DALHOUSIE UNIVERSITY

Faculty of Science Course Syllabus
Department of Biology

BIOL 3635.03/MARI 3635.03
Species at Risk Field Course

Summer – May 13-28th, 2024

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

Instructors: Dr. Christopher Course ch608098@dal.ca
Carter Feltham (Mersey Tobeatic Research Institute) carter.feltham@merseytobeatic.ca

Demonstrator: Caleb Gibbons

Schedule: This is a field-intensive course, not a standard lecture/lab course. Activities may start as early as dawn or end at midnight.

Classroom: LSC 4012, 9:05-11:55 and 1:05-16:55 when on Dalhousie campus

Field trip: May 18-25th, Southwestern Nova Scotia (see detailed schedule; note that any given activities may need to be rescheduled due to inclement weather or availability of guest lecturers or trip leaders; such is the nature of field work)

Course Description

This course provides practical field experience in the biology of Species at Risk (SAR). Students learn through lectures, presentations, field work, and writing a formal report. On a week-long field trip to Southwestern Nova Scotia, students learn from SAR biologists how to conduct field surveys, document data, and recover SAR.

Course Prerequisites

BIOL 2060.03 (Introductory Ecology) and BIOL 2003 or 2004 (or another introduction to biological diversity), or instructor's approval. BIOL 3605.03 (Conservation Biology) is recommended. Students should have at least two years of university courses (60 credit hours or more).

Further information

This course is skills-based and provides practical experience working with Species at Risk. This course will build on knowledge students have obtained through previous introductory ecology, biodiversity, and conservation courses. Students learn about species at risk (SAR), the species assessment process, threats to SAR, and the recovery process. Skills include identification, sampling methods, data collection and management, and the analysis and interpretation of Species At Risk data. Lectures will provide background content. The course will include terrestrial, freshwater and marine SAR, with a focus on species in Nova Scotia.

DALHOUSIE UNIVERSITY

Includes an 8-day overnight trip during which students will spend all or part of each day doing field work. In addition to daytime surveys, some early morning and late evening surveys will target certain species. The schedule will vary and may change due to weather. Students may need to walk over uneven terrain, on and off trail, through woods, swamps and bogs, and travel by canoe. Students will stay in tents or bunks at a field station, with washrooms in a separate building. An auxiliary fee is charged to cover field costs (e.g., meals, accommodations, transportation). This fee is charged on top of the tuition for a half-credit Biology course.

The course provides an opportunity to obtain field and research experience with species at risk. It is excellent preparation for honours students or other students who plan to conduct independent research in their 4th year or for students who are interested in working with Species at Risk in the future.

Field Trips

On the 8-day field trip to Southwestern Nova Scotia, we will stay at the Mersey Tobeatic Research Institute (MTRI) Next to Kejimkujik National Park.

On the field trip, we will prepare meals as a group and accommodate dietary needs. If your diet requires preparing your own meals, you will be accommodated and reimbursed for your food costs. Prior to the field trip students will fill out a questionnaire to indicate what foods they can and prefer to eat. This information will be used to prepare a menu and discussed with the class prior to food purchase.

You are expected to arrive on time and prepared for field trips. You will need to be ready for all weather conditions (hot, cold, or wet weather).

Course Objectives/Learning Outcomes

By the end of the course, students will be able to:

- Use appropriate terminology to discuss Species at Risk and issues around them - Legal / theoretical issues related to species at risk classification, designation, and protection (permitting, land ownership)
- Find and use information on Species at Risk in Nova Scotia and Canada
- Explain the process of designating a species as being At-Risk
- Identify selected Species at Risk in Nova Scotia and associate each with habitats and major threats
- Apply concepts in ecology, biodiversity, and conservation biology to Species at Risk
- Describe general strategies for conservation and recovery of SAR
- Organize and analyze field data using Excel
- Create maps in ArcGIS using georeferenced data and GIS layers
- Interpret survey results in relation to Species at Risk recovery
- Demonstrate understanding of the recovery planning process
- Contribute analyses and summaries to a formal scientific report or status assessment
- Prepare tables and figures according to standard scientific formats
- Use standard field sampling techniques, including:
  - Survey techniques for different Species at Risk
  - Navigation with compass and GPS
  - Documentation of field locations, conditions, activities, and observations in a field notebook

DALHOUSIE UNIVERSITY

Course Materials

All course materials and announcements will be provided through the BrightSpace course website or as handouts or field guides. Most lectures will be posted as pdfs but guest lectures may not be posted. Students should take notes on the lectures. Assignments will include explicit instructions and marking rubrics. No textbooks are required. For citing the literature see the CSE Style Guide, 8th Ed, accessed through Brightspace or the Dal Library. You may also consult Karin Knisely's book, *A Student Handbook for Writing in Biology,* for basic information about preparing reports.

