TESLIN BURN MOOSE SURVEY RESULTS SUMMARY 2004

Yukon
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Fish and Wildlife Branch
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Copies available from:
Yukon Department of Environment
Fish and Wildlife Branch, V-5A
Box 2703, Whitehorse, Yukon Y1A 2C6
Phone (867) 667-5721, Fax (867) 393-6263
E-mail: environmentyukon@gov.yk.ca

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2004 Teslin Burn Moose Survey Results Summary

We conducted a stratification type survey (see Gasaway et al. 1986; Ward et al. 2000) of the Teslin Burn area between November 25 and 30, 2004. The survey area extended from Teslin Lake and the Alaska Highway, southwest to the Atlin Road and B.C. border (see Map 1). It included Game Management Subzones 9-08 through 9-11 and encompassed approximately 2542 km^2 of moose habitat. This was the first survey of the area since 1984 (Markel and Larsen 1987) and the primary objective was to acquire more up to date information on relative moose abundance and distribution. Assessing moose population composition and habitat were secondary objectives.

A forest fire that swept through much of the region between Teslin Lake and Little Atlin Lake in 1958 created extensive areas of willow regeneration interspersed with residual patches of unburned mature spruce and pine. Other forest fires have also burned or re-burned relatively small portions of the area since the 1958 fire. The resulting mosaic of high quality moose habitat undoubtedly played a key role in the high moose density (>400 moose/1000 km^2) recorded in the area in the early 1980s. Local knowledge indicates that habitat quality and moose abundance have been declining since at least the early 1980s.

We flew a total 22.8 hours of flight time to conduct our current survey. This included 14.6 hours of actual search time (0.34 minutes per km^2) and 8.2 hours ferrying to and from the survey area. Survey crews included YTG Fish and Wildlife staff and local observers provided through the Teslin Renewable Resource Council and Teslin Tlingit Council.

Moose were observed in small groups (generally 4 or less) throughout the survey area but were most numerous in sub-alpine zones associated with the mountain range that runs north-south through the middle of the survey area (see Map 2). We saw a total of 142 moose (130 adults and 12 calves) during the survey. This translates to a sighting rate of 0.16 moose per minute of survey time. Based on the regression model developed by Ward et al. (2000) this indicates an average density of 156 moose per 1000 km^2 (90% C.I. 84-228 moose/1000 km^2) or 395 (90% C.I. 214 - 580) moose in the survey area. In contrast there were an estimated 1050 (90% C.I. 867 – 1240) moose in the area when last surveyed in 1984 (Markel and Larsen 1987), nearly three times more than our present estimate.

