

Sightings of Muskoxen in Northern Scoresby Land, Greenland

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ABSTRACT. Observations of muskoxen in Northern Scoresby Land made by the 1982 Sheffield University North East Greenland Expedition during July and August 1982 are compared with observations by previous expeditions to the area. The total population of muskoxen in the area is estimated to be 450, the same as in 1974. The proportion of calves seen in 1982 was 8.1%; average herd size was 4.9.

Key words: muskoxen (*Ovibos moschatus*), Northern Scoresby Land, Greenland

RÉSUMÉ. Des observations de boeufs musqués dans le nord de la terre de Scoresby, relevées par l'expédition 1982 du nord-est du Groenland de l'université Sheffield en juillet et août 1982 sont comparées aux observations d'expéditions antérieures dans la région. La population de boeufs musqués dans la région est évaluée à 450, au même nombre qu'en 1974. La proportion des veaux observés en 1982 fut de 8.1% et la taille moyenne du troupeau fut de 4.9 bêtes.

Mots clés: boeuf musqué (*Ovibos moschatus*); nord de la terre de Scoresby, Groenland

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INTRODUCTION

Northern Scoresby Land and northern Jameson Land provide some of the best range available to muskoxen (*Ovibos moschatus*) in Eastern Greenland (Ferns, 1977). Northern Scoresby Land is bounded to the west by the glaciated mountains of the Stauning Alps; to the south and east is the barren central plain of Jameson Land. Because of the difficulty and expense of travelling to and within Scoresby Land there are few data available on muskox population and distribution in Northern Scoresby Land. One of the main sources of information is sightings made by expeditions to the area. The following observations were collected during the Sheffield University North East Greenland Expedition 1982.

TABLE 1. Muskoxen observations in 1982

Area	Site	Date	Herd Size
Mesters Vig	Skeldal	7 Aug	4
	Ovre Gefion	20 Aug	2
	Nedre Fundal	13 Aug	6
		20 Aug	8
		22 Aug	1
	Delta Dal	21 Aug	3
22 Aug		3	
Antarctic Havn	Kolledalen	16 Aug	5,2,9,1,4
		20 Aug	8,1,2,(9) ^a
	Flexurdal	19 Aug	2,3,6,3
Schuchert Dal	North of Lang Glacier	30 Jul	7
	South of Lang Glacier	23 Jul	1,7
		30 Jul	11
		16 Aug	8,4,1,1

^a() indicates animals observed twice

METHODS

The expedition arrived in Mesters Vig on 3 July 1982 and flew by helicopter to the Bersaerkerbrae Glacier (Fig. 1)

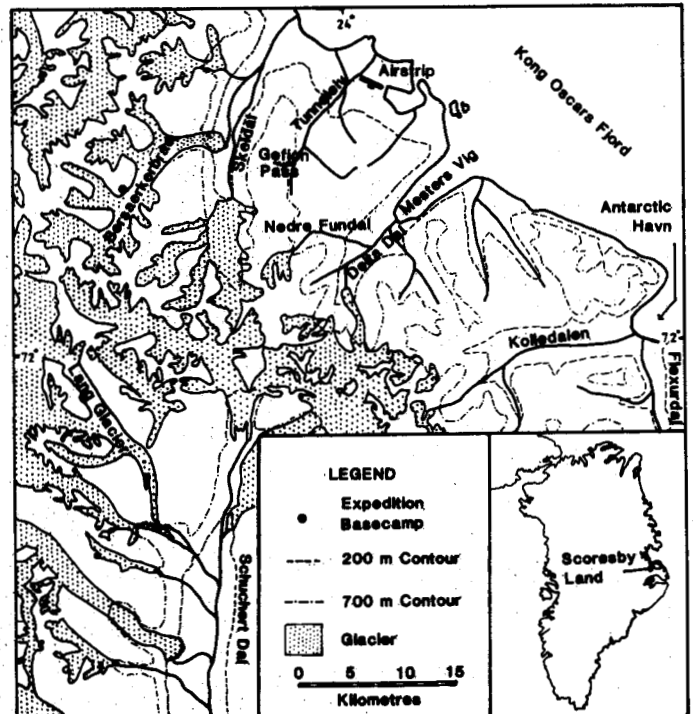


FIG. 1. Map of Northern Scoresby Land.

where a base camp was established. The first party left base camp for Schuchert Dal on 23 July 1982 and from then until 25 August there was a steady stream of human movement in and out of base camp to Schuchert Dal, Antarctic Havn, and Skeldal. Observations of muskoxen were made and whenever possible the composition of a herd as well as its size was recorded. Herd composition was assessed by identifying calves and yearlings from their size. Repeated counting of herds was avoided as their composition and size were individually recognizable. However, repeated counting of lone bulls was much more difficult to avoid. Two four-day journeys

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were made down Schuchert Dal; ten days were spent in and around Antarctic Havn; and Skeldal, Nedre Fundal, and Ovre Gefion were visited on about six occasions each.

