



Herring Gulls feeding in the Niagara River gorge.
Nov. 26, 1974

GULLS ON THE NIAGARA FRONTIER

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All Photographs by the Author

Bordered by two of the Great Lakes and crossed by a major river, the Niagara Frontier Region, which includes the western portion of New York State and part of the Niagara peninsula of Ontario, is an outstanding area for gulls. It is one of the very best areas in North America, and probably in the world, for viewing large numbers and a great variety of these fascinating birds. Sixteen species plus one subspecies have been recorded here so far, and keen observers have tallied 13 species in one day on the Niagara River. At times in fall, there have been over 100,000 gulls present in the region, most of them on the Niagara.

Species identified in the region are: Glaucous Gull, Iceland Gull (2 ssp.), Great Black-backed Gull, Lesser Black-backed Gull, Herring Gull, Thayer's Gull, Ring-billed Gull, Mew Gull, Black-headed Gull, Laughing Gull, Franklin's Gull, Bonaparte's Gull, Little Gull, Ivory Gull, Black-legged Kittiwake and Sabine's Gull. In addition, individuals have appeared here which are probably hybrids, and others have shown plumage variations that are probably due to aberrancy or some other factor.

The Niagara River is largely ice-free in winter and provides a year-round source of food for gulls, as well as a migratory route in season. Gulls are also attracted in numbers to the shores and offshore areas of Lake Erie and Lake Ontario. Less often, and in considerably lower numbers and variety, they range inland in western New York, sometimes following streams or frequenting lakes, plowed fields, refuse dumps and other open land. The abundance of small fish, such as shiners (*Notropis*), alewives (*Pomolobus*), gizzard shad (*Dorosoma*) and smelt (*Osmerus*), in the Niagara and the Great Lakes attracts these multitudes of gulls, especially in autumn and early winter. The late summer and early fall swarms of caddisflies on the Niagara also are an important source of food for the medium-sized and small-sized gulls.

Distribution and Abundance

Beardslee and Mitchell (1965) give brief historical accounts of the distribution and abundance of gull species that were recorded to that time in the region. In a supplement to this book, Mitchell and An-

drle (1970) reported on the occurrence of Thayer's and Mew Gulls here. Bull (1974, 1976) gives some additional and more recent information. Reference is made to some pertinent data from these publications in the species accounts that follow.

Although some records of gulls and information on their status in the Niagara Frontier Region are available from the late 19th and early 20th centuries, it was not until the 1930's, and the creation of the Buffalo Ornithological Society, that increased field study commenced and more data began to accumulate. The distribution and abundance of these birds in the region vary considerably, not only seasonally and by location, but from year to year, influenced by factors such as fish abundance and distribution, weather conditions, water levels, icing of water bodies, and human-induced changes involving breeding sites, power generating stations, refuse disposal and ice boom. There is much more to be learned about gull numbers and distribution in the region. This is often difficult to accomplish because observers of gulls are relatively few, and afield only on weekends, because few studies or counts are made, and because gulls are exceedingly peripatetic here.

Both natural and human-induced fluctuations in forage fish numbers and distribution have undoubtedly affected gull occurrences. For example, in some years the numbers of shiners in sections of the Upper Niagara River are so great that they attract thousands of gulls, particularly Bonaparte's and Ring-billed. In other years these small fish are much less abundant, and gull numbers reflect this. A warmer water outflow from the generating station in Dunkirk Harbor has kept part of the area open all winter in recent years, and has probably increased the numbers of fish and other organisms, this serving to attract more gulls. Storms or high winds sometimes drive gulls from Lake Erie and Lake Ontario into the Niagara River, or from the lakes and river inland over western New York. The creation of two large power reservoirs (Fig. 1) on either side of the river above the Niagara Escarpment has helped to attract large numbers of gulls to feed and rest, particularly in fall and early winter. Additional generating stations built on the Lower Niagara have provided more outflows which bring fish to the surface after passing through them. This too has attracted thousands of gulls; sometimes the concentrations are referred to as a veritable "blizzard" of birds.