Students will need to use Microsoft Word and Excel for classwork. Microsoft Office can be downloaded for free for use on personal computers by Dalhousie Students. If you do not have a personal computer, you will need to do your assignment work in Dalhousie computer labs. It will be useful to have your own laptop or at least a tablet on the field trip for working on your assignments, accessing course materials, and checking email.

Course Assessment

Students will be assessed primarily by their own work, although they may work in pairs to collect data on the field trip. Students will give one presentation on Species at Risk on May 14-15. Student contributions discussions after each presentation will be part of their symposium mark (10%). There will be one test (25%), based on coursework in the first three days.

Assessment of field work (20%) will include the individual field notebook, any data sheets or field cards on which observations are made and submitted, teamwork, and contribution to field data collection. It will also include contribution to class logistics, including being ready on time, obeying rules, and helping to cook and/or clean at the field stations. The field notebook must be filled out in real time, using a soft lead pencil. It must be scanned into a single pdf file and uploaded to Brightspace after the trip; the file must be clear and legible.

In the last few days of the course, each student will individually prepare three short assignments (15% each) that summarize field data, interpret data in the larger context of the recovery of particular species at risk, and demonstrate skills and understanding of concepts and material presented in the course.

Marks in the course will be based on the following:

Assessment	**% of mark**
PowerPoint presentation on a selected SAR and contribution to discussions (May 14 – 15)	*10*
Test (1-2pm, May 16) on all course material from the first three days (lectures, student presentations, any assigned readings), before leaving on field trip	*25*
Field notebook (scan due May 26), plus other field contributions and contributions to class logistics on the week-long trip (May 18-25)	*20*
1 – Data report (May 27): analysis and summary of bird field data or herp data *2 – Insect collection (May 28): Identification and ecosystem health assessment* *3 – Threats and recovery actions (May 28): based on field observations of the other SAR groups and lectures and field trips*	*15* *15* *15*

DALHOUSIE UNIVERSITY

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	**B+** (77-79)	**C+** (65-69)	**D** (50-54)
A (85-89)	**B** (73-76)	**C** (60-64)	**F** (<50)
A- (80-84)	**B-** (70-72)	**C-** (55-59)	

Course Policies

Full attendance and participation, as essential components of this course, are required. Full participation includes, but is not limited to, participating in all scheduled course activities in the classroom and field, chores (e.g., preparing and cleaning up after meals), and being prepared for field trips, with appropriate personal gear. NOTE: Alcohol and legal recreational drugs, as well as illegal drugs, are NOT permitted on field trips.

Course Policies on Missed or Late Academic Requirements - Late assignments and missed coursework will be addressed case by case at the discretion of the instructor.

Course Policies related to Academic Integrity - Students will work in pairs in the field. However, assignments and tests are individual. Plagiarism detection software will be used on papers submitted to Brightspace.

Course Content

Please note that due to the nature of this course the schedule may change to accommodate inclement weather and the availability of guest lecturers or field trip leaders. Surveys will be conducted at various times of day, from early morning, dusk, and evening, as appropriate for each species. Weather may not allow field work each day, or for just part of the day, so the schedule must be flexible. Rest time and assignment work time will also be incorporated into the schedule, but some days may be busier than others.

DALHOUSIE UNIVERSITY

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education.

We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: http://www.dal.ca/cultureofrespect.html

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

https://www.dal.ca/academics/important_dates.html

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

DALHOUSIE UNIVERSITY

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: https://www.dal.ca/faculty/science/current-students/academic-advising.html

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: https://libraries.dal.ca/

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: https://libraries.dal.ca/services/copyright-office.html

Fair Dealing Guidelines https://libraries.dal.ca/services/copyright-office/fair-dealing.html

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: https://dsu.ca/dsas

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Safety

Biosafety: https://www.dal.ca/dept/safety/programs-services/biosafety.html

Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html

Radiation Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety.html

Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html

Dalhousie COVID-19 information and updates: https://www.dal.ca/covid-19-information-and-updates.html