

## A Second Breeding Site for Ross's Gull (*Rhodostethia rosea*) in Nunavut, Canada

ARNAUD BÉCHET,<sup>1,2</sup> JEAN-LOUIS MARTIN,<sup>1,3</sup> PETER MEISTER<sup>1</sup> and CORINNE RABOUAM<sup>4</sup>

(Received 27 July 1999; accepted in revised form 9 February 2000)

**ABSTRACT.** Only 15 cases of breeding of Ross's gull *Rhodostethia rosea* are known outside of Siberia. While numerous birds are regularly seen in the fall at Point Barrow, Alaska, until now only one breeding locality has been known for Nunavut, Canada. We found a second breeding locality in Nunavut in the northwestern corner of Prince Charles Island (Foxe Basin). We observed one pair incubating two eggs on a small island (30 m in diameter) situated in a medium-sized lake, on a low plateau at the top of a complex of raised beaches. None of the reports on aerial or land surveys of this region have mentioned the reproduction of this species, though unpublished aerial observations suggest that the species has been present during the 1980s. Outside Siberia, this species seems to be characterized by an irregular and scattered distribution of its breeding sites.

**Key words:** Ross's gull, *Rhodostethia rosea*, breeding site, Foxe Basin, Prince Charles Island, Nunavut

**RÉSUMÉ.** Seuls 15 cas de reproduction de la mouette de Ross *Rhodostethia rosea* ont été rapportés en dehors de la Sibérie. Alors que de nombreux oiseaux sont observés à l'automne lors de leur passage à Point Barrow (Alaska), la reproduction au Nunavut (Canada) n'a été mentionnée qu'une seule fois. Nous documentons un deuxième site de reproduction pour le Nunavut, dans la partie nord-ouest de l'île du Prince-Charles (bassin Foxe). Un couple a été observé incubant deux œufs sur une petite île (environ 30 m de diamètre) située au milieu d'un lac de taille moyenne, sur un plateau bas constituant le sommet d'un complexe de plages surélevées. Aucun des rapports des levés aériens ou terrestres de cette région ne mentionne la reproduction de cette espèce, bien que des observations aériennes non publiées suggèrent sa présence au cours des années 80. En dehors de la Sibérie, cette espèce semble se caractériser par une distribution irrégulière et éparse des sites de reproduction.

**Mots clés:** mouette de Ross, *Rhodostethia rosea*, nidification, bassin Foxe, île du Prince-Charles, Nunavut

### INTRODUCTION

Although a Ross's gull (*Rhodostethia rosea*) was seen in West Greenland in 1810 (Hjort, 1986 and references therein), the species was first described from two specimens shot by Sir James Clark Ross in June 1823 on the east coast of the Melville Peninsula in Arctic Canada. Breeding was first documented more than 80 years later in Siberia (Buturlin, 1906). The species was also found breeding in 1955 at Isfjorden, Spitsbergen (Lovenskiold, 1964), in 1979 along the coast of West Greenland at Disko Bay (Kampp and Kristensen, 1980), and in 1980 at Peary Land, Greenland (Hjort, 1980). The first Canadian breeding of the species (three pairs in 1976 and six in 1978) was recorded near Devon Island, Nunavut (MacDonald, 1978). Subsequently, three breeding pairs were found in summer 1980 at Churchill, Manitoba: these were the first documented nests on the North American mainland (Chartier and Cooke, 1980).

### OBSERVATION

We found a breeding pair on 8 July 1997 (at 68°13'N, 76°29'W) during a survey on Prince Charles and Air Force Islands in Foxe Basin, Nunavut, Canada, which was part of a research project involving researchers from Canada and France (Martin, 1998). The site was located in the northwestern corner of Prince Charles Island, only about 200 km away from the locality where Ross collected his specimen over 160 years ago (Fig. 1). The nest area, situated at the transition from the wet coastal plain to the drier interior of the island, consisted of a network of medium-sized lakes (Fig. 1) on a low plateau at the top of a complex of raised beaches. The lakes were surrounded by poorly vegetated dry tundra interspersed with patches of bare gravel, a few patches of more densely vegetated dry tundra, and strips of wetter tundra along the lakeshores.