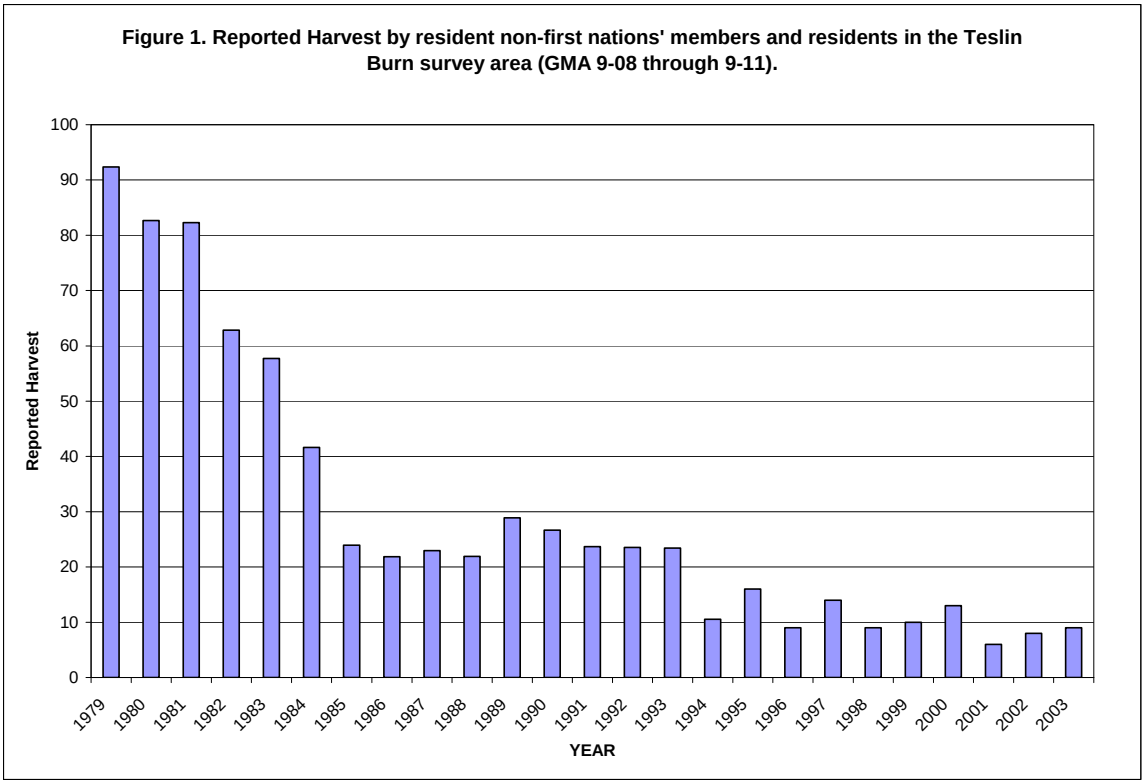
The observed 8.5% calves in the population is quite low and generally would not be considered sufficient to maintain a stable moose population. Similar recruitment rates were observed during a subsequent 2004 survey of the Nisutlin South (6.8% calves) and Whitehorse south/Carcross (9.7% calves) areas. These numbers contrast sharply with the relatively high proportion of calves observed during 2004 surveys in the Faro (17% calves) and Haines Junction (16% calves) areas. Although the techniques used during the Teslin Burn, Nisutlin South and Whitehorse/Carcross surveys tend to under-estimate recruitment because cows with calves frequently segregate into denser forest cover types where sightability is relatively low, it is unlikely that this bias would be sufficient to

account for the difference in recruitment rates observed in these survey areas. Environmental factors are likely responsible for at least a portion of the differences noted.

Most of the moose groups observed were identified primarily by age (adults or calves). Of the 81 individuals in 28 groups that were classified to sex and age; 2 were yearling bulls, 24 were mature bulls, 43 were cows and 12 were calves. Based on this sample, there were 59 mature bulls/100 mature cows, well above the minimum acceptable ratio of 30 mature bulls/100 mature cows. In contrast to the low percent calves observed for the entire survey area, the ratio of 29 calves per 100 mature cows calculated for this classified sub-sample is within the 25 to 30 calves/100 cows generally considered sufficient to maintain a stable moose population. The difference may be due to the low number of individuals in the classified sample or possibly because of local differences in calf survival rates.

Moose harvest records provide further evidence of declining moose abundance in the area. In the late 1970s and early 1980s more than 80 moose per year were reported harvested in the area by resident non-first nations' members and non-residents. Since 2000 the reported non-first nations' harvest has ranged between 6 and 12 moose per year (Figure 1). Our observations during this survey also agree with local reports that much vegetation regenerated after the 1958 fire has now grown beyond the reach of moose. Although it is difficult to accurately estimate vegetation heights during aerial surveys, in many cases willow stands appeared to be in excess of 10 feet and conifer regeneration was well advanced.

In addition to moose, a number of other wildlife sightings and sign were also noted during the survey. Extensive caribou sign and a total of about 85 caribou were recorded. Most of these were concentrated in the area south and east of Mt Bryde. Another lesser area of caribou activity was noted in the west-central portion of the survey area around the Snafu Lake chain. Four mountain goats and associated sign were seen at the south end of White Mountain. A wolverine was seen southeast of Bryde Lake. A series of active (fresh digging) dens, believed to be fox, were recorded on an exposed southeast facing slope on the west side of the creek flowing into the south end of Teenah Lake. Finally, a moose kill and tracks of 4+ wolves were noted northwest of Narrows Lake in the southeast corner of the study area.



