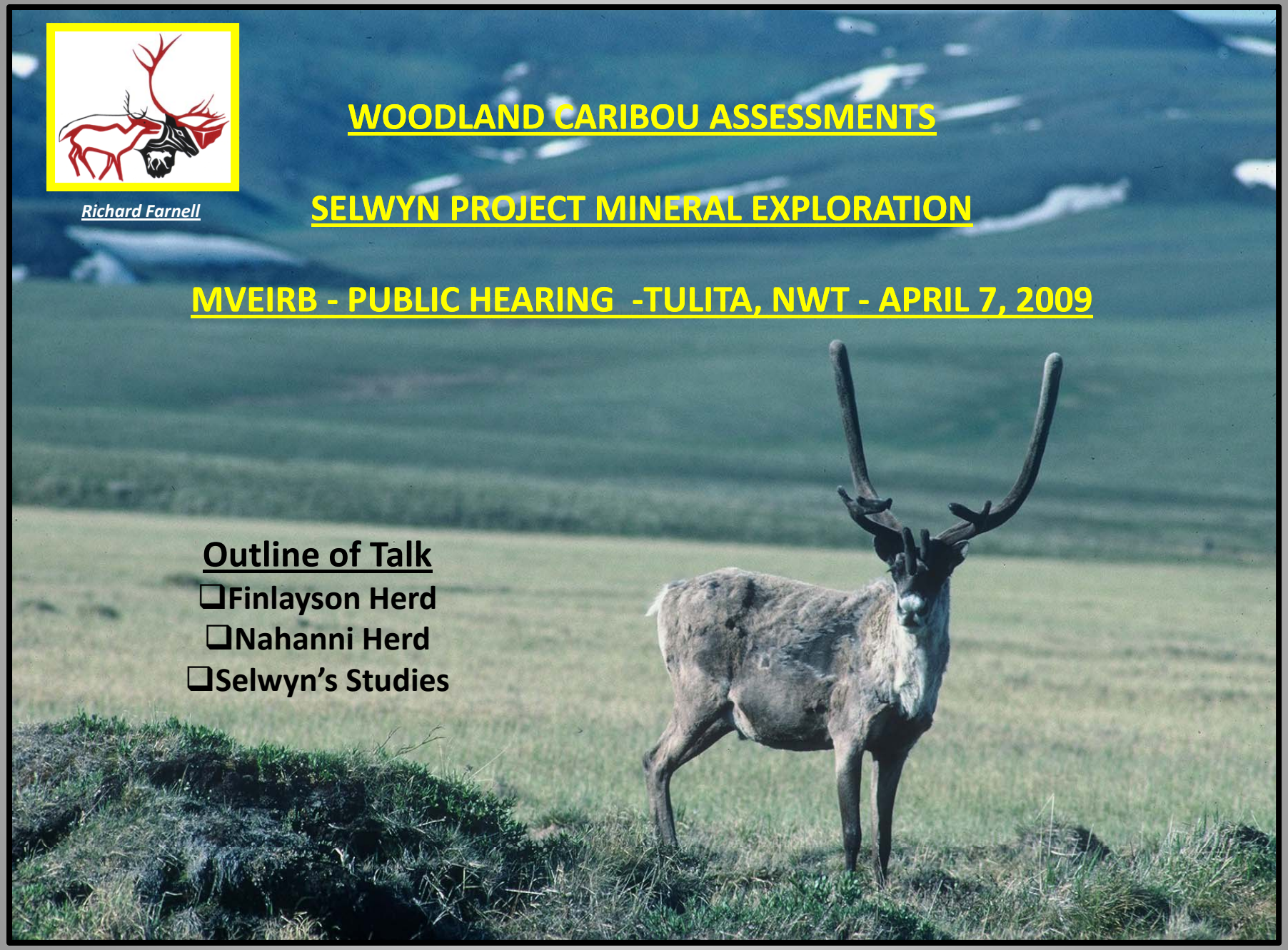


WOODLAND CARIBOU ASSESSMENTS

SELWYN PROJECT MINERAL EXPLORATION

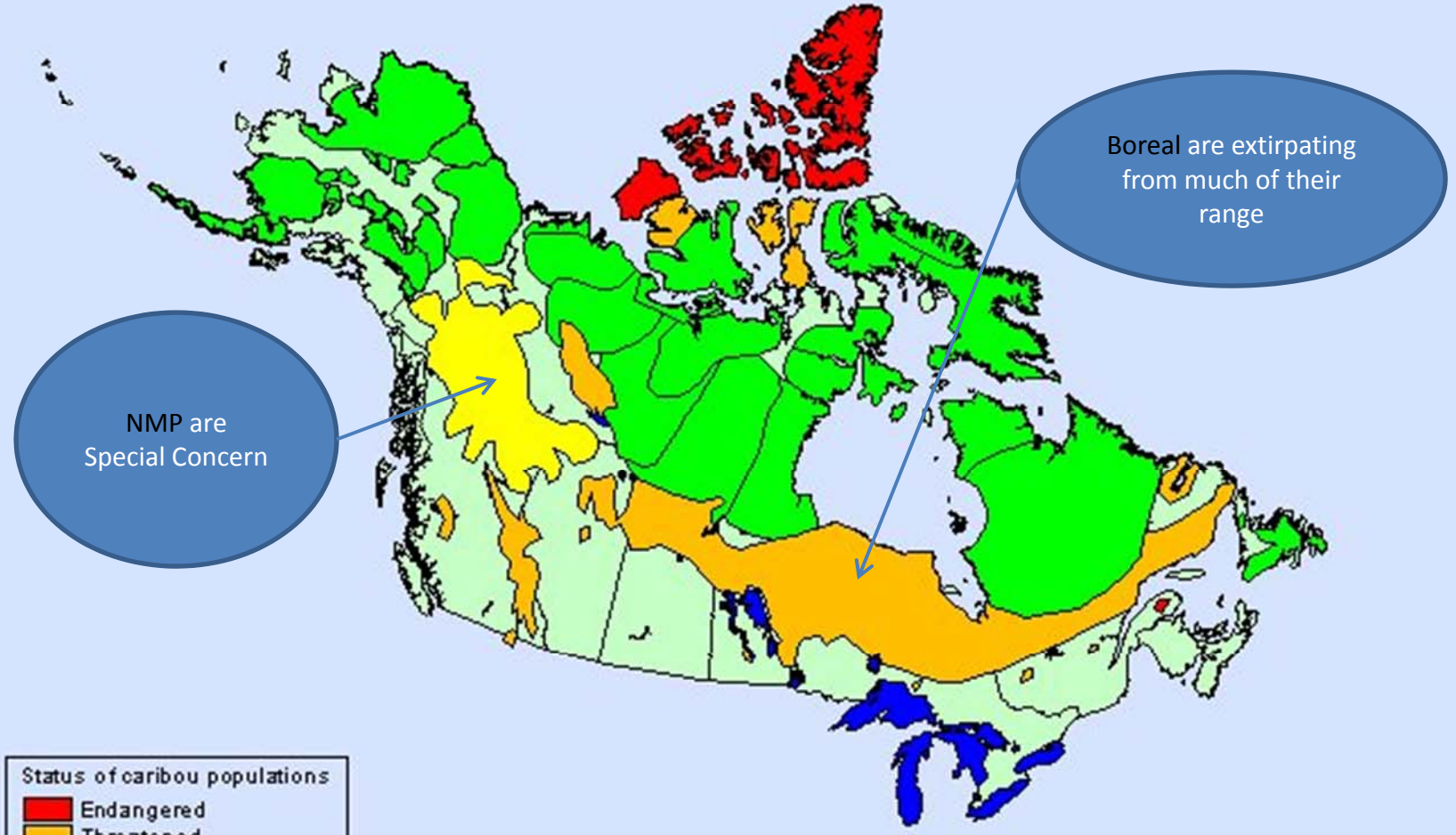
MVEIRB - PUBLIC HEARING -TULITA, NWT - APRIL 7, 2009