Prior to the early 1950's as many as 3,500 gulls were estimated in one day frequenting various refuse dumps along the Buffalo water-

front. The elimination of these dumps since then has caused a general decline in the numbers of gulls frequenting this section in winter. The methods used to cover refuse in current "sanitary landfills" do not leave food exposed for very long. In recent years the ice retention boom maintained in winter and spring at Lake Erie's entrance into the Niagara River has served to attract gulls to feed and rest in the relatively shallow waters kept open below the structure. Lake Erie and Buffalo Harbor are usually ice-covered during the winter. However, the Niagara River remains largely open except for shore ice, sometimes ice-covered areas at the south and north ends of Grand Island, and the "ice bridge" extending for a few kilometers below the Falls in the gorge. Frequently in late winter and in spring considerable amounts of ice move downriver from Lake Erie. Lake Ontario remains essentially open in winter except for varying widths of shore ice. All these ice conditions either effectively eliminate, restrict or otherwise influence gulls and their movements in these parts of the region.



*Immature Glaucous Gulls in the gorge below Niagara Falls.
Jan. 4, 1975*

As noted in the species accounts, some gull species have actually increased here during the last few decades. However, there are more observers now than formerly, and some of them have become more proficient at gull identification, or at least more aware of and interested in studying gulls. Thus the increase in sightings of some species is probably due both to more birders spending more time in the field plus a real increase in abundance and frequency of occurrence.

Species and Subspecies

Glaucous Gull (*Larus hyperboreus*). This gull has shown an increase in abundance here since early in the century, when it was considered rare. It usually occurs in small numbers every fall and winter on the Niagara River and the Great Lakes. Niagara Falls is often the best place to see them. Occasionally individuals wander inland. Before 1974 the maximum number recorded in a day in the region was 12. On 28 December 1974, 30 were counted on the river (29 at Niagara Falls) and 43 (41 at Niagara Falls) on 10 January 1975, unprecedented totals that may not be repeated. A total of 22 was counted on the Niagara on a day in December 1975.

Iceland Gull (*Larus glaucoides*). During the past few decades this species has apparently occurred in slightly greater numbers in the region. It is recorded each fall and winter and is usually less numerous than the Glaucous Gull. The Iceland frequents the Niagara River and the Great Lakes but is more often found on the former. Both this and the preceding species have been sighted into late spring. Both *L. g. glaucoides* and *L. g. kumlieni* have been recorded here, the latter possibly occurring more frequently. Adults of *L. g. kumlieni* are seen more often than adults of the nominate race. Most individuals sighted are in first-winter plumage, and second-winter birds are rather rare. The maximum number noted in a day in the region was 12 on the Niagara River.

Great Black-backed Gull (*Larus marinus*). This species has increased in the region during recent decades. It is most numerous in late fall and winter. The maximum in one locality of 215, seen at Dunkirk on 3 March 1968, is closely followed by the 210 at Niagara Falls (217 on the Niagara River) on 20 December 1974. The open harbor at Dunkirk has frequently attracted fairly large numbers, but it usually occurs most abundantly on the Niagara River, and especially in the vicinity of the Falls. Although a few individuals summer here, no evidence of breeding has been discovered.

Lesser Black-backed Gull (*Larus fuscus*). There had been no acceptable records of this species in the region since 1949, when an adult (*L. f. graellsii*) was collected in Buffalo in 1949, until an adult was seen in December 1972 in Ontario on a garbage dump several miles west of Niagara Falls. In November and December 1976 and January 1977 two adults and two immatures were satisfactorily identified at Niagara Falls by many observers. Another immature, but possibly one of the previous birds, was seen on 10 December 1976, flying over the Black Rock Canal near the foot of Porter Avenue in Buffalo.

Herring Gull (*Larus argentatus*). This abundant visitant and local resident is a major component of the fall and winter gull flocks on the Niagara River and the Great Lakes. Its numbers may be exceeded during this period only by those of the Bonaparte's Gull, and by the Ring-billed Gull from spring to fall. A few Herring Gulls wander inland at various seasons. On 17 December 1969, there were an estimated 31,000 Herring Gulls at Niagara Falls. This is the highest one-day total for a single locality in the region. The regional total at this time probably far exceeded that number, but no one-day estimates are available for the whole region for this or any other species of gull. Herring Gulls particularly favor the power plant outflows in the Niagara River gorge, and the high percentage of immature birds at such locations in fall and winter perhaps reflects the easier availability of fish there. Herring Gulls breed at three places in western New York. About 25 pairs nest with Ring-billed Gulls and Common Terns on a gravel spit at the north breakwater in Buffalo Harbor, two or three pairs with Ring-billed Gulls and Common Terns on the power control dike in the Niagara River off the north end of Grand Island, and about 50 pairs on the cliff and talus slope of Goat Island at Niagara Falls (Andrle, 1976).

Thayer's Gull (*Larus thayeri*). This fall and winter visitant has occurred in the region since at least as early as 1945 when a specimen was taken in Buffalo and was later identified as this form. The species was probably sighted in the 1950's but not identified with certainty except for one collected specimen. In the 1960's and 1970's more have been noted and specimens have been secured. They have probably increased in actual numbers here in recent years, even though more observers have been looking for and have learned how to identify them. Thayer's Gull has been seen on dumps in Buffalo Harbor and on Squaw Island in the Niagara River, but it is most often observed, occasionally several in a day, in the Niagara River gorge off

the power plants upstream from Lewiston and sometimes at Niagara Falls. Andrle (1969) discussed its occurrence and the collection of several specimens here.

Ring-billed Gull (*Larus delawarensis*). The Ring-billed Gull has increased considerably in recent years and more have wintered than formerly. The maximum estimate of about 35,000 was made in November 1958 along the Niagara River from the Falls to some distance below Lewiston. On 26 December 1976, there were an estimated 20,000 in Dunkirk Harbor. Individuals and flocks range inland, especially in late winter and spring. There are three breeding colonies on natural and man-made islands or weirs in the Niagara River and one in Buffalo Harbor. The largest colony, containing about 3,200 pairs, is on the power control dike at the north end of Grand Island.

Mew Gull (*Larus canus*). Two of these gulls, an adult and an immature, were secured in October and November 1967, in the Ontario portion of the region on the Welland Canal about 15 km west of the Niagara River (Andrle and Axtell, 1969; Mitchell and Andrle, 1970). These are the western subspecies, *L. c. brachyrhynchus*, and, though not recorded definitely within western New York, the species is included here because it is conceivable that Mew Gulls could occur on the Niagara River or the Great Lakes among the many thousands of Ring-billed Gulls that frequent these water bodies. There were two unsubstantiated sight reports of this species on the Lower Niagara in the winters of 1968 and 1969.

Black-headed Gull (*Larus ridibundus*). Since 1949, when it was first seen in the region, this species has occurred sporadically, but more frequently, on the Niagara River, usually in fall and winter and occasionally in spring. Almost all have been adult birds. They almost invariably associate with Bonaparte's Gulls, and have been sighted at half a dozen or so locations on the river, especially where Bonaparte's Gulls congregate in large numbers, such as at Niagara Falls, Lewiston and the river's mouth at Lake Ontario. Usually single birds have been found and in some years the species is not seen. In January 1971 two were found in Dunkirk Harbor.

Laughing Gull (*Larus atricilla*). This gull is very rare in the region and may occur in spring, late summer or fall on the Niagara River or the Great Lakes. Once it was reported inland. Both adult and immature plumaged individuals have been seen. There is no particular location

where it is more likely to be found.

Franklin's Gull (*Larus pipixcan*). First reported in the region in 1937, this gull has become more numerous in recent years. It occurs mostly in late summer and fall on the Niagara River and has also been seen sporadically on the Great Lakes. Most are in immature plumage or in various transitional stages, but a few adults have been noted. From one to seven birds have been observed in a day with the maximum sighted being 11 on 1 November 1967, on the Niagara River. Niagara Falls and on the Niagara about the Peace Bridge at Buffalo are good places to find them in late summer and fall.

Bonaparte's Gull (*Larus philadelphia*). This species has increased as a migrant and visitant in the region and many thousands occur in late summer and fall, with lesser numbers in spring. Beardslee (1944) analyzed its status here, and Burger and Brownstein (1968) have updated its occurrence regionally in the state. In November 1959 and 1967 there were great influxes of these gulls, as many as 100,000 being estimated in 1959 on the Niagara River and one of the reservoirs. In November 1973 they were again extremely abundant on the Niagara, an estimate of at least 75,000 being made. However, they usually are considerably less numerous, estimates in fall in other years ranging from about ten to thirty thousand or so. Favored locations are the Upper Niagara River at Buffalo, Niagara Falls and the gorge downstream, and the river mouth. They also occur in numbers at Dunkirk Harbor and on the Great Lakes, particularly in passage along the shores. Franklin's, Black-headed, Little, and Sabine's Gulls sometimes accompany them, as well as Black-legged Kittiwake. Occasionally they appear in small numbers inland.

Little Gull (*Larus minutus*). First recorded here in 1938, and in almost every year since then, Little Gulls have been increasing in numbers. Almost all are in adult plumage, although occasionally subadults and more rarely juvenals are found. They are almost always with Bonaparte's Gulls. On 4 November 1973, the highest count, 29, was made between Buffalo and Lewiston on the Niagara River, 21 of these being in a flock off Queenston, Ontario. The highest count elsewhere in one location was 12 at Times Beach in Buffalo Harbor on 17 August 1975. However, normally only one or two individuals are sighted in one location. The fact that this species has been found breeding to the north in Canada may account at least partially for its increase in the Niagara Frontier Region.



*Immature Sabine's Gull flying with a Bonaparte's Gull over the
Niagara River off Fort Erie, Ontario. Nov. 23, 1967*



*Immature Black-legged Kittiwake on the Niagara River
off Fort Erie, Ontario. Nov. 23, 1967*

Ivory Gull (*Pagophila eburnea*). Recorded only three times here, this very rare species was seen at Niagara Falls in December 1924, February 1934 and December 1973. The first was an adult, the other two birds were immatures.

Black-legged Kittiwake (*Rissa tridactyla*). The species has occurred here sporadically, usually in fall and winter on the Great Lakes and the Niagara River. At least twice it has been found inland, the most recent record a bird found dead there. Very few have been in adult plumage. Birds are usually seen singly, but on occasion two birds have been seen at once, and five were reported near the Falls in November 1969. The Falls are a good place to find them, but they may occur at various places on the Niagara, especially with large flocks of Bonaparte's Gulls.

Sabine's Gull (*Xema sabini*). This rare visitant was reported in 1937 on the Niagara River, but was not recorded again until the 1950's. The species has occurred casually since, mainly in the fall. A few have also been discovered on the Great Lakes, particularly on Lake Ontario where they are possibly more frequent offshore, individuals occasionally coming from there up the Niagara River. Burger (1968) discussed its status in New York and summarized Niagara Frontier Region records. Mostly single birds in immature plumage are seen, but at times two birds have been sighted at once and in October 1964 there may have been 3 or 4 present at Niagara Falls, where the gorge below the cataract is one of the better places to see the species.

Movements

As stated previously, the propensity of gulls to wander and shift locations frequently makes it difficult to calculate their numbers, and this likewise makes it hard to ascertain their local movements here. That the region's Great Lakes and the Niagara River are routes for gull migration is evident, but not enough data have been acquired about this passage to draw definite conclusions. So far as I know, no one has yet tried to analyze gull migration through the region with the intent of obtaining clear geographical and seasonal patterns.

These local wanderings are very evident on the Niagara River, especially from late summer to spring, when migrants linger or overwinter and move to and from various roosting places or to where food is more abundant and readily available. The great late afternoon and evening exodus of gulls in fall downstream on the Lower Niagara River to Lake Ontario, and the opposite movement at the same time

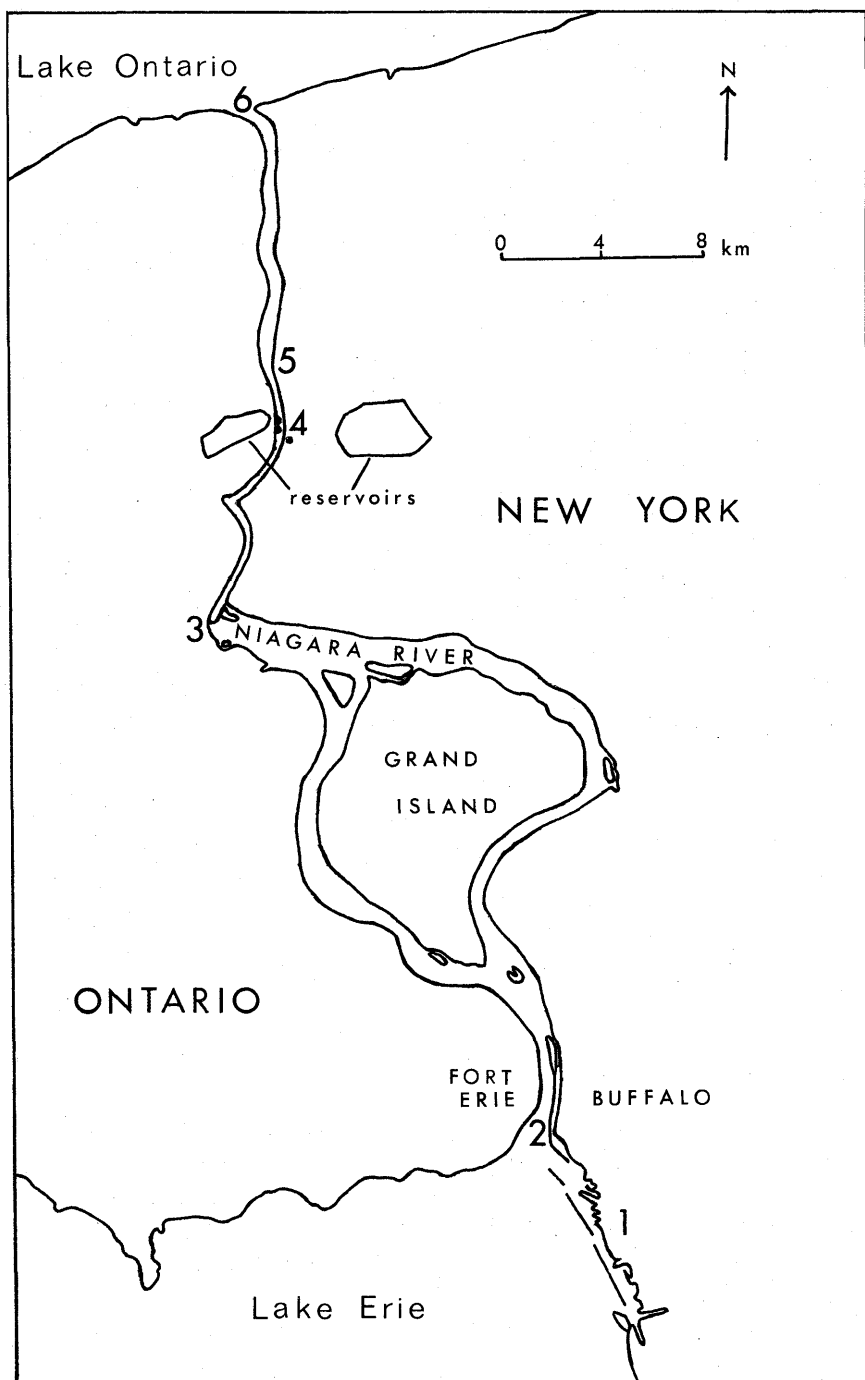
from the Upper Niagara to Lake Erie, are phenomena well known to gull watchers. Also, their movement from feeding areas in the gorge off the generating stations to the two large reservoirs on either side of the river are familiar. The birds shift to feed in various sections of Buffalo Harbor and nightly fly to roost on outer breakwaters or sometimes on the ice of the inner harbor or canal. In the Fall of 1976, large numbers were feeding in the harbor area and off Bird Island Pier at the entrance to the Niagara, several thousand roosting on the ice in the Black Rock Canal off LaSalle Park. An estimate of 5,000 birds was made at this time in the harbor area.

Actual migration on the Niagara River is not as easy to detect as it is on the Great Lakes because of the large concentrations, the birds' frequent movements between feeding areas, and the daily flights to roost. On the Great Lakes, migration takes place both in spring and fall. For example, on 11 April 1976, at Sturgeon Point on the south shore of Lake Erie, over 1,200 Bonaparte's Gulls were seen flying southwestward in about one hour on strong northwest winds. Many more passed during the day. Yet, in other years at this season, there is a movement in the opposite direction. On 10 October 1976, with the wind 30-40 kph west-southwest, there was a major flight of Ring-billed Gulls northeastward along this shore. Such migrations, as with raptors, may also be against the wind. For example, at Olcott on the south shore of Lake Ontario on 23 October 1976, between 0830 and 1030 with the wind west at 15-35 kph, Bonaparte's Gulls were passing westward in large numbers, over 2,000 birds being recorded. Similar gull migrations have been noted on the Great Lakes here in past years, some of them involving passage of birds on a broad front extending considerable distances offshore.

Even though at present there are insufficient data to provide a comprehensive picture of gull migration here, it appears that the situation is a complex one and it is conceivable that there is some irregularity to these movements. Factors which may contribute to this are that the region possesses both open and ice-covered water areas whose expanses vary to some extent each year, that it is a favored wintering location for gulls, that it has extremely variable weather, and that it is situated so as to intercept gulls from vast areas to the north as well as from the Atlantic coast and the other Great Lakes.

Concentration Areas and Observation Points

Gulls can be seen in varying numbers at different seasons from many locations in the region along the Great Lakes shores and the



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Niagara River as well as inland on lakes and open land. The numbers in Figure 1 denote the following areas where gulls tend to concentrate in greater numbers and can be viewed from convenient lookouts.

1. Buffalo Harbor—this large harbor protected by several breakwaters is a favored place for gulls, although it becomes almost or completely frozen in winter. Views can be had from various points along Fuhrmann Boulevard on the harbor side of the expressway from the Coast Guard station south to the Union Ship Canal. Though gull numbers here have generally been smaller since the decline of the refuse dump, hundreds and sometimes thousands of birds can at times be seen feeding in the harbor or roosting on the breakwaters, dikes, the silt flat at Times Beach, or on the ice in fall and early or late winter.
2. Source of the Niagara River, Bird Island Pier and the Black Rock Canal—On the United States side these areas are best viewed from LaSalle Park, from north of the Great Lakes Laboratory near the foot of Porter Avenue, and from Bird and Squaw Islands (now joined) at the foot of West Ferry Street. Good views can also be obtained from the parks and parkway at Fort Erie on the Canadian side of the river from Erie Beach downstream to the International Railway Bridge. The comparatively shallow, swift-flowing waters here above the Peace Bridge, particularly about the Bird Island reef, and the deeper waters of the canal and the Niagara for a few kilometers downstream from the bridge, often attract large flocks of gulls in fall and winter with a good variety of species possible. Some roost on the pier extending upstream from Bird Island, which separates the canal from the river and Lake Erie.
3. Niagara Falls—The combination of shallow water, rapids and rocky areas upstream from the Falls and the deeper water and upwellings from the Canadian Horseshoe Falls and the power station in the gorge makes this a great concentration area for gulls and a mecca for some of the rarer species. On the United States side good views can be obtained from various places on Goat Island (especially Three Sisters Islands) reached by vehicle from the mainland, and from Prospect Park, upstream from the Rainbow Bridge. However, better and more comprehensive observation points can be utilized from the Canadian side, where, in order from upstream of the Falls downriver, they are: above the Falls—the large parking lot just upstream from the weir that extends perpendicularly into the river from the shore; the drive-off parallel parking opposite

Dufferin Islands (short walk to the river edge); the small parking lot just downstream from the old stranded barge; the upstream end of the large parking lot at the Horseshoe Falls (short walk upstream to low wall overlooking rocky area, jetty, island and rapids above the Falls); gorge below the Falls—opposite restaurant in Queen Victoria Park above power station; several overlooks at low wall in park (short walk to edge of gorge) downstream to Rainbow Bridge. The rocky islands and ledges in the rapids upstream from the Horseshoe Falls are particularly good locations to study thousands of gulls roosting and feeding in fall and early winter.

4. Niagara River Power Generating Stations—The best view into the gorge here is from a small parking lot (few steps to the edge) on the Canadian side just upstream from the newer Sir Adam Beck station and opposite the U. S. Robert Moses Power Plant. Several thousand of the larger gulls, and occasionally some of the smaller species, congregate here in late fall and early winter and can be studied from above as they fly about or perch on the station roof.
5. Niagara River at Lewiston—This section of the river where it emerges from the gorge downstream from the Niagara Escarpment is broad, deep and comparatively slow flowing. It can be viewed either from the top of the river bank at Lewiston or better from the Ontario shore below the village of Queenston where a flat area and gravel road border the river. Good concentrations of the large and smaller gulls occur here, especially in fall and winter, with rarer species frequent.
6. Mouth of the Niagara River—Gulls often congregate in the rougher water where the Niagara flows into Lake Ontario and also upstream for varying distances in the river. Views can be had from the Coast Guard station at Fort Niagara on the United States side, and from the Ontario shore, in Niagara-on-the-Lake at several places by shore road and in short walks from the marina downstream to the river mouth.

As mentioned previously, the generating station outflow in Dunkirk Harbor keeps it ice-free to varying extents in winter. Best viewing places here are the marina dock area on the south, the large central fishing pier (drivable), and the drive along the harbor edge in the northern portion. At least eight species of gulls have been recorded there with sometimes thousands of birds being present in fall, winter and spring.

Generally there are no major gull concentration areas on the south

shore of Lake Erie except at Dunkirk and Buffalo, and also none on the shore of Lake Ontario within the region. At times in fall there may be lesser concentrations in places other than those mentioned on the Niagara in the sections of river between Lewiston and Fort Niagara and in the wide stretch between the southern end of Grand Island and Strawberry Island in the Upper Niagara. Sometimes Bonaparte's Gulls are so numerous that they feed along lengthy stretches of the Niagara, such as in the gorge from the Falls downstream to Lewiston or well downstream from the International Railway Bridge at Fort Erie.

Especially since the late 1940's, gulls have become the object of increasing interest and study by local observers here. The exceptional attractiveness of the region for these birds, both ecologically and geographically, has not only stimulated local birders to study them but also has drawn others from considerable distances in the United States and Canada to see them. Chief among these stimulants are the increase in numbers of several species, the relative frequency with which rarities from Arctic, subarctic and ocean areas occur among the more common forms, and the ease with which they can often be observed.

Thus, coincident with the initiation in the early 1950's and subsequent use of the Buffalo Ornithological Society's verification system for sight records, a file of detailed verification reports and some photographs has accumulated documenting many occurrences of the more unusual species and extreme dates of observation. Also, specimens to substantiate these sightings have been selectively taken over the years. All these probably have given the Niagara Frontier Region better documentation for unusual gull records than any other region. However, though such evidence is available, and some yearly data on numbers are also at hand, much more information could be gathered, not only consisting of reliable counts and estimates, but also of data on such subjects as migration, local movements in relation to food and weather, feeding habits and possible causes of large concentrations.

Given the variability of gull plumages and the large numbers of birds gathering in the region, many coming from great distances and from a variety of geographic areas, it is to be expected that some birds would present problems in identification. In addition to individuals exhibiting leucistic or melanistic plumages or unusual variation in coloration with age, some adult-plumaged gulls have evoked much

speculation among observers and even at least tentative opinions that they were Western or Slaty-backed Gulls. Though these two species might be a remote possibility here, we have collected two of these types and concluded from measurements, coloration, and process of elimination that they, and probably others similar to them, are very likely Great Black-backed x Herring Gull hybrids (Andrle, 1972, 1973). Another specimen secured recently on the Niagara may be a hybrid of Glaucous and Herring Gull.

We have often thought that, if more observation and considerable banding or color marking were possible in eastern Canadian Arctic and subarctic gull colonies, more about their identification, plumages and distribution might be learned by collecting, photographing or observing such individuals that reach the Niagara Frontier Region and other northeastern United States and southern Canada locations. There is no question that gulls, as intriguing subjects for observation, study and the simple appreciation of their beauty, arouse the curiosity and interest of many field birders, especially in places like the Niagara Frontier Region where their great numbers and variety provide a constant stimulus to identify and learn more about them.

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