

April 2007 Recruitment Survey Field Summary -  
Tuktoyaktuk Peninsula, Cape Bathurst, and Bluenose-West Herds

Tracy Davison and Marsha Branigan  
Environment and Natural Resources, Inuvik



As part of a monitoring program for the Tuktoyaktuk Peninsula Caribou/Reindeer (TP), Cape Bathurst (CB) and Bluenose-West Caribou (BW) Herds, a recruitment survey was conducted in April of 2007. Recruitment is the number of calves that live to be one year old. Since calves are not quite one year old in April, this is considered maximum recruitment.

Collared caribou (VHF, satellite and GPS) were located by aerial telemetry from a Bell 206 helicopter. Additional groups found during flights were also classified. Small groups were classified in the air and large groups were classified on the ground. Ground classifications involve landing the helicopter and observing caribou through a spotting scope. Where possible, the helicopter would land on a higher hill or ridge near the caribou. When a group of caribou were on a lake below the tree line, the helicopter landed on the opposite end of the lake. Generally, this was successful in not disturbing the caribou and they remained close enough to classify. There were some groups that were too skittish to classify as they started to move away when the helicopter was still far away. These groups were not approached at a low level. When possible high-quality digital photos were taken of these groups from a higher altitude and classified later. Below tree line, there were also some groups that were in the trees and could not be classified.

On April 11<sup>th</sup> and 12<sup>th</sup> efforts were focused on the range of the Tuktoyaktuk Peninsula animals (Figure 1 – blue lines). On the 13<sup>th</sup> and 14<sup>th</sup> of April the winter range of the Cape Bathurst was flown (Figure 1 – green lines). On the 15<sup>th</sup> of April the western section of the Bluenose-West herd between Inuvik and Rendezvous Lake was flown. Poor weather on the 16<sup>th</sup> and 17<sup>th</sup> of April prohibited flights to the eastern section of the Bluenose-West winter range. The survey was then delayed until April 27<sup>th</sup> in hopes that more of the caribou would be above the tree line, where classification is easier. On the

27<sup>th</sup> and 28<sup>th</sup> the eastern section of Bluenose-West herd was flown, between Rendezvous Lake, Fallize Lake, and Colville Lake (Figure 1 green lines). The collared animals were monitored to ensure caribou were not recounted despite the time between surveys. A total of 52.3 hours were flown. This includes ferrying time and the flight on June 16<sup>th</sup>, which was aborted due to weather. Locations where groups of caribou were found during the survey are shown in Figure 2. Identification to herd is based on location of group and where the collared animal, if present, calved the previous June.

During the flights other animal observations were recorded. One golden eagle, and two moose were seen during the flights. A total of 56 musk ox were seen in 6 herds, 5 were identified as calves and the rest were adults. There were 17 wolves seen, two packs and one lone wolf, during the survey flights.

Each caribou was classified as a cow, calf, or bull/youngling (almost 2 years old). Classification was done based on size for calves, presence and size of antlers, and sex-organs (presence or absence of vulva patch, and penis sheath). Classification was not always possible; these animals were recorded as "unclassified." Any animals identified as reindeer were also noted.

The number of calves per 100 cows was done using groups of entirely classified animals, or in the case of large groups, a subsection of animals if it was not possible to identify all animals. Including groups with unclassified animals would cause the estimate of calves per 100 cows to be higher than the true value as calves are the easiest to identify and more cows would be unclassified than calves. Groups that were made up of all bulls were also not included in the analysis.

A total of 136 groups were located. Group size ranged from 2 caribou to 144 caribou, with a mean of 22.8 caribou per group. Table 1 shows the number of groups and group size by herd. There was a total of 8 (4 cows, 1 bull and 3 unclassified) animals identified as reindeer out of a total of 930 animals on the Tuktoyaktuk Peninsula. These cows are included in the recruitment analysis.

One group of caribou had a collared caribou previously identified as a Cape Bathurst animal along with one identified as a Tuktoyaktuk peninsula animal (see Figure 2 for location). These were included with Cape Bathurst for the calculations.

All collars that were active July 2006 were searched for, this and the number found is shown in Table 2. Since only a portion of the herd is needed to do a recruitment estimate it was not the goal of this survey to locate all of the collars. If we assume that the collars are spread out evenly within the herd the number of collars in groups classified gives us an idea if enough are classified to get a representative sample of the herd. Not as many collared caribou were found on the Tuktoyaktuk Peninsula because many scattered groups were spotted between the collared caribou, and locating collars was not a focus.

