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Caribou, primary prey and wolf spatial relationships in northeastern Alberta

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It is widely accepted that increases in industrial development have contributed to woodland caribou declines in Alberta. The current working hypothesis is that industry-induced changes in caribou range have reduced the ability of this species to spatially separate from primary prey, and that this has resulted in increased predation by shared predators such as wolves. Two factors appear important: (1) seismic exploration lines and other linear features may increase wolf hunting efficiency; and (2) industrial disturbances, such as forestry, may increase the quantity and quality of food needed to support higher primary prey densities, which may in turn cause wolf numbers to increase. Although evidence continues to build in support of this hypothesis, we still lack key information that is highly relevant to effective management. For example, does spatial overlap between caribou, and primary prey and predators increase because of changes on caribou range alone or is the adjacent upland habitat crucial, i.e. at what scale do we need to conduct our management activities? We used a simultaneous multi-species (caribou, moose, deer, beaver, and wolf) study approach to assess the following objectives in the West Side of the Athabasca River (WSAR) caribou range. First, has predation risk for caribou in WSAR increased in the last 10 years (i.e. since major increases in forestry and oil and gas activity)? Second, if caribou predation risk has increased, is this due to an increased number of predators, increased predator efficiency, or both? Third, are the changes driven by changes on caribou range, surrounding areas, or both?