

## PHD POSITION IN QUANTITATIVE ECOLOGY

**Research project: Impact of humans on the scaling of the biodiversity – ecosystem functioning relationship**

**Program:** Ph.D. in Biology

**Location:** McGill University

**Start date:** Winter 2021.

**Stipend:** 21,000\$/year for 4 years.

**Supervisors:** Dr. Andrew Gonzalez (McGill) and Dr. Elise Filotas (Université du Québec)

We are seeking an excellent candidate to undertake a Ph.D. research project on the impact of humans on the biodiversity-ecosystem functioning relationship at different spatial scales.

**Project summary:** Positive biodiversity-ecosystem functioning (BEF) relationships have been reported in numerous experimental studies carried out mainly over short spatial and temporal scales, but it remains uncertain how this relationship varies over larger scales. Understanding BEF across scales requires considering the impact that humans have on patterns of biodiversity through changes in land-use and fragmentation, and on ecosystem functions through nutrient additions, harvesting or pollutant contamination. This Ph.D. project will determine how anthropogenic changes in forest ecosystems affect the way in which BEF relationships scale across space and time.

As part of this project, the candidate will carry out both remote sensing analysis and ecosystem modelling. The student will employ statistical approaches to assess biodiversity and productivity from LiDAR data available across Quebec's forest landscapes. The student will also use a spatially explicit model of forest dynamics to investigate the impact of different land-use and climate change scenarios on tree species distribution and measures of ecosystem function, such as wood production and carbon storage over multi-decadal timescales.

### Expertise/ Profile required

- M.Sc. in biological sciences or related discipline
- Strong quantitative or mathematical background
- Strong programming skills (*R* or *python*).
- GIS and remote sensing skills an asset.
- Independent, rigorous and excellent organizational skills
- Fluency in written and spoken English

**To apply,** please send a cover letter describing your research background, interests, and qualifications; a copy of your most recent transcript; plus, a complete curriculum vitae and contact information for at least two references to [andrew.gonzalez@mcgill.ca](mailto:andrew.gonzalez@mcgill.ca) and [elise.filotas@teluq.ca](mailto:elise.filotas@teluq.ca)

Only short-listed candidates will be notified.

Note that priority will be given to Canadian residents because of immigration restrictions due to COVID.

**Application deadline:** Deadline for registration in Dept. of Biology at McGill is October 15<sup>th</sup>, 2020.

<https://www.mcgill.ca/biology/graduate-studies/prospective-graduate-students>

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