

Undergraduate Thesis Opportunity in the School of the Environment

Project: Contaminants and feeding ecology of snakes and turtles from Point Pelee National Park.

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Looking for motivated, independent learners who want to perform an undergraduate thesis in SOE (ESCI and ESTU students welcome to apply). The project(s) will examine spatial and temporal trends in contaminants from Point Pelee National Park and uncover patterns in feeding ecology across species obtained from different park locations. This project will not involve field work but rely on specimens donated to UW from the park. However, students will work-up the samples for organic contaminant and mercury analysis, interpret the data using multivariate statistical approaches and present their findings.

Details of project(s)

Point Pelee National Park has been collecting road killed animals from park roads over the past 20 years. They have been storing the collected specimens in one of their freezers but now have need of that freezer space for a more pressing project. The park contacted UW about donating these specimens for a science-based project as opposed to simply discarding the samples.

This is a unique opportunity to obtain samples of turtles and snakes and examine them for a range of organic and metal contaminants and submit them for stable isotopes used as tracers of animal feeding ecology. Depending on the quality of data (# of samples, # of species and available meta data) the project can potentially support up to two undergraduate thesis projects: one focussing on contaminants and the other on feeding ecology differences.

Training opportunities

Both students (contaminants and feeding ecology) will gain hands on experience in the GLIER Organic Analytical and Nutrient Laboratory, an internationally accredited laboratory on sample processing, lipid and contaminant extraction coupled with instrumental analysis (Gas Chromatography-Electron Capture Detection and Total Mercury Analyzer). Students will generate a rich data set for interpretation via multivariate statistical analyses. You do not need to have extensive experience in analytical chemistry nor statistics, the point of this project is to provide you with hands on training and experience in these techniques. You will be working with technical staff members at the OANL and graduate students from the Drouillard laboratory. Most of the sample analysis will be conducted during the fall semester and data interpretation will proceed during the winter. You maybe asked to volunteer a couple of days in the spring to help the park with their freezer clean-up, taking notes on sample labels and meta-data as well as taking tissue samples of the frozen specimens for later analysis in the spring. Depending on number of samples retrieved I anticipated needing about 60 h of laboratory time related to sample processing (mostly in the

fall) and approximately 40 h dedicated towards data interpretation and writing your thesis. You will be provided help throughout this process. A best-case scenario is that the data produced can lead to a publication in a peer review journal.

Qualifications

You are capable of enrolling in the undergraduate thesis course within SOE or ESTU. You are well organized and dedicated such that when you create a schedule and commit to time in the lab, you always follow through. You have the self motivation to schedule regular appointments with your advisor, rather than your advisor having to find you after long lapses of time. You recognize this is more than a pathway to course credits, but a career building opportunity with chances to network with people from Parks Canada, work in an accredited laboratory setting and participate in public outreach events. You are professional, willing to learn and passionate about the environment.

For more information, please email Ken Drouillard (kgd@uwindsor.ca) and enclose a copy of your resume and a brief description of why you are interested in the project.

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