

## **Core High-Elevation Winter Habitat for the Quintette Caribou Herd**

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The Quintette caribou herd is one of the herds included in the Peace Northern Caribou Planning initiative. Radio-collared caribou have been monitored in this herd since 2002 and their range use patterns are well documented. Caribou in this herd use primarily high-elevation habitats for summer (Figure 1) and winter range (Figure 2). Many of the caribou use the central portion of the Rocky Mountains in summer, but most migrate to the eastern edge of the Rocky Mountains and use alpine and subalpine habitats during the winter. Radio-telemetry data have been used in three projects to develop seasonal habitat use models that can be used to identify important habitat areas (Jones et al. 2007, Williamson-Ehlers 2012a, Williamson-Ehlers 2012b).

One of the key management objectives of the Peace Northern Caribou Plan is to protect much of the core high-elevation winter range from industrial activities. Therefore, we integrated the available habitat models and telemetry locations for the Quintette caribou herd to delineate a core area that incorporates most of the high-elevation locations for Quintette caribou in winter. The Williamson-Ehlers 2012b model incorporated more telemetry data than the 2012a model, so we used that version.

1. There were a total of 23,300 winter telemetry locations for the Quintette caribou herd, but 607 of them were for caribou that moved out of the Peace Northern Caribou Plan area in winter, and used habitat within the Prince George Forest District. Those areas are already protected as winter range for the Hart Ranges mountain caribou herd.
2. For the 22,693 winter locations within the Peace Forest District, 1,665 were at low elevations in the Boreal White and Black Spruce Biogeoclimatic zone. Those low-elevation habitats are also used by the Bearhole-Redwillow caribou and habitat management strategies for those areas are being developed.
3. Therefore, we used 21,028 caribou locations to refine core winter habitat for Quintette caribou within the Peace Forest District.
4. The “Very Highly” selected habitat from Williamson-Ehlers (2012b) incorporated 75% of the high-elevation winter locations within 44,713 hectares.
5. The “Very Highly” selected habitat from Jones et al. (2007) incorporated 89% of the high-elevation winter locations within 117,925 hectares. This model missed some of the “Very Highly” selected areas from Williamson-Ehlers (2012b) that contained heavy caribou use.

6. The integrated model that we have developed includes the “Very Highly” selected habitat from Jones et al. (2007) plus the “Very Highly” selected habitat from Williamson-Ehlers (2012b).
7. The integrated model also removed some high-elevation habitat near the height of land of the Rockies that had limited and irregular use by radio-collared caribou.
8. The integrated model for the Quintette caribou herd was separated into two habitat quality classes. “Very Highly” selected habitat from the Williamson-Ehlers model (2012b) was classified as “Very High” quality habitat. “Very Highly” selected habitat from the Jones et al. (2007) model was classified as “High” quality habitat. In situations where the two models overlapped the area was classified as “Very High” quality habitat.
9. The final version of the Core High-Elevation Winter habitat for the Quintette caribou herd (Figure 3) incorporated 95% of the high-elevation caribou locations within the Peace Forest District within 71,276 hectares (Figure 4).

## References

Jones, Elena S., Michael P. Gillingham, Dale R. Seip and Douglas C. Heard. 2007. Comparison of seasonal habitat selection between threatened woodland caribou ecotypes in central British Columbia. *Rangifer* Special Issue No. 17: 111-128.

Williamson-Ehlers, E.P. 2012a. Impacts of industrial developments on the distribution and movement ecology of wolves (*Canis lupus*) and woodland caribou (*Rangifer tarandus caribou*) in the south Peace region of British Columbia. M.Sc. thesis, University of Northern British Columbia. 163 pp.

Williamson-Ehler, E.P. 2012b. Seasonal habitat selection for woodland caribou (*Rangifer tarandus caribou*) across the Peace region of northeastern British Columbia. Unpublished report, B.C. Ministry of Environment.

