

Core High-Elevation Winter Habitat for the Moberly Caribou Herd

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The Moberly 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 Moberly caribou herd to delineate a core area that incorporates most of the high-elevation locations for Moberly 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 8,602 winter telemetry locations for the Moberly caribou herd, but 313 of them were for caribou west of the Clearwater River, within the winter range of the Scott caribou herd. Habitat in that area will be identified and mapped as Scott high-elevation winter range. An additional 5 locations were removed near the headwaters of the Peace River, well beyond the typical winter range.
2. Therefore, we used 8,284 caribou locations to refine core winter habitat for Moberly caribou east of the Clearwater River.
3. The “Very Highly” selected habitat from Williamson-Ehlers (2012b) incorporated 72% of the high-elevation winter locations within 35,246 hectares.
4. The “Very Highly” selected habitat from Jones et al. (2007) incorporated 87% of the high-elevation winter locations within 61,856 hectares.
5. 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).
6. The integrated model also removed some small isolated patches of high-elevation habitat that had no use by radio-collared caribou.

7. The integrated model for the Moberly 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.
8. The final version of the Core High-Elevation Winter habitat for the Moberly caribou herd (Figure 3) incorporated 88% of the high-elevation caribou locations within 68,177 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.

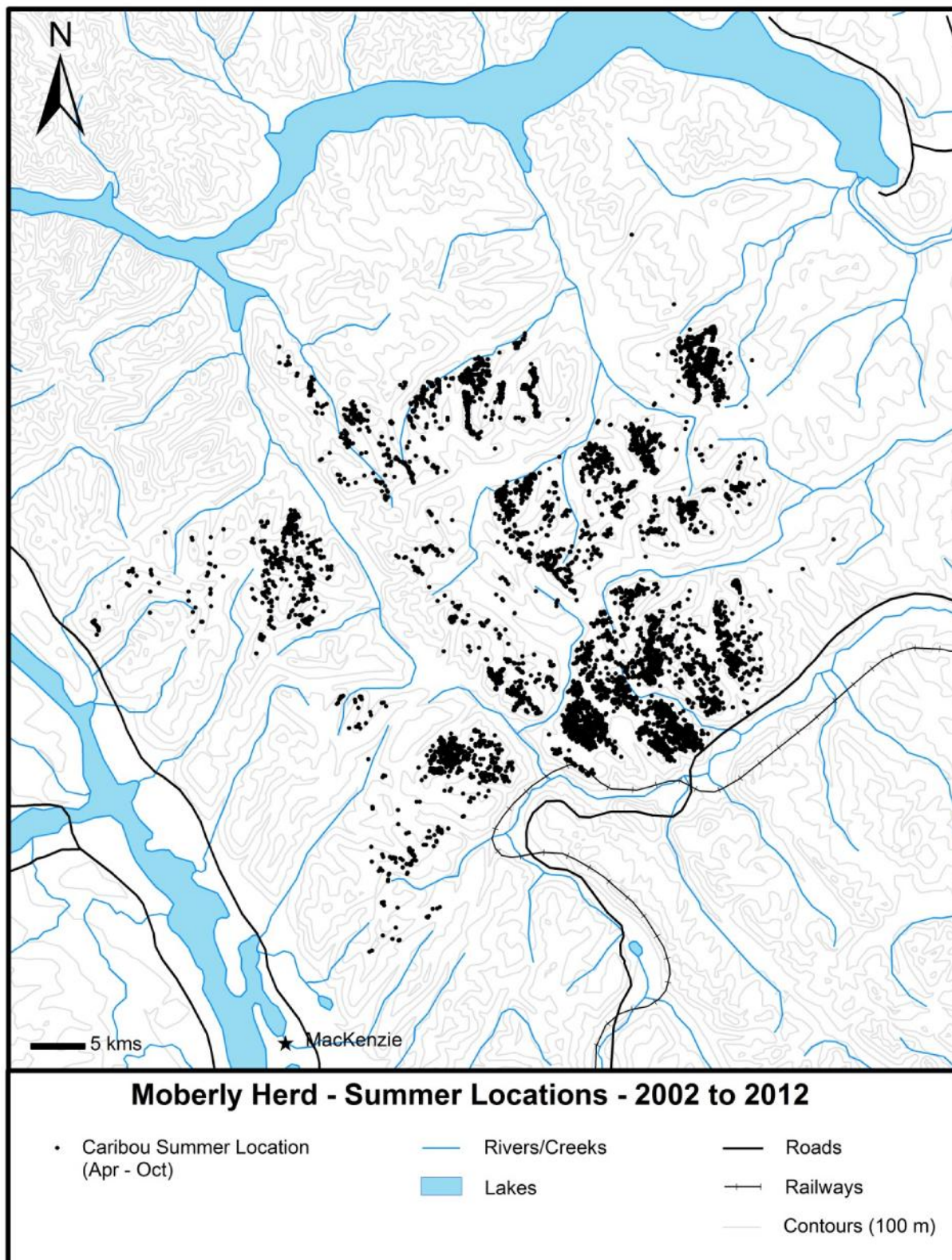


Figure 1. Summer locations (Apr to Oct) for the Moberly caribou herd from 2002 to 2012.

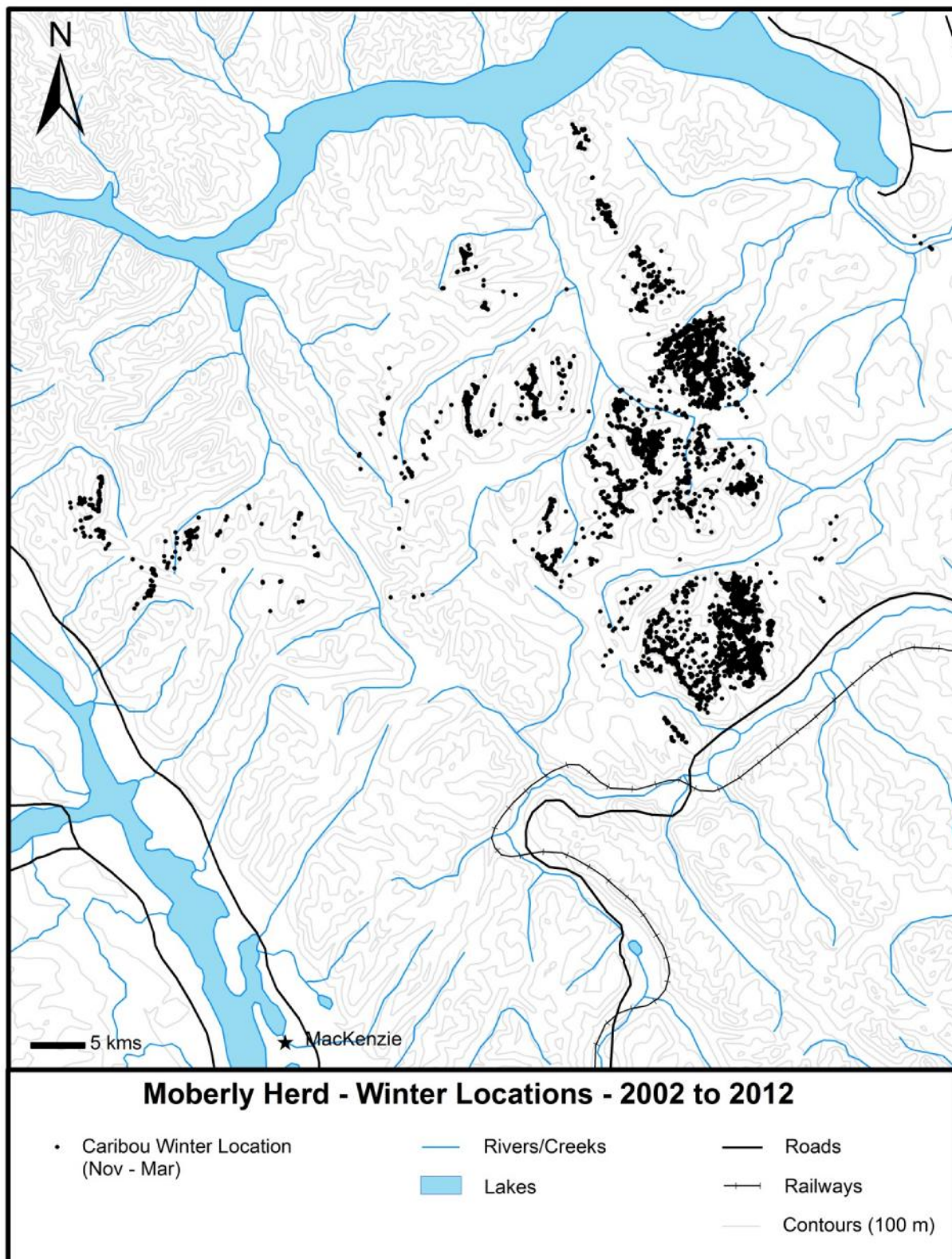


Figure 2. Winter locations (Nov to Mar) for the Moberly caribou herd from 2002 to 2012.

