Thinning and Spacing Lodgepole Pine Stands to Reduce Susceptibility to the Mountain Pine Beetle

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Study Location: 99 Mile Ski Trail (near 100 Mile House, see map)

Objectives: There is growing evidence that thinning and spacing mature lodgepole pine stands reduces their susceptibility to attack by the mountain pine beetle. The mode of action appears to be alteration of the stand microclimate through increased temperatures and wind speed which encourages the beetle to continue flying rather than land and attack trees. The objective is to establish a demonstration and research area in which to monitor beetle activity in treated and untreated plots.

Experimental design: Twelve 80m x 80m plots were established in the stand and six plots were randomly assigned to each of two treatments (see map). The treatments are 4m x 4m spacing and control (no treatment). The stand will be thinned from below with the reserve trees being selected for position, size, form and apparent vigour. Reserve trees will be marked with paint for the information of the loggers.

Monitoring: All trees will be examined, in both the treated and untreated plots, on an annual basis for evidence of bark beetle attack. All bark beetle attacks will be identified as to species responsible and the date, number and position of attack, impact on the tree and location of the tree recorded.

Other research opportunities: There are opportunities in this study for complementary research on the effect of thinning and spacing on growth and yield of the residual stand, regeneration under thinned vs natural stands, wildlife in thinned vs unthinned stands etc.

Timetable: This is a long term research experiment with monitoring to continue for approximately 10-20 years.