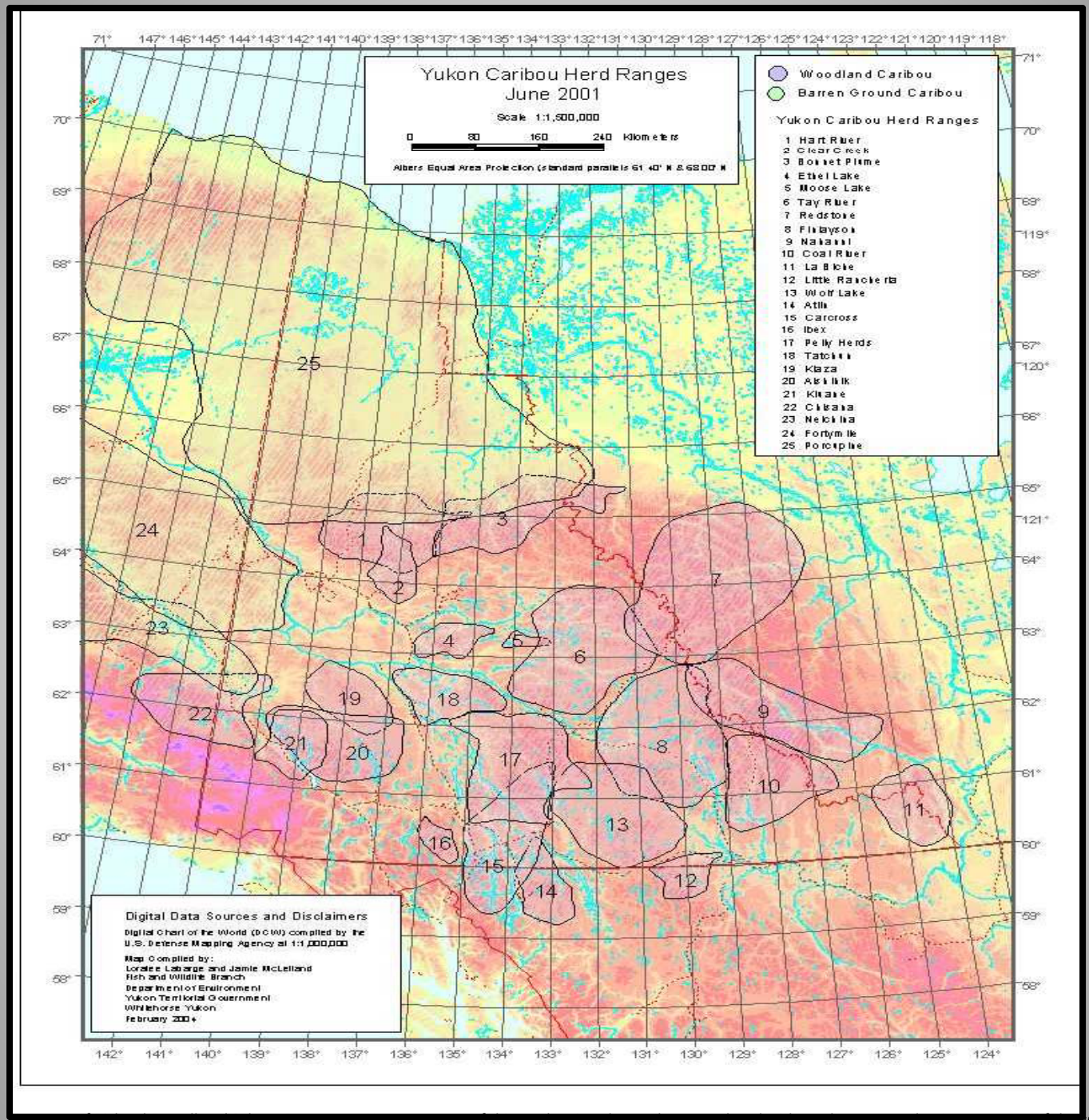
Richard Farnell

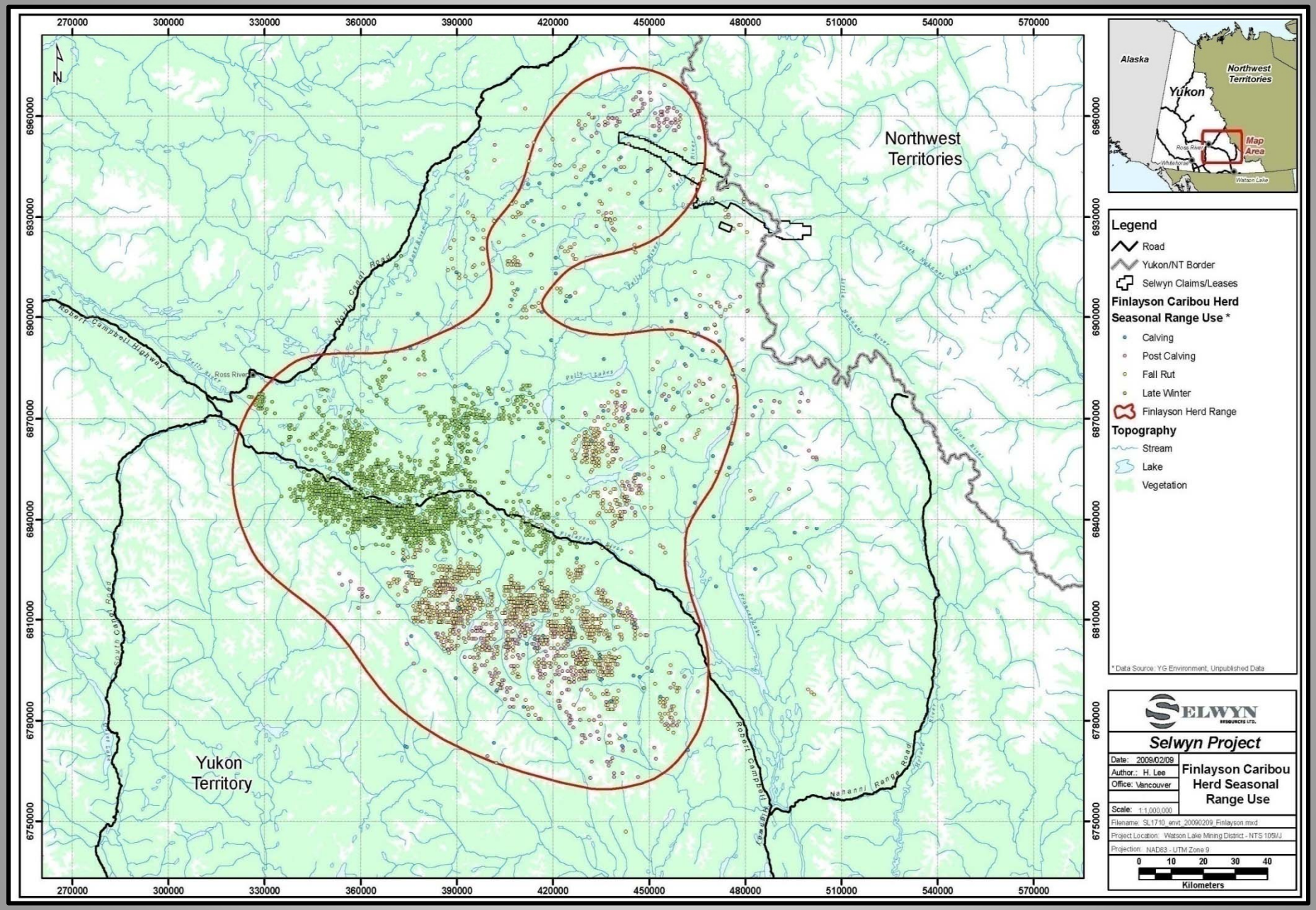
Outline of Talk

- ❑Finlayson Herd
- ❑Nahanni Herd
