FILE REPORT

Aerial Moose Survey of Hyland Forest Products 1988-89 Cutting area in the Meister River valley and two Control areas.

November 29, 1988
&
March 18, 1989

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Introduction:

The Fish and Wildlife received funds through the Resource Transportation and Access Program (RTAP) to conduct moose surveys in the Meister River valley. The objectives of the study are:

1. Determine the early-winter and late-winter distribution of moose in the segment of the Meister Valley scheduled for road construction and logging in the fall and winter of 1988-89.
2. Make an assessment as to the quality and abundance of moose winter range in the above area.
3. Obtain information on the impacts of the haul road and logging operation upon moose.
4. Obtain baseline information on moose abundance which can be used to assess how the moose population responds to regeneration of cutover areas.
5. Obtain information for designing forest harvesting guidelines.

These objectives and other details of the proposal submitted to RTAP are contained in Appendix "A".

Methods:

On 29th November 1988 the early-winter survey was carried out by Len Mychasiw and Jean Carey. We used a Bell 206 helicopter (CFXZI) operated by Frontier Helicopters Ltd. and piloted by Claude Marchand. We surveyed the 50 km^2 project area and two control areas (Figure 1), each measuring 10 km^2, at an altitude of 100m and speed of 100-130 km/hour.

The control areas are situated on False Pass Creek and Sambo Creek because they are more representative of the project area than adjacent reaches of the Meister River.

The survey was flown along preselected flight lines spaced at 400 m intervals and aligned parallel to the long axis of each area. This allowed for complete coverage of the project and control areas. Sight distance allowed adjacent transects to overlap slightly but the small size of the areas precludes the likelihood of double counting animals. Observations were recorded on a 1:50,000 scale map by the observer seated at the front of the aircraft, who also acted as navigator.

The March 28th survey was carried out by Len Mychasiw and John Russell, using the same methods.

