

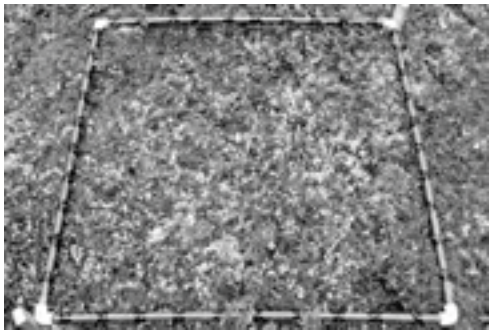


FIA–FSP Forest Science Corner

Understanding MPB’s effect on caribou winter range habitat

by Bruce Rogers, Mountain Pine Beetle Extensionist

Researchers are working hard to understand how woodland caribou respond to the changes that occur when winter range pine-lichen habitat has been salvaged following mountain pine beetle (MPB) attack.



Elena Jones photo

Permanent terrestrial vegetation plot.

Across much of its range in British Columbia, lodgepole pine is an early seral species that is often associated with frequent fire disturbance.

Lodgepole pine has specialized to exploit post-burn conditions and thrive until it is overtaken through plant succession and replaced by slower-growing,

more shade-tolerant species such as spruce and subalpine fir. However, on some drier and nutrient-poor sites, stand types such as pine-lichen associations develop and dominate for a long time. Animals such as caribou, which forage on lichens, have come to rely on these associations, particularly as components of critical Ungulate Winter Range (UWR).


With the accelerated mortality of many of these stands because of the MPB infestation and subsequent salvage logging practices, researchers have been addressing questions about the impacts on lichen availability and caribou response. **Dr. Dale Seip**, a wildlife ecologist with the BC Ministry of Forests and Range, is the proponent for a project funded by the Forest Investment Account–Forest Science Program that investigates these questions; **Elena Jones**, a wildlife biologist for the McGregor Model Forest, is the project biologist; and BC Ministry of Environment (MOE) wildlife biologists **Doug Heard** and **Glen Watts** are responsible for radio collaring the animals in this study.

The team’s project focusses on the Kennedy Siding caribou herd, which is considered threatened and consists of approximately 160 animals in the Parsnip River drainage two hours north of Prince George. The study area is part of an approximately 3,000 ha approved UWR, which means that up to half of the area (1,500 ha) can be salvage logged. Prior to the MPB infestation, the seasonal behav-

iour and distribution of the herd was monitored for five years, providing considerable baseline data for post-MPB comparisons. Caribou were observed to remain in the lower elevation pine-lichen range eating terrestrial lichens until snow conditions became too hard; after that they would feed more extensively on arboreal lichens located on lower tree branches. Eventually, the caribou would leave the pine forest and move up into higher elevation range to continue feeding on arboreal lichens.

Primary questions and study approaches are:

1. Will caribou continue to use pine-lichen stands that have been attacked by MPB? Post-MPB radio-collar data are compared to pre-MPB caribou telemetry data.
2. What is the impact of MPB on arboreal lichens and terrestrial lichens? Monitoring of arboreal and terrestrial lichen abundance is ongoing.
3. What is the impact of MPB on snow depth and snow conditions in pine-lichen stands? Monitoring of snow stations in MPB-attacked stands is ongoing.
4. What is the impact of MPB on caribou feeding behaviour in pine-lichen stands? Caribou are trailed in winter to record feeding behaviour, and data are compared to pre-MPB trailing data.

One scenario proposed by Dr. Seip would see the lichen forage in the unsalvaged dead pine stands remain viable and thus, available to the caribou. Caribou could use these areas until standing dead trees begin to fall to the ground (15–20 years). If at that time stand characteristics became unfavourable (e.g., tree fall creating physical barriers), caribou could then be able to shift and use adjacent salvage harvested areas where lichen communities have rejuvenated over time. A concern regarding future forage availability (addressed with the lichen and vegetation abundance monitoring component of this project) centres around successional changes in the plant communities of the dead pine stands caused by changes in light availability. Terrestrial lichens are sensitive to competition and new light regimes may, or may not, facilitate sufficient lichen survival or regrowth. 

More information

For more information on this project or the results to date, please contact Dr. Dale Seip, BC Ministry of Forests and Range at 250-565-4125 or Dale.Seip@gov.bc.ca