

## Ross's Gull (*Rhodostethia rosea*) Breeding in Penny Strait, Nunavut, Canada

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**ABSTRACT.** We found a small, previously undiscovered breeding colony of Ross's gulls (*Rhodostethia rosea*) in Nunavut, Canada, approximately 80 km from a previous colony location occupied during the 1970s. The birds nested in association with arctic terns (*Sterna paradisaea*). The collective observations from this region of the High Arctic suggest that Ross's gulls may move colonies each year, or that colony occupation is intermittent.

**Key words:** Ross's gull, *Rhodostethia rosea*, Arctic, Canada

**RÉSUMÉ.** Nous avons repéré une petite colonie de reproduction de mouettes rosées (*Rhodostethia rosea*) non découverte jusqu'à ce moment-là au Nunavut, au Canada, à environ 80 kilomètres de l'emplacement d'une autre colonie occupée dans les années 1970. Les oiseaux nichaient avec des sternes arctiques (*Sterna paradisaea*). Les observations collectives de cette région de l'Extrême-Arctique laissent supposer que les mouettes rosées peuvent changer de colonie chaque année ou que l'occupation des colonies est intermittente.

**Mots clés :** mouette rosée, *Rhodostethia rosea*, Arctique, Canada

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### INTRODUCTION

Ross's gull (*Rhodostethia rosea*) is the rarest breeding gull in North America, where only three breeding locations have been confirmed: Cheyne Islands, Nunavut (MacDonald, 1978); Churchill, Manitoba (Chartier and Cooke, 1980); and Prince Charles Island, Nunavut (Béchet et al., 2000). Like the ivory gull (*Pagophila eburnea*), this species is usually associated with polar environments (Blomqvist and Elander, 1981; Hjort, 1982). Nesting colonies are typically small (< 25 pairs), and Ross's gulls are often found nesting in association with arctic terns (*Sterna paradisaea*; Buturlin, 1906; Densley, 1991; Béchet et al., 2000).

Although few colonies have been found, Ross's gulls are regularly observed during fall migration near Point Barrow, Alaska, and sporadically along the Pacific and Atlantic coasts, as well as the Great Lakes, during the non-breeding season (Macey, 1981; Alvo et al., 1996). Many of these birds probably migrate from the main breeding area in Siberia (Buturlin, 1906) or the scattered, small colonies known outside of Siberia (Kampp and Kristensen, 1980; Blomqvist and Elander, 1981), but some may also originate from North American sites that remain undiscovered.

As part of the research and monitoring of marine birds in High Arctic Canada (Mallory and Gilchrist, 2003, 2005), we conducted surveys for Ross's gulls at previous or potential colony locations in Nunavut. Here we report on

the discovery of a new colony location and briefly describe the nests and behaviours of the breeding birds.

### METHODS

Surveys were conducted on islands in Penny Strait (Fig. 1) on 16 July 2002, 10 July 2003, 1 July 2004, and 2 July 2005, using a Bell 206 L4 helicopter. Sea-ice coverage in Penny Strait varied among years, being extensive in 2003 and 2004 (> 70%), moderate in 2005 (50%), and minimal in 2002 (< 10%). In the extensive-ice years, ice bridges connected many of the islands to other islands or to mainland coasts of Bathurst Island, potentially allowing arctic foxes (*Alopex lagopus*) to reach small breeding islands.

In 2002, we surveyed 16 small islands in the strait between 75.8° and 76.7° N, and between 95.6° and 102° W. We landed on most islands and conducted surveys on foot, but in a few cases islands were very small and barren, and we surveyed these while hovering at approximately 10 m altitude. Two biologists divided the islands into sections and searched for Ross's gulls and other bird species (Mallory and Gilchrist, 2003). In 2003–05, we resurveyed Seymour Island (76.8° N, 101.3° W), the Cheyne Islands (76.3° N, 97.5° W), and a small, unnamed island east of Crozier Island (75.8° N, 96.3° W). All of these are small (up to 3 × 1 km) rocky islands (Seymour) or gravel reefs,

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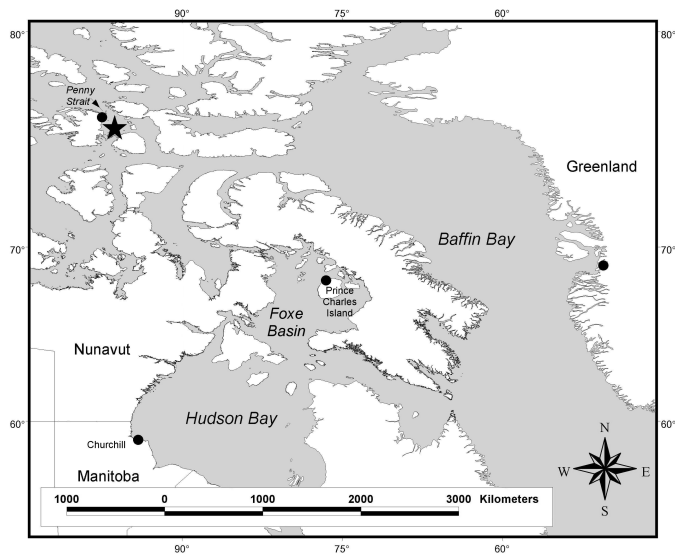


FIG. 1. Confirmed breeding locations of Ross's gulls in North America and West Greenland are shown as black dots. The star indicates the new colony location in Penny Strait.

and all are located more than 5 km from the mainland coast of Bathurst Island.

