

## Tentative Working Plan

SX 8150<sup>0</sup> Q - Site preparation of grassy sites using Glyphosate  
Fort Nelson - Prophet River

Objectives

- a) To obtain estimates of operational costs of ground applied chemical site preparation on a limited scale.
- b) To compare the efficacy of two spray concentrations applied in the month of June using the U.L.V./Knapsack sprayer.
- c) To compare survival and growth of seedlings planted
  - (i) approximately 2 months subsequent to spraying with those
  - (ii) planted immediately after spraying and those
  - (iii) planted the following spring.

Roundup (Glyphosate), will be applied with the combination U.L.V./Knapsack sprayer. The treatment area will be divided into three units of 2 ha each including a control and two spray units treated at 500g a.i. and 1 000g a.i. respectively. Depending on time available and site conditions the area may be further subdivided to facilitate replicated treatments. Approximately two months following treatment all units (treated and control) will be planted with Spruce plugs (PSB 211). Seedlings will be planted at a 3m x 3m interval (1100 trees per ha) using the Potti-Putki planting tool. We will request a total of 7000 seedlings from Prince George.

Herbicide Treatment Date

Presently all units are scheduled for treatment in mid June though some flexibility is required to allow for unfavorable weather. All herbicide treatments should be completed within one week of the date of commencement.

Sampling Design

Upon completion of the planting 100 seedlings in each treatment unit will be marked for future assessment by the method described in Appendix 6-21 of the Silviculture Manual.

Assessment

## 1) Treatment efficacy

In 1982, one year following treatment all units will be assessed using the Research Distribution Code method. Further measurements in 1983 and 1984 may be carried out to look at rate of re-vegetation and its implications with respect to wildlife (browse) and tree survival and growth.

2) Tree survival and growth

Prior to planting, Morphological data (avg. height, avg. diameter and shoot to root ratio) of the seedling stock will be recorded.

In 1982 (if warranted), 1983 and 1984, seedlings marked at time of treatment will be rated according to the following factors - see F.S. 793.

Survival - Alive, Dead or Missing  
Alive Injury - Drought, Browsing, Frost or Smothering  
Dead Cause - Drought, Browsing, Frost and Smothering  
Shade - Open, Part Shade or Full Shade  
Status - Good, Fair or Poor

On the reverse of the F.S. 793 growth measurement - total height and current leader growth will be recorded for 100 trees in each treatment.

Data between treatments will be compared to controls and morphological differences between stock prior to and after planting should indicate the value of Roundup for site preparation in grassy areas.

3) Time studies

- From Data collected during the herbicide treatments determine:
- a) Production by man hours and total cost of treatment including equipment, labour and chemical cost per hectare.
  - b) Suitability of Equipment - i.e. down time. In addition problems associated with equipment used will be noted.
  - c) Rate the effect of treatment on cost of planting as compared with cost of control area planting.