SUMMARY OF 1998 FARO MOOSE COMPOSITION SURVEY RESULTS

Prepared by:
No Known Author

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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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Purpose

We did a moose count in the Faro area (Game Management Subzone 4-45 and surrounding area) between November 23-28, 1998. The area surveyed covered approximately 4064 km^2 and ran from the Tay River in the north, to the Pelly River in the south; and from the junction of the Pelly and Tay Rivers on the west, to as far east as Connolly Lake. The area was divided into eight survey blocks for comparing moose abundance and population composition (see attached map).

In 1997, a more intensive helicopter survey of Game Management Subzone (GMS) 4-45, immediately north of the Faro mine was conducted in response to local concerns about moose harvest levels in the area. That survey suggested that harvest levels in accessible portions of GMS 4-45 may be too high leading to low numbers of bulls in the moose population. This year's survey was conducted to follow up on last year's survey findings and to address local questions about moose distribution, abundance and population composition in areas adjacent to GMS 4-45.

The 1998 survey was done using a fixed-wing airplane with a pilot and one observer. We flew about 32 hours to complete the survey. Survey conditions were generally good with enough snow cover and frost on the shrubs to allow for good tracking and spotting. On average, we used a little less than one half minute of flight time per square kilometer to search the area. Most of the effort was used in sub-alpine and alpine areas where moose were expected to concentrate. Less search effort was expended on lower elevations and heavily forested areas where moose are less likely to occur at that time of year. Strong winds kept us from surveying some valleys. The location, age and sex of moose observed was recorded directly onto 1:50,000 maps.

Survey Results and Discussion

Overall moose abundance in the survey area was relatively high by Yukon standards. We counted a total of 1189 moose in the 8 survey blocks that made up the survey area (see Table 1) for a minimum average density of 292 moose for every 1000 square kilometers. Actual moose densities in the Faro area are undoubtedly somewhat higher as our 1998 count makes no allowance for moose missed during the survey. Most areas of Yukon have moose densities of less than 250 moose for every 1000 square kilometers.

Highest moose densities were in the Blind Lakes area and in GMS 4-45 (the area surveyed last year). It is difficult to compare the number of moose seen in GMS 4-45 this year with our 1997 population estimate for the same area because of differences in the survey techniques used, but based on

numbers seen during the two surveys, it seems likely that moose abundance has not changed significantly.

Overall, we observed 30 calves for every 100 cows during the 1998 survey. Thirty calves for every 100 cows is the minimum number generally considered sufficient to maintain stable moose populations. Calf numbers, however, varied considerably between survey blocks (Table 1). While calf numbers in the Tay Mountain, Rose Mountain, and Mount Mye areas were well above the 30 calves for every 100 cows threshold for maintaining stable moose populations, calf numbers in the Twopete and Mt Connolly areas were well below this level. GMS 4-45, and the Teddy Ck, and Blind Lakes areas had about 30 calves for every 100 cows.

The 26 calves for every 100 cows observed in GMS 4-45 during this year's survey is somewhat lower than our estimate of 35 calves for every 100 cows in the area in 1997. This change may, however, be at least partially due to differences in the survey technique used and areas searched. In any event calf numbers in both years were near the minimum generally considered necessary to maintain stable moose populations.

We generally feel that moose populations should have at least 30 mature bulls for every 100 mature cows to ensure that all the cows are bred. All of the eight survey blocks in our 1998 Faro survey area had more than this minimum acceptable bull/cow ratio. It is interesting to note, however, that the lowest observed bull/cow ratios were in GMS 4-45 and around Mount Mye, immediately north of Faro. These areas are the most accessible and therefore likely to receive the highest hunting pressure. It is also interesting to note that substantially fewer moose were seen near the access corridors in GMS 4-45 than in more remote parts of the zone.

Between 1993 and 1997 hunters reported harvesting an average of 51 moose per year in GMSs overlapping our 1998 survey area. With the exception of GMS 4-45, which was surveyed in 1997 and 1998, it is difficult to assess the impact of this harvest on local moose populations. There are two reasons for this. First, our 1998 survey area included only portions of GMS 4-38, 4-40 to 4-41, 4-43 to 4-46, 4-48, and 4-51. Since harvest is reported only to the level of GMS it is impossible to know what portion of the reported harvest was taken from within the survey area. Second, our 1998 survey was not designed to estimate the total number of moose in the area, which is needed to accurately weigh harvest against abundance.

Based on our minimum count of 1189 moose in the survey area, at least 45 to 50 moose per year can probably be harvested from the survey area without hurting the population. The total sustainable harvest for the GMSs contained all, or partially, within our 1998 survey area is probably somewhat higher, however, because only portions of these GMSs were surveyed and there are undoubtedly more moose in the area than observed during the survey.