We observed one bird hovering low above the water near the shore of a lake, apparently feeding on small

<sup>1</sup> CEFÉ/CNRS, 1919 route de Mende, F-34293, Montpellier Cedex 5, France

<sup>2</sup> Current address: Université du Québec à Montréal, Département des Sciences Biologiques, Succursale Centre ville, C.P. 8888, Montréal, Canada; d265335@er.uqam.ca

<sup>3</sup> Corresponding author: martin@cefe.cnrs-mop.fr

<sup>4</sup> CEBC/CNRS F-79360, Beauvoirs-sur-Niort, France

crustaceans or insects on the water's surface near several Sabine's gulls *Xema sabini*. The bird also spent some time walking along the shore and picking up small items from below the surface and from wave-washed scum. A second bird was soon located; it was leaving and resettling periodically at the same spot on a small island situated on an adjacent lake. The island, roughly circular in shape, was less than 30 m in diameter. One of us waded ca. 25 m across the stretch of water isolating the island to verify the suspected existence of a nest (maximum water depth was about 60 cm). The nest was 2 m from the island's shoreline ( $68^{\circ}13'24.7''\text{N}$ ,  $76^{\circ}29'03.3''\text{W}$ ). It held two warm eggs ( $42.65 \times 30.0$  mm, mass 17.5 g, and  $46.35 \times 30.18$  mm, mass 19.2 g). The nest, located on slightly sloping terrain at the lakeshore, occupied the top of a conical hump 5 cm high and covered with moss and stunted dwarf arctic willow. It consisted of a shallow, circular depression lined with a few pieces of dry grass. The whole area within 5 m around the nest (not including the area occupied by the lake) was totally covered by vegetation (85% was moss, 15% stunted dwarf arctic willow). The pair kept diving towards the observers as long as they were within 100 m of the nest. During these attacks, the birds never got closer than 4 to 5 m from the intruders. One arctic tern (*Sterna paradisaea*) nest and one oldsquaw (*Clangula hyemalis*) nest with two eggs were present on the small island within a few metres of the gull's nest. We found no evidence of other pairs of Ross's gull on the island or in the vicinity.

## DISCUSSION

### *Breeding Range*

The Siberian breeding sites discovered by Buturlin (1906) consisted of several colonies (2–15 birds) along the north-flowing Kolyma, Alazeya, and Indigirka Rivers, between the Cherskogo mountains in the west and the Kolymskiy mountains in the east. Later surveys added to this breeding range the Lena River (Degtyaryev et al., 1987), the Taimyr peninsula in the west (Yésou, 1994), and the Chaun River delta in the east (Pearce et al., 1998). Elsewhere, breeding occurrences have been observed only on a few islands in Greenland and at specific sites in Spitsbergen and the Canadian Arctic (Table 1).

The site of our 1997 observation lies at a latitude roughly halfway between those of the two earlier observations for the species in Canada. Despite intensive terrestrial and aerial surveys on Prince Charles and Air Force Islands during the summers of 1996 and 1997, especially by the Canadian party led by V. Johnston, our observation was the only one made for the species. Reports from earlier aerial surveys or visits to the island did not mention the species (Ellis and Evans, 1960; Reed et al., 1980; Gaston et al., 1986; Morrison, 1997). However, in the course of the extensive aerial surveys done over Foxe Basin by Gaston et al. (1986), two observers independently but tentatively identified single Ross's gulls on the southeastern coast of Prince Charles Island in 1984

