

CNAES
HQP Research & Collaborative Exchange
Funding
Visit report

A one-page report and photo (maximum 500 words) describing your visit. Include your original objective, and what you accomplished. This will be shared within the CNAES community.

1. Exchange information

Visitor: Vanessa Bourne, Master's Candidate, Laurentian University

Supervisor: Dr. John Bailey

Host: Dr. Michelle Palmer and Dr. Claire Holeton

2. Goals

The purpose of this trip was to learn how to properly interpret and analysis periphyton data. Periphyton is a well-developed bioindicator of ecosystem conditions. It was collected in the Ring of Fire region of Ontario as part of my Master's research project. These samples were then processed and identified by a professional algae taxonomist. I am using periphyton as a method to understand seasonal variability of stream conditions in the Ring of Fire, and to see how this variability differs between the Hudson Bay Lowlands and the Boreal Shield.

The goal of this trip was to meet with two aquatic scientists that are part of the Ontario Ministry of Environment and Climate Change. Dr. Michelle Palmer and Dr. Claire Holeton specialize in the evaluation of algae communities for bioassessment of fresh water. They are both well versed in periphyton analysis and were more than willing to share their knowledge.

This trip provided me with the opportunity to better my understanding of periphyton data analysis and interpretation, to further my Master's research.

3. Description of the visit

This trip took approximately 2 days. I left Sudbury and drove to Toronto the morning of the June 28th. That afternoon and the following day were spent learning data interpretation and analysis skills. I drove back to Sudbury on the night of June 29th.

Dr. Holeton and Dr. Palmer started their instruction by describing how to properly organize the data for analysis. Outlining what level of analysis to use, calculating relative abundance of data, describing how to deal with missing data and how to account for rare taxa. From there, they instructed that I conduct an Analysis of Similarities for a broad overview of seasonal and ecozone differences. They then advised that I conduct a repeated measures ANOVA, Tukey SD test and visually display the results with a boxplot. This analysis will be followed with creating a stacked bar plot of the most abundant species for each group. They then advised me to calculate some summery metrics including richness, species diversity etc. Lastly, they advised me to create ordinations of the data. This will relate the communities to the water chemistry data, the environmental characteristics and benthic macroinvertebrate data. Before conducting these ordinations I will determine if my data is linear or nonlinear, as this will decide which type of ordination to use. Overall, I benefited from meeting with Dr.Holeton and Dr.Palmer as they provided direction for how to properly analysis my periphyton data.

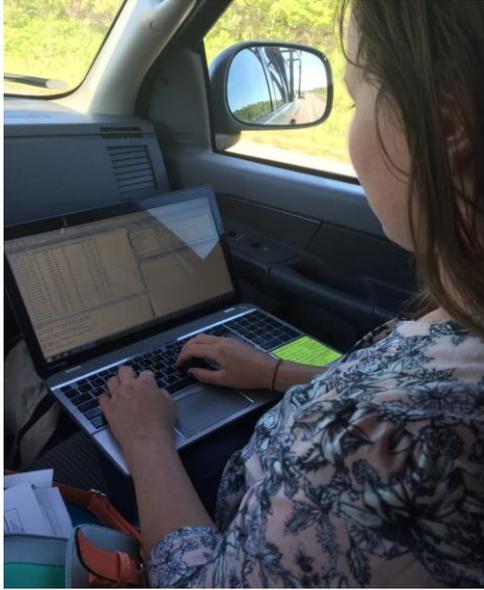


Figure 1.a. This picture shows me on the way back from Etobicoke applying my new statistical analysis knowledge Figure 1.b. This is the delicious Somalian dinner I had while staying in Etobicoke.