Nitrogen cycling in boreal mixedwoods

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Participants

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Background

Harvesting affects soil nutrient status and nutrient cycling in forests by modifying microclimatic conditions and changing rates of nutrient uptake and litter input. The availability of inorganic N is soil is often higher following harvesting, and N availability is expected to increase in proportion to harvesting intensity. Different tree species contribute to the development of distinctive forest floor and soil features. Higher nutrient availability is expected in broadleaf and mixedwood forests, as a result of their higher foliar litter quality and associated faster rate of decay. We will test the extent to which these assumptions about harvesting and species effects are valid in the boreal forest of northern Alberta and explore the mechanisms behind the effects. Results from the first year after harvesting indicate substantial treatment effects at EMEND sites, showing changes in forest floor depth and soil C, extractable N and foliar N concentrations.

Objectives

To assess differences in nitrogen cycling under different cover types and harvesting intensities and determine the mechanisms behind the differences.

Key Results

n/a