

# Resource Ecology Syllabus

## Department of Biology

BIOL & MARI 3063 Winter 2024

*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
Reid Steele (TA)	Reid.Steele@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 - 2023/2024 Winter \(brightspace.com\)](https://brightspace.dal.ca/BIOL3063/MARI3063-Resource%20Ecology-Sec:01-2023/2024%20Winter)

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 8-9).

## 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 - 2023/2024 Winter \(brightspace.com\)](#)

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: 15:35-17:25, Killam Room 2622
- 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 8, 12:35-13:25 in Killam Room 2622.

### *Tutorials*

One 2-hour tutorial per week: in-person, Wednesdays, 15:35-17:25, Killam Room 2622.

## Course Materials

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

[Homepage - BIOL3063 MARI3063 - Resource Ecology - Sec: 01 - 2023/2024 Winter \(brightspace.com\)](#)

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

## Assessment

### Assignments

Assessment	Weight (% of final grade)	Date
Midterm exam	15%	Feb 14, 2024, 15:35-17:25 (one hour, in-person, during tutorial time)
Final exam	30%	(two hours, in-person, scheduled by Registrar)

### Assignments

- Resource use		
○ Survey I	1%	Jan 17, 2024 (in tutorial) 15:35-17:25
○ Survey II	1%	Apr 3, 2024 (in tutorial) 15:35-17:25
- 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 20 & 27, 2024, 15:35-17:25
○ Written reflection	10%	Mar 20 & 27, 2024, 15:35-17:25
- 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).

- 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 9 Th – Jan 11	Introduction (in person!) Terrestrial mammals	W – Jan 10	Introduction (in person!), scientific briefing topics
2	T – Jan 16 Th – Jan 18	Ethics of resource use Whales & Whaling	W – Jan 17	Resource survey I, food choice topics
3	T – Jan 23 Th – Jan 25	Other marine mammals Resource management	W – Jan 24	Presentations Mammals
4	T – Jan 30 Th – Feb 1	Marine fish Diadromous/Freshwater fish	W – Jan 31	Presentations Fish
5	T – Feb 6 Th – Feb 8	Reptiles & Amphibians Conservation & Recovery	W – Feb 7	Presentations Reptiles & Amphibians
6	T – Feb 13 Th – Feb 15	Aquaculture (extra day)	W – Feb 14	<b>MIDTERM exam</b>
	Feb 19-23	STUDY BREAK - NO CLASSES		
7	T – Feb 27 Th – Feb 29	Invertebrates Monitoring & Assessment	W – Feb 28	Presentations Invertebrates
8	T – Mar 5 Th – Mar 7	Wild birds Ecosystem consequences	W – Mar 6	Presentations Birds
9	T – Mar 12 Th – Mar 14	Wild plants Economy, Social & Market forces	W – Mar 13	Presentations Plants
10	T – Mar 19 Th – Mar 21	Forestry Land- & Ocean use management	W – Mar 20	Food choice presentations I
11	T – Mar 26 Th – Mar 28	Agriculture Pest control & Pollution	W – Mar 27	Food choice presentations II
12	T – Apr 2 Th – Apr 4	Future of resource use (extra day)	W – Apr 3	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](mailto:elders@dal.ca). Additional information regarding the Indigenous Student Centre can be found at: [https://www.dal.ca/campus\\_life/communities/indigenous.html](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](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](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](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](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/dept/university\\_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.html](https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality-checking-software-policy-.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](http://www.dal.ca/academics/important_dates.html)

Classroom Recording Protocol:

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/classroom-recording-protocol.html](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](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](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](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](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](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](https://www.dal.ca/campus_life/academic-support/On-track.html)

Indigenous Student Centre: [https://www.dal.ca/campus\\_life/communities/indigenous.html](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](mailto: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](https://www.dal.ca/campus_life/communities/black-student-advising.html)

International Centre: [https://www.dal.ca/campus\\_life/international-centre.html](https://www.dal.ca/campus_life/international-centre.html)

South House Sexual and Gender Resource Centre: <https://southhousehalifax.ca/about/>

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](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](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](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>