

# The Siscowette

## Great women doing great science in the Great Lakes

### FEATURED RESEARCH

Schmidt et al. 2011. Historical and contemporary trophic niche partitioning among Laurentian Great Lakes coregonines. *Ecol. Appl.* 21:888-896.

An ecologically unique and diverse species assemblage once roamed the deep waters of the Great Lakes, prior to overfishing and non-native species introductions. Now extirpated from Lakes Michigan, Huron, and Ontario (and in low numbers in

Superior), the deepwater coregonines were important prey fish for top predators and supported a productive commercial fishery. Rehabilitation of native deepwater fish communities is now a top management priority, yet little is known about their historical ecology.

Stephanie Schmidt and her colleagues collected coregonine tissue samples from museum specimens and from contemporary populations in Lakes Supe-

rior and Nipigon. They used stable isotope analysis – a technique that uses carbon and nitrogen information to decipher diet – to reconstruct the food web from the 1920's to the present.

In each lake, the coregonines were ecologically distinct from one another, their distinctness was maintained throughout a period of tremendous ecosystem change, and the most distinct species was most likely to persist



Stephanie Schmidt

over time. Stephanie suggests that the rehabilitation of ecological diversity be considered in reintroduction programs.

### FEATURED PROFESSIONAL

Jennifer Winter is a senior scientist with the Ontario Ministry of the Environment, and directs nutrient monitoring programs for inland lakes and the Great Lakes. She also is acting supervisor for the Sport Fish and Bio-monitoring Unit, the group responsible for the monitoring of contaminant levels in fish tissues throughout Ontario.

Jennifer's path to a career in science began in England, where she earned a B.Sc. in En-

vironmental Biology (Univ. of Liverpool) and a M.Sc. in Pollution and Environmental Control (Univ. of Manchester). She then moved to the Univ. of Waterloo (not England!) and the Ministry's Dorset Environmental Science Centre ([www.desc.ca](http://www.desc.ca)).

Jennifer's interest and background in environmental sciences forms the basis of a diverse research program on lakes at risk. She has studied the recovery of Sudbury area lakes,

the effects of multiple stressors on the phytoplankton communities of Canadian Shield lakes and Lake Simcoe, trends in nutrient and chloride loading to Lake Simcoe, and trends in algal bloom reporting by the public. Currently, she is involved with a large, collaborative research project on Lake Simcoe which explores how key processes such as nutrient loading and climate variability affect the ecology of the lake.



### FEATURED STUDENT OR POSTDOC

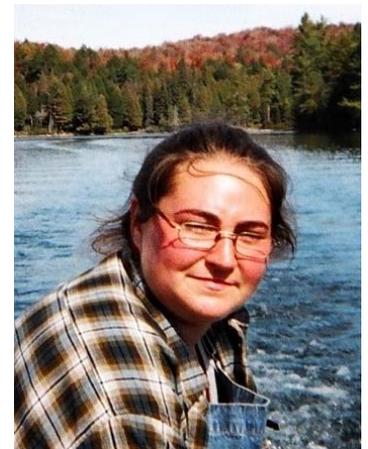
Michelle Palmer, a Ph.D. student at York University in Toronto, is interested in large scale questions concerning ecosystems and their responses to multiple, interacting stressors. Her research focuses on ~40 Ontario lakes and how their physical, chemical and biological properties changed following changes in climate, acidic deposition, nutrients and development, and species introductions. Michelle will also assess whether widespread stressors such as climate

change should be used to inform restoration targets for stressed lakes.

Michelle's first research experience was on cuttlefish communication at Dalhousie University (Nova Scotia), while still an undergrad. After completing her B.Sc. in marine biology and statistics, she moved to McGill University to do an M.Sc. Here, her research focused on biological invasions in the St. Lawrence River.

Michelle's integration of quantitative approaches and ecology is a winning combination. She has 11 publications in press or submitted, six of which are first-authored! Along the way, she has received several prestigious scholarships and awards.

Michelle is also passionate about teaching and knowledge sharing. She has been a TA for several courses, a coordinator for 1st year Biology, and even found time to found a taxo-



nomical and statistical consulting business!

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