Resource Ecology Syllabus
Department of Biology
BIOL & MARI 3063   Winter 2025

Dalhousie University acknowledges that we are in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq People and pays respect to the Indigenous knowledges held by the Mi'kmaq People, and to the wisdom of their Elders past and present. The Mi'kmaq People signed Peace and Friendship Treaties with the Crown, and section 35 of the Constitution Act, 1982 recognizes and affirms Aboriginal and Treaty rights. We are all Treaty people.

Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.

Course Instructor(s)

Name	Email	Office Hours
Heike Lotze (Instructor)	Heike.Lotze@dal.ca	After the tutorial or by appointment
Julia White (TA)	julia.a.white@dal.ca	After the tutorial or by appointment

Course Description

This class considers the ecology, utilization, and management of natural resources in fisheries, wildlife and forest management, agriculture, and aquaculture. Topics include population dynamics, community interactions, and ecosystem support of resources as well as the history of resource utilization, practices of controlling production, pests, and predators, and sustainable management strategies.

Course Prerequisites: BIOL 2060.03, MATH 1000.03 (or MATH 1215 or STAT 1060.03 or DISP)

Course Exclusions: None.

Student Resources

All necessary information for this course will be posted on Brightspace:
Homepage - BIOL3063 MARI3063 - Resource Ecology - Sec: 01 - 2024/2025 Winter

Please read the Class Schedule and this Course Syllabus before the first class.

See also the Faculty of Science "Student Resources and Support" section below (page 9-10).

Course Structure

Course Delivery

This course will be delivered with two 1-hour lectures (asynchronous online) and one 2-hour tutorial (in-person) per week.

Course Brightspace page Homepage - BIOL3063 MARI3063 - Resource Ecology - Sec: 01 - 2024/2025 Winter

Lectures will be online asynchronous (except first in-person Introduction lecture):
- Panopto recordings posted on Brightspace.
- Lecture slides posted as pdfs on Brightspace.

Tutorials will be in-person:
- Wednesdays: 14:35-16:25, LSC Room C334
- Attendance is required, sessions will not be recorded.
- Students scientific briefing presentation slides will be posted as pdfs on Brightspace.

Exams will be in person.

Contact with instructor and TA:
- At the end of each tutorial students have time to ask questions in person.
- There is the discussion board on Brightspace to ask questions.
- Email us with any questions or concerns, we can schedule meetings, chats or video calls if needed.

Lectures

Two 1-hour lectures per week: asynchronous online. Except: first in-person Introduction lecture on Jan 7, 12:35-13:25 in Killam Room 2622.

Tutorials

One 2-hour tutorial per week: in-person, Wednesdays, 14:35-16:25, LSC Room C334.

Course Materials

There is no textbook, all necessary lecture & tutorial materials will be available on Brightspace:

Homepage - BIOL3063 MARI3063 - Resource Ecology - Sec: 01 - 2024/2025 Winter

Asynchronous lectures will be available as recordings and slides (pdf) that can be watched and accessed on any laptop or personal computer.

Assessment

Assignments	Weight (% of final grade)	Date
Midterm exam	15%	Feb 12, 2025, 14:35-15:35 (one hour, in-person, during tutorial time)
Final exam	30%	(two hours, in-person, scheduled by Registrar)

Assignments

- Resource use
  - Survey I — 1% — Jan 15, 2025 (in tutorial) 14:35-16:25
  - Survey II — 1% — Apr 2, 2025 (in tutorial) 14:35-16:25
- Scientific briefing
  - Oral presentation — 15% — in tutorial, different dates for each student
  - Written briefing — 15% — one week after student's oral briefing
- Food choice
  - Presentation — 10% — Mar 19 & 26, 2024, 14:35-16:25
  - Written reflection — 10% — Mar 19 & 26, 2024, 14:35-16:25
- Participation in tutorial discussions — 3% — in tutorials throughout term

Other course requirements

Attendance of in-person tutorials will be used to upgrade or downgrade final grades that are between marks.

Conversion of numerical grades to final letter grades follows the Dalhousie Grade Scale			
A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (0-49)
A- (80-84)	B- (70-72)	C- (55-59)	

Course Policies on Missed or Late Academic Requirements

All assignments have a strict deadline; late assignments will be docked 10% per day late; missed assignments and exams will count 0%; with the following exceptions:

- In case of illness, please use the Student Declaration of Absence (SDA) form for late or missed academic requirements. Late penalties will not apply if SDA is submitted prior to the due date. Maximum 2 uses of the SDA per term. Students who are ill for an extended period and miss multiple requirements should refer to Assistant Dean (Student Affairs).

- o In case of technological malfunction (internet failure, power outage), please notify the instructor via email as soon as possible and provide a written explanation.

If excused, we will provide the following alternative arrangements:
- ➤ missed midterm exam: the % value will be shifted to the final exam.
- ➤ missed final exam: a make-up exam will be offered on another date.
- ➤ missed assignments: an extended deadline will be offered.

The content of cancelled lectures or tutorials will be integrated into following classes in abbreviated form; only topics presented and discussed in lectures and tutorials will be tested in exams.

Course Policies related to Academic Integrity

In case of group projects, each student is required to contribute to the group's work, and the group will be assigned one grade.

Plagiarism software will be used to check for the originality of each student's written assignments.

As all written assignments require critical thinking and evaluation, the use of generative AI and large language models (e.g., ChatGPT) is NOT recommended.

