

# Partial Harvest Effects on White Spruce Cone Production and Seed Rain

Lead by: Jim Stewart

Theme: White Spruce Regeneration

Status: Continuing

Start: 1999

## Participants

- Dan Gilmore
- Travis Jones
- Jim Stewart

## Background

n/a

## Objectives

To quantify the relationships among cone production, residual stand density (degree of exposure), tree condition (preharvest crown class), and seed rain, following partial harvesting.

## Key Results

Calibration of ground-based binocular estimates of cone crops showed a consistent relationship with actual counts of cones from felled trees. A model to estimate cone crops from tree parameters had an  $R^2$  of 0.67 overall, but had a poor fit for some trees. The mast year for cone production in 1999 was followed by poor cone production in the subsequent years. Cone crops increased with stem density in 1999, but in 2000 and 2001 the largest cone crops were in the 50% and 75% residual density treatments. The intermediate stem density compartments exhibit the least interannual variation in cones per tree. Seed rain in relation to cone

crop varied by compartment. This may be related to numbers of seeds per cone varying, but seed rain was also affected by neighbouring stands as well as seed trees within the compartments.