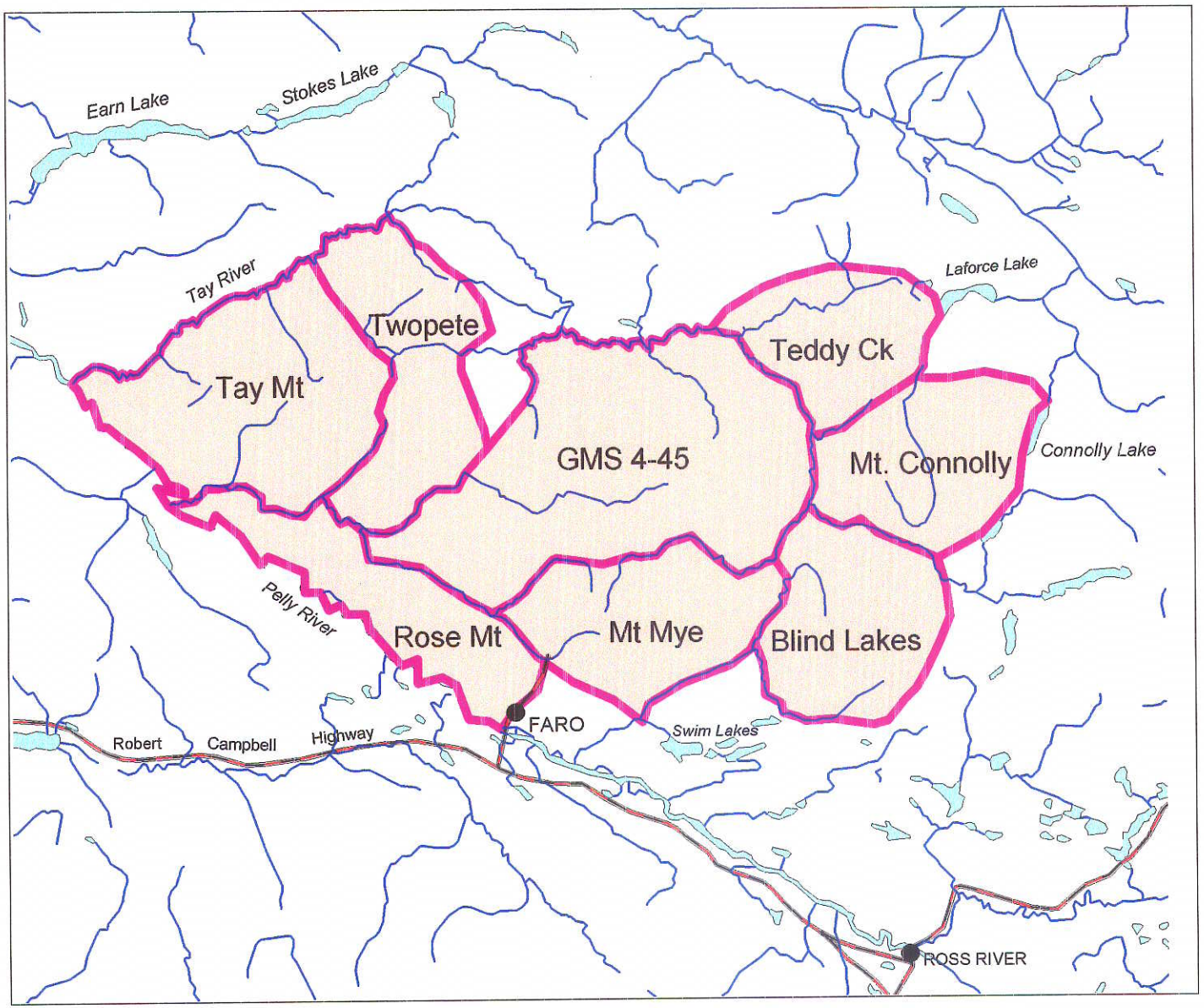
Given this, the current overall moose harvest within these GMSs is probably well within sustainable limits.

Although the moose harvest in the 1998 survey area is likely within sustainable limits; there are several lines of evidence to suggest that the harvest within GMS 4-45 may be at, or near the sustainable limit. Based on our 1997 population estimate of 566 moose, GMS 4-45 can likely sustain a harvest of about 20 to 25 moose per year. While the average reported harvest for this GMS between 1993 and 1997 was only 16 moose per year, local knowledge suggests that the total harvest is probably closer to 20 moose per year and may be 25 or more moose in some years (at least 26 in 1998). These sources also indicate that hunting pressure in the area has been increasing in recent years. Concern over current harvest levels in GMS 4-45 is supported by two lines of evidence: 1) fewer moose were seen near access corridors than in more remote portions of the subzone and, 2) in comparison to other moderately harvested populations surveyed throughout the Yukon, relatively few bulls were observed in the population during both the 1997 and 1998 surveys.

Recommendations

In summary, overall moose abundance in the survey area is relatively high by Yukon standards. The number of mature bulls and calves observed in the area during our 1998 survey also suggests that the regional moose population is likely stable. However, we continue to have concerns about high harvest pressure in the accessible portions of GMS 4-45. These concerns are based on local reports on current harvest levels and increasing hunting pressure; fewer moose seen in accessible portions of GMS 4-45; and the relatively low numbers of mature bulls seen during the 1997 and 1998 surveys.

Faro November Moose Composition Count, 1998



Legend

- Towns
- Rivers
- Lakes
- Highways
- Moose Composition Blocks

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S

30 0 30 60 Miles

Table 1. Summary of 1998 Faro Moose Composition Survey Results.

Survey Block	Area (km^2)	Number Of Bulls	Number Of Cows	Number Of Calves	Unknown Age/sex	Total Number of moose	Density (moose/ 1000 km^2)	Calves/ 100 cows	Bulls/ 100 cows
GMS 4-45	1034	132	291	76	0	499	483	26	45
Tay Mt.	646	33	40	17	1	91	141	43	83
Twopete	438	16	32	5	0	53	121	16	50
Rose Mt.	373	8	8	4	1	21	56	50	100
Mt. Mye	421	18	45	24	4	91	216	53	40
Teddy Ck.	321	20	31	9	0	60	187	29	65
Mt. Connolly	412	47	61	9	0	117	284	15	77
Blind Lakes	419	95	118	44	0	257	613	37	81
TOTAL	**4064**	**369**	**626**	**188**	**6**	**1189**	**292**	**30**	**59**