

Course Title:	Winter Ecology of Birds
Instructor(s):	Paul Martin, 613-533-6598, pm45@queensu.ca, Dept. Biol., Queen's Univ. Kingston ON
Dates:	Sunday 12 February to Sunday 26 February 2023
Location:	Queen's University Biological Station (50 km north of Kingston, ON) (https://qubs.ca/home ; 613-359-5629)
Cost:	\$1400.00 (Deposit of \$350.00, balance due at time of course). This cost includes room and board at QUBS and local transportation. This cost does not include home university tuition or your travel to/from the field station from your home.
Prerequisites:	University course in general biology. Additional course(s) in ecology and evolution are an asset, but not required.
Enrolment:	12 students
Course Description (brief):	<p>The goal of this course is to explore the ecology of birds in winter, examining adaptations of various species to surviving under difficult conditions. We will consider factors that limit the geographic distributions of species, particularly at northern latitudes, how species partition habitat and food resources, mixed species flocking, the importance of food caching, large mammal kills, and roost sites, patterns of movement through the winter, and morphological and physiological adaptations to winter conditions. We will also consider the impacts of global climate change on the wintering distributions and ecology of local species.</p> <p>Students will learn skills of field identification of birds, recording natural history observations, designing and conducting field studies, and analysis and presentation of results. The field course will focus on the immediate area of the Queen's University Biological Station but will include day trips to nearby open water and congregations of birds (Wolfe or Amherst Island).</p>
Evaluation:	<p>30 min seminar based on reading provided by prof, prepared before course: 20%</p> <p>15 min seminar on the natural history of a focal bird, highlighting their annual life cycle and ecology in winter, prepared before course: 10%</p> <p>Field notebook evaluations: 20%</p> <p>Participation in the field and in discussions that follow presentations: 10%</p> <p>Final project report (10-15 pages) based on data obtained from group or individual projects (due 4 weeks after end of course): 40%</p>

An Average Day – What to Expect

Daily timeline	<p>Here is an example day in the first week of the course:</p> <p>6:00-10:00 am - Field trip on QUBS properties - Finding Food in Winter (Moore, Pangman or Bracken Tract)</p> <p>10:00-11:30 am - Scientific Method Discussion</p> <p>12:00-12:30 pm - Lunch</p> <p>1:30-3:30 pm - Assigned readings: Platt (1964) and Cimprich & Grubb (1994)</p> <p>5:30-6:00 pm - Dinner</p> <p>7:00-8:00 pm - Student Presentations, Part 1 (order randomly drawn).</p> <p>Note: Days involving travel (e.g., to Amherst Island) or owl surveys will depart at 4am sharp; some days (e.g., Amherst Island trip) will be full days in the field with packed lunches. The latter half of the course will involve independent field projects and data collection, typically done in small groups (2-3 students).</p>
Work habitat & Physical exertion	<p>Expect, and come prepared for, extremely cold conditions and deep snow. Hiking in these conditions can be extremely difficult – students should be confident that they are in good physical condition. In previous years, we have hiked in temperatures below -25C and with snow above your knees.</p>
Common activities	<ul style="list-style-type: none"> • common activities: hiking in cold and through snow, standing still, driving short distances, looking for and at birds • associated risks: fatigue, hypothermia - come with suitable clothing for cold weather; also getting lost (during independent work), twisted ankles
Weather, dehydration, & biting insects	<ul style="list-style-type: none"> • weather conditions: cold, wind chills, heavy snow at times, also freezing rain and rain with temperatures just above freezing • bring lots of layers that can be added/shed as required and protection against precipitation in various forms
Toxic/poisonous, wildlife/ plants	<p>Nothing too problematic but need to stay off ice and guard against getting lost during independent study.</p>
Sleeping, washroom & laundry facilities	<ul style="list-style-type: none"> • sleeping accommodations (without COVID restrictions: shared rooms with bunk beds, gender specific in heated building); with COVID restrictions: one student per room in heated buildings). Students need to bring bedding (e.g. sleeping bag, pillow). • washroom facilities at the station with private hot showers; no washrooms in the field during hikes (students who need to go drop off the back of the group and go in the forest) • washing/laundry facilities at the station
Meal plans & food allergies	<p>Meals provided at the station. Please notify the professor of allergies or special diet requests.</p>
Non-academic responsibilities	<p>Getting yourself ready for <u>prompt</u> departures early in the morning. Being respectful of others.</p>
Degree of isolation	<p>See https://qubs.ca/home for details on the station and its location. The station has wifi and some cell reception but does not have a store for personal items/food.</p>
Alcohol & drugs	<p>Whatever QUBS says at the time of the field course (https://qubs.ca/home).</p>
Vaccinations/ Insurances	<p>All students will require COVID 19 vaccinations.</p>
Social Situations	<p>Group living in close quarters, if COVID restrictions are not in place.</p>
Final comments	<p>Each winter is different, but always exciting. On the course, we have now seen 8 species of owls (including Snowy, Boreal, Great Gray and Northern Hawk-Owl), in addition to all of the winter finches (including both crossbills), up to 7 Bald Eagles at one time, Golden Eagle, 3 species of swans, and much, much more.</p> <p>Please see website for complete details, including a tentative itinerary: https://www.paulmartinlab.com/teaching</p>