



Vale **LIVING WITH LAKES CENTRE** **CENTRE POUR LA VITALITÉ DES LACS** Vale

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GRADUATE RESEARCH IN AQUATIC BIODIVERSITY **Cooperative Freshwater Ecology Unit, Laurentian University**

Aquatic ecosystems of the Boreal Shield Ecozone (BSE) include a diversity of lakes, ponds, wetlands, streams and rivers linked across the landscape in a network of nested catchments (drainage basins). Fish biodiversity over this landscape is often interpreted from conditions in larger lakes (> 100 ha) which are the primary survey targets. Much less is known about how smaller lakes and streams contribute to the overall biodiversity and productivity of the catchment through provision of unique habitats, refuges and migration corridors. Our objective is to advance our current understanding of fish biodiversity at the catchment scale in the BSE through a research program that examines all aquatic habitats.

Research will begin in the recovering landscape of the historical acid deposition zone in northeastern Ontario, Canada. Acid and metals damaged aquatic ecosystems over a vast area, and biological recovery appears to be lagging chemical recovery. Our initial working hypotheses are: i) catchment-scale fish biodiversity will be lower in recovering catchments than reference catchments, and ii) local biodiversity will depend on landscape position as well as habitat type within all catchments, but landscape position will be more important in recovering catchments because of its influence on both the severity of initial impact and the re-colonization process during recovery. From this starting point, we will model and test predictions about species distribution patterns within both reference and recovering catchments in the context of both legacy and current environmental stressors.

I am seeking motivated students to conduct graduate research on this project at the MSc or PhD levels. Applicants should have strong quantitative, organizational, and writing skills, and be willing to develop and undertake a field-intensive program in a challenging environment. Knowledge in limnology, fish biology, and restoration ecology, and experience with fish sampling, database management and statistical analyses are all definite assets.

Students will be based at the Cooperative Freshwater Ecology Unit (CFEU), housed in the Vale Living with Lakes Centre (<http://www.livingwithlakes.ca>) at Laurentian University. Students will work with a multidisciplinary team of researchers from

academia, the Ontario Ministry of Natural Resources and Forestry (MNRF) and the Ontario Ministry of Environment, Conservation and Parks (MECP), and will have access to extensive, long-term databases for fish communities and water quality.

Salary will be at current NSERC rates and starting dates are negotiable from May 2021 onwards.

Please forward a CV, a statement of research interests and qualifications, copies of transcripts, and names of three references to: **Tom Johnston**, Cooperative Freshwater Ecology Unit, Vale Living with Lakes Centre, Laurentian University, Sudbury, ON, Canada. tjohnston@laurentian.ca