Learning Objectives

Content:
- Define living natural resources
- Describe the history of exploitation in terrestrial, marine and freshwater living resources
- Summarize the current state of global fisheries, wildlife, forestry, agriculture and aquaculture
- Explain the fundamental principles and ethics of resource management and conservation
- Outline how to monitor and assess the distribution and abundance of resource populations
- Identify environmental factors and biological interactions that influence resource abundance
- Identify how species diversity, food-webs and ecosystems influence resource abundance
- Point out the influence of economic and social factors on natural resources
- Assess practices of controlling resource production, pests, and predators
- Summarize the range of human impacts on natural resources
- Recommend management strategies that foster sustainability

Skills:
- Produce an independent project researching the biology, population status, exploitation history, management and conservation of a resource species
- Compose an oral presentation summarizing the independent research project
- Write a formal scientific briefing to inform a politician/manager about a resource species in question
- Produce an infographic and write self-reflection essay on a food choice assessment

Course Content

The tentative schedule of Lecture and Tutorial topics is posted below, this may change with snow days or other delays. Extra days will be used for rescheduling cancelled lectures or missed tutorials.

Week	Date	Lecture topics	Date	Tutorial topics
1	T – Jan 7 Th – Jan 9	Introduction (in person!) Terrestrial mammals	W – Jan 8	Introduction (in person!), scientific briefing topics
2	T – Jan 14 Th – Jan 16	Ethics of resource use Whales & Whaling	W – Jan 15	Resource survey I, food choice topics
3	T – Jan 21 Th – Jan 23	Other marine mammals Resource management	W – Jan 22	Presentations Mammals
4	T – Jan 28 Th – Jan 30	Marine fish Diadromous/Freshwater fish	W – Jan 29	Presentations Fish
5	T – Feb 4 Th – Feb 6	Reptiles & Amphibians Conservation & Recovery	W – Feb 5	Presentations Reptiles & Amphibians
6	T– Feb 11 Th – Feb 13	Aquaculture (extra day)	W – Feb 12	**MIDTERM exam**
	Feb 17-21	STUDY BREAK - NO CLASSES		
7	T – Feb 25 Th – Feb 27	Invertebrates Monitoring & Assessment	W – Feb 26	Presentations Invertebrates
8	T – Mar 4 Th – Mar 6	Wild birds Ecosystem consequences	W – Mar 5	Presentations Birds
9	T – Mar 11 Th – Mar 13	Wild plants Economy, Social & Market forces	W – Mar 12	Presentations Plants
10	T – Mar 18 Th – Mar 20	Forestry Land- & Ocean use management	W – Mar 19	Food choice presentations I
11	T – Mar 25 Th – Mar 27	Agriculture Pest control & Pollution	W – Mar 26	Food choice presentations II
12	T – Apr 1 Th – Apr 3	Future of resource use (extra day)	W – Apr 2	Resource use survey II, Q&A for Final Exam

University Policies and Statements

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 at 1321 Edward St or elders@dal.ca. Additional information regarding the Indigenous Student Centre can be found at: https://www.dal.ca/campus_life/communities/indigenous.html

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." Additional internationalization information can be found at: https://www.dal.ca/about-dal/internationalization.html

Academic Integrity

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all 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. Additional academic integrity information can be found at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion, please contact the Student Accessibility Centre (https://www.dal.ca/campus_life/academic-support/accessibility.html) for all courses offered by Dalhousie with the exception of Truro. For courses offered by the Faculty of Agriculture, please contact the Student Success Centre in Truro (https://www.dal.ca/about-dal/agricultural-campus/student-success-centre.html)

Conduct in the Classroom – Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

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 (Strategic Priority 5.2). Additional diversity and inclusion information can be found at: http://www.dal.ca/cultureofrespect.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. The full Code of Student Conduct can be found at:
https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. Additional information regarding the Fair Dealing Policy can be found at: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. Additional information regarding Originality Checking Software can be found at: https://www.dal.ca/about/leadership-governance/academic-integrity/faculty-resources/ouriginal-plagiarism-detection.html

Student Use of Course Materials

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading to a commercial third-party website) may lead to a violation of Copyright law.

Faculty of Science

Student Resources and Support

University Policies and Programs

Important Dates in the Academic Year (including add/drop dates):
http://www.dal.ca/academics/important_dates.html

Classroom Recording Protocol:
https://www.dal.ca/dept/university_secretariat/policies/academic/classroom-recording-protocol.html

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

Grade Appeal Process: https://www.dal.ca/campus_life/academic-support/grades-and-student-records/appealing-a-grade.html

Sexualized Violence Policy: https://www.dal.ca/dept/university_secretariat/policies/health-and-safety/sexualized-violence-policy.html

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

Learning and Support Resources

General Academic Support – Advising (Halifax): https://www.dal.ca/campus_life/academic-support/advising.html

General Academic Support – Advising (Truro): https://www.dal.ca/about-dal/agricultural-campus/ssc/academic-support/advising.html

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

On Track (helps you transition into university, and supports you through your first year at Dalhousie and beyond): https://www.dal.ca/campus_life/academic-support/On-track.html

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

Indigenous Connection: https://www.dal.ca/about-dal/indigenous-connection.html

Elders-in-Residence (The Elders in Residence program provides students with access to First Nations elders for guidance, counsel, and support. Visit the office in the Indigenous Student

Centre or contact the program at elders@dal.ca or 902-494-6803:
https://cdn.dal.ca/content/dam/dalhousie/pdf/academics/UG/indigenous-studies/Elder-Protocol-July2018.pdf

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

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

LGBTQ2SIA+ Collaborative: https://www.dal.ca/dept/vpei/edia/education/community-specific-spaces/LGBTQ2SIA-collaborative.html

Dalhousie Libraries: http://libraries.dal.ca/

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

Dalhousie Student Advocacy Services: https://www.dsu.ca/dsas?rq=student%20advocacy

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

Human Rights and Equity Services: https://www.dal.ca/dept/hres.html

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

Study Skills/Tutoring: http://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Faculty of Science Advising Support: https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html

Safety

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

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

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

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