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POLAR BEAR TAGGING, CLYDE RIVER,  
SPRING, 1982

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N.W.T. WILDLIFE SERVICE

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ABSTRACT

During April and May, 1982, seventeen polar bears (10 males, 7 females) were captured, marked and released along the northeast coast of Baffin Island between Cape Hunter in the north and Cape Henry Kater in the south. None of the bears had been captured previously. Bears appeared to be thinly distributed.



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## INTRODUCTION

The Northwest Territories Wildlife Service (NWT WS) initiated a 3 year polar bear mark/recapture study in the Clyde River and Broughton Island areas during April and May, 1981 (Lee and Schweinsburg 1982). This report summarizes the results of the second year of that project. Factors such as age structure, mortality, natality, distribution, movements, and population size will ultimately be determined.

Similar studies have been undertaken previously in the vicinity of Pond Inlet (Schweinsburg et al. 1980) and Cumberland Sound (Stirling et al. 1980), but did not extend into the Clyde River and Broughton Island region. A short exploratory tagging program was conducted near Clyde River in the fall of 1980 (Lee 1982) and denning surveys were carried out in 1961 and 1979 (Harrington 1961, Wooley 1979).

## STUDY AREA

The study area (Fig. 1) covers the northeastern coast of Baffin Island, a distance of approximately 900 km. The northeast portion of Baffin Island is characterized by steep sided fiords which result in deep southwesterly oriented coastal indentations in the south. The coast, for the most part, is fronted by a broad coastal lowland possessing many ponds and marshes. The area is described in detail by Dunbar and Greenaway (1956).