## RESULTS AND DISCUSSION

In 2002, 2003, and 2004, we did not observe Ross's gulls at any of the islands, nor were any seen in flight during our extensive surveys.

In 2005, no Ross's gulls were found at Seymour Island or the Cheyne Islands, but several were observed near a colony of approximately 100 pairs of arctic terns and seven pairs of Sabine's gulls (*Xema sabini*) on the unnamed island. We found three Ross's gull nests at approximately 10, 25, and 40 m from the periphery of this main colony of terns and gulls, and a fourth nest on the central, elevated gravel ridge running the length of the island. Intense adult defensive behaviour indicated a fifth nest 25 m away on the ridge top, but we could not locate it. No other species were nesting within 3 m of any Ross's gull nest. Each nest cup was circular, approximately 12 cm in diameter, and was scraped into the gravel 30 mm deep on pebbles typically 1–2 cm in diameter, but was otherwise unlined with nesting material. Three nests had two eggs, and one nest had three eggs (mean  $2.25 \pm 0.5$  SD eggs). One egg that we found measured  $42 \times 30$  mm, about the same size as the eggs of the nearby terns. The eggs had a dark, dull olive green colour similar to that of Sabine's gull eggs, except that the sepia brown on the poles took the form of one continuous blotch around the pole, instead of the speckling of the Sabine's gull egg.

Most of the gulls exhibited vigorous, tern-like nest defense, with birds lifting off their nests when people were

over 20 m away, and then circling 10 m above the nest and emitting the "colony contact" call (Densley, 1991). When we stopped at two of the nests, the resident pair dived close to our heads ( $\sim 1\text{--}2$  m), emitting loud, rapid, high-pitched calls. However, the defense was less vigorous than that exhibited by Sabine's gulls (Day et al., 2001), which were louder and approached more closely in their dives.

This site, which represents the fourth known nesting location of Ross's gulls in North America (Fig. 1), is approximately 80 km from the Cheyne Islands, where the species nested in 1976 and 1978 (MacDonald, 1978). Macey (1981) reported that MacDonald found no nests in the Cheyne Islands in 1977 or 1979, but he did observe birds there in 1974 and 1979. In 2002–05, we failed to find nesting birds at the Cheyne Islands or on any other suitable islands within 50 km of this location. We also did not find any birds nesting at this new colony on the unnamed island in 2002–04. Our surveys, and the previous reconnaissance by MacDonald, suggest that colony occupation by Ross's gulls is more intermittent in the Canadian High Arctic than farther south (Macey, 1981; Densley, 1991). In the northern locations, birds may move nesting locations each year, perhaps as a strategy to avoid predators, as terns do (Hatch, 2002), or in response to annual snow and ice patterns. If Ross's gulls were breeding in Penny Strait in the years that we recorded none, they may have used low, wet, mainland sites that we did not search (habitat more typical of their Siberian breeding conditions; Densley, 1991), or their nests could have failed before we arrived. It is also possible that the gulls may not breed every year, perhaps influenced by food supplies, but at present we lack data to evaluate these various hypotheses.

Our observations of nest structure, eggs, and parental behaviour are markedly similar to those of Densley (1991), who examined nesting Ross's gulls in Siberia. However, most of the nests we found had two eggs, whereas the modal clutch size at the Siberian colony was three eggs. Unfortunately, we could not return to the island to determine nesting success.

Ross's gulls nest in a range of habitat types, from inland marshy wetlands along coastal lowlands to gravel reefs (Blomqvist and Elander, 1981). The former habitat is abundant along the coast of Hudson Bay and in Foxe Basin, both areas where human contact is exceedingly low, but gulls have occasionally been observed during the breeding season (Alvo et al., 1996; Béchet et al., 2000). Gravel reefs, such as those in Penny Strait, appear to be more limited in the Canadian Arctic, and further surveys for Ross's gull colonies will likely be more successful if focused on suitable coastal lowlands. In support of this hypothesis, we cite the fact that Ross's gulls were known to many Inuit who participated in traditional knowledge interviews in southern Baffin Island (Mallory et al., 2001), an area where gulls reared in Foxe Basin or migrating from farther north might be observed.

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