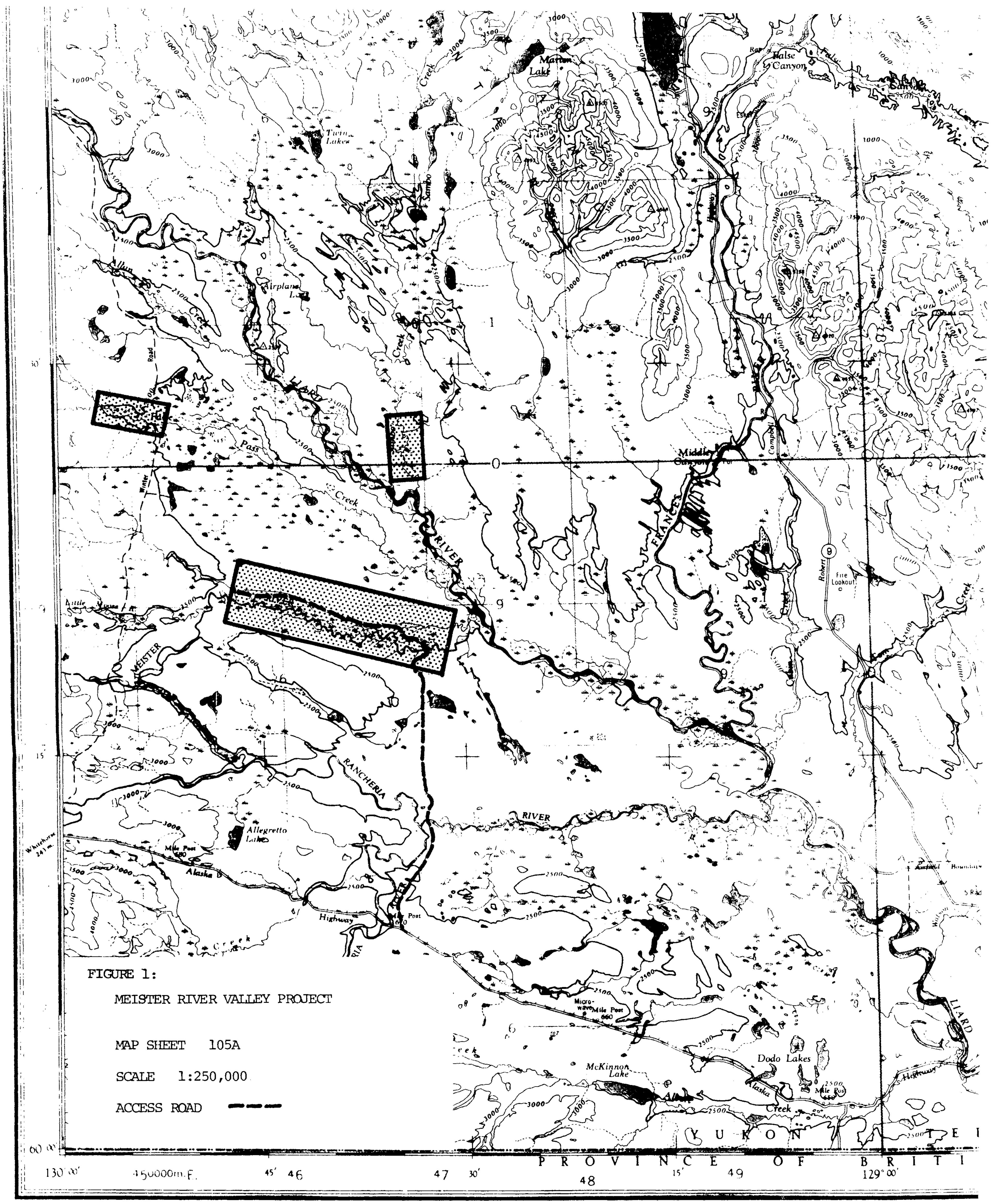


FIGURE 1:

MEISTER RIVER VALLEY PROJECT

MAP SHEET 105A

SCALE 1:250,000

ACCESS ROAD ▬ ▬ ▬

Universal Transverse Mercator Projection
All Elevations in Feet above Mean Sea Level
Contour interval 500 Feet
North American Datum 1927

Magnetic Declination 33°35′ East at centre of sheet, 1950
The variation of the compass needle is decreasing 2 minutes annually

Surveyed, compiled, drawn and printed
by the Army Survey Est. R.C.E. 1948-50.
Aerial photographs by the R.C.A.F. 1948.

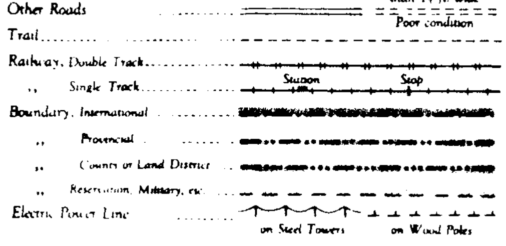
Interim corrections 1979

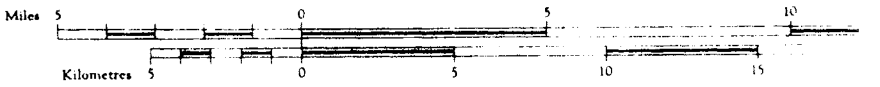
WATSON LA

YUKON TERRITORY

Scale 1:250,000
1 Inch to 4 Miles Approximately

REFERENCE





ROADS -*ROUTES*
hard surface - *pavee*
loose surface - *de gravier*
cart track - *de terre*
trail - *sentier*
Deletions - *Suppressions* x x x x x

Results and Discussion

November 28, 1988

Visibility was reduced to approximately 2 km when we began the survey at 10:00, but it improved gradually to about 20 km by the time we completed the flight 3 hours later. Poor visibility initially hampered navigation but the meander pattern of the river and creeks at the centre of each area, together with other features, allowed for frequent position checks. Thus, only minor corrections were required and the transects overlapped sufficiently to ensure full coverage.

We observed 9 moose in the project area (Figure 2). They were in 2 groups in the portion that had been clear cut in 1974. One group of 6 was comprised of 4 adult males and 2 females. The second group consisted of 3 adult males. We did not observe moose or fresh moose sign in either of the control areas. One old track was noted along the edge of a pond in the Sambo Creek area.

Moose foraging habitat in this segment of the Meister Valley occurs in a narrow band along the stream face. Willow shrubs are best represented on the convex side of stream meanders. Point-bar deposits are of fairly recent origin and willow cover is common on this newly formed ground. Climax vegetation at the valley floor is close-canopy white spruce, followed by a cathenary sequence of mixed spruce-pine which changes to a continuous pine forest on higher and better drained ground. Except at point-bar deposits and some meander scrolls, most flood plains have spruce forest extending right to the active channel.

We did not survey line No. 8 of the Meister block because it is in continuous close-canopy pine. In the March survey, we will drop lines 1, 2, 7 and 8 because they are outside of the area to be cut and have heavy conifer cover. These initial survey results show that the new road to be built along the north side of the Meister Valley (Figure 1) follows the edge of the densely wooded pine upland and will have a negligible effect upon moose and moose habitat, except for the access-related impacts attributed to increased harvest.

