

Queen's University
Ontario Universities Program in Field Biology

Course Title:	Environmental change in lake ecosystems
Instructor(s):	Dr. Shelley E Arnott, arnotts@queensu.ca
Dates:	Sunday Aug 19 to Sat Sept 1, 2018
Location:	Queen's University Biology Station
Cost:	\$1100 (includes \$350 deposit). Balance due Aug. 1. This cost includes room and board, local transportation, and supplies.
Prerequisites:	University course in general biology. Additional course(s) in ecology and biostatistics are an asset.
Enrolment:	12 (4 reserved for Queen's University)
Description:	<p>In this two-week course, students will become proficient at limnological sampling, conducting surveys in a heterogeneous landscape, and experimental design. Students will be based at the Queen's University Biology Station and will collect data on lakes along the Rideau Canal, in Frontenac Provincial Park, and on QUBS property. We will survey and compare lakes with different physical and chemical characteristics and with different levels of human impact, including invasive species. Emphasis will be on examining physical, chemical, and biological factors that determine the abundance and distribution of organisms within and among lakes.</p> <p>Students will learn limnological techniques commonly used to characterize lake ecosystems. In addition, we will use high-resolution data from lake monitoring rafts to model lake physical properties.</p> <p>During the first 5-6 days of the course, students will work in teams to collect data on ~ 20 lakes in the Frontenac Arch landscape. In the second half of the course, students will conduct independent research experiments inspired by their observations and interests that developed while visiting lakes in "The Land Between", a region with rich biodiversity and unparalleled beauty.</p> <p>Students will be required to canoe/boat, hike, and carry limnological equipment to the lakes. A moderate level of physical fitness and a positive attitude are essential. Previous canoeing/boating experience is NOT necessary. Students will receive basic instruction in paddling techniques and boating safety at the beginning of the course.</p>
Evaluation:	<ol style="list-style-type: none"> 1) Seminar: 30 minute seminar, based on scientific literature 20% 2) Website – group project to showcase data and analyses on lakes 20% 3) Written report (10-15 pages) based on data obtained individual projects (due~ 4 weeks after end of field course) 40% 4) Participation: 20%

***\$350 Deposit is due at time of registration.

Tuition at your home institution is *in addition* to any field module costs.

Students who drop a field course should not expect a refund of any field course costs.

Students are encouraged to purchase cancellation insurance if airline tickets are required.

Students are responsible for all fees incurred by the home or host university due to any bounced cheque.