

Lesser Snow Goose Colonies In The Pelly Lake Area, Northwest Territories

by Kevin J. McCormick¹

Introduction

Breeding Lesser Snow Geese (*Anser caerulescens*) were first recorded in the Pelly Lake area in July 1984 (McCormick and Arner 1988). Altogether 362 adults and 55 young were counted between the confluence of the Bullen and Back rivers and the east end of Garry Lake (Fig. 1). Additional large flocks of young and adults were present at Pelly Lake but could not be accurately counted.

A mid-July 1986 survey (McCormick and Bromley 1988) disclosed approximately 2200–2600 breeding Lesser Snow Geese at five sites (Table 1). The numbers observed at each colony were probably underestimated because numerous pairs, with their young, were leaving the nesting sites at the time of the survey. The presence of these nesting concentrations was attributed to the late spring throughout much of the central Arctic. The observers supposed that the geese had resorted to nesting in this area after discovering that their traditional nesting sites in the Queen Maud Gulf Bird Sanctuary were still snow-covered (McCormick and Bromley 1988).

I revisited the Pelly Lake area in 1987 and in this paper present my observations and speculate on the future of the Lesser Snow Goose colonies there.

Study area

The study area includes the Back River system from near the mouth of the Jervoise River to Upper Garry Lake (Fig. 1). It has generally low, gently undulating terrain punctuated by exposed bedrock. Countless small, rock-bound lakes connected by short, poorly drained creeks occupy the depressions (Zoltai *et al.* 1980). The Back Lowland (Bostock 1970) is covered by a substantial layer of till which may vary in thickness from less than a metre to tens of metres (Thomas 1977). There is some evidence that either a glacial lake existed in, or the sea extended into, the Back River valley (Geological Survey of Canada 1967). Well-formed beaches are present near 65°45' N, 101°00' W, and patches of silt and poorly defined beaches have been observed near Macdougall Lake (Craig 1964). Extensive sand beaches and dunes occur along much of the Back River, and numerous small islands dot Pelly and Garry lakes.

Methods

The area was surveyed 27 June 1987 in a Bell-206 helicopter at about 30 m above ground level (agl) and 160 km/h. The survey route followed the southern bank of the Back River eastward and returned along the northern shore. Lack of fuel prevented the survey from extending beyond colony No. 12.

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All sites were photographed obliquely from approximately 200 m agl. The number of geese (breeders and non-breeders) at each colony was determined from the photographs. If two complete sets of photographs were available for a colony, estimates were made from each one and the results averaged. Colony No. 2 was also surveyed on foot. The geese were counted and the percentage of blue-phase birds was estimated from a high point within the colony.

Results and discussion

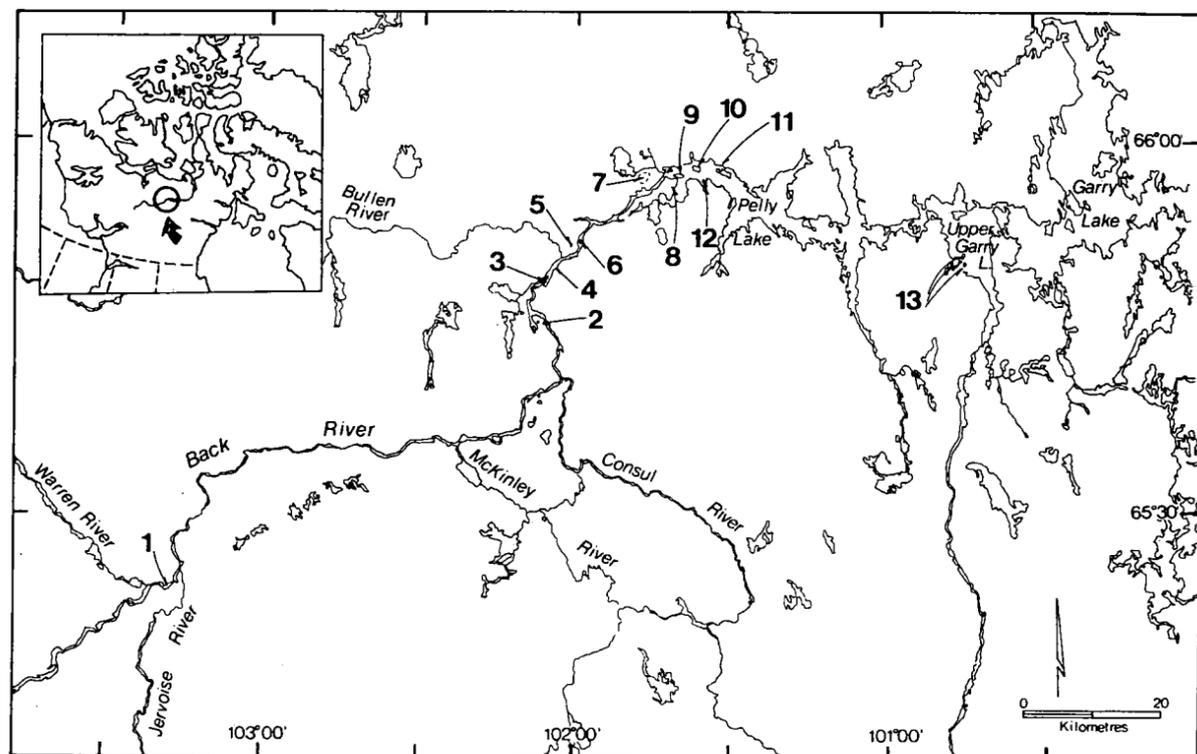
The location and size of colonies observed in 1986 and 1987 are summarized in Table 1. All colonies were on islands, except No. 8, which was on a peninsula. Available topographic maps show the topography in late summer, when water levels are low. Thus, several sites (No. 2, 3, 4, 5, 7) that are mapped as parts of extensive sandflats are islands in spring at high water.