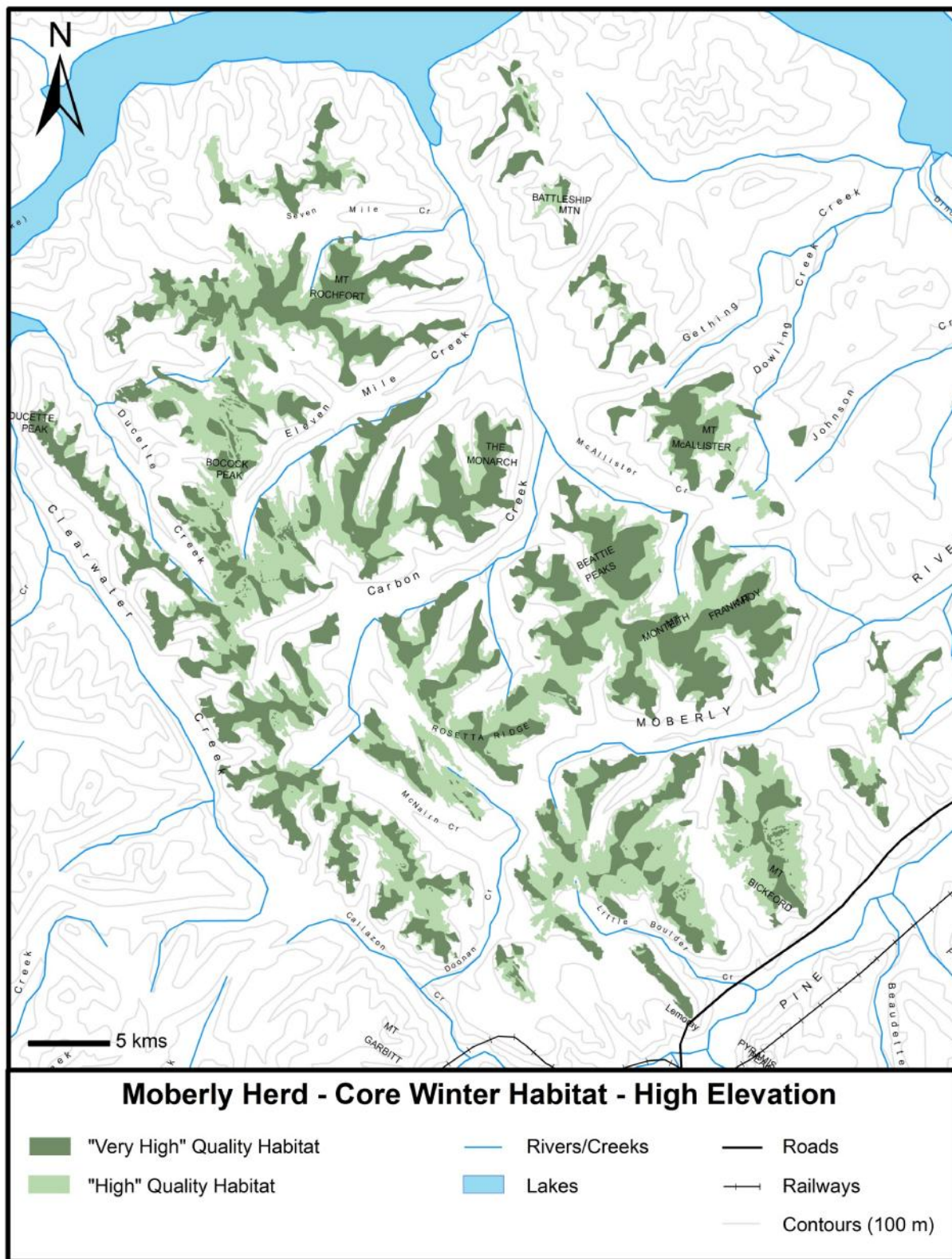


Figure 3. Core High-Elevation Winter habitat for the Moberly caribou herd.