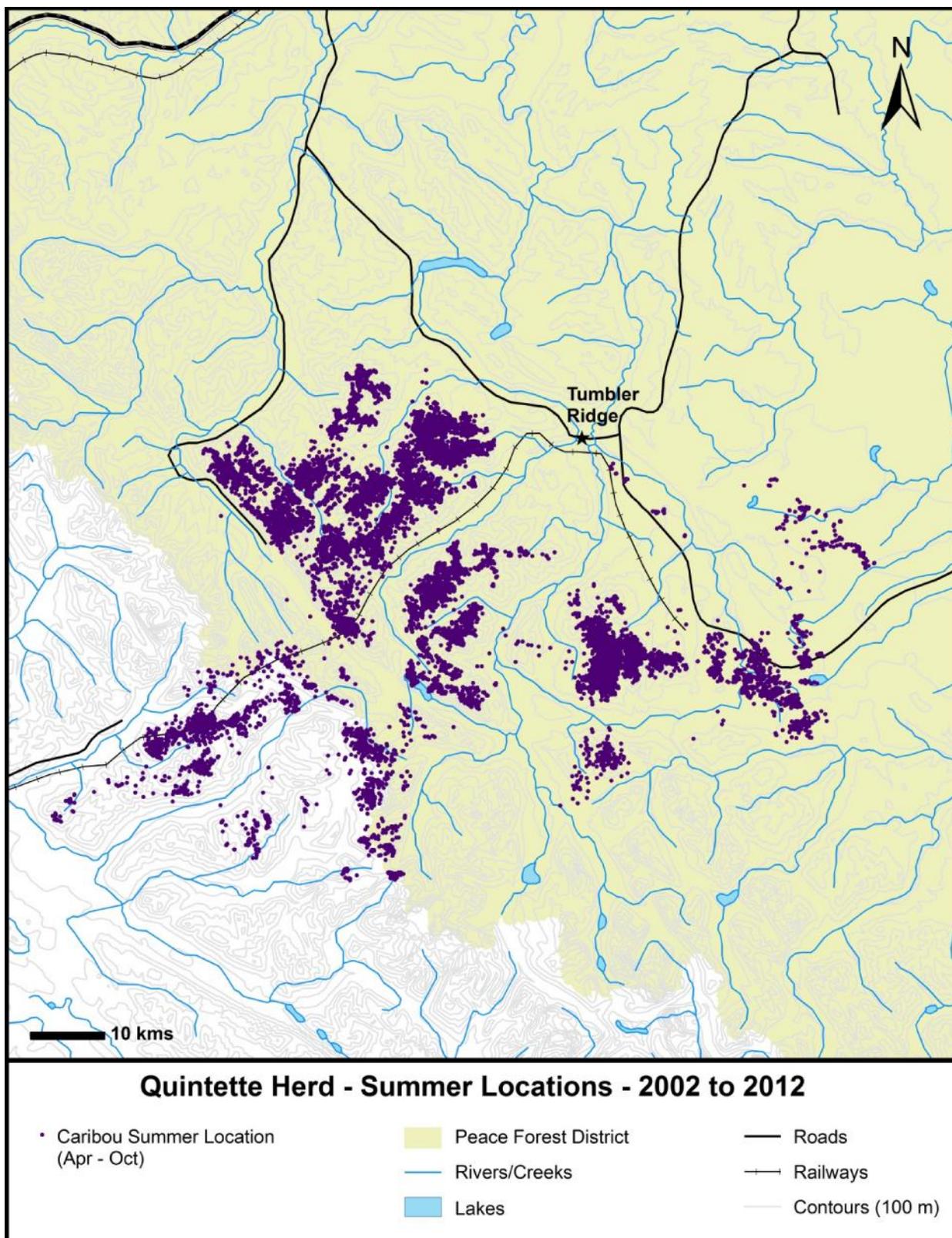


Figure 1. Summer locations (Apr to Oct) for the Quintette caribou herd from 2002 to 2012.