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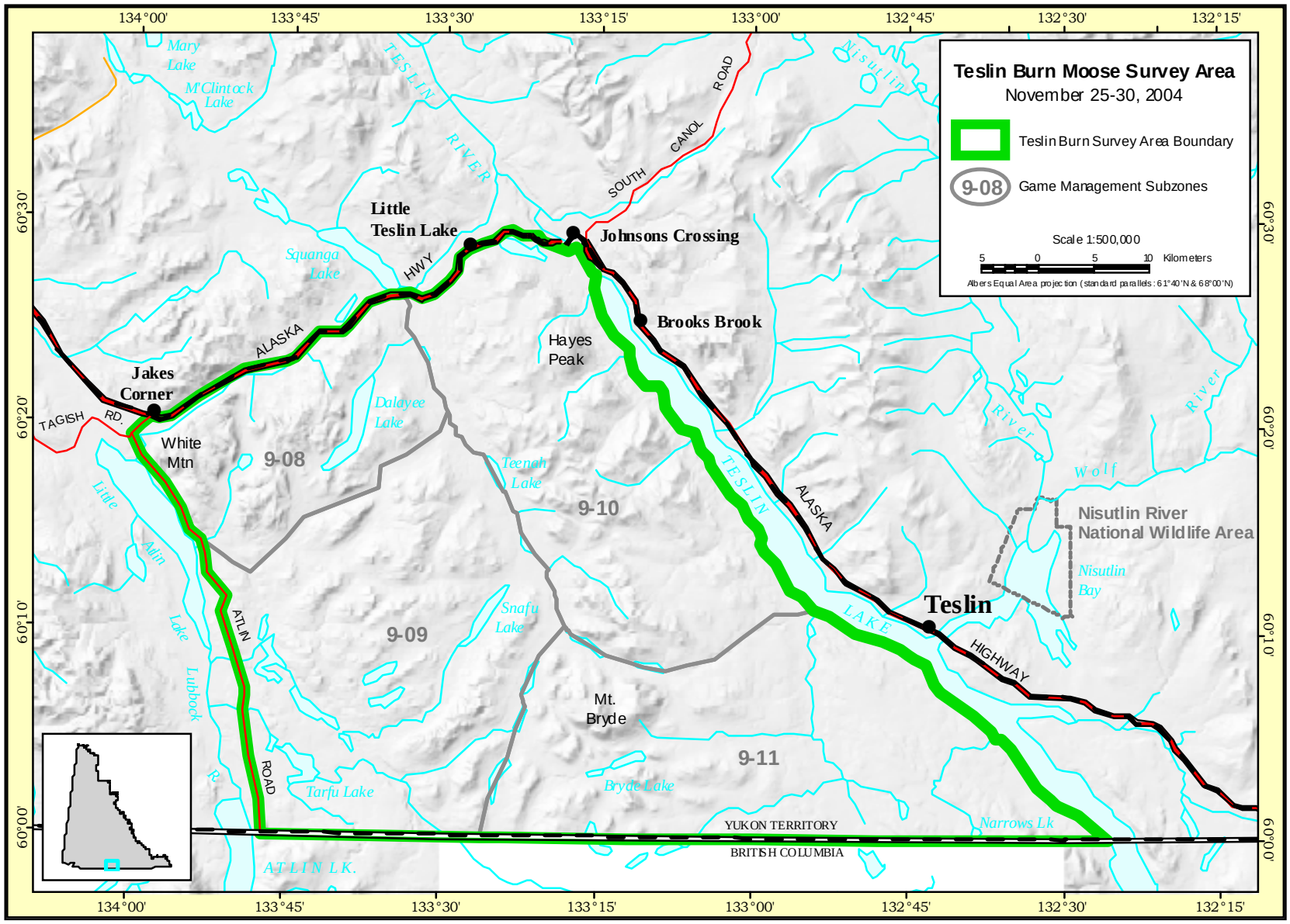
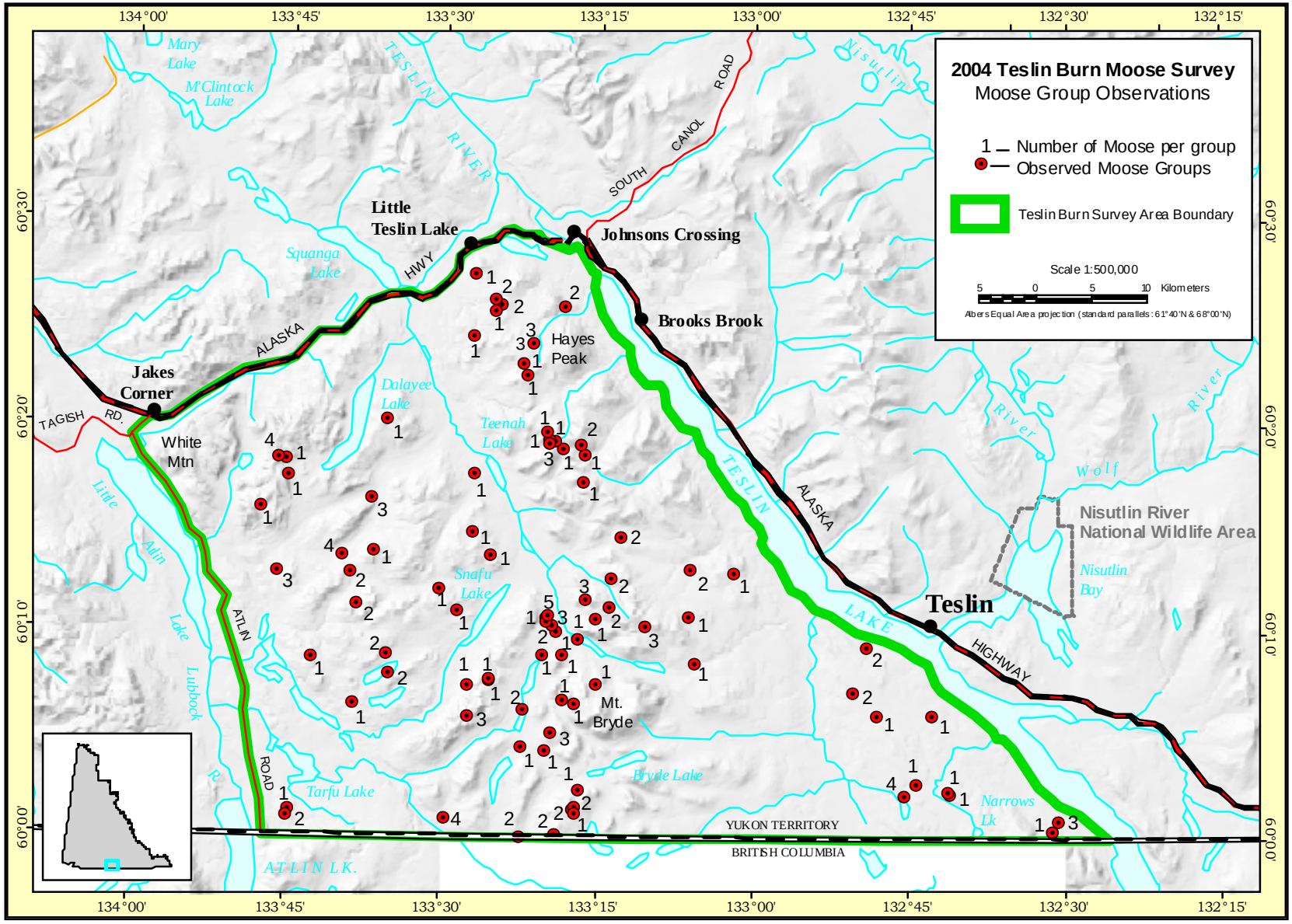


Map 1. 2004 Teslin Burn Moose Survey Area



Map 2. Moose Groups Observed in the 2004 Teslin Burn Survey Area

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