, possibly they remain far offshore on Lake Erie and thus mostly unseen. A recent observation may confirm this possibility: on 14 September 2013 several thousand Bonaparte's Gulls (mostly adults) were present offshore from Erieau, Chatham-Kent Municipality, while on the very same day virtually none could be found at Point Pelee (pers. obs.). This may imply a more pelagic behaviour of the species during the month of September, and may also imply that birds are more concentrated in the central basin of Lake Erie rather than the western basin.

Furthermore, the re-appearance of adult Bonaparte's Gulls at Point Pelee (typically in late September) may be related to the "fall turnover" of water columns within Lake Erie. This occurs when the water temperature in the epilimnion cools down so that the density gradient in the water column disappears and wind action will cause the water to mix top to bottom. This occurs only if the water column has been thermally stratified during the summer (Hutchinson 1957). This condition regularly occurs in the central and eastern basins of Lake Erie, but is very rare in the western basin (Joseph H. Leach, pers. comm.). Even more interesting is the fact that the "fall turnover" typically occurs in late September or early October, which is precisely the time when numbers of adult Bonaparte's Gulls make a

re-appearance at Point Pelee. Obviously a considerable amount of additional research is required to determine if these possible associations are valid.

It is usually the last week of September when significant numbers of Bonaparte's Gulls make a re-appearance at Point Pelee, and this coincides when adult birds have completed their molt to winter plumage. From then until their final departure sometime later (as late as early to mid January), birds can be highly nomadic as they seem to be constantly on the move in what presumably must be searches for productive feeding areas. It is not uncommon to encounter hundreds if not thousands of birds one day, to be followed the next day by far lesser numbers and sometimes virtually none. The Tip of Point Pelee is the premiere location to witness the daily movement of such birds, where large numbers may pass in a short period of time. On a day-to-day basis the direction of flight is highly variable, but on a specific day the flight direction is usually constant; generally the heaviest flights occur during the morning hours, but late-day movements are not uncommon. Presumably these daily flights are related to feeding,with changing winds and other unknown factors dictating their direction. When birds stop to feed, it is generally over onshore waters of Lake Erie; very late in the season they may also concentrate at various marinas and harbours, particularly Wheatley Harbour which is a favoured location. During this late-fall time period, significant numbers are rarely encountered in local marshes or in agricultural fields (in contrast to earlier in the season).

The highest counts ever reported for fall migrants at Point Pelee are as follows:

- **17,000** – 22 December 1984: this total was attained during the Christmas Bird Count that was conducted on this date; the vast majority of birds were concentrated at Leamington Marina, Sturgeon Creek, Wheatley Harbour, Hillman Marsh, and the Tip (multiple observers).
- **15,000** – 31 October 1992: Tip to Leamington Marina (Alan Wormington, Jon L. Dunn, Sue Tackett).
- **12,000** – 28 August 2006: Onion Fields (Alan Wormington, Iain Ewing).
- **12,000** – 5 August 2007: all adults, Seacliff Beach to Pelee Marsh (Alan Wormington).
- **12,000** – 26 October 2007: Tip (Alan Wormington)
- **11,000** – 13 September 1987: Lake Erie at Wheatley Provincial Park (Alan Wormington).

Bonaparte's Gull is known as an exceptionally late fall migrant in southern Ontario, and at Point Pelee it is not uncommon for significant numbers to regularly linger well into the middle of January before making a final departure. The latest three records for fall migrants at Point Pelee are as follows:

- **2 February 1995:** 14 adults, Wheatley Harbour (Alan Wormington). Prior to this observation very large numbers of Bonaparte's Gulls were lingering at Wheatley Harbour, including 550 birds on 21-23 January and 200 on 26 January (Wormington 1995b). A single adult still present on 7 February is difficult to categorize