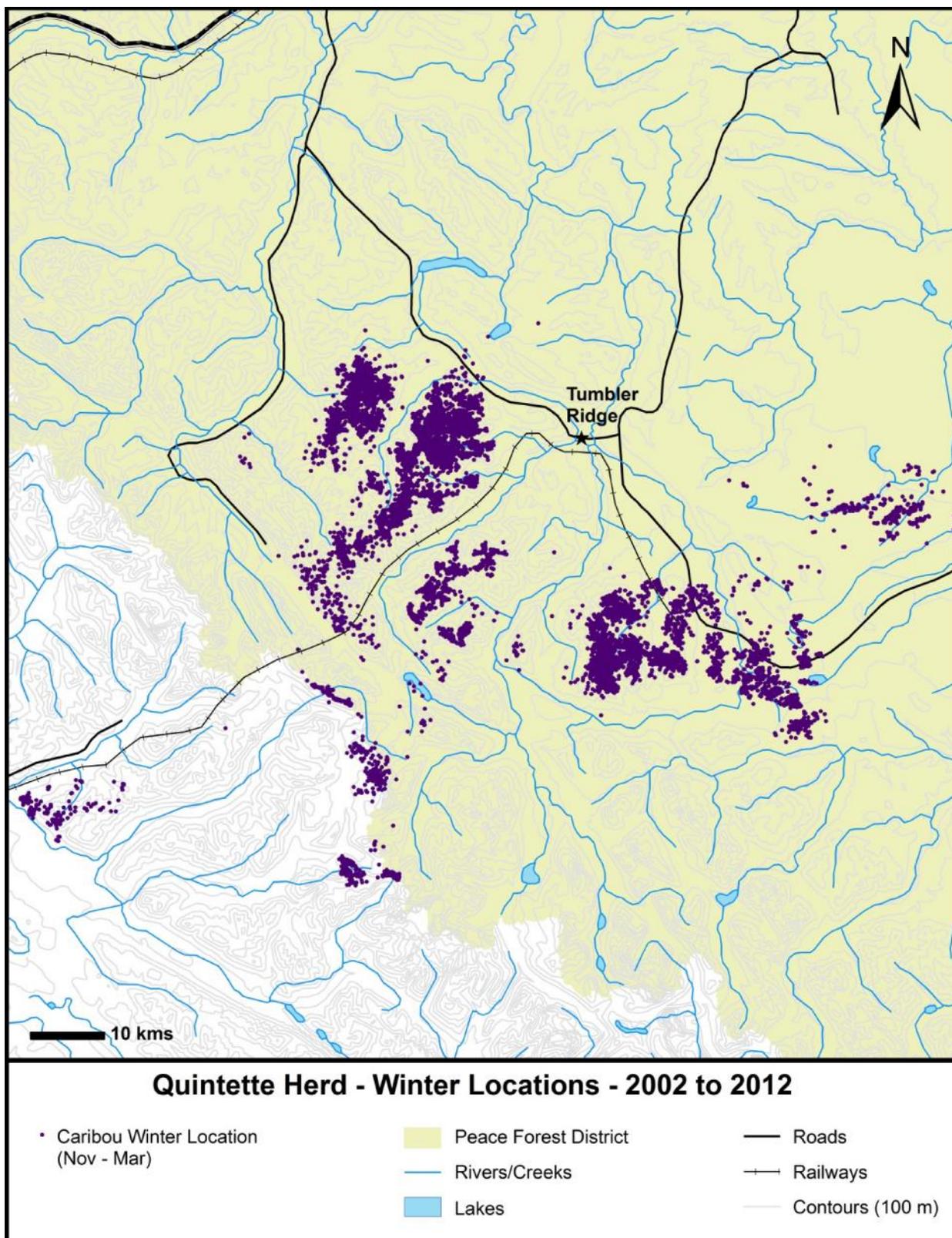


Figure 2. Winter locations (Nov to Mar) for the Quintette caribou herd from 2002 to 2012.

