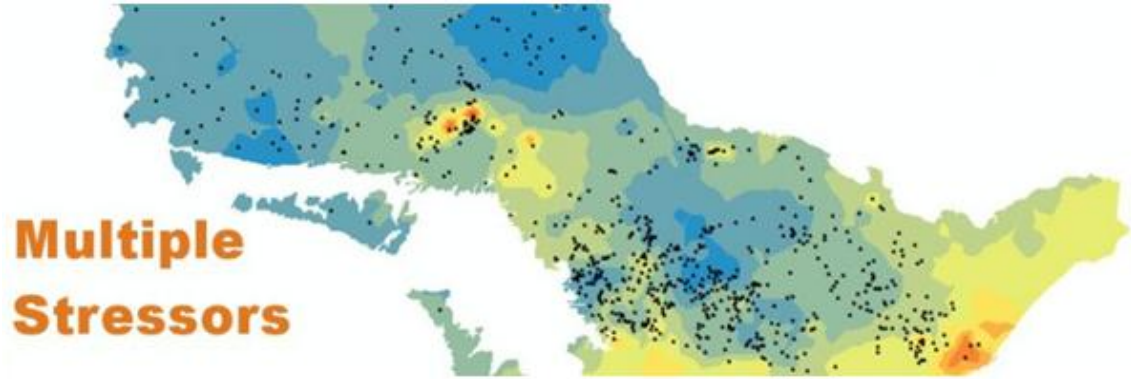
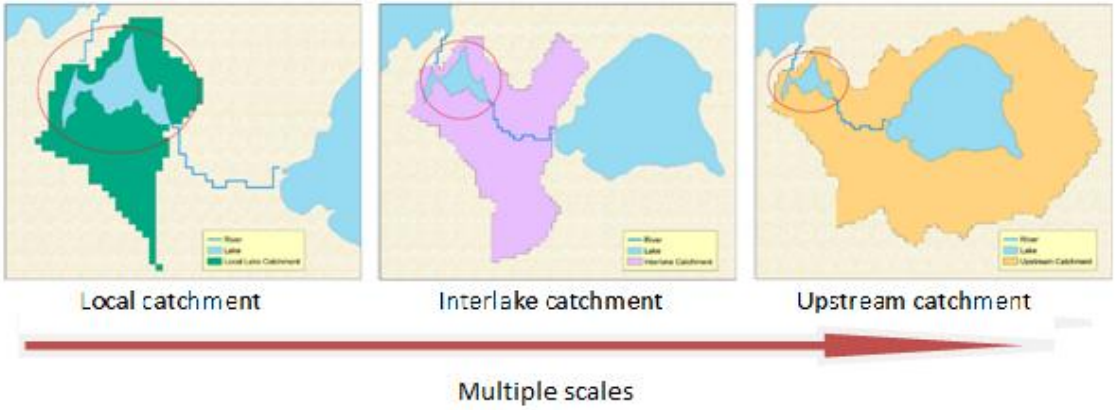
Building a Geospatial Database for Assessing Effects of Multiple Stressors on Inland Lakes

Mitacs Accelerate Grant $15,000; PI: Stephanie Melles; collaborators: Federation of Ontario Cottagers' Associations

Duration: Summer – Fall, 2016

Significance: Greater awareness and insights generated from this collaboration will not only use and report on FOCA member volunteer collected data, but will also enable researchers and managers to improve understanding of the causes of water quality change in inland lakes (i.e., phosphorous).





Citizen interests groups and provincial government bodies (i.e., Ontario Ministry of Natural Resources and Forestry, OMNRF, and Ontario Ministry of the Environment and Climate Change, MOECC) collect and analyze lake water quality data for a few thousand lakes across Ontario, but there are hundreds of thousands of unmonitored lakes. In order to assess effects of multiple stressors on our inland lakes, it is necessary to model how catchment-level inputs affect water quality, but catchments can be defined at multiple scales (e.g., local, inter-lake, entire upstream).

In this project, the Melles lab worked with the Federation of Ontario Cottagers Associations to produce a multi-scale geospatial database for two large regions of Ontario (Muskoka and Georgian Bay). The database includes combined land-based predictors of multiple stressors on lakes from reach-level (confluence to confluence[1]) land-based contributing areas at multiple scales (see further details here).

Click here for link to FOCA news on the project

Click here to view the poster presented at Latornell Symposium in 2016.

[1] Courtesy of Ontario Ministry of Natural Resources and Forestry, Jones lab