Cover changes, during the 1954–1990 period, in the alpine vegetation used by the Gaspesie Provincial Park caribou herd

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Abstract: The Gaspesie provincial park (P.Q., Canada) caribou herd, classified as threatened, is the only remaining native caribou population on the continent, east of the St. Lawrence River. The alpine belt of the range, such as the Mt. Albert plateau (the largest alpine area of the park, 16 km^2), is heavily used by caribou in summer and in the fall. In 1954 and in 1963, the alpine vegetation cover of Mt. Albert was surveyed by Moisan (1974; Changements dans la vegetation de l'alpage du Mont Albert, M.T.C.P. Report no. 3. p. 292–297). We repeated this study in 1990 to monitor vegetation changes of Mt. Albert over the last three decades and their management implications for the caribou herd.

Most of the vegetation categories decreased significantly relative to the previous two surveys suggesting a reduction in total vegetation cover on the plateau. Mean vegetation cover was 62% and 53% respectively for 1954 and 1990. However, lichen cover increased from 8.6% in 1963 to 14.6% in 1990.

Interpretation of changes in the alpine vegetation cover of Mt. Albert during the last 37 years should be viewed in light of the following potential forcing factors: caribou grazing, climatic changes, and plant succession dynamics. From 1954 to 1963, the alpine vegetation showed a decrease in lichen cover and a slight increase in other plant categories. This trend was attributed to caribou grazing by Moisan (1974). It is likely that utilization of the plateau by caribou decreased in the 1963–1990 period relative to the previous one as the caribou population has declined. Significant increase in lichen during the 1963–1990 period would thus support the caribou grazing hypothesis.

However, the link between the observed pattern of cover change and caribou razing on Mt. Albert is questionable: 1) Reduction in grazing pressure, as suggested by an increase in lichen cover, should not be correlated with a decrease in total vegetation cover. 2) Despite a probable decrease in grazing pressure in the last four decades, grazing pressure is still relatively high as $\simeq$ 60 caribou are observed each fall on the plateau. 3) The low lichen cover on the plateau suggests that caribou might not selectively feed on lichens. Consequently, we suggest that other factors might have also influenced the observed cover changes. Casual observations indicate that tree line is regressing in the study area suggesting an increase in climate harshness. Such climatic stress could partially explain the overall decrease in plant cover, setting favourable conditions to pioneer species, such as the lichens, by reducing competition.

Recent investigations suggest that the alpine belt of the range is a key component for the survival of that threatened population. However, its importance to caribou feeding ecology remains to be shown. It is possible that the role of the plateau as escape habitat from predators might be more crucial to caribou survival than its use as a feeding ground.

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