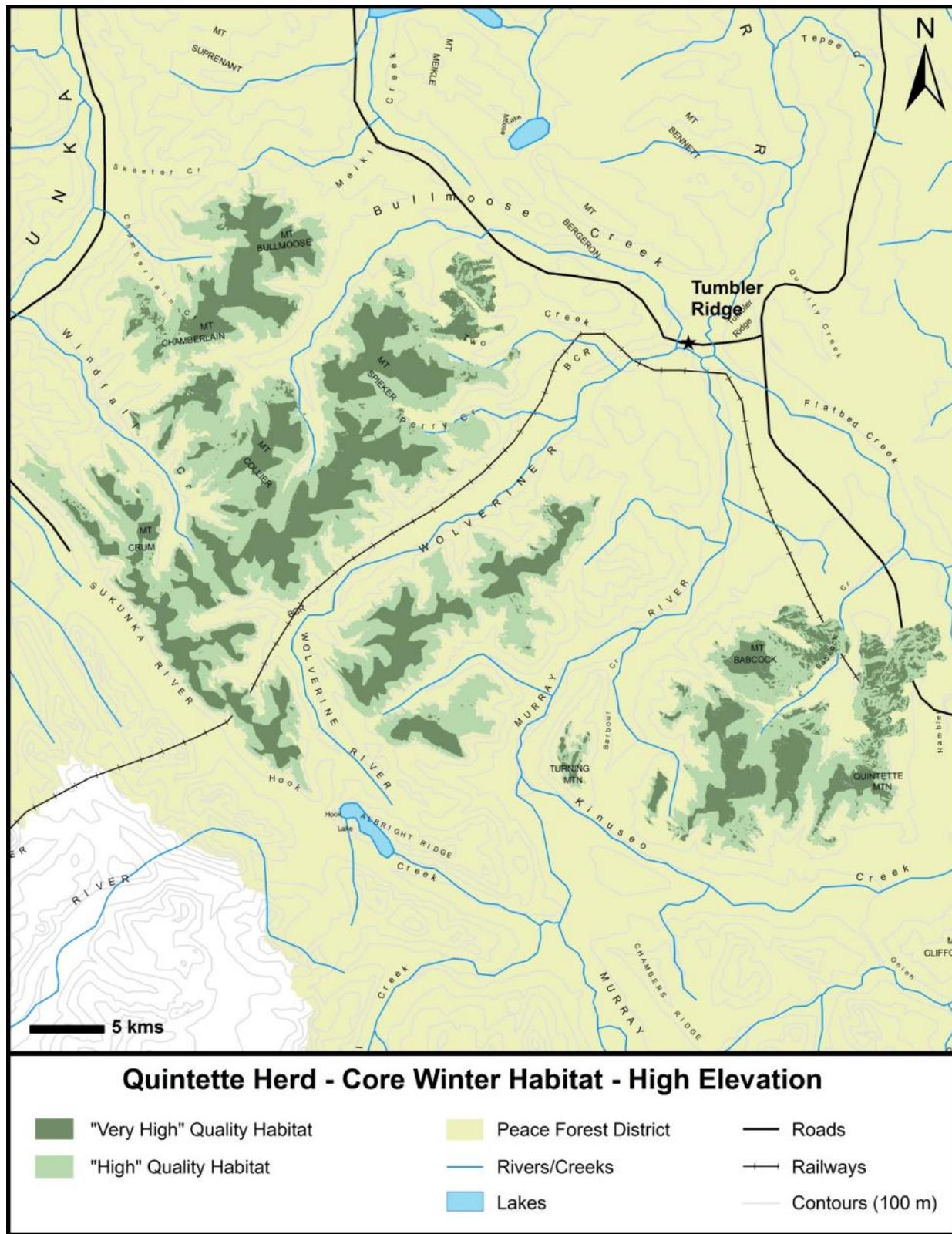


Figure 3. Core High-Elevation Winter habitat for the Quintette caribou herd within the Peace Forest District.

