

<b>Course Title:</b>	<b>Canadian Shield Biodiversity</b>
<b>Instructor(s):</b>	Alex Mills, York University. Email: <a href="mailto:ammills@yorku.ca">ammills@yorku.ca</a>
<b>Dates:</b>	July 18 to August 1, 2020
<b>Location:</b>	Wildlife Research Station, Algonquin Provincial Park
<b>Cost:</b>	\$1400 (\$350 non-refundable deposit to your home university; \$1050 balance to York University). The balance is due by May 31, 2019 payable by cheque to <i>York University</i> . The cheques should be mailed to: Avalon Moore, Dept. Biology, York University, 4700 Keele St, Toronto, ON M3J 1P3. Fee includes: all accommodations, meals, use of canoes and equipment, transportation during the course. Excluded: Students are responsible for travel costs to and from the WRS, although arrangements can be made for pick-up (July 18) and return (August 1) at the Huntsville Bus Station. For students interested in car pooling, Professor Mills will try to facilitate communications.
<b>Prerequisites:</b>	First year biology that includes an ecology-evolution component
<b>Enrolment*:</b>	18 (4)
<b>Course Description (brief):</b>	Algonquin Park is Ontario’s oldest and most famous provincial park, and the Wildlife Research Station (WRS: <a href="https://www.algonquinwrs.ca/">https://www.algonquinwrs.ca/</a> ) at Lake Sasajewan has just had its 75 <sup>th</sup> anniversary. Hundreds of research papers have resulted from field work at this venerable institution situated in the heart of the park. The objective is to immerse you in a research facility in a great natural environment where you will be introduced to a number of prominent taxonomic groups – birds, dragonflies, nocturnal moths, etc. – and where we will employ some commonly used methods to sample biodiversity – banding birds, netting dragonflies, using UV lights at night, etc. Most of our time will be spent in the field, where students will conduct fieldwork in small teams, generally 3 students each. We will also regroup in the classroom from time-to-time where we will summarize and analyze the data we collect, create presentations, construct identification keys, and enjoy active learning exercises that are also fun. Progress will be assessed with periodic short quizzes and also through one or more select specimen collections. Throughout, you will keep a natural history journal that will form part of your assessment. [ Students will encounter biting insects (mostly mosquitoes and deer flies). There is neither poison ivy nor venomous snakes in the area. It is the warmest time of year in Algonquin, but it could be rainy at times. We are likely to use canoes on one or more days of field work. ]
<b>Evaluation:</b>	<ul style="list-style-type: none"> <li>• In-course – Daily-log field Journal submitted at the end of the course 14%</li> <li>• In-course - Specimen collection (plants or insects) 8%</li> <li>• In-course - Creation of a dichotomous key based on collection data 8%</li> <li>• In-course - Two 3-minute presentations (prepared in advance) 10%</li> <li>• In-course - Participation grade 10%</li> <li>• In-course - Eight taxonomy modules → survey data, ID skills, and analysis 24%</li> <li>• Post-course - Eight taxonomy modules → post-course write-up 16%</li> <li>• In-course – Mini-quizzes 10%</li> </ul>