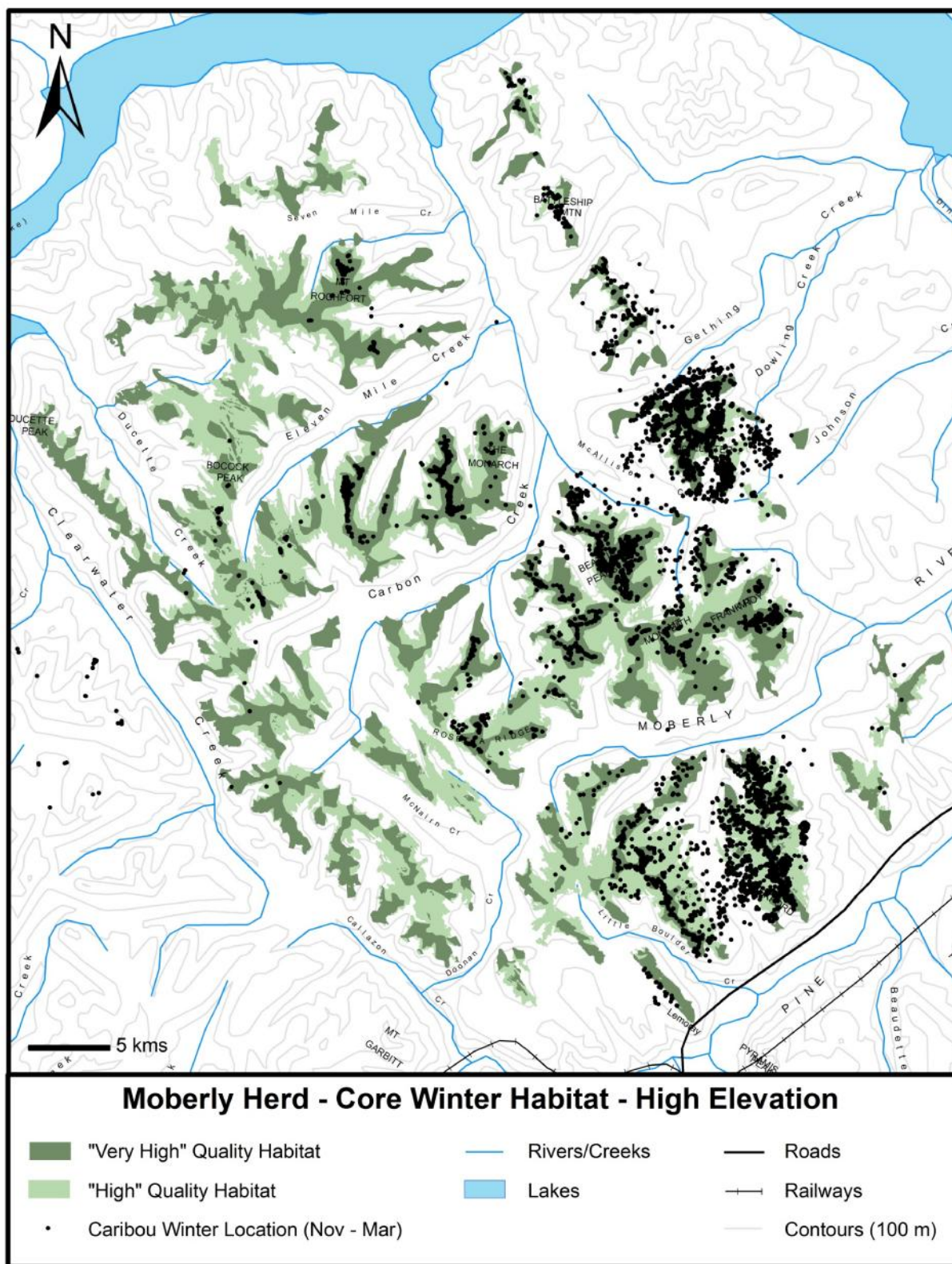


Figure 4. High-elevation winter locations for the Moberly caribou herd from 2002 to 2012.