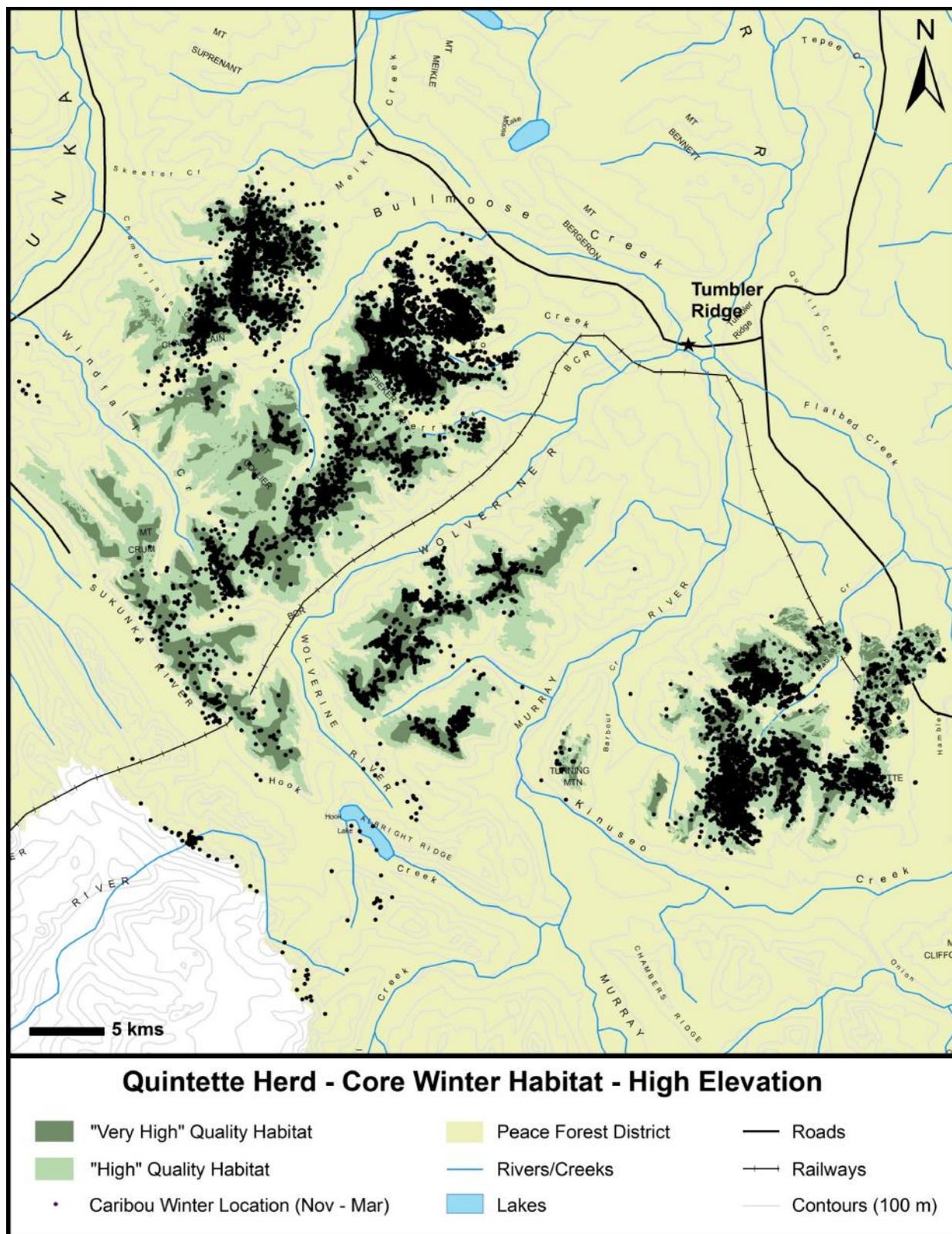


Figure 4. High-elevation winter locations for the Quintette caribou herd from 2002 to 2012 within the Peace Forest District.