

Linking changes in the soil microbial community to changes in the carbon chemistry of forest floor following timber harvesting

Lead by: [Kirsten Hannam](#)

Theme: [Soils and Nutrient Cycling](#)

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Participants

- [Kirsten Hannam](#)
- [Barbara Kishchuk](#)
- [Sylvie Quideau](#)

Background

Timber harvesting can affect long-term forest productivity by altering patterns of nutrient cycling in the soil. In the first year following logging at the EMEND study, forest floor depth decreased with increasing levels of canopy removal (Kishchuk, 2002). Soil C and N were also affected by harvesting, indicating changes in soil organic matter processes. The soil microbial community ultimately controls nutrient cycling through soil organic matter, and its activity is modified by changes in moisture, temperature and substrate availability. Recent studies suggest that timber harvesting can decrease soil microbial activity and shift the microbial community structure by modifying the C chemistry of the soil. Such changes in soil C chemistry are presumably caused by differences in the quantity and/or composition of plant litter inputs. We anticipate that

differences in forest floor C chemistry among forest types or harvesting intensities will be reflected by shifts in forest floor microbial activity and microbial community structure.

Objectives

To determine differences in forest floor C chemistry, microbial activity and microbial community structure among forests of varied tree species composition and harvesting intensity.

Key Results

n/a