

# Dynamics of arthropod assemblages in forests managed to emulate natural disturbance - arthropod diversity synthesis

Lead by: [John Spence](#)

Theme: [Arthropod Diversity](#)

Status: Continuing

Start: 1997

## Participants

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## Background

n/a

## Objectives

This study will provide the first systematically and concurrently collected data about the diversity and ecological importance of a number of arthropod groups (litter dwelling beetles, spiders, saproxylic beetles,

butterflies, moths, parasitoids, and bumblebees) in a northern forest. This study also aims to identify "indicator taxa" to monitor regeneration using specific faunal guidelines. This will ensure sufficient microhabitat variation to conserve and maintain appropriate invertebrate assemblages in the mixedwood. Through linkages with other EMEND projects, important functional linkages will be better understood, such as 1) impacts of herbivores and pollinators on understory regeneration after wildfire and harvest; 2) relationships among forest floor structure and arthropod activity and community structure; 3) how changes in stand structure affect relationships between potential pest insects and their natural enemies and alter probabilities of damaging outbreaks; 4) associations among breakdown of coarse woody material and attack by saproxylic insects and fungi and the implications for nutrient cycling; and 5) relationships between arthropod diversity and net primary productivity. Results will provide a basis for projecting impacts of large scale forestry on invertebrate biodiversity in NW Alberta, for predicting the consequences for ecosystem function, and for modeling trade-off between biodiversity and productivity.

## **Key Results**

n/a