- ❑Selwyn's Studies

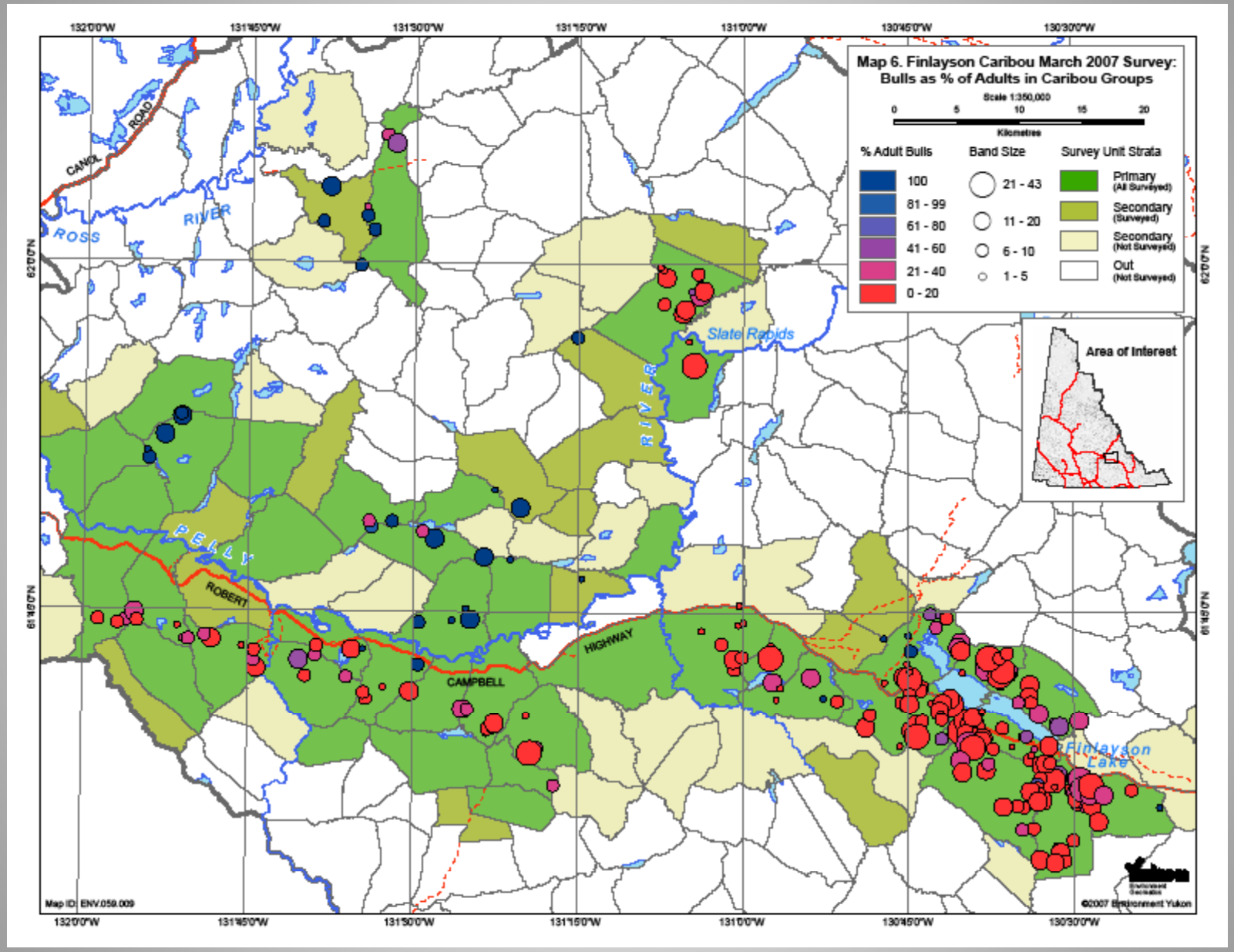
Status of North American Caribou – COSEWIC





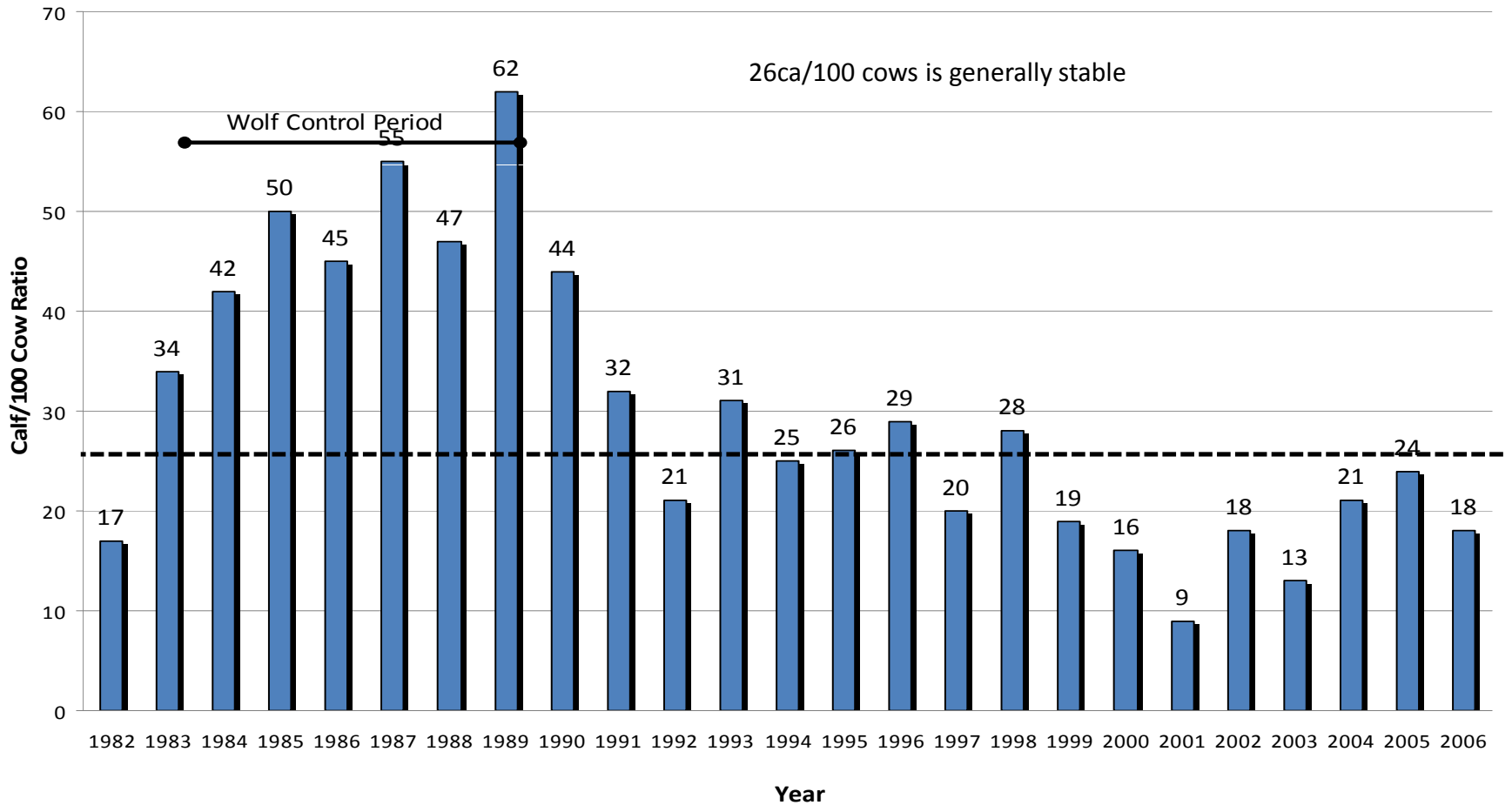


WINTER RANGE IS CRITICAL HABITAT !!!