The number of calves per 100 cow were  $25.7 \pm 2.8$  (Standard error of mean) for the Bluenose-West,  $21.8 \pm 3.1$  for the Cape Bathurst, and  $30.6 \pm 3.0$  for the Tuktoyaktuk Peninsula. These are lower than those found historically (McLean 1992, McLean and Jackson 1992, McLean and Heard 1991, Williams and Elliott 1985). The number of calves per 100 cow found in 1983, 1986, 1987, 1988, and 1991 were  $44 (\pm 2.0)$ ,  $51.8 (\pm 2.86)$ ,  $64 (\pm 4.8)$ ,  $46.0 (\pm 0.61)$ , and  $38.9 (\pm 2.57)$  calf/100 cow, respectively. These numbers are from when the herds were considered one herd. 1991, 1988 locations where groups were found was primarily in the range of what we now consider the Bluenose-West herd range. In the other years locations fall within what we now consider the range of the Cape Bathurst and Bluenose-West herds. The recruitment trend over time is shown in figure 3.

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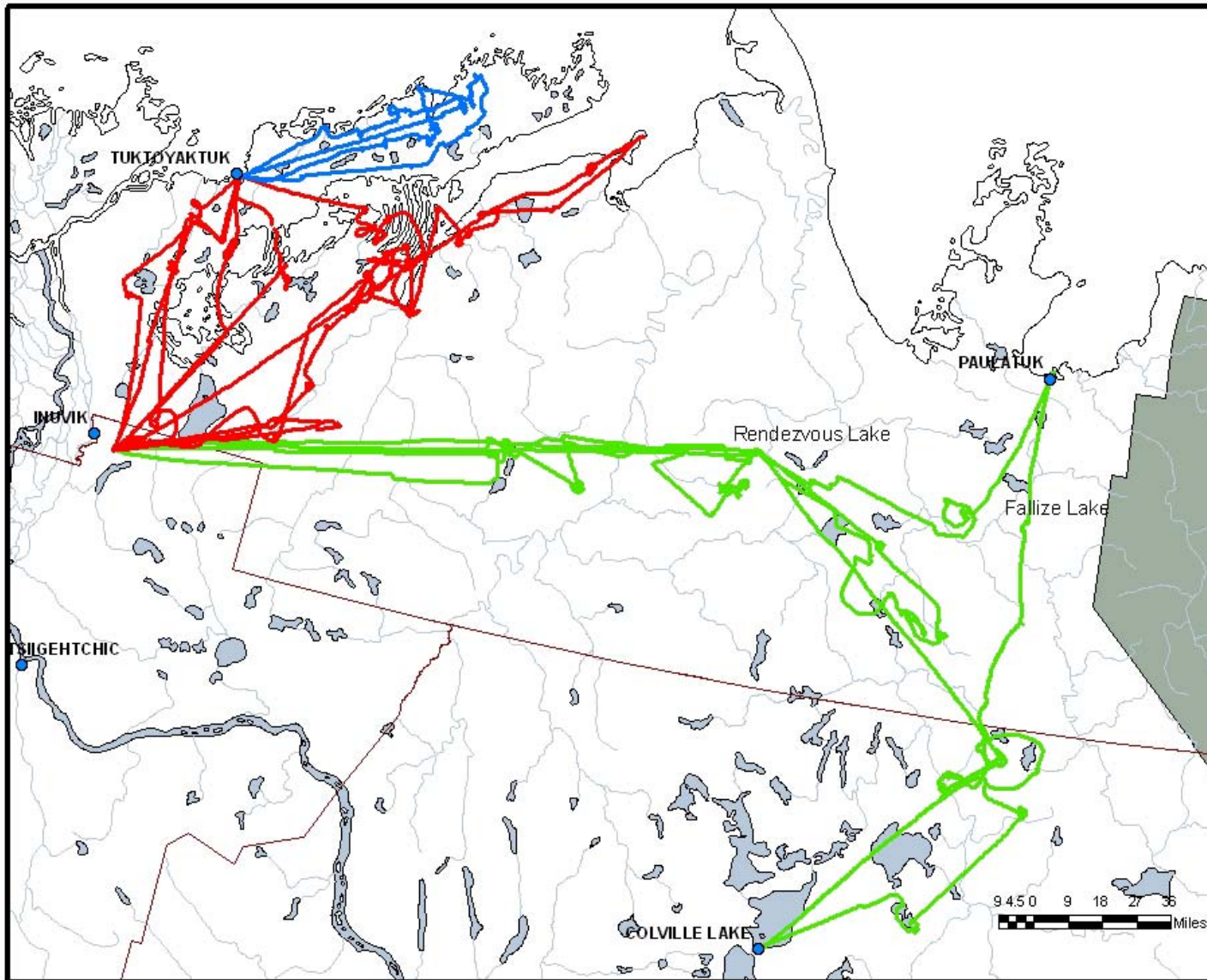


Figure 1. Lines flown during the survey.