The number of geese apparently increased from approximately 2200–2600 in 1986 to about 9000 in 1987. The number of colonies also increased from 5 in 1986 to 12 in 1987. The 1987 estimates are probably low for two reasons. First, numerous possible sites for colonies in Pelly and Garry lakes (including Colony No. 13) were not surveyed. Second, although no cryptic blue-phase birds were detected on the photographs, ground observation showed that at least 20% of the geese at Colony No. 2 were blue-phase individuals. The estimates of colony size would be substantially increased if a similar proportion of blue-phase birds was shown to be present at all sites. Large numbers of Lesser Snow Geese and Ross' Geese (*Anser rossii*) nest immediately to the north in the Queen Maud Gulf Bird Sanctuary (Kerbes *et al.* 1983). In June 1982, approximately 8% of the Lesser Snow Geese were blue-phase birds (R. Kerbes pers. commun.).

Three pairs of Ross' Geese were observed at Colony No. 2. Because Ross' Geese cannot be differentiated from Lesser Snow Geese in aerial photographs, further discussion refers only to Lesser Snow Geese. It is quite probable that the estimated number of Lesser Snow Geese at each colony includes some Ross' Geese.

As in 1986, the concentrations of Lesser Snow Geese in the area may be attributed to the late spring in central Arctic Canada (Fig. 2). Traditional colony sites in the Queen Maud Gulf Bird Sanctuary (Kerbes *et al.* 1983) were snow covered when Lesser Snow Geese should have been nesting in 1986 and 1987 (A. Gunn, T. Barry pers. commun.). Although nesting had been delayed in 1986 by about a week, numerous young were hatched at the Pelly Lake colonies (McCormick and Bromley 1988), and similar production could be expected during 1987. However, the on-site production at these colonies in 1986 could not account for all the increase that occurred between 1986 and 1987; a substantial immigration must also have occurred, probably from areas to the north where late snow cover was extensive. This would be consistent with the observations of Geramita and Cooke (1982), who concluded that a sharp increase in breeding birds at La Perouse Bay in 1978 could be attributed to females that usually nested farther north but,

Figure 1
Map of the study area



unable to use their natal colony that year because of late snow cover, sought nest sites elsewhere.

The future of these colonies is open to speculation. The immigration of geese into this area may be attributed to the poor habitat conditions at traditional colonies in the Queen Maud Gulf Bird Sanctuary. What will happen during a normal spring? The Pelly Lake area has abundant favourable habitat (McCormick and Arner 1988). Also, female Lesser Snow Geese are highly philopatric and often nest near their initial nest site in subsequent years (Cooke *et al.* 1975, Cooke and Abraham 1980). MacInnes and Kerbes (1987) concluded that mass movements into new areas may occur when the birds originally nested nearby, are familiar with the new site because they have spent summers there or are drawn to an established colony at the new site. As all three conditions are met to varying degrees at Pelly Lake, it seems that colonies in that area will likely continue to flourish.

