Habitat Use of Threatened Caribou at the Transition Zone from Mountain to Northern Ecotype

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Key Words: woodland caribou, *Rangifer tarandus caribou*, ecotype, foraging, habitat, season, British Columbia

Extended Abstract: Woodland caribou (*Rangifer tarandus caribou*) in the Central Canadian Rocky Mountains Ecoregion of central British Columbia are part of the nationally threatened caribou population in the Southern Mountains National Ecological Area (COSEWIC 2002). The ecoregion encompasses the transition zone between the northern and mountain ecotypes of woodland caribou. Our study area is approximately 8000 km^2, and is located within the Central Canadian Rocky Mountains Ecoregion in the Hart Ranges of the Rocky Mountains, bounded on the east by the Parsnip River.

Threats to woodland caribou and appropriate conservation practices differ significantly for different habitat types. Low-elevation pine forests require an appropriate forest management regime to perpetuate terrestrial lichens. Subalpine forests require protection or special silvicultural practices to maintain arboreal lichens. Alpine areas are susceptible to disturbance by motorized recreation, oil and gas developments, and mining.

In winter, some caribou within the study area behave like mountain caribou, using mature, subalpine forests and feeding on arboreal lichens. Other caribou behave like northern caribou, feeding on terrestrial lichens in low-elevation pine forests or on windswept alpine ridges. As part of a larger study on the ecology of these caribou, we are attempting to delineate woodland caribou populations and ecotypes within the study area in order to examine the seasonal variation in habitat use among these populations and ecotypes. This information will be used to develop and improve recovery action plans for each population of woodland caribou.

Twenty-three woodland caribou were radiocollared as of 1 June 2003, an additional 10 were collared in early December 2003, and 2 more were collared in early February 2004 (total = 35 radio-collared caribou). Telemetry flights were conducted bimonthly during the summer (1 June to 15 October 2003), and weekly during early winter (16 October 2003 to 20 January 2004) and late winter (21 January to 20 February 2004). Macrohabitat (alpine, subalpine parkland, subalpine

forest, and low-elevation forest) and forest stand type were recorded from the telemetry plane for each caribou location, and elevation was derived from a topographic map.

Caribou populations within the study area were delineated based on spatial separation and migration patterns of individual caribou. Four populations were identified: Kennedy Siding, Moberly, Quintette, and Parsnip. Caribou in the Kennedy Siding population were distinguished from the Parsnip and Moberly populations if they migrated to the Kennedy Siding low-elevation pine forests. The Quintette population was geographically separated from the other three populations. Seasons were defined based on the migration of Kennedy Siding caribou to the low-elevation pine forests in early winter and back to subalpine and alpine regions in late winter. Telemetry locations were pooled for individual caribou within each population, and were used to determine the proportion of locations in macrohabitat, forest stand type, and elevation classes for each population.

Preliminary data analysis indicates that variation in early- and late-winter use of macrohabitat, forest stand type, and elevation existed among populations and ecotypes of woodland caribou, although variation in summer habitat use was minimal. In winter, the Kennedy Siding, Moberly, and Quintette populations used habitats typically used by northern caribou. All three populations used windswept alpine ridges, but the Kennedy Siding population was the only northern caribou population that used low-elevation pine forests. Additionally, the Moberly and, particularly, the Kennedy Siding population used a high proportion of subalpine forest habitat. Parsnip caribou used subalpine forest habitat in all seasons, consistent with typical mountain caribou habitat use. Foraging site investigations suggest that caribou occupying similar habitat types used the habitat in the same way, regardless of population or ecotype. Observed differences in use of habitat types by caribou populations in close proximity to one another, and variation in habitat use among seasons illustrates the importance of determining seasonal habitat types used by each woodland caribou population across their range.

References

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2002. COSEWIC assessment and update status report on the woodland caribou *Rangifer tarandus caribou* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, Ontario. xi + 98 pp.