## *An Average Day – What to Expect*

(a) Daily timeline	<p>Most days will begin before 7:30 breakfast with bird banding, although students will be on a rotation of about 4 days so that only a portion of the class will begin before breakfast. After breakfast most days, students will be in the field. Initially, it will be the whole group, but after an acclimatizing period, students will work in groups of about three. Several locations will be accessible on foot near the station, but we will also taxi students to several nearby sites when required (Old Airfield, Bike Trail, Two Rivers Trail, Bat Lake Trail, etc.). Lunch will normally be back at the station. On some days, we will also be in the field in the afternoon, and occasionally in the evening – even after sundown once or twice. But there will be a break for personal time each day. Also, most days we will be in the classroom for at least one hour. This will be for varied purposes: (a) short lectures from the professor, (b) 3-minute presentations by students, (c) identification practice, (d) collection development, etc. A course schedule will be provided at the start of the course, but weather will almost certainly require adjustments as we go. Each student will be in a group, also on rotation, that will require after-dinner clean-up duty two or three times during the course.</p>
(b) Work habitat & Physical exertion	<p>Students will be on foot a lot, and will likely be walking at least several kilometers per day. The terrain is rugged and varied, but the change in elevation is not great, so there is not a lot of climbing. Good running shoes or light hiking boots will usually be appropriate. Some landscapes are low and wet underfoot. Once or twice we will be wading, and in such cases old running shoes that can get wet will probably be superior to boots. Once or twice we will be canoeing, although it will involve only relatively short distances. Inevitably, students will occasionally be in the field when rain arrives, so rain gear is highly desirable. Previous spring and summer field courses at the WRS have proved to present no major challenges where students have reasonable physical fitness.</p>
(c) Common activities	<p>Daily: Walking on quiet bush roads and trails, walking in wooded and open habitats off-trail, working in classroom, identifying biodiversity and recording location or survey data</p> <p>Less than daily, but likely more than once: Wading in shallow water (small river or marsh), collecting plants, collecting insects, mist-netting and handling birds, bird-banding, canoeing</p> <p>Associate inconveniences: getting wet from rain, twisted ankles in uneven terrain, being annoyed by biting insects (mosquitoes and deer flies), long days</p>
(d) Weather, dehydration, & biting insects	<p>Late July is the height of summer in Algonquin. Daily high temperatures are commonly in the high 20s°C, with a high probability of sunshine most days. It is almost always considerably cooler at night, perhaps even as low as 10°C. Most days are not likely to rain, but it will rain during the course at one or more points. Providing that students travel with a water bottle and are attentive, dehydration is unlikely. Days exceed 15 hours of daylight at this time of year at this latitude. Even in warm weather, hats and skin-covering clothing will be best suited for most field activities to minimize sunburn and insect bites.</p>
(e) Toxic/poisonous, wildlife/ plants	<p>Some plants and fungi are poisonous to eat. There is no poison ivy or stinging nettle in the area. There are no venomous snakes. Ticks that attach to humans are rare in Algonquin, and to date, Lyme disease has not been recorded. There are stinging bees and wasps, but stings are infrequent. There are black bears and eastern wolves in Algonquin, and we have been lucky enough to see both in the past; they pose little risk providing that students follow protocol.</p>
(f) Sleeping, washroom & laundry facilities	<p>Students sleep in single-sex cabins shared with other students. Beds with mattresses are provided, but students should bring bedding (or sleeping bags) and their own pillow. Some cabins are not impervious to deer mice, but keeping a clean cabin minimizes their presence. Cabins have electricity but are not air-conditioned.</p> <p>The WRS has a utility building that includes single-sex washrooms with hot showers and flush toilets. Elsewhere on the WRS station (e.g. more distant facilities, such as the classroom), outhouses (pit latrines) are also used. The utility building also has laundry facilities.</p>

(g) Meal plans & food allergies	<p>The WRS has a kitchen and dining area that will accommodate the whole course at one sitting. Mostly, all students in the course will eat here three times per day (breakfast, lunch, dinner) at prescribed times. Breakfast is usually self-serve using cereal, toast, etc. but occasionally it is a hot breakfast. Lunches may be hot or cold, but are hearty. Dinners are usually a hot meal. On occasion, we may employ boxed lunches for consumption in the field. The WRS has kitchen staff who prepare the noon and evening meals.</p> <p>Good coffee is available each morning, but users are asked to contribute coins to the coffee fund if they consume it.</p> <p>Allergies are registered with the head cook, and vegetarian options are available. The facility cannot eliminate all allergens from the site, however. For instance, it cannot be nut-free. Naturally, students who react to allergens with anaphylaxis should come prepared with an epipen.</p>
(h) Non-academic responsibilities	<p>Students will be on clean-up duty two or three times during the course. This includes dish duty and also sweeping / cleaning of the utility building and the dining hall, but not cleaning toilets. Students are expected to be fastidious in their sleeping cabins in consideration of their bunk mates and to minimize attracting deer mice.</p>
(i) Degree of isolation	<p>The WRS is about 1.5 km north of highway 60 and it is accessible by a bush road prohibited to the public (but not to the course). Students are expected to make their own way to and from the course. However, there is bus service from the GTA to the Town of Huntsville, and field course personnel will pick up (July 18) and return (August 1) students there by arrangement. Similarly, for enrolled students who are interested, we will try to facilitate car pooling arrangements to and from the course.</p> <p>The station has power, so recharging devices is possible. There is no WIFI and cell service is intermittent. Occasionally but not daily, groups of students will be able to visit the Algonquin Visitor Centre where there is WIFI. During most of the course activities in the field and the classroom, cell phone use will be restricted anyway, so that students are “in the moment” occupying a non-virtual, non-electronic environment.</p> <p>The Two Rivers Store on highway 60 is about 2 km from the WRS, and it has fast food and some basic convenience items.</p> <p>There are first aid supplies at the Wildlife Research Station. The Huntsville Hospital is about an hour’s drive from the WRS.</p>
(j) Alcohol & drugs	<p>The WRS is not alcohol-free, but there is a no-alcohol course policy. At the end of the course, we plan to have an evening bonfire party where alcohol will be permitted. Smoking marijuana or marijuana products is not allowed.</p>
(k) Vaccinations/ Insurances	<p>Students should be up-to-date with whatever vaccinations are appropriate for Ontario, such as tetanus, and students are required to have Ontario health care coverage or the equivalent through a private insurer.</p>
(l) Social Situations	<p>Students are required to be considerate of those with whom they share sleeping quarters, and to work collaboratively with those with whom they will be working on course activities.</p>
(m) Final comments	<p>One field course comment from past version of this course, about the beautiful landscape: “I feel like I’m living in a postcard”.</p>