Module #14

Laurentian University / Université Laurentienne

Ontario Universities Program in Field Biology

Course Title:	**Disturbance and Recovery: Mining, climate, and change in Boreal lakes**
Instructor(s):	Dr. Elizabeth (Liz) Favot, efavot@laurentian.ca, tel: 705-675-1151 ext. 5296 Vale Living with Lakes Centre Laurentian University
Dates:	Monday August 3rd – Saturday August 15th, 2026
Location:	2 Field Camps: Hannah Lake, Sudbury and Research Centre, Killarney Park
Cost:	$1950. [$350 deposit to home university; $1600 balance due Jul. 2, 2026] Travel to and from Sudbury not included. Course fee includes accommodation, board, and all in-course travel (excludes fish and chips in Killarney).
Prerequisites:	All registrants in the course must be able to swim and be physically fit for hiking and overnight camping. At least one previous course in ecology, plant biology, limnology or environmental science is recommended. Introductory statistics is an asset.
Enrolment:	12 students
Course Description (brief):	This field course is an experimental and research-based study of how Boreal Shield lakes respond to and recover from environmental stressors, focusing on the dual influences of mining impacts and climate-driven change. Centered in the Sudbury Basin, one of the most successful environmental remediation sites in the world, students will investigate how shifts in lake chemistry, oxygen dynamics, and ecosystem structure reflect both historical disturbance and modern climate pressures. Field work in Killarney Provincial Park provides a contrasting reference for understanding recovery trajectories across disturbance gradients. Students will gain hands-on experience with standard limnological and paleolimnological techniques, including water profiling, sediment sampling, and plankton and invertebrate community analyses. Using the Vale Living with Lakes Centre (www.livingwithlakes.ca) as a research hub, students will form teams to design and carry out challenging research projects, introducing them to methods and analytical techniques useful for advanced studies and employment in aquatic sciences. On the first day of the course, each student will be required to present a 20-minute seminar and provide a brief written summary on an assigned topic (topics selected in May 2026). These seminars must be prepared in advance. Each student must submit a scientific paper in journal format on the data collected by their research team, one month after the fieldwork is completed. Upon successful completion of this course, students will have an introduction to field research, lab analysis and outdoor exploration to deepen their understanding of long-term environmental change and lake ecosystem resilience in northern landscapes.
Evaluation:	20% seminar at the beginning of the course 5% quiz during field course 10% field notes 15% course/project participation 50% research paper due one month after the course

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An Average Day – What to Expect

(a) Daily timeline	Field course days are full and focused. Breakfast: 7:15–8:00 AM, and by 8:30 AM students are in the field or lab — *rain or shine*. Work continues until noon and often involves physically demanding tasks such as carrying equipment, and sampling from boats. After a 12:00–12:45 PM lunch, field or class work continues from 1:00–5:00 PM. Persistence and teamwork matter most in these afternoon sessions, to overcome mental and physical fatigue from field-heavy morning sessions. Dinner is 5:30–6:30 PM, followed by 6:30–8:30 PM evening sessions that include lectures, data entry, planning, and student presentations. The days are long, but also highly rewarding. Weekend evenings will offer a well-earned break and some free time, where you can enjoy a sauna, swim, snack, and rest back at camp. The first week is structured and intensive with some in-class fundamental learning and group-based data collection; the second week is more flexible and centers on individual research projects.
(b) Work habitat & Physical exertion	Some field work may require moderate difficulty hiking on trails and portaging canoes. Students may be required to help carry field gear in backpacks or totes. Typical field excursions last 2-5 hours with lunches packed and prepared for longer trips. Environments accessed by students as part of individual research projects will vary based on topics chosen. Long days in cold, rain, or heat during field research should be expected. Risks include capsizing boats, twisted ankles, and fatigue, which will be mitigated through training, rest breaks, being well-prepared with clothing and gear, and sharing the load.
(c) Common activities	• While carrying day packs and gear you'll be travelling in groups of 3-5. You'll be hiking up rocky trails to sampling locations with little to no shade, canoeing or boating across lakes, using heavy sampling gear at times, and wading in streams with long days in vehicles on highways and gravel roads, with limited access to flush toilets • Care should be taken to avoid blisters, bear encounters, dehydration or heat exhaustion (e.g. hats, sunscreen, drinking lots of water, rest breaks)
(d) Weather, dehydration, & biting insects	• The daily temperature ranges from 15-30°C with high sun exposure; we are careful to avoid thunderstorms and lightning • In early August mosquitoes and black flies have mostly passed and biting fly conditions are much improved, except for pesky deer flies
(e) Toxic/poisonous, wildlife/ plants	There are usually bees and wasps and perhaps exposure to poison ivy but not many risks exist from small creatures except for those students with severe allergies. Lyme disease is known in the area, but ticks are very uncommon at this time of year. Mitigation is through daily tick checks and tucking pants into socks. Black bears are very common at our study sites, so we provide an educational video and the group leaders carry bear spray. Most bears are seen while driving or boating. They usually leave quickly when they notice our group.
(f) Sleeping, washroom & laundry facilities	At the Sudbury camp, students stay in dorm style rooms, 2-3 students per room in gender-specific groups. No bedding is provided. You are required to bring a sleeping bag and pillow. Flush toilets are available. There is a shower but there is a 5-minute limit. Laundry facilities are not available, but there is a sink and a clothesline for swimming suits and towels, etc. At the Killarney camp accommodations are in a single or shared tent. You will need a sleeping pad, a flashlight, sleeping bag, pillow, towel, etc. There will be flush toilets nearby.
(g) Meal plans & food allergies	Meals provided are hearty and nutritious, with vegetarian options available though with limited variety. There is usually excellent bread and desserts and a good variety of options for students to pack their own lunches. With advance notice, cooks do their best to support individual student needs and allergies, however a strict vegan, celiac, or other restrictive diet would be challenging, and these students should bring extra food at their own costs if required.
(h) Non-academic responsibilities	N/A
(i) Degree of isolation	• There is no wifi and few electrical outlets at the camp. Reliable internet and research access are available while on campus at Laurentian University • There are no readily walkable stores, but occasional trips are made to pick up supplies, visit pharmacies, etc.
(j) Alcohol & drugs	No alcohol, narcotics or smoking at camp. Killarney wilderness park has a complete can and bottle ban.
(k) Vaccinations/ Insurances	No special vaccinations required. A waiver form must be filled out prior to participation.
(l) Social Situations	This field course is a close-knit team activity, with a large amount of social interaction, and students spending a lot of time together for projects, meals, and free time. Most groups enjoy the social aspect and may form lasting friendships and future professional connections. Students will work together on data collection and field work, building interpersonal skills, but are expected to write research reports independently.
(m) Final comments	This field course gives students a hands-on, immersive taste of what it's really like to be a graduate student or professional scientist – the kind of work that happens outside the lecture hall, on real lakes, with real problems to tackle. Many students find this experience exciting and inspiring, and it has sparked countless careers in environmental science. It's challenging, yes, but also full of discovery, allowing students to pursue their curiosity, and develop transferable skills.