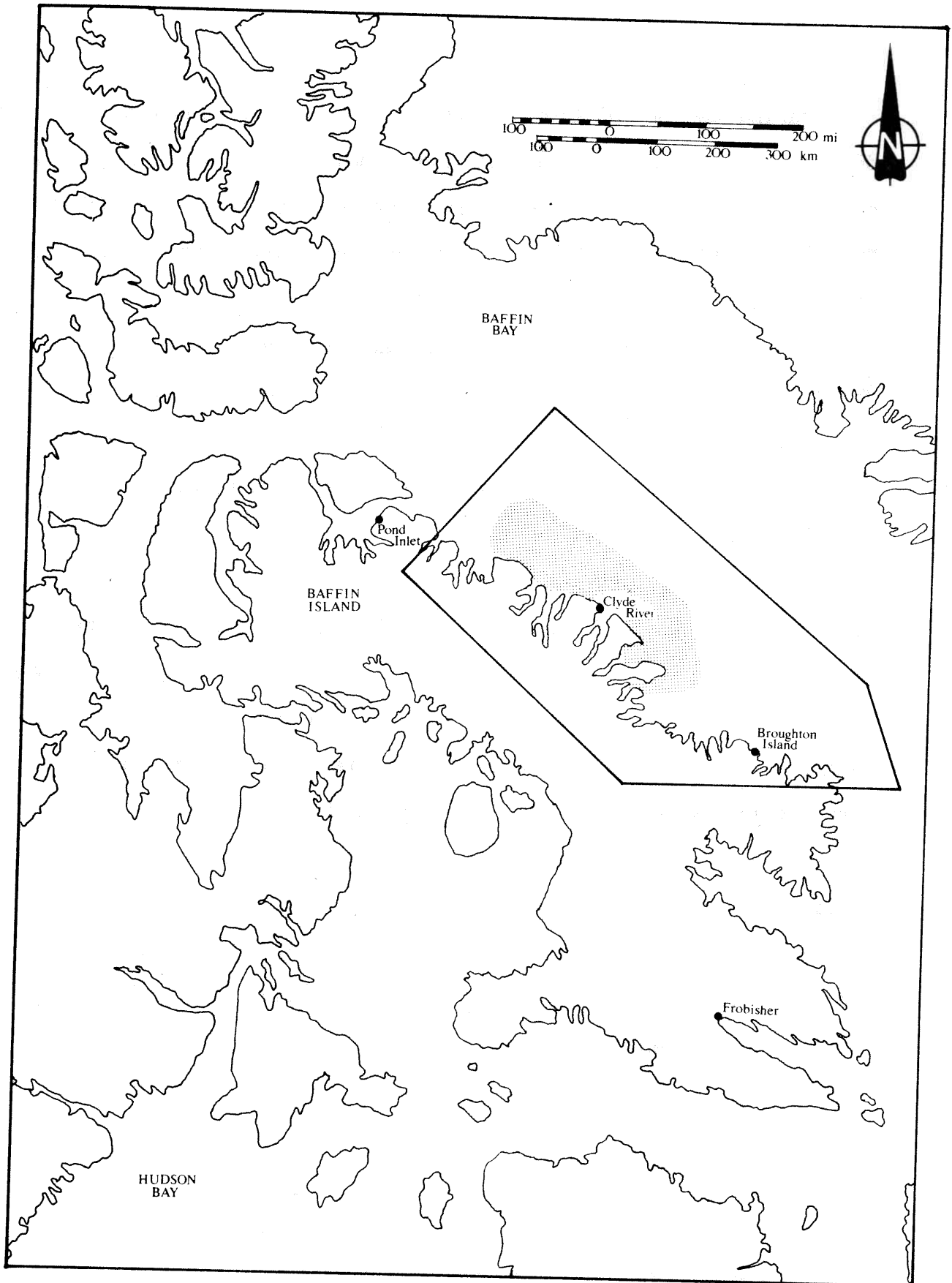


Fig 1. Study area and area searched (shaded) by helicopter for polar bears during April and May 1982.

## METHODS

During the period from 13 April to 14 May, we flew a total of 46.2 hours covering a total of approximately 6000 km. Figure 1 outlines the search area and Table 1 summarizes the search effort. Most bears were located by tracking as densities were too low to utilize visual scanning effectively. Search effort was concentrated over ice habitats such as floe edges and areas of drifted pressure ridges which have proved productive in previous studies. No searches were carried out on the drifting pack ice because of hazardous conditions for the bears and researchers.

Standard techniques of polar bear capture and handling were used (Lentfer 1968, Larsen 1971). Immobilization was accomplished with a combination of ketamine HCl<sup>1</sup> and xylazine HCl<sup>2</sup> administered intramuscularly at a dosage of 6 mg of each drug/kg of body weight. Once immobilized, bears were marked with individually numbered polyurethane ear tags and were tattooed on the upper lip with a corresponding number. Data recorded for each bear included weight, sex, total length, chest girth, physical and reproductive condition. The first premolar was pulled for age determination. Each bear was painted with a number for subsequent identification from the air. Blood samples for blood chemistry and epidemiology were taken from most bears.

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1 Ketamine HCl, Parke Davis, Brockville Ontario

2 Rompun, Bayvet, Mississauga, Ontario

Table 1. Summary of search effort for polar bears during April and May, 1982.

Area searched	Hours flown	Bear/hour flown
Clyde River - Cape Hunter	25.3	0.4
Clyde River - Cape Henry Kater	20.9	0.3
Over all	46.2	0.37

## RESULTS AND DISCUSSION

Due to poor weather conditions and helicopter mechanical problems, initiation of tagging was delayed about 3 weeks and fewer hours were flown than was anticipated. Seventeen polar bears (10 males, 7 females) were captured, marked and released over the period of 13 April to 14 May, 1982 (Fig. 2, Appendix A). Three family groups were captured; 1 group of 2 cubs of the year (COY), 1 group of 1 yearling and 1 group of 1, 2 year old. None of the bears captured had been marked previously which was surprising as 13% (n=45) of the bears killed by local hunters were tagged. Three resightings of bears marked in this study occurred during the course of the study.

