SX 84118 Q

SUPERIOR SPRUCE PROVENANCE TRIAL

R. Winter

WORKING PLAN

1984
Working Plan for SX 84118Q, Superior Interior Spruce Provenance Trial

Introduction

Previous provenance test results (in Prince George E.P. 646 plantations are located at Aleza Lake, Grove Fire, Buckhorn Lake and Germanson Landing, in Prince Rupert E.P. 672 plantations are located at Quick and Verden Mountain) have shown that local seed sources are not always the optimal ones; interior spruce provenances from the interior wet-dry transition belt survived as well as local provenances when tested at sites as far north as 50° of latitude from their origin, and outgrew local provenance by as much as 30%.

Provenances from Birch Island, Fly Hills, McGillivray Lake and Horsefly in particular proved to be fast growing and surviving well at almost every test site.

In the fall of 1983 operational cone collections were completed from 2 superior Sx provenances. The details of these collections are:

1) Seedlot 8032 - Vicinity of Birch Island on North Thompson River, elevation - 425 m, Collection made by Clearwater Timber Ltd. under Section 88, 79% germination, 24.87 kg of seeds in storage.

2) Seedlot 8482 - Vicinity of Tisdale Lake (near Horsefly & Quesnel Lakes), elevation - 1140 m, 89% germination, 627.15 kg of seeds in storage.

Seedlot 8483 - Vicinity of Elbow Lake and Bassett Creek (near Horsefly Lake), elevation 1030 m, 77% germination, 193.70 kg of seeds in storage.

It is the intent of this trial to establish several plantations in the 5 interior regions utilizing seedlots 8032, 8482 and one or more local seedlots as per the recommendation of the Seed Zone and Transfer Review Task Group.
Objectives

1) To confirm previous test results indicating the superior performance of selected interior spruce provenances compared to local seed sources.

2) To add to the seed transfer information base by extending seed transfer beyond the currently recommended rules.

Participants

Silviculture Branch - R. Winter, J. Konishi
Research Branch - C. Ying
Cariboo - Al Randall
Nelson - B. Fraser
Prince George - J. Revel, M. Bruhm
Prince Rupert - G. Pinkerton (In addition Eurocan (Stuart
Kamloops - M. Faliszewski McPherson) has agreed to
establish a similar trial in Burns Lake F.D.)

Responsibilities

Silviculture Branch - Working Plan
- coordinating field program with regions
- assisting with data analyses & reporting
- compiling regional reports

Research Branch - liaison with Silviculture Branch
Regions - selection of sites
- coordinating plantation establishment
- coordinating subsequent survival and growth assessments
- preparing interim and final reports
- providing site descriptions, observations, data analyses, etc.

Districts - nominating candidate sites.
- plantation establishment
- survival and growth assessments
Forest Companies - selection of sites
  - plantation establishment
  - survival & growth assessments

Trial Design
5 Regions x 4 locations per Region = 20 test sites

Each location to include a 5000 seedling block of S/L 8032, a 5000 seedling block of S/L 8482, the balance of the plantation to consist of 1 or more local seedlots.
To reduce bias in the layout of the blocks it is recommended that a randomized "1, 2, 3" layout be used (see attached sketch).

Regional Seedling Requirements
5000 trees/location x 4 locations = 20,000 1+0 (2+0) PSB 313 S/L 8032
5000 trees/location x 4 locations = 20,000 1+0 (2+0) PSB 313 S/L 8482
40,000 Total per Region

Four 50 tree staked lines will be set out in each seedlot at each location (all trees within the lines to be flagged). The starting point of each line will be selected randomly and the line will be oriented toward a randomly selected cardinal point.

Survival and height growth will be assessed after 2, 5, 10 and 20 growing seasons. At the 5 and 10 year assessments an estimate of the Free Growing % will also be provided.

To maintain control of the superior seedlots in the field, ie. to ensure each seedlot is clearly identified on the ground and on maps and the assessment lines are properly laid out, it is recommended that Regions put one individual in charge of the trial establishment. Silviculture Branch can provide some manpower assistance (Mr. C. Clarke). In addition the Branch can provide funds to cover any contract costs of administering the establishment phase.
Schedule

Assessments

<table>
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<th>Season</th>
<th>Year</th>
<th>Height (cm)</th>
<th>Caliper (mm)</th>
<th>Survival (%)</th>
<th>Free Growing (%)</th>
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<tr>
<td>Fall</td>
<td>'95</td>
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Establishment Report

Winter '86/87 - please detail locations of trials, and complete a FS 739 and Planting Report. Update History Records and Mylars.

Interim Report

Winter 90/91 - Interim Report

Final Report

Winter 95/96
RECOMMENDED BLOCK LAYOUT

LEGEND
1  S/L 8032
2  S/L 8482
3  Local Seedlot

LOCATION A
- 10 m Buffer
- 4 x 4 Post with I.D. Tag

LOCATION B

LOCATION C

LOCATION D