

# Spatial patterns of boreal canopies, understory communities and tree regeneration

Lead by: Steve Kembel

Theme: Pattern and Processes

Status: Completed

Start: 1999

End: 2001

## Participants

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## Background

Canopy gaps provide increased light to the understory and influence temperature, moisture and nutrient availability. Canopy structure is known to influence understory communities and tree regeneration patterns in many forest types, but studies of canopy influence on small scale patterns of understory vegetation/tree regeneration are generally lacking in the boreal forest.

## Objectives

To determine how the spatial structure of canopy tree populations affect the fine scale patterns of understory community structure and tree regeneration in boreal mixedwood forests.

## Key Results

Spatial analyses indicated that canopy and understory vegetation had very patchy spatial distributions at a range of small spatial scales (0-25 m). Understory vascular plant cover was highest under canopy gaps, while non-vascular plant cover was highest under dense patches of coniferous trees. Understory vascular plant cover was high throughout the Aspen plots, but was highest only under canopy gaps and Aspen trees in the Conifer/Mixed plots. White spruce regeneration occurred primarily in canopy gaps in the Conifer/Mixed plots, but was found throughout Aspen dominated plots, while limited Aspen regeneration occurred throughout all plots.