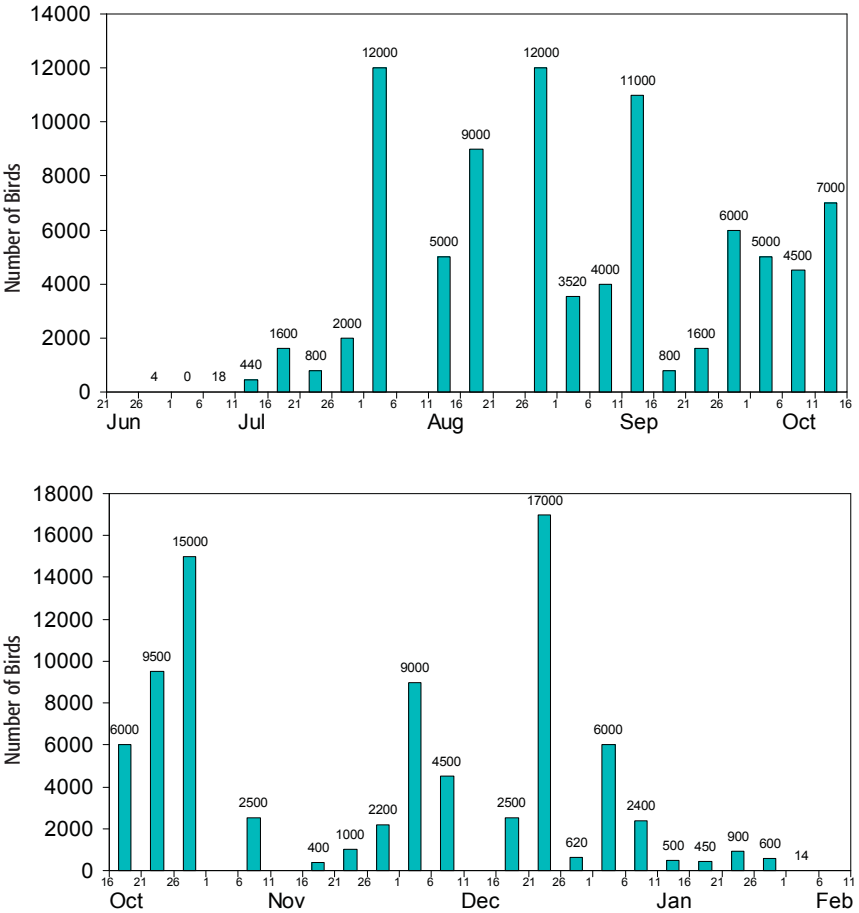


Figure 7. Maximum daily counts for Bonaparte's Gull during fall migration at Point Pelee, presented in 5-day intervals.

(it may have overwintered), but afterwards no additional birds were reported until the first spring migrants (80) were found on 22 March (Wormington 1995c).

- **30 January 2013:** one adult, flying south off Tip via east side (Alan Wormington). After this observation, the species was not reported again at Point Pelee until the first spring migrants (two) were seen on 10 March (Wormington 2013c).
- **29 January 2007:** 600, Wheatley Harbour (Alan Wormington). After this observation there were no subsequent sightings at Point Pelee until the first spring migrant appeared on 14 March (one bird only), along with numerous birds immediately thereafter (Wormington 2007b). Along

the Lake Erie shoreline in Ohio, where large numbers of Bonaparte's Gulls sometimes overwinter, none remained this season; at Cleveland, where most are seen, there were 100+ birds on 3 February, only two birds on 16-17 February (one of which was eaten by a Peregrine Falcon, *Falco peregrinus*), and no birds on or after 18 February until the first spring migrants made an appearance some time later (John V. Pogacnik, pers. comm.).

Juvenile Birds

The migration of juvenile Bonaparte's Gulls is unique, and is markedly different from adults. The first juveniles typically arrive at Point Pelee in late July (Table 1), before quickly increasing in numbers during August (Wormington 2013a). Their very early arrival indicates that they presumably make a more-or-less direct flight from the species' boreal breeding grounds to the lower Great Lakes, which is a behaviour similar to adult birds. Unlike the adult population, which remains abundant at Point Pelee very late into the fall season, the vast majority of juvenile birds depart by early September, or by mid September at the very latest (Figure 9). Then for the remainder of the fall season (until January) only a very small number of juvenile birds (now in first-winter plumage) remain behind, and they comprise just a very small percentage of the overall population.

The earliest four records for juvenile birds at Point Pelee are as follows:

- **19 July 2012:** one, Seacliff Beach (Alan Wormington); see Figure 8
- **20 July 1998:** one, Tip (Alan Wormington, Henrietta T. O'Neill)
- **20 July 2006:** three, Seacliff Beach (Adam J. Hall e*t al.*)
- **21 July 2007:** one, Seacliff Beach (Adam C. Pinch)

Figure 8. A record-early juvenile Bonaparte's Gull for the Point Pelee Birding Area, at Seacliff Beach (Leamington) on 19 July 2012. *Photo: Alan Wormington*

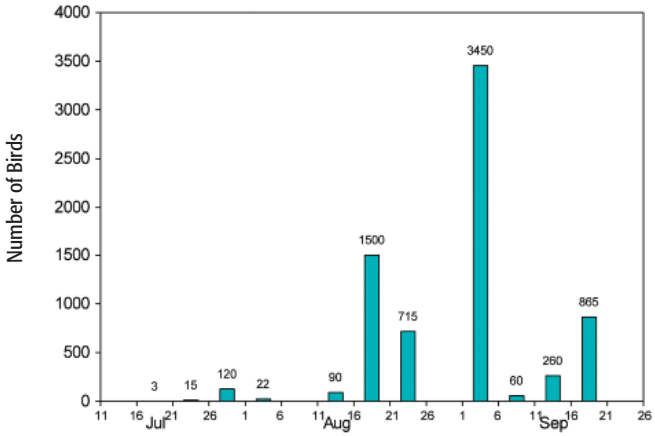


Figure 9. Maximum daily counts for juvenile Bonaparte's Gulls at Point Pelee, presented in 5-day intervals.