The capture rate in 1982 (0.37 bears/hour flown) was lower than that in 1981 (0.47 bears/hour flown) and considerably lower than that experienced in Lancaster Sound (1.2 bears/hour flown) in 1979 (Schweinsburg et al. 1980). Only 2 bears were located by chance sighting; most captures required 20 to 30 minutes of tracking time. Tracks, old and new, were more frequently encountered in two locations; (1) within 5 km of the floe edge between Scott Island and Cape Hunter, and (2) within 5 km of the floe edge due east of Cape Henry Kater.

The sex ratio of the capture sample was 1.4 (m/f) and only 2 of the six adult females captured were in estrus. The overall physical condition of the bears seemed thin using a subjective fat index of 1 to 5, with 1 being thin, 70.6% of the bears had indexes of 2 or less. Hunters from Clyde River also reported that many of

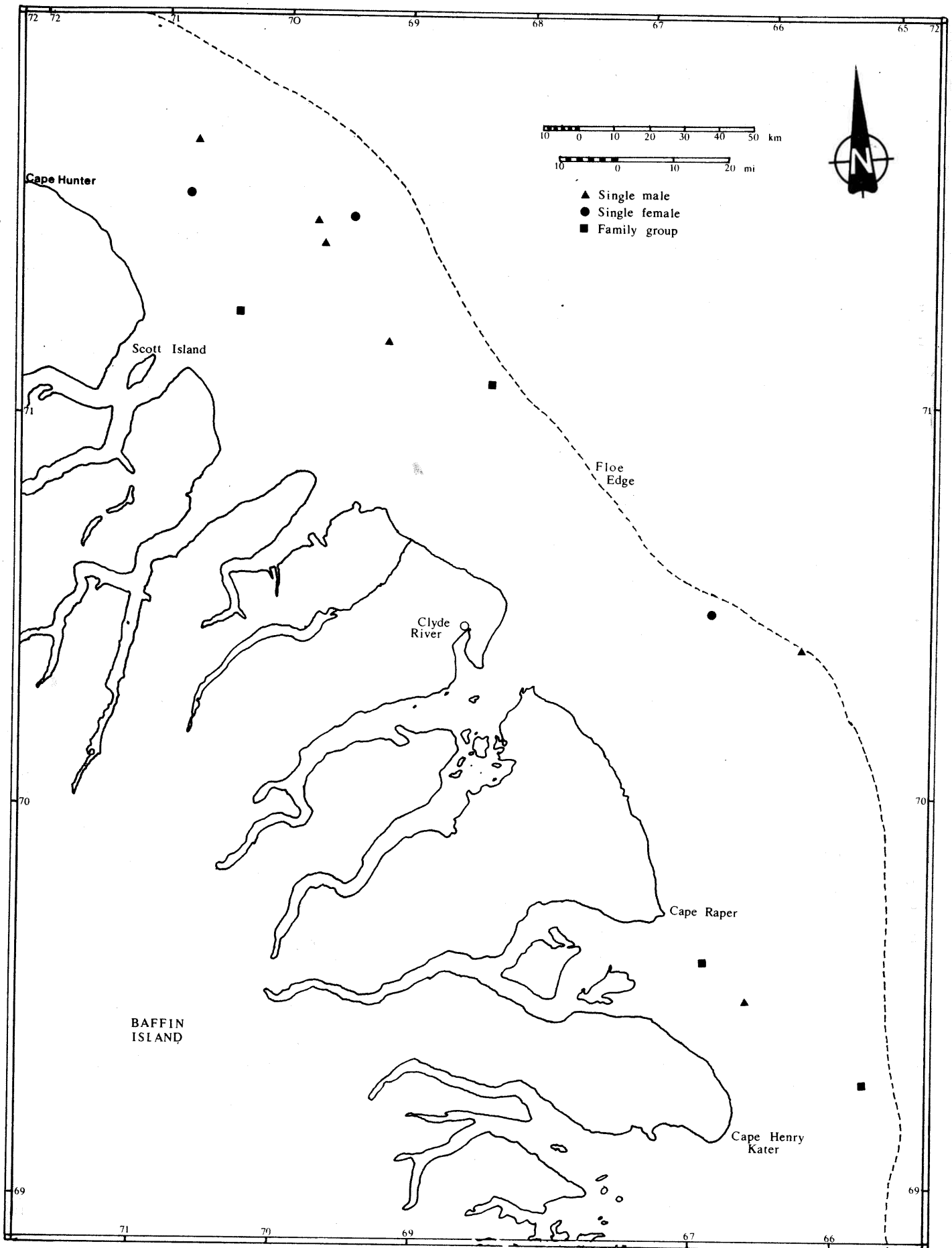


Figure 2. Capture locations of polar bears during April and May, 1982. Broken line indicates approximate location of floe edge.





the bears killed during the 81/82 hunting season were thin. Also reported by the hunters were two cases of adult females with polar bear hair and skin in their stomachs. In one case, examination of the hair and skin, by the Ontario Ministry of Natural Resources Wildlife Research Lab, confirmed that the hair was from a very young animal and that the skin appeared to be the remnants of an umbilical cord.

## ACKNOWLEDGEMENTS

We gratefully acknowledge the logistic support of the Polar Continental Shelf Project and the NWT Wildlife Service. Howard Massacar and Nelson Bently of Quasar Helicopter provided efficient and professional helicopter service throughout the study. Aiko Sutherland of the NWT Wildlife Service