SX TRIAL

Hardwood Girdling at Three Phenological Stages

**Objective:**
To test the efficacy in controlling vegetative reproduction of aspen, birch, cottonwood, alder and willow by manual stem girdling at three phenological stages.

**Background Information:**
The only documented girdling undertaken to control non-crop vegetation in the Cariboo Forest Region has been on T.F.L. #5, north of Quesnel, in the summer of 1983. The cambium of girdled alder and willow healed (or the trees were not completely girdled) and both species continued growing. In addition, complete girdling around each stem was difficult due to the clumpy distribution. Aspen, cottonwood and birch stems did die, however, and suckering and sprouting were reported to be low.

**Location:**
The trial will be undertaken on a transition site in the SBSc subzone in the Quesnel Forest District, where hardwoods are a common competitor with coniferous crop trees. The selected site is stocked with 1-2 m tall conifers that are overtopped by birch, aspen and cottonwood saplings as well as clumps of willow and alder. The area for treatment is northwest of the junction of the 600 and 3500 Roads, north of Cottonwood House.

**Timing of Treatments:**
The three phenological stages for girdling are:
A - before leaf-out
B - during leaf-out
C - after leaf-out, but before leaf fall

Treatment will be in spring and summer of 1987.

**Design:**
A completely randomized design with three replications will be incorporated. Each plot measures 10 m × 10 m, in which all hardwoods will be girdled. Untreated 5 m wide buffers remain between plots.
Assessment: The assessment is designed to separately correlate the average number of suckers or sprouts created by each girdled stem for each species in order to decide upon the biological suitability of girdling for conifer release.

Assessment will be based on:

1) the condition of each girdled stem, and
2) the degree of suckering and sprouting caused from the girdling.

Condition will be classified as either:

1) dead
2) moribund or poor – expected to die, or
3) fair or good – expected to survive.

Basal sprouts will be counted and the sprout heights measured from ten treated stems in each plot.

Diameters of all treated stems will be recorded, to attempt to correlate diameter range with the practicality of treatment for operational use, in terms of both the biological efficacy of girdling and the capability of girdling for a certain diameter range.

Time of Assessment: First assessment – Summer 1988

First report: Fall 1988