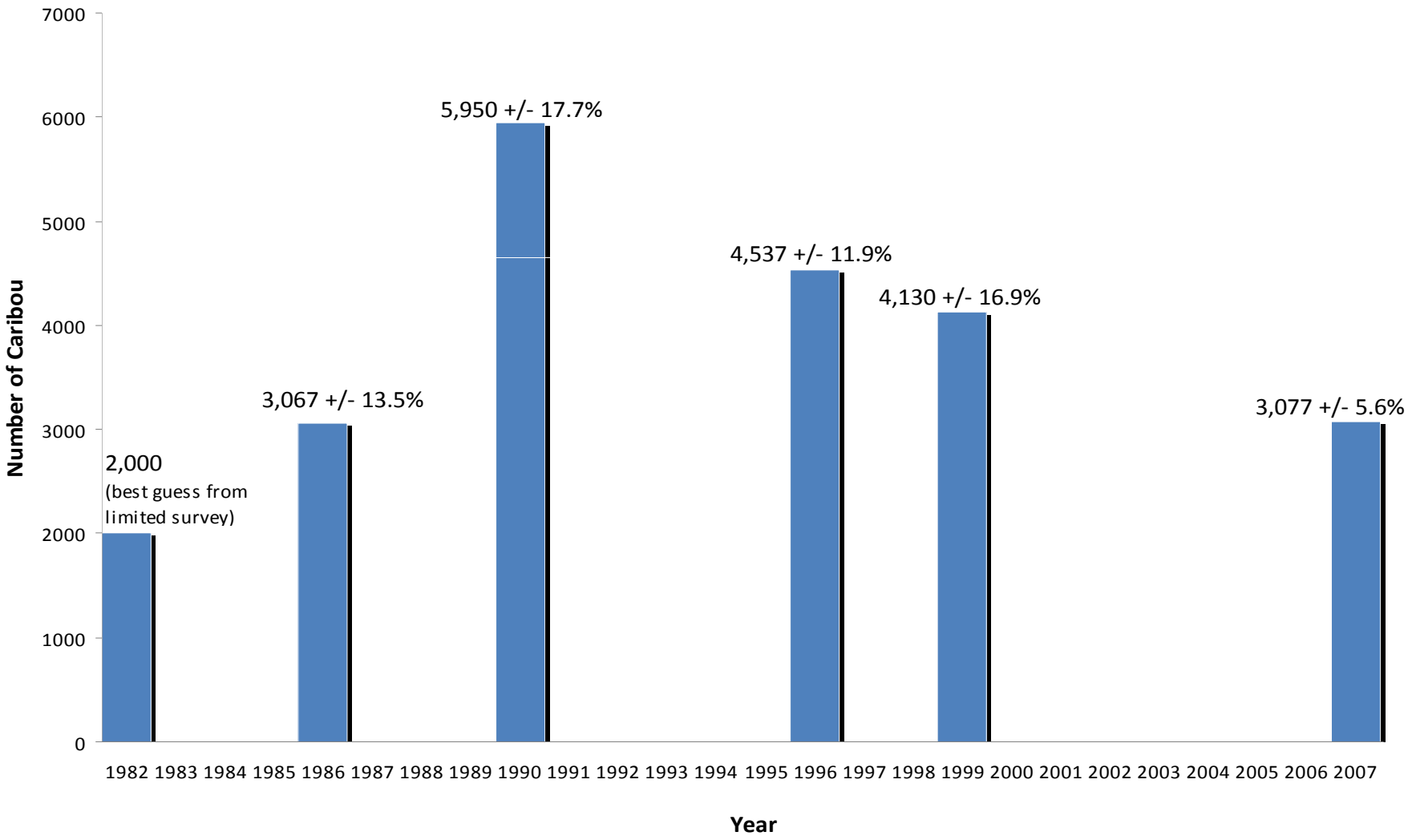


INTENSIVE MANAGEMENT

Fall Calf/100 Cow Ratios in the Finlayson Caribou Herd 1982-2006



Population Size Estimates of the Finlayson Caribou Herd 1982-2007

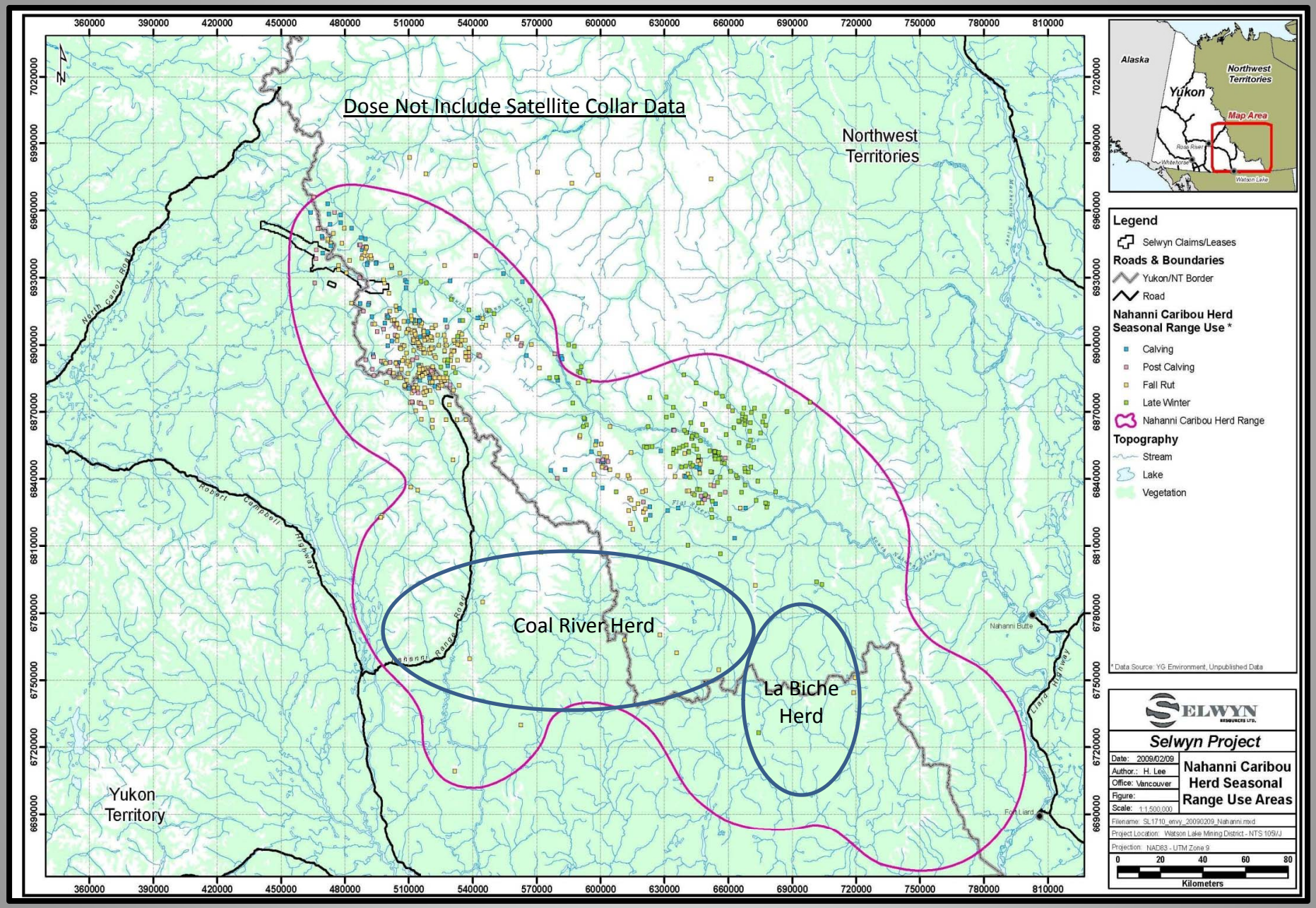


Other Research Studies Past – Present – On/Going

- POPULATION TRENDS (Since 1982)
- HARVEST (Since 1982)
- PREDATOR/PREY RELATIONSHIPS (1980's & 90's)
- RANGE USE (Since 1982)
- FORAGE QUALITY (1980's & 90's)
- BODY CONDITION (1992 & 93)
- GENETICS RELATIONSHIPS (1990'S)
- CLIMATIC AFFECTS (On-going)
- POTENTIAL CONTAMINANTS (On-going)

Some Relevant Facts From These Studies

- The FCH & NCH are Northern Mountain Population herds of caribou.
- This ecotype differs greatly from Boreal caribou in other parts of Canada.
- There is less known about potential adverse affects on NMP caribou from anthropogenic effects.
- The decades long record of range use and demography of the FCH provide an excellent record for baseline reference as new conditions arise.
- There are still roughly 3100 caribou in this herd – more than in 1982 when intensive management began.
- Accordingly their still seems to be good opportunity for wildlife managers and communities to address population decline problems.
- Bench line data on caribou physical condition provide a rare opportunity to revisit the role of forage/nutrition and possible contaminants on caribou.
