



UNIVERSITY OF TORONTO
FACULTY OF FORESTRY

Prof. Sean Thomas' Lab: Forest Ecology and Silviculture

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Number of Positions available: 2-3 MScF or PhD positions, with preference for the latter.

Detailed Description: Currently funded and planned projects include studies on the following topics:

1. Age-related changes in tree functional biology as a driver of belowground and soil processes. Planned experiments will involve measurements of litter decomposition, soil CO₂ flux, autotrophic respiration, and fine root dynamics in the rooting zone of trees of varying ages, and will make use of large-scale mapped forest plots in Northern Hardwood forests of central Ontario.
2. Remote sensing of canopy dynamics and tree ageing and senescence. Planned experiments will involve measurements and analysis of leaf- and canopy-level spectral reflectance and transmittance patterns, and LiDAR-based analyses of canopy structure and how these vary with tree ontogeny. In addition, projects under development involve use of small unmanned aerial vehicles for super-high-resolution remote sensing of leaf features.
3. Effects of charcoal ("biochar") additions on nutrient availability, soil processes, and tree ecophysiology in temperate forest ecosystems. Planned work will focus on soil chemistry, nutrient uptake, and tree growth dynamics; in addition, work on biochar impacts on understory vegetation and soil invertebrates is planned.