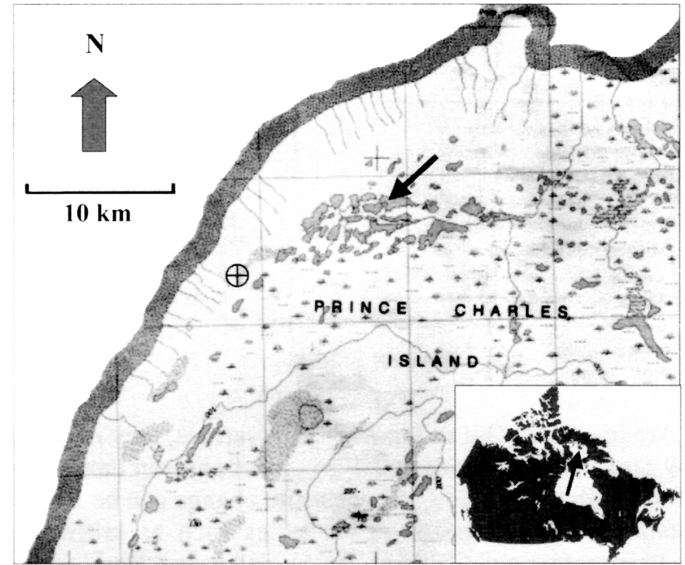


FIG. 1. Location of breeding site of Ross's gull on northwestern Prince Charles Island. Arrow on inset indicates location of the island in Foxe Basin. Arrow on map of northwestern Prince Charles Island indicates breeding site ( $68^{\circ}13' \text{N}$ ,  $76^{\circ}29' \text{W}$ ), and circled cross indicates location of field camp.

(A.J. Gaston, pers. comm. 1999). These unpublished observations suggest that the species could be a regular breeder in the area.

### *Nesting Habitat and Behaviour*

Breeding sites discovered in Siberia were surrounded by vegetation that included bushes and hardwood trees (e.g., willows (*Salix* spp.), alder trees (*Alnus incana*), and occasionally coniferous trees) and resembled the habitat near the Canadian mainland breeding site of Churchill, Manitoba (Chartier and Cooke, 1980). The habitat on Prince Charles Island is more truly arctic and probably more closely resembles the other breeding localities found in the High Arctic, elsewhere referred to as marshy wetlands in subalpine and boreal tracts (Blomquist and Elander, 1981).

Our observation confirms that Ross's gull often nests in association with arctic terns (Buturlin, 1906; Chartier and Cooke, 1980; Kampp and Kristensen, 1980). Whether this pattern results from mutual payoffs or from identical nesting requirements remains unknown. No antagonistic behaviour between the tern and the gull was observed.

### *An Opportunistic Strategy?*

The only known stable colonies of Ross's gulls are those in Siberia along the Alazeya, Indigirka, Kolyma and Lena Rivers (Dementiev and Gladkov, 1969; Degtyaryev et al., 1987). Other documented breeding attempts have been isolated, and it is not known whether these sites were used again for reproduction in the following years.

Buturlin (1906) described pairs of Ross's gulls arriving together at breeding sites. During the non-breeding season, Hjort et al. (1997) observed Ross's gulls in the central

TABLE 1. Latitude and longitude of known breeding records of Ross's gull.

Locality	Latitude	Longitude	No. of pairs	Source
Kolyma estuary (Siberia)	62°30' N,	*162° E		Buturlin, 1906
Taimyr peninsula (Siberia)	73°36' N,	106°51' E		Yésou, 1994
Spitsbergen	78°04' N,	*18° E	1	Lovenskiold, 1964
Gronne Ejland (Greenland)	68°50' N,	51°50' W	1	Kampp and Kristensen, 1980
Peary Land (Greenland)	82°33' N,	19°57' W	1	Hjort, 1980
Penny Strait (Nunavut)	*76°30' N,	*93°20' W	3 + 6	MacDonald, 1978
Prince Charles Island (Nunavut)	68°13' N,	76°29' W	1	Our observation, 1997
Cape Churchill (Manitoba)	58°40' N,	*96° W	3	Chartier and Cooke, 1980

\* estimated coordinates of the locality.

Arctic Ocean. Out of their 23 observations, they reported 9 groups of two birds and 4 groups of an even number of birds. Mate retention after nest site change can be important in some colonial larid species such as kittiwakes (Fairweather and Coulson, 1995), and paired Ross's gulls may remain together during the non-breeding season. Alternatively, pair bonds could also be established on the winter quarters. Both behaviours could explain how birds of this species are able to nest sporadically in space and time when they encounter a favourable site.

#### ACKNOWLEDGEMENTS

This paper results from a co-operative research project with the Canadian Wildlife Service: the support of Vicky Johnston and her co-workers was essential. The project was partially funded by the French Institute for Polar Research and Technology (IFRTP) and received logistical support from the Polar Continental Shelf Project, the Eastern Arctic Scientific Research Station in Igloolik, and the Nunavut Research Institute in Iqaluit. Tony Gaston read an earlier draft of the paper and provided unpublished information. Natural Resources Canada provided the map of Prince Charles Island.