Wormington (2013a) reported a huge number of juvenile Bonaparte's Gulls that were migrating past Wheatley Harbour on 1 September 2010. A total of 3,450 juveniles was tallied, by far the highest count ever for this age class at Point Pelee. Other than juveniles only about 80 additional birds were involved in this passage (comprising other age classes), thus the juvenile birds on this date comprised a remarkable 98% of all birds counted. This event is the only recorded instance during fall migration at Point Pelee when adult birds did not outnumber all other age classes combined.

Winter

In Ontario, true overwintering of Bonaparte's Gull is a relatively rare event, even though many authors have routinely listed "winter records" in various publications. For example, Speirs (1985:339-342) provided a long series of supposed "winter" records for multiple locations in southern Ontario, but virtually all of these pertain to late-fall migrants within the time frame of early December to early January inclusive. He listed, in fact, only a single record that can be categorized as a true wintering record — three birds on 7 February [1953] at Point Pelee (from Stirrett 1973b). The only location in the province where Bonaparte's Gull is regular as a true overwintering species is the Niagara River, where in modern times small numbers can be found during most seasons (James M. Pawlicki, pers. comm.). However, the species has not always been a regular wintering species there. For example, Baillie (1949) stated that due to the prevalence of open water, upwards of 300 Bonaparte's Gulls remained along the Niagara River throughout February of 1949, which was the first wintering of the species there since the 1931-1932 season.

At Point Pelee the overwintering of Bonaparte's Gull is likewise a rare event, even though fall migrants may linger well into the middle of January (with 16 January considered a "normal" last date for fall migration, as shown in Figure 3). In total, Bonaparte's Gull has been recorded as wintering at Point Pelee, during only eight winter seasons. Prior to the late

1980s, the only reported sighting that could be categorized as true wintering pertains to the three birds reported by Robert E. Mara at "Point Pelee" on 7 February 1953 (Stirrett Files; Stirrett 1973b). Wintering was not recorded again until the 1986-1987 season, and all other records have occurred thereafter.

Numbers recorded during winter have ranged from very low numbers only, to many birds numbering into the thousands (see Figure 10). As to be expected, wintering birds are typically present during mild winters when Lake Erie is consistently free of widespread ice coverage. The winter when the greatest number of birds was recorded was 2001-2002, when the maximum count was 6,000 birds on 10 March. This is an exceptional number for wintering birds, but Currie (2002) stated that temperatures in southern Ontario for the season were 8.6° F. warmer than average, and 2.0° F. warmer than the previous warmest winter (1997-1998). (It is interesting to note that the winter of 1997-1998 also saw wintering birds at Point Pelee.) Wintering birds are typically found foraging over inshore waters of Lake Erie, and principally they have been found in an area extending from the Tip to Wheatley Harbour (Figure 11). The vast majority of all wintering birds have been adults, but a few first-winter immatures can also be present when overall numbers are high. As in the late-fall period, wintering Bonaparte's Gulls generally avoid the local marshes and agricultural fields.

The highest counts reported during specific winter seasons at Point Pelee are as follows:

- **6,000** – 10 March 2002: all adults, Wheatley Harbour to Hillman Marsh (Alan Wormington). Slightly earlier in the season lesser numbers were also recorded, including 1,600 birds on 28 February and 600 on 26 February (Wormington 2002).
- **4,000** – 14 March 2006: all adults (except for three first-winter immatures), Wheatley Harbour (Ian M. Richards, Alan Wormington). Lesser numbers were recorded earlier in the

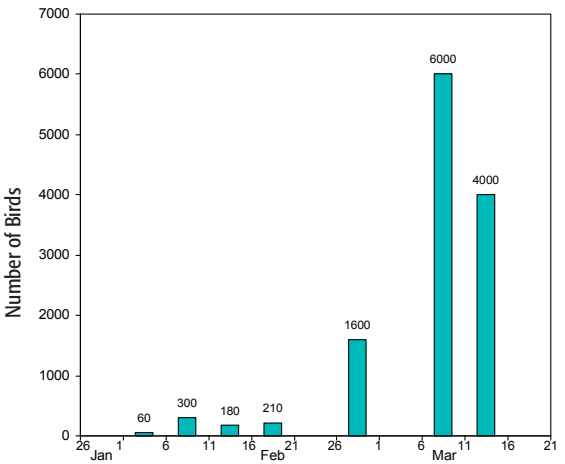


Figure 10. Maximum daily counts for wintering Bonaparte's Gulls at Point Pelee, presented in 5-day intervals.

winter, including 700 on 9 March (Wormington 2006a), 180 on 13 February, and 300 on 6 February (Wormington 2006b).