Acknowledgements

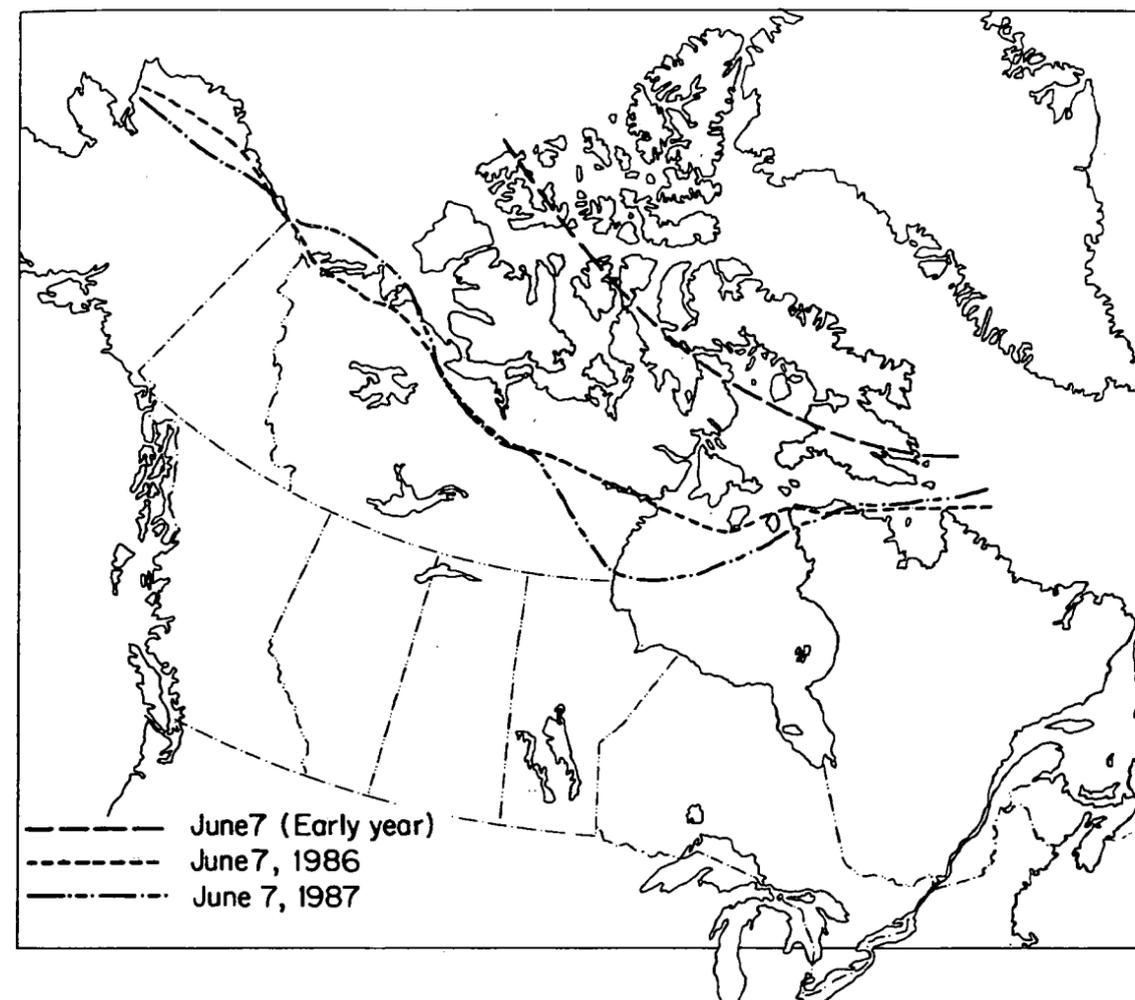
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Table 1
Location and size of Lesser Snow Goose colonies in the Pelly Lake area, 1986 and 1987

Colony No.	UTM location	Number of adults*	
		1986	1987
1	EC 785 545	44	75
2	FC 320 965	—	200
3	FD 320 030	—	180
4	FD 345 040	—	275
5	FD 355 080	—	1120
6	LJ 635 087	300-400	1450
7	LJ 735 180	800-1000	2425
8	LJ 775 170	—	150
9	LJ 790 175	—	1035
10	LJ 815 190	600	1100
11	LJ 845 185	—	630
12	LJ 822 167	—	420
13	MJ 035 200	500-600	N/A
Total:		2244-2644	9060

* Includes breeders and nonbreeders.

Figure 2
Snowline in Arctic Canada during the survey periods (from U.S. Fish and Wildlife Service and Canadian Wildlife Service 1986, 1987)



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