



# CNAES

## HQP Research & Collaborative Exchange Funding

### Visit report

#### 1. Exchange information

Visitor: Camille Ouellet Dallaire, PhD candidate, McGill University  
Supervisor: Dr. Bernhard Lehner  
Host: Junting Guo, Post-doctoral fellow, Western University  
Supervisor: Dr. Irena Creed

#### 2. Goals

The goal of this visit was to explore possible collaborations between project 2.1 ([Classifying streamflow regimes in different forest landscapes across Canada](#)) and my PhD project ([Using the concepts of river classifications, environmental flow requirements, and aquatic ecosystem services to inform sustainable management strategies for large river basins with a focus on Canada](#)). In both projects, a strong component of the research aims at classifying rivers in Canada, but with different goals and scales.

#### 3. Description of the visit

The visit took place from May 26 to 29, 2015, at Western University. We spend these three days in a workshop aimed at understanding each project thoroughly and identifying possible research collaboration areas.

This meeting enabled us to identify clearly the differences between the two classifications: the McGill classification is based on river reaches and on the GloRiC framework for the entire extent of Canada; as the Western one aims at creating hydrological units for the forested extent of Canada. Having two classifications with overlapping study areas is an opportunity to use them as comparative baselines for one another.

Two key outcomes were possible research collaborations. The first project will compare the two Canadian classifications to investigate how best to create management units (either through downscaling of global data or upscaling of local data). The second project will use river classes derived from the McGill classification to assess their vulnerability to climate change.

Another outcome of this visit is an exchange of datasets. These datasets will become baseline data for the outlined collaborative research projects. For example, one key dataset from McGill is HydroSHEDS, which is a hydrologically relevant suite of raster data available for Canada at 1km, 500m, and 90m pixel resolution. From Western, climate grids for Canada were provided as well as hydrological indices derived from the HYDAT database.

Following this visit, we are planning a second meeting to take place in Montreal during the fall to reconvene and expand on these two projects.



**Figure 1** Preliminary result of the McGill river reach classification. In this map, there are a more than 30 different river types based on hydrological and physio-climatic variables. This project is ongoing and these results will likely changes over the summer. For more information, email [camille.ouelldallaire@mail.mcgill.ca](mailto:camille.ouelldallaire@mail.mcgill.ca).