Extensive flat bogs were noted between the Meister Valley and False Pass Creek. Tree cover on most bogs is sparse, giving rise to tracts of semi-open ground of up to 3 km^2. Medium-high shrubs were noted in some areas and they could be of some value as moose habitat. This was confirmed by the sighting of 7 moose in a bog just south of Twin Lakes.

March 18, 1989

Meister Block

We reduced the area covered in the Meister study area by dropping transects over continuous stands of pine and spruce. Coverage of the valley floor was increased by making two additional passes.

No moose were observed in the study area, but there were numerous tracks, indicating that they had been active in the shrub zone along the active channel and abandoned meanders.

In order to determine the actual extent of recent use by moose in this segment of the valley, we extended the survey upstream by approximately 10 km, as well as the downstream segment to the confluence with Liard River. There were no tracks above the study area but numerous tracks were seen in the downstream segment and along the Liard River.

The new logging road along the north bank of the Meister has been completed and compartment roads into the cut blocks had been built in three locations. Clear cutting was in progress and one landing had tree-length logs piled in it. We observed one logging truck on the haul road south of Meister River, thus all of the activities associated with forest harvesting are taking place in the study area. The haul road north of the Meister skirts the edge of the 1974 clear cut, putting the entire cutover area where 9 moose were seen in November within view of the road.

False Pass Creek

We observed five moose in this control area. Four of them, three adults and one juvenile, were in stream-face habitat and the fifth one, an adult, was in a semi-open bog some distance from the creek.

Sambo Creek

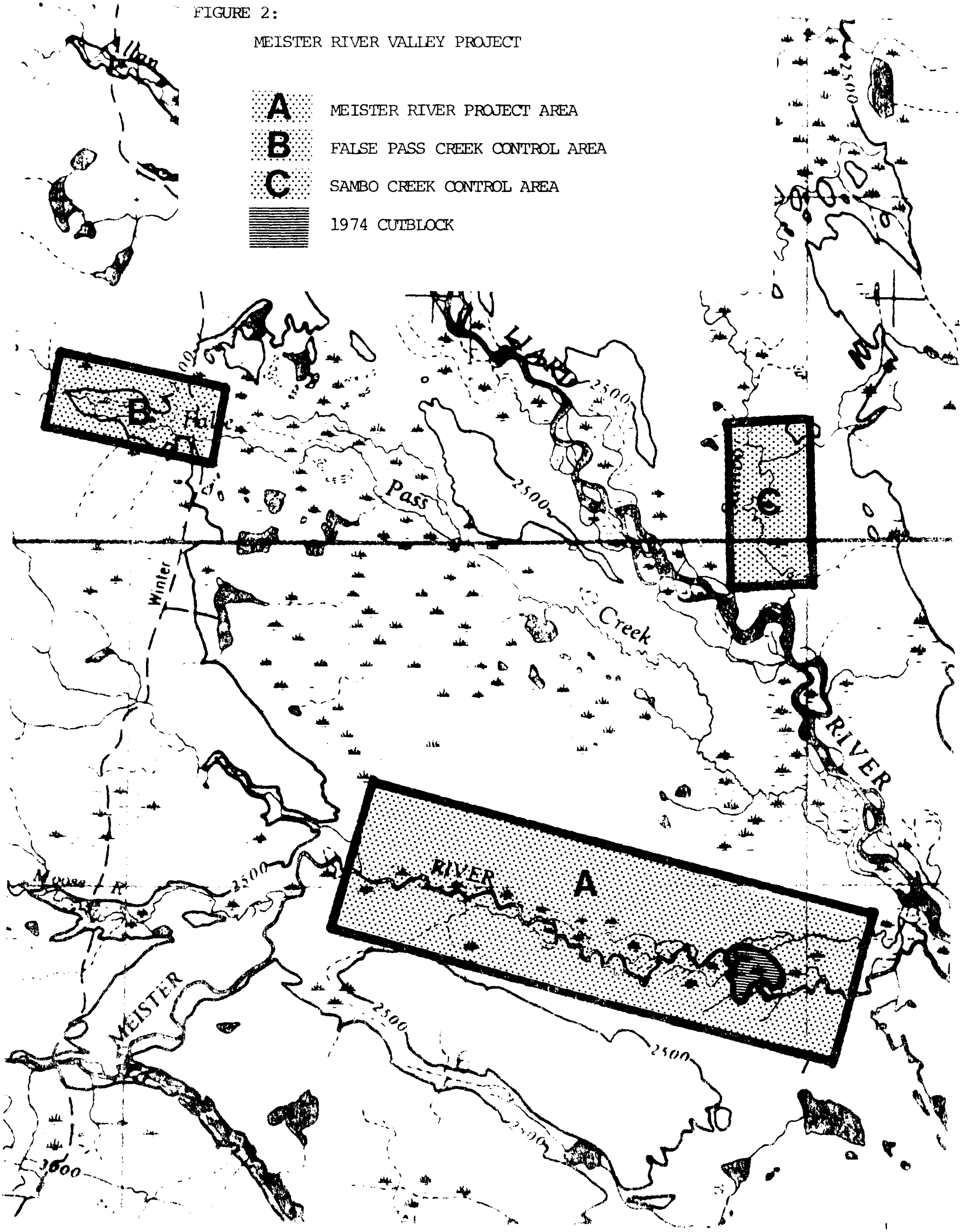
The stream-face cover types and the active channel had numerous tracks, but no moose were seen in this control area. We checked the upstream segment for a distance of about 10 km, but saw no moose or recent tracks. As this block abuts the Liard River, it forms one continuous habitat unit with a corresponding distribution pattern.