RESULTS AND DISCUSSION

The daily observations (Table 1) indicate a minimum number of muskoxen in each area.

The Cambridge East Greenland Expedition had operated to the south of the 1982 study area between 8 July 1961 and 9 September 1961 (Hall, 1964). However, comparable areas in Antarctic Havn were visited in both 1961 and 1982. Muskox observations reported by the 1962 Oxford University Expedition (Hall, 1964) are mostly from areas other than those visited in 1982. The 1974 Joint Biological Expedition visited the same areas as the 1982 expedition (Ferns, 1977). Ferns's (1977) use of maximum daily totals of muskoxen for between-year comparisons reduces the biases caused by varying the number of observers and the number of days in the area. Comparison of the 1974 and 1982 observations (Table 2) indicates that the population in 1982 was similar to that in 1974. Ferns (1977) estimated that the population had increased between about 1 and 4% per annum in the 20 years preceding 1974. The 1982 data would suggest a 1.2% increase per annum; however, there are insufficient data to confirm this.

TABLE 2. Maximum summer daily totals for comparable sites

Site	1961	1962	1974	1982
Skeldal			4	4
Ovre Gefion	2		5	2
Nedre Fundal			5	8
Delta Dal			3	9
Kolledalen	5] 8	23	22
Flexurdal	14		14	14
Totals			54	59

Ferns (1977) estimated the total population for regions visited in 1974 from observations made on foot and from the air. He assumed no muskoxen above 200 m above sea level (a.s.l.) and on this basis calculated the population densities shown in Table 3. In 1982 muskoxen were sighted at 700 m a.s.l. on mountains bordering the north side of the Bersaerkerbrae Glacier and also on the Gefion Pass (Fig. 1). Hall (1964) has also reported muskoxen more than 200 m a.s.l. Population densities for 1982 were calculated using the total number of muskoxen observed, which was 119 animals, and the area of land below 700 m a.s.l. that was visible to parties during their surveys. The area calculated from Danish maps of the region was 485 km².

TABLE 3. Muskoxen population densities

Area	1974 ^a (Muskoxen·km ⁻²)	1982 (Muskoxen·km ⁻²)
Mesters Vig	0.3	0.13
Antarctic Havn	0.8	0.3
Schuchert Dal	—	0.5

^aFerns (1977)

The proportion of calves seen in 1982 was 8.1% (Table 4). Calf production has varied between 1954 and 1982 in response to variations in severity of the winters. Few calves were born following the severe winters of 1953-54 and 1973-74, when snow cover was deeper than the 50-cm average. Snow depth in the winters of 1980 and 1981-82 was average (Anderson and Boiesen, pers. comm. 1983), but relatively deep late winter snow may be responsible for low calf productivity in 1982. If the small samples of 1955 and 1971 are ignored, then the average percentage of calves in the four remaining years is 8.3%, similar to the 8.1% observed in 1982.

TABLE 4. Calf production for years between 1954 and 1982

Year	No. of Muskoxen Sighted	Percentage of Calves
1954 ^a	323	1.5
1955 ^b	14	12.0
1961 ^b	267	23.6
1962 ^b	71	<5.6
1971 ^c	28	25.0
1974 ^d	233	3.0
1982	111	8.1

^aFerns (1977) quoting Vibe (1967)

^bFerns (1977) quoting Hall (1964)

^cFerns (1977) quoting Halliday (1974)

^dFerns (1977)

A herd (Fig. 2) was rarely resighted in the same location on recurrent visits, even after only a few days' absence. Muskoxen were not seen at all around Mesters Vig airstrip or in Tunnelev in late August, which supports Ferns's (1977) suggestion of a summer movement away from the coastal plain.



FIG. 2. Herd of muskoxen in Nedre Fundal, 20 August 1982. (Photo: R.M. Andrews)

Mean herd size in 1982 was 4.9 with a standard deviation of 1.7. This compares with mean herd sizes of 5.7 and 3.6 in 1961 and 1974 respectively (Hall, 1964; Ferns, 1977).

CONCLUSIONS

The muskox population in Northern Scoresby Land is estimated at 450, similar in size to that observed in 1974. The increase in population over the last 30 years has averaged between 1 and 4% per annum. Although they have no predators and no longer are killed as food for trappers' dogs, the population is still in danger of being decimated by a single severe winter. The potential effect on muskox habits and population of the increased geological exploration in Jameson Land has been investigated (Thing *et al.*, 1982, 1983; Lassen, 1983; Petersen, 1983; Sittler *et al.*, 1983). However, it is still difficult to predict the probable effects of increased human activity on the muskoxen of Northern Scoresby Land.

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