- Climatic analysis suggests that calf recruitment is likely sensitive to late spring conditions – a natural climatic affect.
- Finally population size and trend in the FCH seem to be driven more by predation and human harvest than any other limiting factor at present.



Calf and bull/100 cow ratios and sample sizes for the South Nahanni caribou herd, NWT – Yukon, 1995–2001.

Date	No. of Groups & (caribou)	Calf/100 cow ratio	Bull/100 cow ratio	Source
25-28 Sept 2001	83 (781)	10	40	Gunn et al. 2002
4-7 Oct 2000	32 (549)	15	33	Gunn et al. 2002
8 Oct 1997	53 (733)	26	32	Gullickson & Manseau 2000
9 Oct 1996	99 (739)	20	47	Gullickson & Manseau 2000
15-16 Oct 1995	78 (813)	17	37	Gullickson & Manseau 2000

•Based on annual fall composition surveys calf recruitment was low for the SNH from 1995 to 2001 averaging only 17.6 calves/100 cows.

•The bull 100/cow ratio in the SNH averaged 37.8 over this period - substantially below the Yukon wide average of 45/100.

•A total count of 781 caribou was observed on the census survey.

•A correction factor (6 collars seen/11 available) provided a minimum sightability bias correction of 1.46 to extrapolate a population size estimate of 1140 caribou in the SNH.

Other On-going Research Studies
Nahanni Caribou

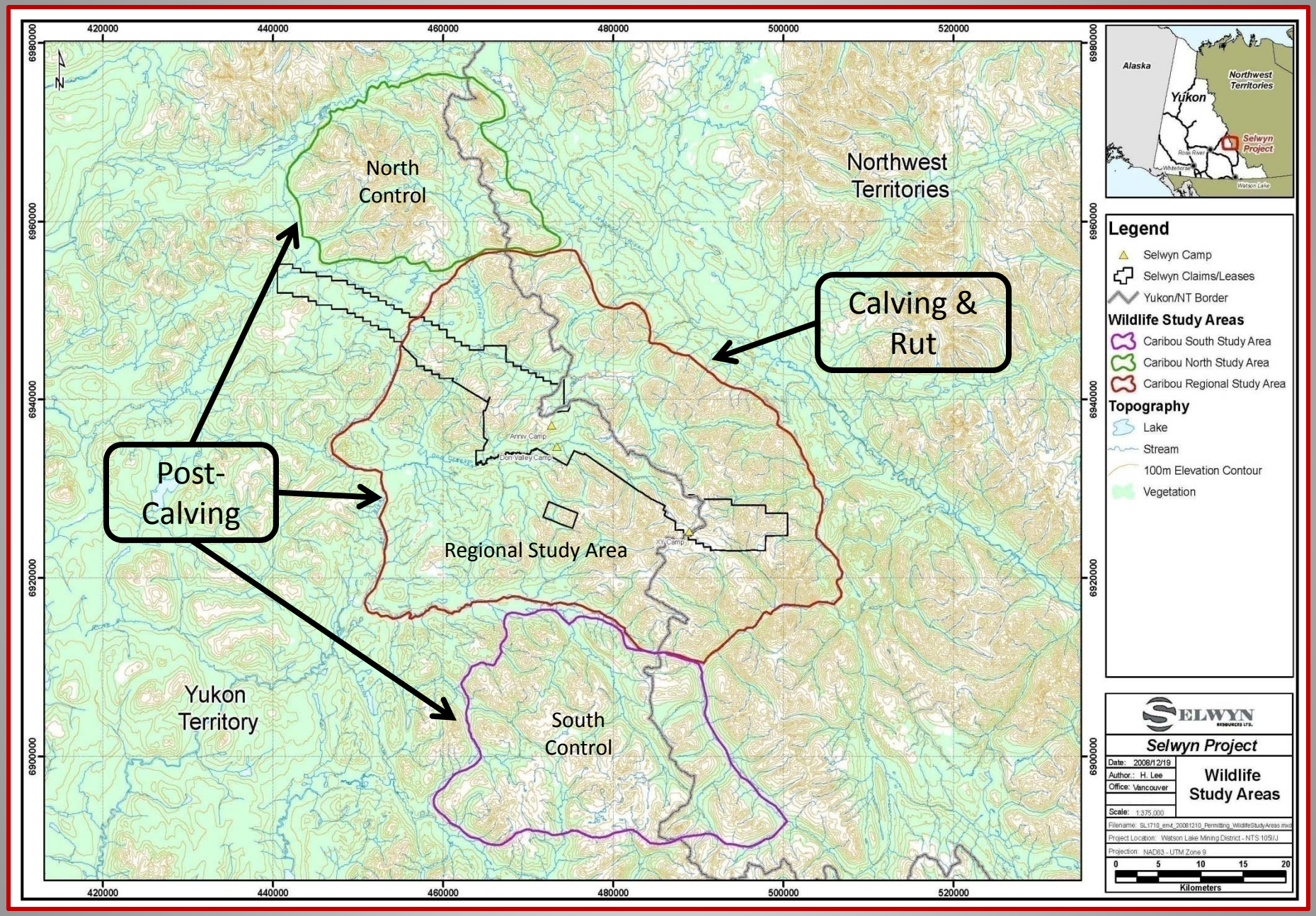
- Range use study with 30 satellite collars
- Fall Composition Counts
- Population Estimate Survey in Fall 2009

