

**CNAES**  
**HQP Research & Collaborative Exchange**  
**Funding**  
*Visit report*

**1. Exchange information**

Visitor: Camille Ouellet Dallaire

Supervisor: Bernhard Lehner

Host: Stephanie Melles

**2. Goals**

At the 2015 CNAES AGM, Stephanie Melles, Bernhard Lehner and I hosted a workshop of river and catchment classification. During this workshop, it became apparent that the cumulative nature of river systems was a key component of these classifications, yet methods for integrating this aspect were variable and sometimes lacking. During my visit to Toronto, I met with Stephanie to further our analysis and establish an extended outline for an upcoming publication based on the finding of the workshop. This work falls under project 3.1 ([Development of a pan-Canadian hydrological framework for modelling aquatic ecosystem services](#)) and 3.2 ([Can watershed-based classification help explain patterns in fish mercury concentrations across Ontario and Quebec?](#)).

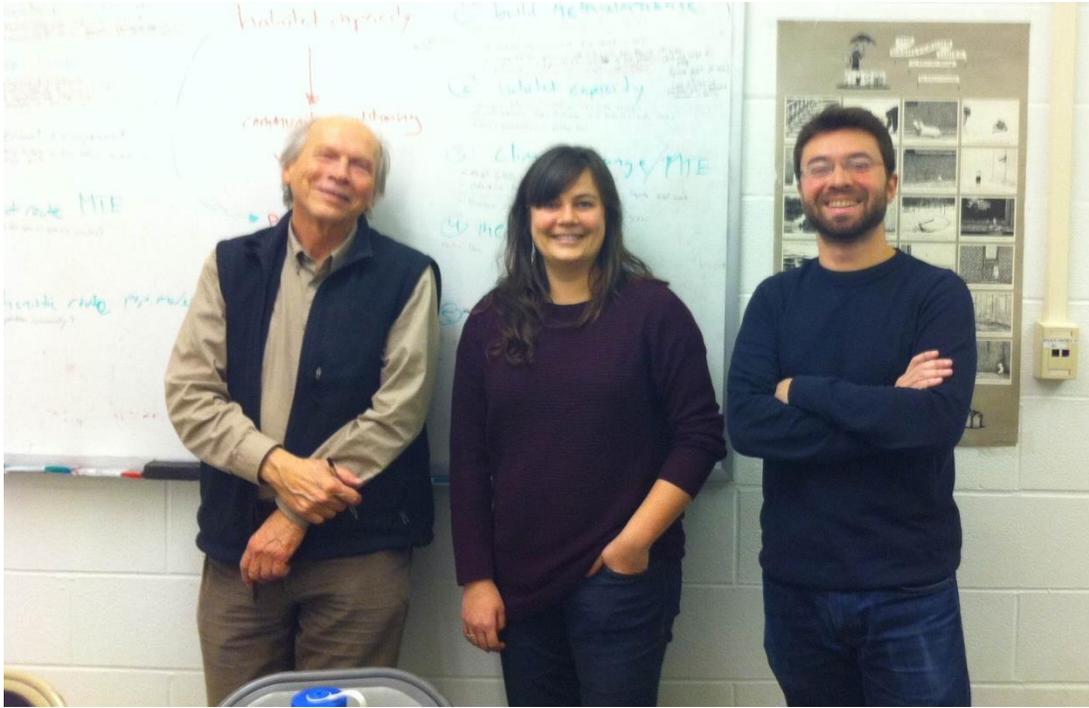
**3. Description of the visit**

On the first day of my visit, I met with Stephanie Melles at Ryerson University. We had already been in touch about developing a paper based on our findings from the workshop. Before this meeting, we had created some figures to illustrate the influence of the cumulative nature of river systems. Our goal during this meeting was to clearly establish the objectives of the paper and an extended outline.

Our paper will look at the differences in patterns and scales between terrestrial and aquatic systems. These differences are especially noticeable for large-scale units. During this meeting, we agree on some key messages such as the importance of upstream contributions for large rivers and the difference in variability between large-scale units for terrestrial and aquatic ecosystems. We hope that this paper can shed light on how to integrate the hierarchical nature of river systems in their analysis, especially for large rivers.

The second day, I meet with Brian Shutter to discuss a second project part of my PhD. This project aims at mapping aquatic ecosystem services (AES) at large-scale in Canada. Most of my work is related to rivers and I use river reaches as the unit of analysis. However, when looking at AES in Canada, lakes and associated services (mainly fishing) are unavoidable. During this meeting Brian Shutter and I discuss possible ways to integrate lakes and how to use lake volume to derive fish abundances. This meeting was extremely beneficial to this project because it provided with possible tools to include lakes in my analysis.

Overall this visit provided me opportunities to deepen my understanding of river systems and AES through fruitful meetings and collaborations.



Brian Shutter, Henrique Giacomini and I after our meeting in University of Toronto.