SX 85107C

DRY BELT FIR SEEDING AND PLANTING TRIAL. WEST FRASER OPERATIONAL TRIAL

Working Plan
1984

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DRY-BELT FIR SEEDING AND PLANTING TRIAL
West Fraser Operational Trial
84-01

A. PURPOSE: To assess broadcast sowing, spot seeding, (scratch and sow) and plug planting of Douglas-fir (Pseudotsuga menziesii) in the xeric site conditions of the Interior Douglas-fir Sub-zone IDF undiff 2 (may 83) on the Chilcotin Plateau as a viable method of regenerating recently harvested areas that are not anticipated to regenerate naturally.

B. LOCATION: The S.E. portion of Block III; C.P. 942, F.L. A20020 West Fraser Operating Area #7; Big Creek.
UTM Co-ordinates: ________________.

C. TREATMENTS: four treatments and two controls were designed as follows:
1) Broadcast sowing on skid trails @ 2 kg/ha
2) Broadcast sowing off of skid trails @ 2 kg/ha
3) Row spot seeding (scratch & sow) on skid trails @ 2 kg/ha
4) Planting of PSB 313 Fir plugs on skid trails @ 1.5 m intervals
5) Control plots on skid trails
6) Control plots off of skid trails
Seedlot numbers were 2964 for both broadcast seed and planted plugs. Seed was stratified and had an 84% viability.

D. EXPERIMENTAL DESIGN & METHOD: all plots are staked with 3 foot high 1"x 3" stakes
1) Plot Selection & Marking
   a) Sixteen (16) thirty meter (30 m) sections of skid trail were selected for similar mineral soil disturbance and estimated degree of use during logging (ie: all secondary skid trails)
   b) Aspect, degree of residual cover remaining, and slope were all similar.
   c) Strips were located as shown in figure #1.
   d) Each strip was then staked as shown in figure #2 with 20 plots of 1 m² area (circular 0.56 M radius subplots) located along each strip @ 1.5 meter intervals.
   e) Treatments were assigned to each numbered strip by random number generation as follows:
      i) Broadcast on skidtrails - #'s 3, 5, 12, 15.
      ii) Spot Seeding - #'s 1, 8, 9, 16.
      iii) Planting - #'s 2, 6, 11, 13.
      iv) controls - #'s 4, 7, 10, 14.
   f) Broadcast sowing off of skidtrail plots were placed adjacent to the broadcast sowing on skidtrail plots. Controls for off of skidtrail sowing were placed adjacent to the controls for on skid trail sowing. Plot locations for these treatments were as per figure #3.

       continued 2
2) Method

a) Broadcast Sowing on/off of skid trails was done on top of the snowpack in February to simulate possible operational aerial seeding. Seeding on top of the snowpack was chosen in an attempt to minimize rodent consumption of seed over winter and yet allow the seed to be present for germination during the snowmelt time of year. 2 kg/ha was the rate chosen. This was an equivalent of 24 seeds per 1 m² on skid trail circular plot (0.0001 ha) applied by hand randomly over the entire 1 m³ area. For the off skid trail plots a 1.26 m radius was chosen (5 m³ = 0.0005 ha) and 120 seeds were broadcast randomly around these plots. Seed was stratified and had 84% viability.

b) Row Spot Seeding on skid trails was done immediately after snowmelt in April to capture the high soil moisture available. This design was to simulate possible operational row seeding behind a scarifying skidder. 2.0 kg/ha was the rate chosen or 24 seeds in three 0.5 m long rows beside each stake (see figure #4).

c) Planting of 313 Plugs on skid trails was done immediately after snowmelt in April to capture the high soil moisture available. This design was to simulate the possible operational planting along skid trails to fill in marginally stocked residual stands due to skid trail voids. It was also to provide a comparison of the success of seeding versus planting in the xeric Chilcotin conditions. One seedling was planted adjacent to each numbered stake.

E. DATES ESTABLISHED AND CONDITIONS

1) Broadcast sowing - February 15/84 @ +5° C daytime
   - approximately 0.5 meters of snowpack

2) Planting plugs - 4/April/84 @ +10° C daytime
   - no snow; ground frozen in patches only

3) Spot seeding - .4/April/84 @ +10° C daytime
   - no snow; ground frozen in patches only

RESULTS & DISCUSSIONS - First assessment planned fall 1984.

* Hot, dry, rocky site
  measured for 2 years
  but no germination
**Figure 2: Plot Design on Skidtrails**

- **Plot Design on Skidtrails**
- **Plot Radius**: $0.56 \text{ m} = 1 \text{ m}^2 = 0.0001 \text{ ha}$
- **K = 0.01 \text{ ha/m}^2**

**Figure 3: Plot Design off Skidtrails**

- **Plot Design off Skidtrails**
- **Plot Radius**: $1.26 \text{ m} = 5 \text{ m}^2 = 0.0005 \text{ ha}$
- Plots are numbered 1a, 1b, 1c, 1d, etc., the # being the on skidtrail strip #, the letter being the position from the start or end stake.

**Figure 4: Spot Row Seeding Design**

- **Plot Radius**: $0.5 \text{ m} \text{ long, 3 furrows/plot}$

- **Direction to Landing**

- **Beginning Stake for Strip**
Dry Belt Fir Seeding and Planting Trial

Officer i/c: D. Routledge

Location: Big Creek

Region/District or Nursery: Cariboo/Riske Creek

Objective: To assess broadcast sowing, spot seeding, (scratch and sow) and plug planting of Df in the xeric site conditions of the interior Df Sub-Zone IDF (undiff 2) May '83, on the Chilcotin Plateau as a viable method of regenerating recently harvested areas that are not anticipated to regenerate naturally

Progress: Working Plan submitted S'84

Next Scheduled Assessment/Treatment: Fall '84

Report Distribution: Silviculture Branch Library - SX Trial Co-ordinator

Abandoned - Virtually no germination. Dry, rocky site with no overstory protection.