

**Faculty of Science Course Syllabus**  
**Department of Biology**  
*BIOL 3063.03 / MARI 3063.03*  
*Resource Ecology*  
*Winter 2021-2022*

*Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq.*

*We are all Treaty people.*

- Instructor:** Heike Lotze ([Heike.Lotze@dal.ca](mailto:Heike.Lotze@dal.ca))
- Teaching assistant (TA):** Nakia Cullain ([Nakia.Cullain@dal.ca](mailto:Nakia.Cullain@dal.ca))
- Lectures:** Two 1-hour lectures per week (Online Asynchronous)
- Tutorials:** One 2-hour session per week: Fridays, 11:35-13:25 (Online Synchronous, or in-person if possible)
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### **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 Objectives/Learning Outcomes**

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 Materials

There is no textbook, but lectures and tutorial materials will be available on Brightspace  
<https://dal.brightspace.com/d2l/home/203519>

### Course Delivery (online) (we will switch to in-person tutorials when possible)

- Course Brightspace page <https://dal.brightspace.com/d2l/home/203519>
- