

## Patterns of vagrancy of Ross' Gull

*A bird better known as a vagrant than  
on its normal winter range*

*Anthony H. Bledsoe and David Sibley*

### INTRODUCTION

ROSS' GULL (*Rhodostethia rosea*) is a circumpolar arctic species that breeds primarily in Siberia. In North America, it is an elusive gull, occurring with regularity only at scattered breeding localities in the Canadian Arctic and during fall migration in northern Alaska. However, Ross' Gull is becoming considerably less elusive in subarctic North America as the number of sightings of the species outside the Arctic increases. In 1983 and 1984, four Ross' Gulls occurred in subarctic North America, as many as the total sighted previously. The pattern of occurrence of Ross' Gull in subarctic North America parallels the trend of subarctic Eurasian records of the species, in terms of both seasonal occurrence and increase in sightings. In this paper, we document the seasonal and annual patterns of vagrancy of Ross' Gull in North America and Eurasia and discuss several interpretations of these patterns.

Before describing the patterns of vagrancy of Ross' Gull, it will be useful to review the available information on the distribution and abundance of the species

in the Arctic. Relatively little is known about the breeding distribution of Ross' Gull. The species breeds regularly in northeast Siberia on low, marshy tundra dominated by sedges (*Carex*) and is particularly common along the Kolyma River (Buturlin 1906). A small colony breeds at Churchill, Manitoba, on similar, low-lying wet tundra (Chartier and Cooke 1980). In the high Arctic, Ross' Gulls have nested on flat, wind-swept, barren "cobble" along the coasts of northern Greenland (Hjort 1980), northern Canada (MacDonald 1978), and probably Spitsbergen (Løvenskiold 1964). In Siberia nesting apparently does not take place during flood years (*in* Dement'ev and Gladkov 1951), and even in favorable years more birds arrive at the breeding grounds than are able to nest (Andreev and Kondrat'ev 1981). Non-nesting birds disperse into the Arctic Ocean, and paired adults have been found on pack ice throughout the arctic in early July (Dement'ev and Gladkov 1951, Løvenskiold 1964, Meltofte *et al.* 1981).

Even less is known about the migration

and winter distribution of Ross' Gull. At fledging, adults and young in Siberia move north toward arctic pack ice (Buturlin 1906, Dement'ev and Gladkov 1951). Large flocks reach the north coast of Alaska by August, move east toward Point Barrow, and head northeast into the Arctic Ocean by early November. Flocks north of Svalbard in September also move in an easterly direction (Meltofte *et al.* 1981). The winter range of Ross' Gull is not known, but the rarity of the species in subarctic oceans, the directions of post-breeding dispersal and fall migration, and the abundance of Ross' Gulls on pack ice between Greenland and Svalbard in fall suggest that the species winters in the Arctic Ocean. There they probably feed on well-developed, under-ice planktonic fauna, a known source of food in fall (Divoky 1976), exposed along lines of breaking ice. In May, Ross' Gulls pass overland from Anaydar northwest toward the Kolyma River "more or less regularly" (Dement'ev and Gladkov 1951), suggesting a possible wintering population in the Bering Sea. However, there are only a few Bering Sea records



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(Sealy *et al* 1971, Kessel and Gibson 1978). There is no reliable estimate of the population size of Ross' Gull. Bannikow and Flint (1978) give an estimate of 10,000 for the world population, and up to 4,500 have been recorded in a single flock in migration at Point Barrow (Kessel and Gibson 1978).

Ross' Gull is accidental outside the Arctic Ocean and Hudson Bay. In Eurasia, the species has been recorded in southern Norway (Løvenskiold 1947), southern Sweden (Glutz and Bauer 1982), Denmark (Glutz and Bauer 1982, Enevoldsen *et al.* 1984), West Germany (Gätke 1895, Schmidt and König 1954), Netherlands (Spaans 1959), France (Seguin-Jard 1914), Italy (Martorelli 1906), Japan (Mori 1976), and China (Kuroda 1918). There are 34 accepted records from the British Isles through 1982 (Rogers *et al.* 1983). The southernmost record is of a bird collected in Sardinia, Italy, on January 10, 1906 (Martorelli 1906).

#### THE INCREASE IN SUBARCTIC RECORDS

THERE ARE EIGHT verified records of Ross' Gull in North America south of

the Bering Sea and Churchill (Table 1). The number of North American vagrant records is small compared to the number of Eurasian records, but on both continents the number of records has increased substantially in the last ten years, as Figure 1 indicates. The increase in records during the 1970s roughly coincided with an increase in number of observers and in their proficiency in gull identification. Given our limited knowledge about the distribution and abundance of Ross' Gull, we consider the increase in number and ability of observers to be the simplest explanation for the increase in subarctic records. However, discriminating between observer-related increases and real increases in incidence of vagrancy is not always a simple task. For instance, the pattern of occurrence of Bonaparte's Gull (*Larus philadelphia*) in Great Britain does not correspond with the pattern of increase in observer number and interest; the species occurred slightly less frequently during the increase in observers in the 1970s than it did before the increase. In this instance, a reduced actual frequency of occurrence would have had to coincide with the increase in observers to give the appearance of a roughly con-

stant number of Bonaparte's Gulls in Great Britain over the last 25 years. Alternatively, the real frequency might have remained constant, with no effect of observer increase on number of records of Bonaparte's Gull and, *ipso facto*, of Ross' Gull as well.

We cannot argue strongly either for or against a real increase in the incidence of subarctic Ross' Gulls, because the observed increase in records coincided not only with an increase in the number and effort of observers, but also with an apparent increase in the number of Ross' Gull nesting localities. Ross' Gulls nested at Devon Island, northern Canada, in 1976 (three pairs) and 1978 (six pairs) (MacDonald 1978, *in* Blomqvist and Elander 1981) and at Churchill, Manitoba, the southernmost breeding locality, in 1980 (Chartier and Cooke 1980), 1981 (*Am. Birds* 35:951), probably in 1982 (*Am. Birds* 36:989), and successfully in 1983 (*Am. Birds* 37:999). In Greenland in 1979, nesting occurred at 82°33'N, 19°57'W (Hjort 1980), the northernmost known breeding locality, and on Grønne Ejland, Disko Bay (69°N, 52°30'W) (Kampp and Kristensen 1980). A colony was recently discovered on the southern



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**Table 1. Verified subarctic North American records of Ross' Gull\*. Records from the Bering Sea, Aleutian Islands, and Churchill, Manitoba, as well as an unverified sight record from Massachusetts (*Am. Birds* 35:802) are not listed.**

Date	Locality	Plumage	Reference
Nov. 9, 1966	Victoria, V.I., B.C.	First-winter	in Chartier and Cooke 1980; photo in Roberson 1980:206
Dec. 7, 1974-May 6, 1975	Salisbury/Newburyport, Mass.	Adult	Miliotis and Buckley 1975
Dec. 18, 1976	nr. Fogo I., Newfoundland	Adult	<i>Am. Birds</i> 31:306-307
Nov. 19-Dec. 1, 1978	Chicago, Ill.	Adult	Balch <i>et al.</i> 1979
Apr. 28-May 7, 1983	Jumbo Res., nr. Julesberg, Colo.	First-winter	Chase and Bunn 1984; photo w/ incorrect date <i>Am. Birds</i> 37:896
May 14-23, 1983	Moosonee, James Bay, Ont.	Adult	<i>Am. Birds</i> 37:865; <i>Ontario Birds</i> , in press
Apr. 4-14, 1984	Agassiz N.W.R., Minn.	Adult	Mattsson 1984
Apr. 11-22, 1984	West Haven, Conn.	Adult	Bledsoe <i>et al.</i> 1984

\*See editor's note, page 227.

Taymyr Peninsula, U.S.S.R. (Zhirnov *et al.* 1978), 1800 km west of the Kolyma River delta, where the species has bred in numbers since the early 1900s (Buturlin 1906). Chartier and Cooke (1980) argued that nesting probably did not begin at Churchill much before 1980. However, there are earlier New World breeding records from Meighen Island, northern Canada, before 1922 (in Glutz and Bauer 1982) and at Ikamiut, Disko Bay, Greenland, where two birds were shot from a nest with an egg on June 20, 1885 (not June 15, 1885 as cited by Kampp and Kristensen 1980; see Ticehurst [1933] for evidence supporting this

historically controversial breeding record). Nesting probably also took place at Godthåb's Fjord, Greenland (64°30'N, 52°W), where an adult male with well-developed testes and brood patches was collected on June 1, 1927 (Petersen 1928), and at Kapp Linné, Isfjorden, Spitsbergen (78°N 16'E) in 1955 (Løvenskiold 1964). We will need more data on the historical and current breeding distribution of Ross' Gull, the patterns of vagrancy of other species, and the increase in number and proficiency of observers before we can argue strongly for or against a real increase in the breeding distribution and the frequency of va-

grancy of Ross' Gull.

#### SEASONAL PATTERN OF OCCURRENCE

WHAT IS THE SEASONAL pattern of vagrancy of Ross' Gull? In Figure 2, records of Ross' Gulls from subarctic North America and Eurasia are plotted by date of initial sighting. The records fall into two main clusters, one in winter and another in spring. The comparatively few North American records fall in November and December and in April and early May.

Is the distribution in Figure 2 an arti-

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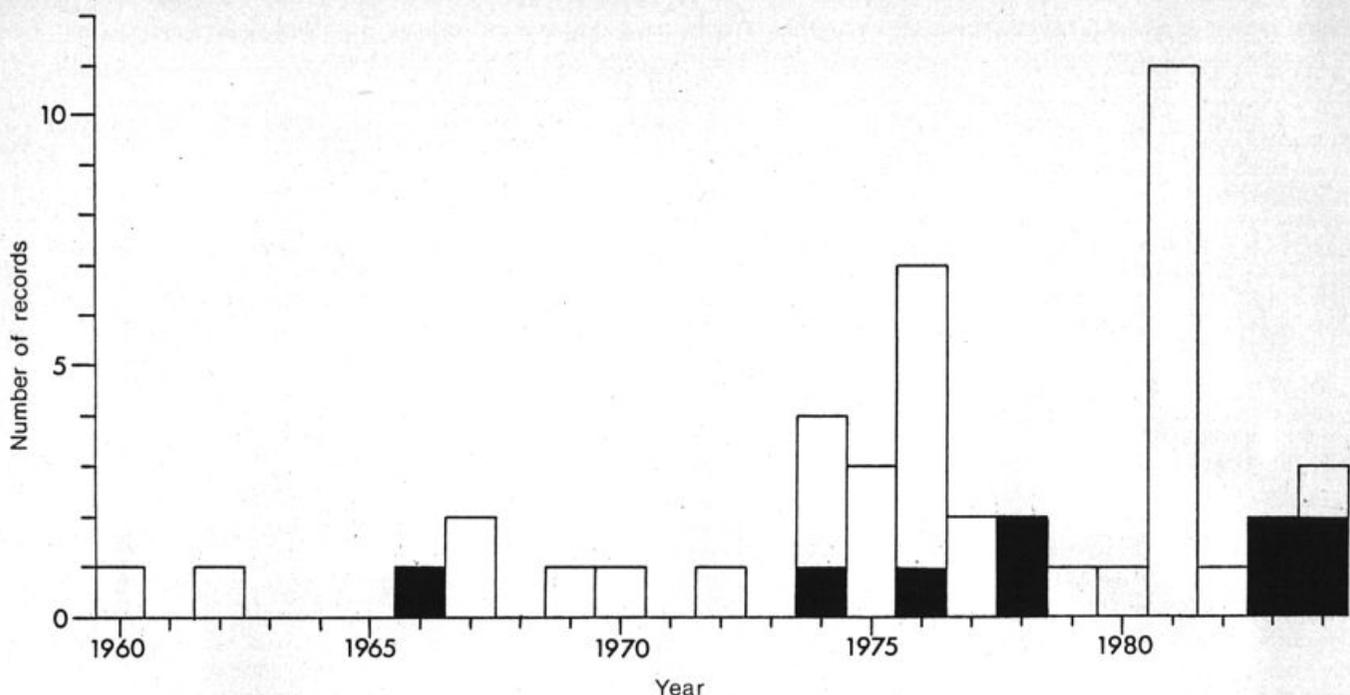


Figure 1. Annual distribution of vagrant Ross' Gull records between 1960 and 1984. Records south of 60° N (excluding the Bering Sea and Hudson Bay and including the Shetland Islands and the Baltic Sea) have been plotted. A complete tally of British and Eurasian records for 1983 and 1984 is not yet available. The North American records are shaded.

fact of observer activity? We believe it is not, for several reasons. First, parts of the seasonal pattern of occurrence of vagrant Ross' Gulls do not coincide with the pattern of observer activity. For instance, birders are as active in late September and early October as at any time of the year, yet there are no records of vagrant Ross' Gulls during this season. Second, the areas most likely to harbor vagrant Ross' Gulls—estuaries and protected coastal coves—are visited regularly by birders throughout the fall, winter and spring, because waterfowl, shorebirds and gulls congregate at such sites. These

areas are often the only regularly visited localities in winter. Third, in Great Britain the seasonal pattern of Bonaparte's Gull does not follow that of Ross' Gull. Records of Bonaparte's Gull peak in March and September, while records of Ross' Gull peak in January and April. Once again, as with the increase in sightings, it is difficult to explain the seasonal patterns of occurrence of both Bonaparte's and Ross' Gulls on the basis of a simple observer-bias hypothesis.

Figure 2 probably reflects the seasonal pattern of occurrence of Ross' Gull accurately, but we have very little data with

which to explain it. The winter peak probably represents birds moving south from the Arctic, but the spring birds could be coming from almost any direction. The paucity of winter sightings south of the spring localities, and the likelihood that at least a few birds wintering in the south would be detected, make it unlikely that the spring peak is composed primarily of birds moving north from southern coastal localities. The spring birds might be disoriented and move south from the Arctic, but this too seems unlikely, because only two of 54 Eurasian vagrants have overwintered.



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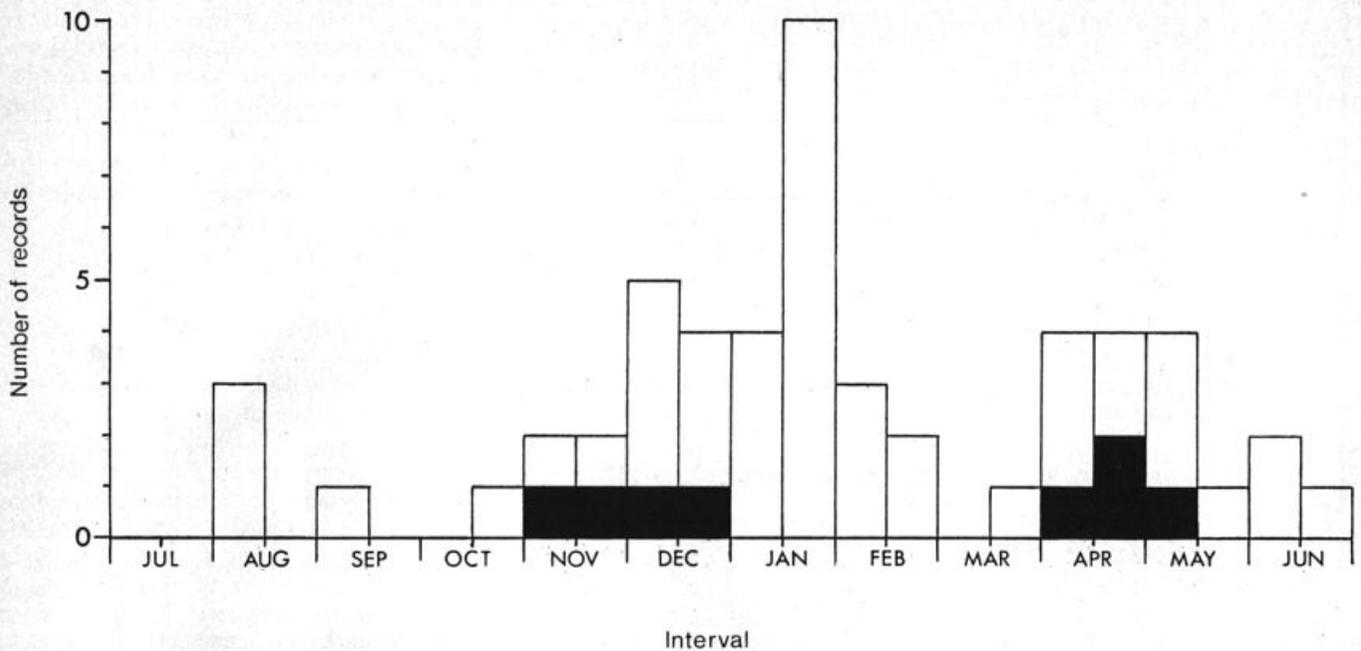


Figure 2. Seasonal distribution of vagrant Ross' Gull records, plotted by date of initial sighting in half-month intervals. The North American records are shaded.

There is always the possibility that the vagrant Ross' Gulls are wide-ranging, well-oriented individuals that defy any simple analysis, but as far as we know, no vagrant Ross' Gull has returned to a subarctic locality in consecutive years, as "well-oriented" out-of-range birds often do. Because Ross' Gull is primarily pelagic when not nesting, an explanation as likely as any is that the spring peak consists of birds that wintered offshore and moved onshore during April. The inland North American records are consistent with this hypothesis, because some individuals normally move overland in Siberia

when migrating toward the breeding grounds in spring. Of the inland records, only the Colorado bird cannot reasonably be construed as moving roughly toward Churchill from a plausible winter location in the Atlantic or Pacific. It is difficult to tell if the timing of the spring movement of the vagrants is correct, because we have no information on the timing of spring movement of birds that (presumably) winter pelagically in the Arctic Ocean.

ORIGIN OF VAGRANT ROSS' GULLS

WHAT IS THE ORIGIN of the vagrant Ross' Gulls in North America? Miliotis and Buckley (1975) supported an Old World origin of the Massachusetts bird, because at that time there were very few records of Ross' gull in the Canadian Arctic but many records from northern Europe, the presumed origin of other "Old World" vagrants such as the Little Gull (*Larus minutus*) and the Common Black-headed Gull (*L. ridibundus*). However, the recent nesting of Ross' Gull in Canada and Greenland and the geographic distribution of the subarctic North American records, particularly the

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inland ones, suggest a New World origin of the North American vagrants. It is possible, although unlikely, that the inland birds migrated southeast from fall flocks in Alaska to reach central North America (see comments by D. Gibson, *Am. Birds* 29:646, 1975). Balch *et al.* (1979) have argued persuasively against a North Atlantic origin of the inland vagrants *via* the St. Lawrence Seaway.

#### DISCUSSION

THE DIFFICULTY in interpreting the annual and seasonal patterns of vagrancy of Ross' Gull emphasizes our limited understanding of the biology, distribution, and migration of this historically mysterious species. Since the flurry of activity during the race for the North Pole and the discovery of the Siberian breeding grounds by Buturlin (1906), we have learned little about the biology and arctic distribution of Ross' Gull. We do not expect such information to be forthcoming, given the difficulty and expense of arctic research. The biggest mystery—the winter range of Ross' Gull—will probably remain unsolved, if indeed the species winters in the Arctic Ocean. A concerted effort to gather data from ice-breakers in northern Europe, the U. S. S. R., Alaska, Canada, and Greenland might shed light on the matter.

Ross' Gull has the unusual distinction of being better known in its vagrancy than in its normal winter range. The annual pattern of vagrancy clearly indicates that observers in North America should find Ross' Gulls with increasing frequency, as European observers have since the early 1970s. Most vagrant Ross' Gulls have occurred at estuaries and coastal coves in flocks of other small gulls. Many have been quite tame, a characteristic of the species during the summer as well (Kampp and Kristensen 1980). Birds that have stayed for any length of time have frequently disappeared for several days when the number of other small gulls dropped. Forty of the 50 vagrants for which we have age data have been adults, which are conspicuous among other gulls and easily identified.

Recent literature on gull identification (Grant 1981, 1982; Harrison 1983) has remedied the deficiencies in previous field guide presentations of Ross' Gull. Compared to Bonaparte's Gull, an adult Ross' Gull is a much paler bird, with a mostly white head and no black in the wing tips. Its small, round head, large eye, short bill (accentuated by feathering

at the base of the culmen and mandible), short neck, and short legs give the bird a "pudgy" appearance, but its proportionately long wings and tail make it appear about the same length as a Bonaparte's. Flight characteristics vary considerably with behavior (see Densley 1979), but in general the flight is strong and stiff-winged, the flap is shallow, and the wings appear slightly bowed, even when the bird is soaring. When at leisure, the flight is not tern-like (Kampp and Kristensen 1980; personal observations). The broad, white trailing edge of an otherwise light gray wing is a prominent mark in flight. Because the wedge-shaped tail is often difficult to see and can be obscured by molt (as in the bird in Minnesota in 1984), and because Little Gulls in transition between juvenal and first-winter plumage can appear to have a wedge-shaped tail (Grant 1981), the shape of the tail is not as useful a field mark as the unique body shape and paleness of Ross' Gull. A first-winter Ross' Gull can be mistaken for a first-winter Little Gull but will have the diagnostic short bill, round head, large eye, and long wings and tail, and will lack the dusky coloration on the

crown and secondaries of a first-winter Little Gull. First-winter Black-legged Kittiwakes (*Rissa tridactyla*) are larger than Ross' Gull, have a black nape and square tail, and lack the dusky rump mark of a first-winter Ross' Gull. The two first-winter vagrant Ross' Gulls in North America have had a conspicuously dusky collar, and the heads of at least some breeding birds have a very light gray hood (Snyder and Shortt 1957, Kampp and Kristensen 1980), characters that are not mentioned or illustrated in any field guide.

Nearly all subarctic Ross' Gulls for which we have data on the color of the underparts have had little or no pink tinge. Our experiences with the Connecticut and Massachusetts birds indicate that the same individual can appear slightly pink or not pink at all, depending on lighting conditions and the observer. Other observers (e.g. Bunce and Richards 1962) have noted this same phenomenon. Adults in breeding plumage in arctic areas are usually conspicuously pink, although there are exceptions (see Kampp and Kristensen 1980), and adults in winter plumage in Alaska are also usually quite pink (Densley 1979). The color fades rapidly in museum specimens and does so apparently without the action of light (Gätke 1895). Kampp and Kristensen (1980) state that the color is imparted

by a secretion of the uropygial gland, but fail to cite supporting data or references. Cook (1960) reported that a freshly dead British specimen had no pink tinge, but "the actual skin was covered in places with a pinkish-rose fat." Research on the nature and origin of the pink pigment of small gulls will be needed before we understand why individuals vary in pinkness, and why the pink color varies in strength under different lighting conditions.

Another intriguing aspect of the plumage of Ross' Gull is the black smudge in front of each eye of birds in winter plumage. The smudge consists of small, dusky contour feathers and modified, bristle-like feathers, both of which are lost during the partial spring moult and replaced by white contour feathers of normal shape. Densley (1979) proposed that these feathers protect the eyes of feeding birds from freezing salt spray in winter, an idea that brings to mind the eye-protecting function of rictal bristles in flycatchers (Conover and Miller 1980). However, Zonfrillo (1982) reported that many seabirds, particularly the Northern Fulmar (*Fulmarus glacialis*), have similar, bristle-like feathers in front of the eye, and discounted Densley's (1979) theory. Experiments modeled after those described by Conover and Miller (1980) would be useful in determining the func-

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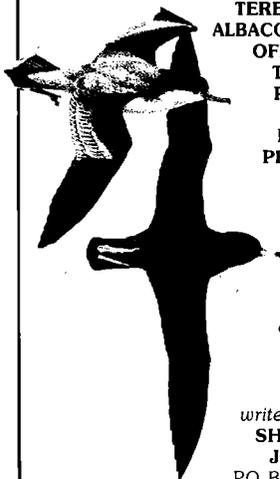
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[An adult Ross' Gull was sighted at Newburyport, Massachusetts Dec. 3, 1984 by a Wings Tour group (Stuart Tingley et al.), providing the ninth record of Ross' Gull in North America south of the Bering Sea and Churchill.—Ed.]

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