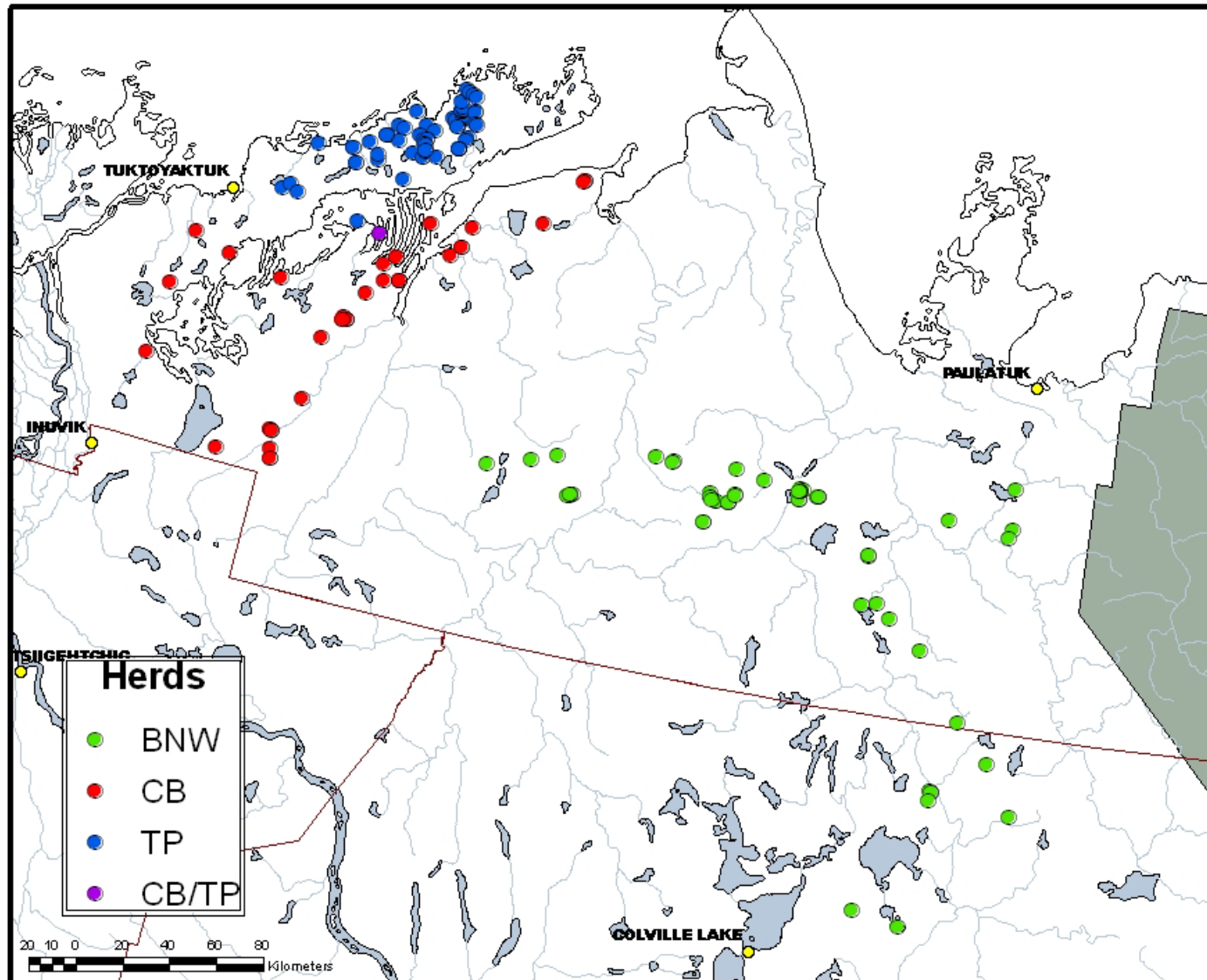


Figure 2: Groups of Caribou from Tuktoyaktuk Peninsula (TP) animals, Cape Bathurst Herd (CB), and Bluenoses-West Herd (BW) located during the survey.

Table 1: Groups found by herd and number of groups used for analysis.