sectioned and aged the polar bear teeth. Thanks to George Kolenosky, Ontario Ministry of Natural Resources for identifying the hair and skin sample. Special thanks to Joe Tigullaraq, Wildlife Officer, Clyde River, for his assistance in the field and his help and cooperation during our stay in Clyde River.

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Appendix A. Summary of polar bears captured and resighted near Clyde River during April and May, 1982.

Bear	Reason	Sex	Age	Date	Location	Lat.	Long.
X4918	M-Cap	M	03	27 Apr.	20 mi Cape Come Again	7112	06910
X4919	M-Cap	F	08	27 Apr.	40 mi E Scott Island	7128	06920
X4920	M-Cap**	F	08	01 May	15 mi E Scott Island	7117	07020
X4921	M-Cap**	M	COY	01 May	15 mi E Scott Island	7117	07020
X4922	M-Cap**	F	COY	01 May	15 mi E Scott Island	7117	07020
X4923	M-Cap	M	04	04 May	35 mi SE Clyde River	7022	06600
X4924	M-Cap**	M	01	04 May	20 mi SE Cape Raper	6935	06645
X4925	M-Cap**	F	08	04 May	20 mi SE Cape Raper	6935	06645
X4926	M-Cap	M	07	04 May	30 mi N C. Henry Kater	6928	06604
X4927	M-Cap**	F	09	04 May	28 mi ENE C. Henry Kater	6915	06540
X4928	M-Cap**	M	02	04 May	28 mi ENE C. Henry Kater	6915	06540
X4929	M-Cap	M	16	08 May	20 mi E Erik Point	7100	06839
X4930	M-Cap	M	12	08 May	20 mi E Cape Adair	7129	06940
X4931	M-Cap	F	08	08 May	20 mi E Cape Adair	7133	07025
X4932	M-Cap	M	09	10 May	30 mi NE Scott Island	7126	06939
X4933	M-Cap	M	04	10 May	25 mi ENE Cape Adair	7139	07020
X4934	M-Cap	F	08	12 May	30 mi E Clyde River	7028	06648
X4920*	Resight	F	08	08 May	25 mi NE Cape Come Again	7126	06847
X4931	Resight	F	08	10 May	25 mi NE Scott Island	7127	06847
X4929	Resight	M	16	10 May	28 mi E Erik Point	6915	06840

\*\* Family group

\* Female accompanied by 2 COY

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