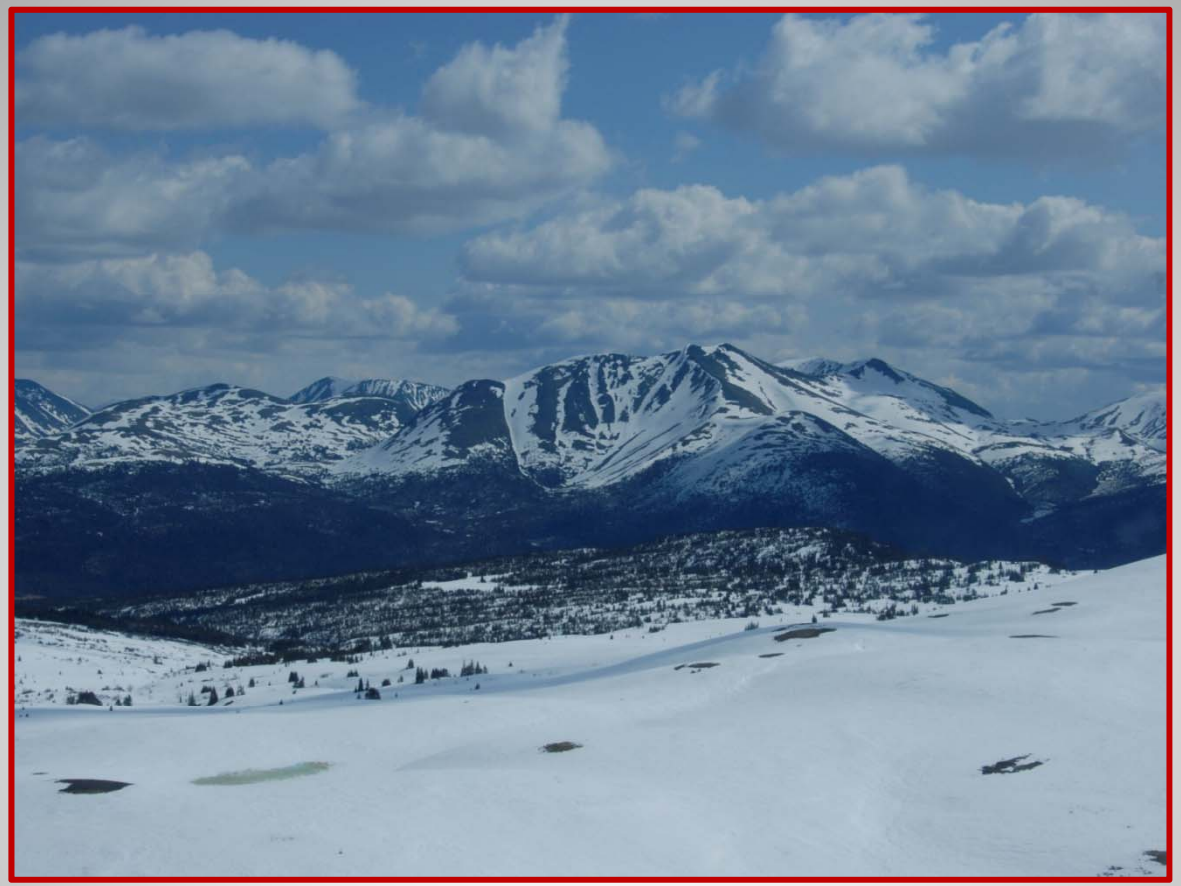
Some Relevant Facts From These Studies

- The SNH is a trans-boundary herd that ranges in the Howard Pass area during summer and to a lesser extent during the rut.
- The herd winters primarily in Nahanni National Park Reserve.
- Demographic data collected between 1995 and 2001 strongly suggest that the SNH is declining and human harvest could be accelerating the decline.
- Fall composition counts and the 2001 population estimate provides baseline for further population monitoring and are methods with repeatability.

Selwyn Resources Wildlife Assessment Studies 2007 & 2008

- Calving
- Post-Calving
- Rut





Female woodland caribou disperse in the mountains during calving to avoid predators.

•The calving period for woodland caribou is from May 7 to June 8 with a median peak of calving on May 17.

Calving Survey 2007

- We conducted a survey of the RSA on June 14-15, shortly after the calving season was over.
- We assumed that the relative abundance of cow caribou observed at this time would be representative of caribou that calved in the Project Area for that year.
- We found a total of 75 caribou in 16 groups ranging in size from 1 to 11 individuals consisting predominantly of cow caribou (79%).

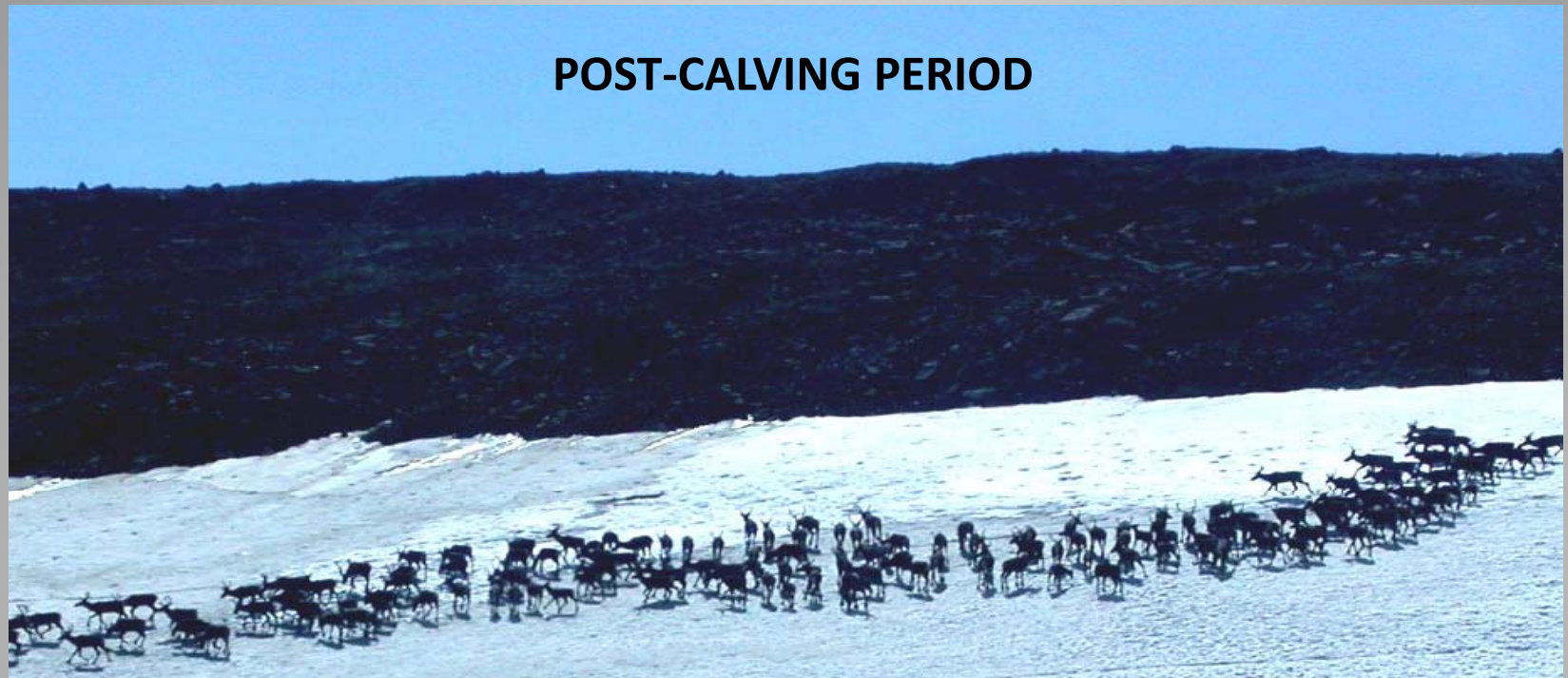
Calving Season – Howard Pass - 2008

- **In 2008 we conducted another calving survey of the RSA earlier in the calving period on May 29.**