Conclusions

The observed pattern of range use by moose is judged to be typical for this region, under winter conditions. Snowfall in the Liard basin is rated as normal this winter. The total snowfall at Watson Lake to March 19th, 1989 is 188.6 cm, compared with the 20 year normal of 209.5 cm for the September-March period. There were no moose above the 2500′ elevation in any of the three survey blocks and little sign of recent use. These observations lead to the conclusion that the moose have moved to lower elevation habitat along the mainstem of the Liard system. This is supported by the sighting of moose in the False Pass block in March, whereas none were seen there in November. It is impossible to determine from tracks exactly how recently moose were in the study area because the last appreciable snowfall (1.2 cm) occurred on March 8th.

FIGURE 2:

MEISTER RIVER VALLEY PROJECT



There is some evidence of a cause-and-effect correlation between the absence of moose from the Meister block and logging operations. Road construction along the Meister was completed in mid-February and logging commenced around March 11th. The inference is that moose moved downstream along the Meister toward the Liard River soon after logging activities started. This conclusion is borne out by tracks and sightings of moose along the Liard.

We made a cursory reconnaissance of the Liard valley from a short distance upstream and downstream of the mouth of Meister River. In this part of the valley floor, we saw five moose and the impression is that it can support a significantly larger number. This fact suggests that moose displaced by logging from the lower Meister can find suitable habitat along the Liard River, thus there is a minimal impact to the population.

Management Considerations

The results of the early- and late-winter surveys indicate that the lower Meister valley, below 2500′ elevation, is a moose wintering area. The absence of moose from the study area during the March survey appears to be related to logging activity. There is sufficient habitat downstream of the logging operations and along the Liard River to support moose displaced from the study area. Follow-up surveys of the area would determine how the pattern of habitat use changes after logging.

Our observations of moose in the 1974 clearcut suggest that short-term displacement of moose by logging can lead to favorable habitat conditions in the long-term. A significant factor in this context is that there was no access into the Meister valley after logging in 1974. With a permanent crossing on the Rancheria River and an all-weather road into Meister valley, both to be completed in 1989, it is highly likely that increased hunting pressure will prevent the moose population from increasing to fill the available habitat. Thus, without exercising some control over hunting pressure, there can be no real benefit to the moose population.

For the purposes of formulating future logging plans, these considerations are critical:

1) An operation of this scale may be allowed to proceed with restrictions as to the size and configuration of the cutblocks. Some short-term impacts from displacement can be anticipated but if, as in this case, there is good winter range in the adjacent segment of river valley, that impact will not be significant.

2) Access management in the form of road closure or limited access hunts must be brought into force. It is a reasonable certainty that local overharvesting of moose will occur as a result of logging roads, particularly since the harvest by

native hunters can occur throughout the year. Under winter conditions, moose are especially vulnerable because of their tendency to congregate along watercourses where logging takes place.

3) Monitoring of moose abundance prior to logging and post-logging should be carried out to determine cause-and-effect relationships. The validity of inferences as to the positive and negative effects of logging upon moose needs to be critically examined. Baseline information to enable this kind of review should include measurements of habitat factors, as well as moose observations, moose abundance and distribution over time.

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