

Biology Seminar



Western
UNIVERSITY · CANADA

12:30 - 1:30 pm
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BGS 0165



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Conserving biodiversity in Canada's agroecosystems: a landscape ecology approach

Biodiversity plays a critical role in ecosystem resilience and in the provision of ecosystem services, particularly in working landscapes. However, biodiversity is declining globally and agriculture extensification and intensification have been implicated as the leading drivers of these declines via the loss and degradation of habitat. As the human population continues to grow and food demand increases (all under the backdrop of climate change), under a business as usual scenario, agriculturally-associated losses of biodiversity are likely to continue. Therefore, there is an urgent need to understand how we can manage agro-ecosystems in a way that sustains or promotes increases in biodiversity. Indeed, Canada is a signatory to the Kunming-Montreal Global Biodiversity Framework and has committed to multiple targets, including Target 10 which aims to promote sustainable agricultural practices that help meet food demand while simultaneously promoting and sustaining biodiversity. We have undertaken a series of studies using community science data and targeted field studies to understand how landscape composition and configuration as well as land use practices within agro-ecosystems affects biodiversity (e.g. birds, bats, and frogs), with an emphasis on natural and semi-natural habitats, including forest patches, field margins and treed drainages. Overall, our results suggest that current land use practices within agro-ecosystems in Canada have likely contributed to biodiversity loss, but that maintaining existing forest patches, reducing field sizes, and having structurally diverse hedge rows can maximize biodiversity in Canada's current agro-ecosystems.