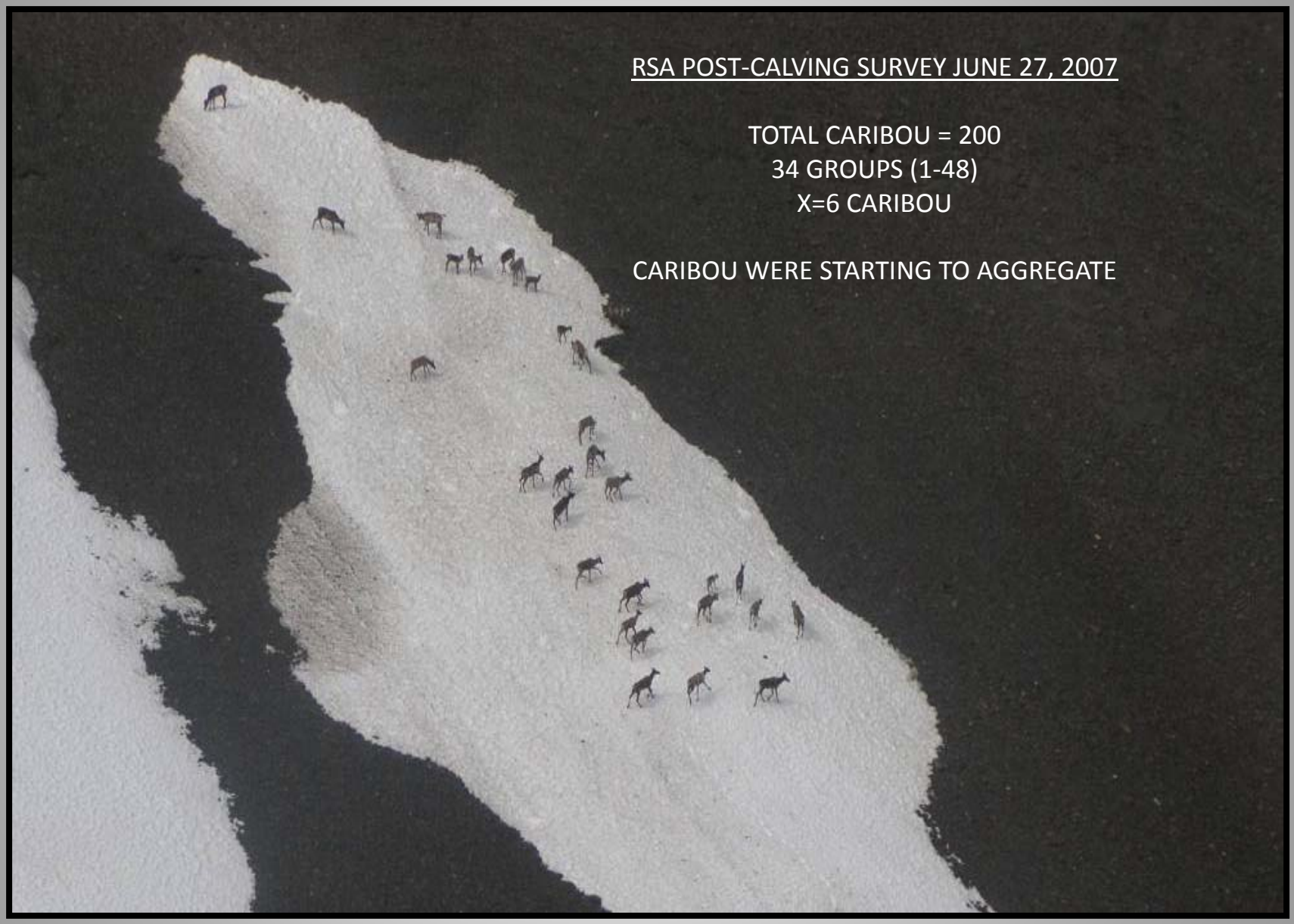
- **We found a total of 10 caribou comprising 7 cows and 3 calves.**

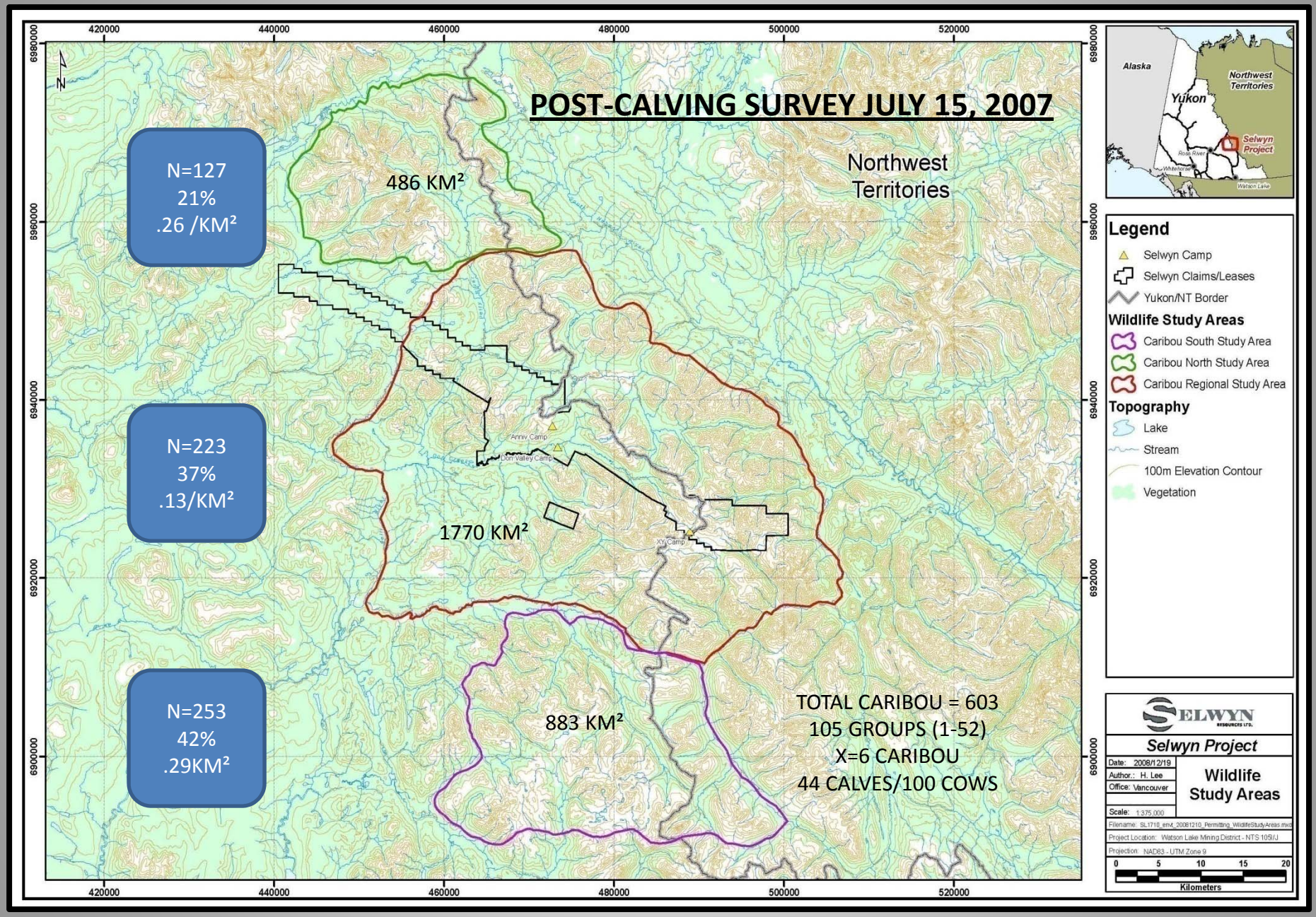
- **Their wide-spread spacing strategy during this period not only increases the search intensity of predators – *"it also makes it difficult for biologists to find them".***

