

Vascular and non-vascular plant biodiversity in mixedwood forests: EMEND understory vegetation overview.

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Theme: [Vegetation](#)

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Background

Plant communities of the boreal forest are influenced by a diversity of factors including composition of the forest canopy, microenvironmental conditions (climate, soils), availability of substrates for establishment (e.g., downed wood, small scale forest floor disturbances), and time since disturbance. Forest disturbance, whether natural or anthropogenic, influences these factors, in turn affecting the composition and diversity of plant communities. Non-vascular plants (mosses and liverworts) have exacting conditions for establishment and survival in forest ecosystems. The composition and diversity of bryophyte assemblages is typically related to micro-habitat availability and micro-environmental conditions. Dispersal constraints may also be important.

Objectives

To understand factors and processes influencing plant communities in mixedwood boreal forests and the influence of disturbance by partial harvesting upon this. To understand factors and processes influencing bryophyte diversity and composition in mixedwood forests and the influence of disturbance by partial-harvesting and fire upon this.

Key Results

Mixedwood and conifer-dominated forests are more similar to one another, in terms of the understory vascular plant community, than either is to broadleaf-dominated forest. Broadleaf forests have higher vascular plant richness (# of species) and diversity per plot whereas conifer and mixedwood forests showed greater diversity among plots within and between forest stands. Understory composition was related to canopy composition and edaphic conditions. In the short-term (2 years post-harvest) partial harvesting (20 %) and clearcutting affected understory communities by increasing abundance of early successional and disturbance-adapted species while evergreen, shade-tolerant understory herbs were retained in the unharvested and 75% retention harvest. Longer-term effects of the variable-retention harvesting are being explored.