THE USE OF DOMESTIC SHEEP FOR VEGETATION CONTROL ON FOREST PLANTATIONS IN THE INTERIOR OF BRITISH COLUMBIA

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
BACHELOR OF SCIENCE IN FORESTRY

in

THE FACULTY OF FORESTRY
Department of Forest Resource Management

We accept this thesis as conforming
to the required standard

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THE UNIVERSITY OF BRITISH COLUMBIA
April 9, 1986

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ABSTRACT

A study involving the grazing of domestic sheep on Engelmann spruce, *Picea engelmannii* and lodgepole pine, *Pinus contorta* plantations was initiated in June 1985 near Hendrix Lake, British Columbia. Specific areas investigated included vegetation removal and seedling damage as a result of grazing, animal weight gains, and forage quality. The impact of such grazing on site nutrient cycling and on soil quality were also investigated in less detail.

The results of this trial suggest that grazing on Engelmann spruce plantations can lead to a considerable reduction in competing vegetation, and that damage to these seedlings can be kept to a minimum provided grazing is avoided in spring, the movement of sheep is controlled and the utilization of forage on cutblocks does not exceed about 75 percent. Grazing on lodgepole pine plantations should be avoided, however, because sheep appear to have a preference for this species.

Although not measured quantitatively, it is evident from observation during the trial that the amount of urea deposited on plantations can be considerable. The impact of such nitrogenous inputs is probably not as significant as reported in the literature, however, because the sheep tend to spend much of the day at a central landing, rather than in the cutblock.

Soil compaction was not a problem during grazing primarly because of the medium to coarse-textured quality of soil on most of the areas grazed.

Weight gains were considered "acceptable" for the first month of the grazing trial, approximately, but declined to less acceptable levels as the trial proceeded because of aggravation by predators and declining forage palatability. Forage quality was

not, however, limiting the growth of animals prior to August, according to foliar analyses. Minerals such as phosphorus were possibly limiting growth later in the summer and in early fall.

The findings of this study complement those of previous studies which also support the use of domestic sheep in silvicultural programs. Further research is required, however, to better correlate seedling damage with forage utilization and animal stocking levels, as well as to investigate the impact of sheep grazing on long term plantation performance and success. Vegetation preferences of sheep and nutrient cycling during grazing are two specific areas that also require further investigation.

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ACKNOWLEDGEMENTS

The author would like to thank Dave Tweedhope for his time and help in collecting data and providing needed information during and after the 1984 and 1985 grazing trials. Chris Easthope from the Regional Office in Williams Lake and Steve Christiansen from Weldwood also helped out a great deal in collecting data, and further input from Bert Smith and his crew is appreciated.

Finally, technical counselling and information provided by Professors D.P. Lavender and M.D. Pitt further helped the author in putting this thesis together.