SILVICULTURE BRANCH

SX 82403 V

FERTILIZATION WITH NITROGEN TO IMPROVE GROWTH OF STAGNANT SITKA SPRUCE NEAR NAHWITTI LAKE

WORKING PLAN

F. Nuszdorfer 1982
Working Plan For A SX Trial

Title: Fertilization with nitrogen to improve growth of stagnant Sitka spruce near Nahwitti Lake

Introduction: Approximately 4000 ha of Sitka spruce plantation on the northern end of Vancouver Island are displaying symptoms of nitrogen deficiency as determined by foliar analysis. The reason for this seems to be planting of this species on the wrong sites. The question now is whether the slow growth can be corrected or if the plantations should be replaced with a different species. This decision will be easier if we know the kind of response that can be expected from nitrogen fertilization in terms of growth of the Sitka spruce.

Objective: To monitor changes in height growth of fertilized Sitka spruce annually for three years and changes in foliar nitrogen during that time

Location of Study Area: Nahwitti River, east of Nahwitti Lake

Methods: An existing plantation of Sitka spruce will be stratified into areas that are growing well and those that have stopped growing. These blocks will be divided into two parts. One of these will be fertilized at the operational level of 200 kg/ha of N as urea, the other will be left as a control. Each plot will be of sufficient size to contain 30 trees.

Fertilizer will be applied by hand. Each year after the growing season the annual height growth will be measured for the 30 trees in the plots. At this time foliage from the upper part of the crown will be collected for analysis for nitrogen, phosphorus, calcium, potassium, magnesium, and several micro-nutrients. Nine trees from each plot will be sampled for foliage each year. Only current-year foliage will be collected during the late fall. Foliage sampling and analysis will be carried out according to the practices recommended by Dr. T. M. Ballard, Soil Science Department, University of British Columbia.

Duration: Three years
Budget: First Year

1. Three month salary to contractor 8000
2. Five month salary to technician 8000
3. Materials including: Fertilizer, ladder, pole pruner, stakes, labels and sampling bags 1500
4. Transportation to Port Hardy and return to Vancouver 1200
5. Vehicle lease three months 1500

Total 22,000

Second Year

1. One month salary to technician 1600
2. Transportation to Port Hardy and return to Vancouver 400
3. Vehicle lease for one month 500

Total 2500

Third Year

1. One month salary to technician 1600
2. Transportation to Port Hardy and return to Vancouver 500
3. Vehicle lease for one month 600

Total 2700

Grand Total 27,200