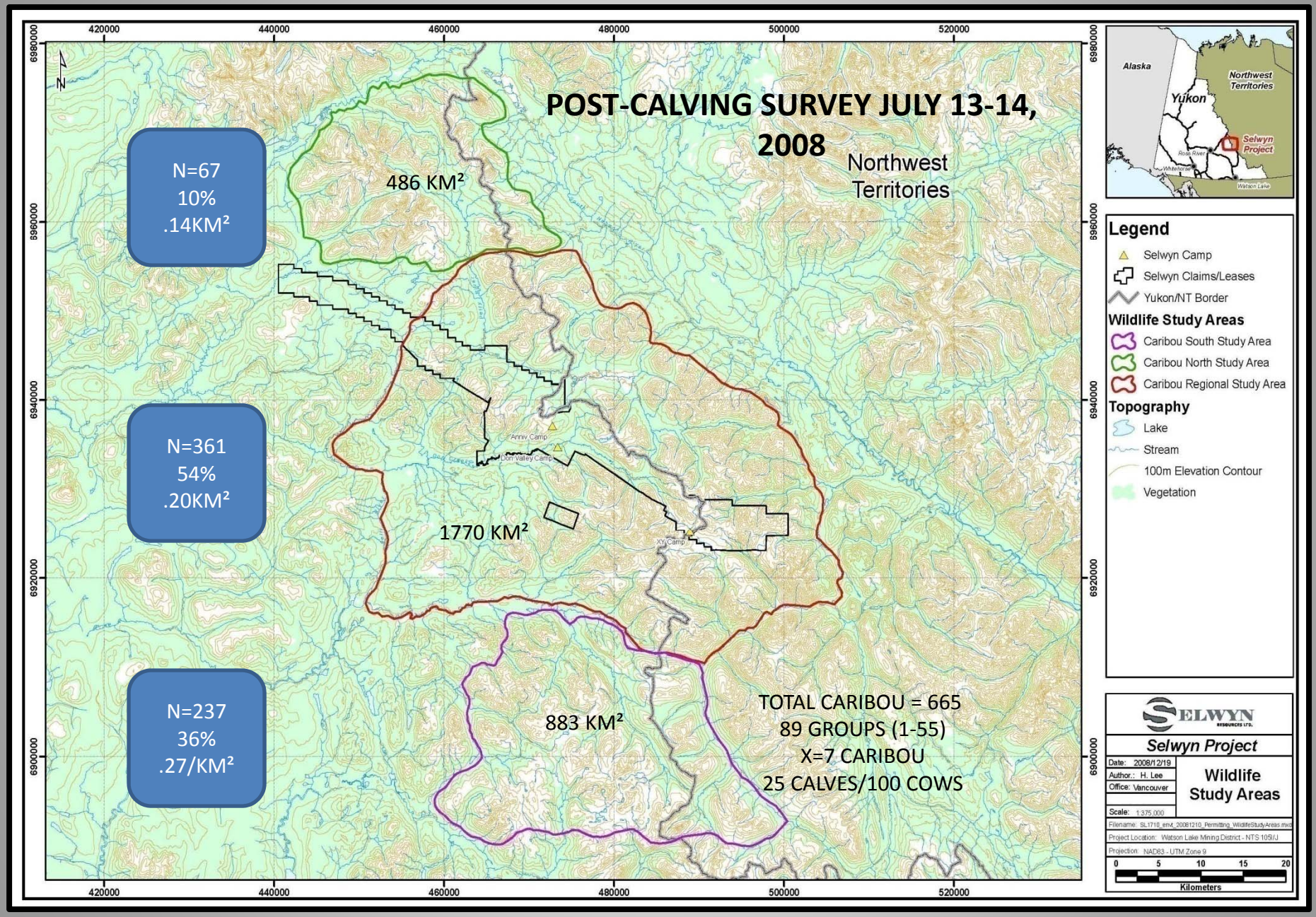
POST-CALVING PERIOD



- Caribou have a limited time span during summer for growth and building new fat reserves for coming winter.
- Constraints on the ability of caribou to feed optimally during this period of high forage quality and availability could have a negative affect on their body condition.
- Caribou make use of high elevation slopes and ridge tops to avoid insects.
- Caribou also make use of snow patches on warm days to avoid insects and thermo regulate







FALL RUT COUNTS 2007 & 2008

- We worked collaboratively with the Yukon Department of Environment

RUT COUNT 2007

Finlayson Caribou Herd

- We counted a total of 1061 caribou most of which (94%) were found in the Pelly Mountains south of the Robert Campbell Highway.
- The calf/100 cow ratio was 30.5/100 - since 1999 FCH calf recruitment has averaged only 17.3 calves/100 cows

Nahanni Caribou Herd

- We counted a total of 389 caribou south of the Project Area. The calf/100 cow ratio was 17.1/100.

Project Area

- A total of 57 (5%) caribou ranging in group sizes of 1-15 animals were found in the Project Area suggesting that most caribou had already moved out of the Project Area since post-calving presumably to rutting grounds in closer juxtaposition to winter range.

RUT COUNT 2008

Finlayson Caribou Herd

- A total of 712 caribou were tallied most of these caribou (69%) were found in the Pelly Mountains south of the Robert Campbell Highway.
- The calf/100 cow ratio decreased from 2007and was 16.0 .

Nahanni Caribou Herd (Southern Range Area)

- A total of 245 caribou in 24 groups were classified yielding a calf/100 cow ratio of 9.5

Project Area

- We found a total of 151 caribou in 14 groups ranging in size from 1 to 40 individuals, with a mean groups size of 11 caribou – a large variation from 2007.
- The calf/100 cow ratio was 21.4/100.
- Subsequent relocations found that caribou captured in and near the Project Area moved southeast onto the traditional winter range of the Nahanni herd.

Combined Survey Results (range-wide area)

- When we combine results found for caribou surveyed range-wide and in the Project Area we find a total count of 396 - similar to that found in 2007 (N=390). The combined ratios from both surveys were 13.9 calves/100 cows.

CONCLUSIONS

- There are good baseline data that are representative of conditions prior to development.
- Surveys making use of established protocols can be carried to examine conditions during and after development.
- We have acquired comparative baseline data on the distribution, relative abundance, group dynamics and population characteristics of caribou inhabiting the Project Area.
- Elements of the FCH and NCH clearly make seasonal use of the area.
- The post-calving period is when caribou make extensive use of the area.
- There appears to be alternate high-quality habitat during the post-calving period should some displacement occur.
- Spatial models ('Zone of Influence') can be developed to evaluate this and provide a predictive tool for decision makers.
- Radio-telemtry study of the NCH presently being carried out over the next four years will provide a more comprehensive understanding of landscape use of this herd – information to better mitigate potential impacts from development.
- The long term recruitment rate for the both the FCH and NCH is consistent with that of herds in slow decline (Yukon Caribou Management Guidelines 1986).
- The present status of these herds therefore requires the focus of responsible management authorities to continue to monitor and manage these populations so that they do not become threatened.

QUESTIONS?

THE END