- **700** – 11 March 2012: NW Hillman Marsh (Blake A. Mann). Lesser numbers were recorded earlier in the winter, including 320 on 27 February and 60 on 1 February (Wormington 2012b).
- **550** – 27 February 1998: Tip (Alan Wormington); 210 birds were also recorded on 18 February (Wormington 1998).

During years when Bonaparte's Gull has wintered at Point Pelee, there has sometimes been a major uptick in numbers very late in the season, namely during the period of late February to the middle of March (Figure 10). Such late-winter increases were documented in 1998, 2002, 2006 and 2012, but not reported in 1953, 1987, 1989 or 1991 (the only other years when wintering was recorded). These late-season increases have always corresponded to significant warming trends at the time, when any remaining ice on Lake Erie was mostly or completely eliminated, and such events have also corresponded to years when significant numbers were known to be wintering along the Lake Erie shoreline in Ohio. These are not spring migrants (although a small percentage of the total may be so), since during typical (cold) winters when the species is completely absent on Lake Erie (including Ohio), spring migrants do not normally appear at Point Pelee until the general time frame of 15-25 March (and even then in very small numbers only). Similarly, for

Figure 11. An adult, winter-plumaged Bonaparte's Gull at Wheatley Harbour on 8 March 2002. This bird was one of thousands that wintered at this site during the 2001-2002 season. *Photo: Alan Wormington*

New York State as a whole, Burger and Brownstein (1968) stated that spring migration of Bonaparte's Gull begins in the last week of March. It seems probable that these late-winter concentrations are derived from birds that are already wintering elsewhere on Lake Erie (predominately in Ohio waters), and they simply move to Point Pelee when conditions become suitable. Almost all of these late-winter concentrations have been in the vicinity of Wheatley Harbour, a location that is highly favoured by the species.

Records of wintering at Point Pelee are clustered almost entirely in the modern time-frame. It is not known if this is due to an actual increase in the frequency of overwintering, or is simply a result of increased observer effort. Perhaps it is a combination of both factors, and future sightings may provide additional clarity.

Overnight Roosting Areas

There are exceptionally few published sources to indicate if Bonaparte's Gulls regularly migrate at night, or if the species is otherwise active during the night-time hours. Burger and Gochfeld (2002) stated that the species "occasionally migrates at night" which is based on a single incident only as reported by Taylor (1993). Otherwise the evidence is wanting.

At Point Pelee there is no evidence that Bonaparte's Gulls are mobile during night-time (nocturnal) hours; all sightings here are strictly confined to daylight (diurnal) periods. However, for all times of the year at Point Pelee, it is not known where Bonaparte's Gulls spend the night. Locations where the species roost overnight at Point Pelee are not known, but a number of assumptions can be made. Throughout the year, it is common knowledge that at or just after sunset the numbers of all gulls (including Bonaparte's Gulls) decrease dramatically at Point Pelee, as birds slowly drift offshore. For Bonaparte's Gull specifically, there is never any distinct direction that the birds fly (other than offshore) to suggest that there is any land-based overnight roosting area either at or near Point Pelee that birds might be heading towards. Thus it can be assumed that Bonaparte's Gulls from Point Pelee spend the night on Lake Erie, and presumably well offshore at unknown distances. There is a possibility that at certain times of the year (primarily summer and early fall) some birds may roost overnight on mud islands within Pelee Marsh, but this requires further study.

On 11 January 1985, 400 Bonaparte's Gulls were present at Wheatley Harbour. At sunset about half of these birds flew due south out into Lake Erie, as if migrating (pers.obs.). Just two days later on 13 January only three birds remained at Wheatley Harbour, and these were the last fall migrants for the season (Wormington 1985). Whether the birds on 11 January were truly migrating, or just going offshore to roost for the night, is not known.

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All birders who have made observations at Point Pelee over the years, and who have later reported those observations by any one of a number of methods, deserve special recognition. Without such sightings, compilations as presented here for Bonaparte's Gull would simply not be possible. Thanks to David J. Moore who created the map (Figure 1). Christopher J. Risley prepared the bar graphs, and his time devoted to this task was much appreciated. Kevin A. McLaughlin reviewed the draft, and made several valuable comments. Joseph H. Leach provided information pertaining to the limnology of Lake Erie. The writing of this paper was sponsored by Environment Canada, with a contract awarded to the author. D.V. "Chip" Weseloh, Canadian Wildlife Service, was the designated Scientific Authority for the contract.

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