#### REFERENCES

- BLOMQUIST, S., and ELANDER, M. 1981. Sabine's gull (*Xema sabini*), Ross's gull (*Rhodostethia rosea*) and ivory gull (*Pagophila eburnea*). Gulls in the Arctic: A review. *Arctic* 34(2):122–132.
- BUTURLIN, S.A. 1906. The breeding grounds of the rosy gull. *Ibis* 8:131–139, 333–337, 661–666.
- CHARTIER, B., and COOKE, F. 1980. Ross's gulls (*Rhodostethia rosea*) nesting at Churchill, Manitoba, Canada. *American Birds* 34(6):839–841.
- DEGTYARYEV, A.G., LABUTIN, Y.V., and BLOHIN, Y.Y. 1987. Ross's gull (*Rhodostethia rosea*): Migration and breeding cycle near the border of the range. In Russian with an English summary. *Zoological Journal* 66: 1873–1885.
- DEMENTIEV, G.P., and GLADKOV, N.A. 1969. Birds of the Soviet Union. Vol. 3. Jerusalem: Israel Program for Scientific Translations. 756 p.
- ELLIS D.V., and EVANS J. 1960. Comments on the distribution and migration of birds in Foxe Basin, Northwest Territories. *The Canadian Field-Naturalist* 74(2):59–70.
- FAIRWEATHER, J.A., and COULSON, J.C. 1995. Mate retention in the kittiwake, *Rissa tridactyla*, and the significance of nest site tenacity. *Animal Behaviour* 50(2):455–464.
- GASTON, A.J., DECKER R., COOCH, F.G., and REED, A. 1986. The distribution of larger species of birds breeding on the coasts of Foxe Basin and northern Hudson Bay, Canada. *Arctic* 39(4):285–296.
- HJORT, C. 1980. Ross's gull *Rhodostethia rosea* breeding in Peary Land, North Greenland, 1979. *Dansk Ornithologisk Forenings Tidsskrift* 74(1–2):75–82.
- . 1986. The early days of Ross's gull *Rhodostethia rosea* in Greenland. *Dansk Ornithologisk Forenings Tidsskrift* 79 (3–4):152–153.
- HJORT, C., GUDMUNDSSON, G.A., and ELANDER, M. 1997. Ross's gulls in the Central Arctic Ocean. *Arctic* 50(4): 289–292.
- KAMPP, K., and KRISTENSEN, R.M. 1980. Ross's gull *Rhodostethia rosea* breeding in Disko Bay, West Greenland, 1979. *Dansk Ornithologisk Forenings Tidsskrift* 74(1–2): 65–74.
- LOVENSKIOLD, H.L. 1964. Avifauna Svalbardensis. *Norsk Polarinstittutt Skrifter* 129. 460 p.
- MARTIN, J.L. 1998. Réponse au stress climatique et biotique dans une communauté de l'Arctique canadien. Rapport d'activité 1997 et 1997–98. Brest, France: L'Institut Français pour la Recherche et la Technologie Polaires (IFRTP).
- MACDONALD, S.D. 1978. First breeding of Ross's gull in Canada. *Proceedings of the Colonial Waterbird Group* 1978:16.
- MORRISON, R.I.G. 1997. The use of remote sensing to evaluate shorebird habitats and populations on Prince Charles Island, Foxe Basin, Canada. *Arctic* 50(1):55–75.
- PEARCE, J.M., ESLER, D., and DEGTYAREV, A.G. 1998. Birds of the Indigirka River delta, Russia: Historical and biogeographic comparisons. *Arctic* 51(4):361–370.
- REED, A., DUPUIS P., FISHER, K., and MOSER, J. 1980. An aerial survey of breeding geese and other wildlife in Foxe Basin and northern Baffin Island, Northwest Territories, July 1979. *Canadian Wildlife Service Progress Note* 114. 21 p.
- YÉSOU, P. 1994. Contribution à l'étude avifaunistique de la péninsule du Taïmyr. *Alauda* 62(4):247–252.