Area\ Herd	Number groups for recruitment	Total caribou seen	# groups dropped *	Group Size			
				Total # groups	Average	Min	Max
TP	38	896	22	60	15.5	2	80
CB	13	1099	18	31	34.9	4	144
BW	28	1062	16	44	21.7	2	74

\*unable to classify entire group or group all bulls so dropped from analysis

Table 2: Numbers of Collars split by herd.

Herd	Total Searching For	In Groups Classified	Heard but not Classified	Mortality Signal	Not found
Tuktoyaktuk Peninsula	26	7	0	1	18
Cape Bathurst	46	27	0	1	18
Bluenose- West	76	17	3	2	54

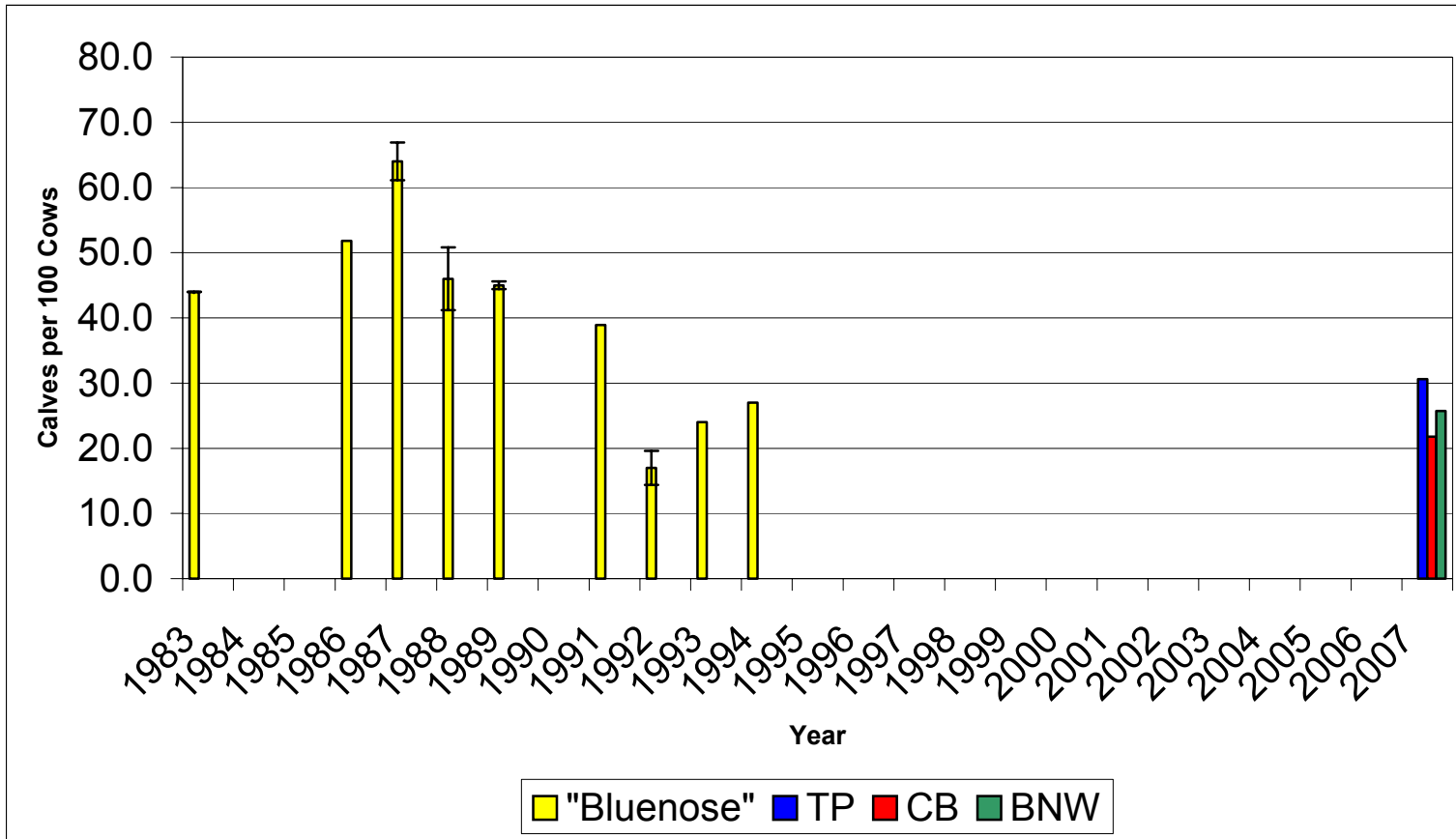


Figure 3: Recruitment over time (Department of Renewable Resources 1996; ENR unpublished data).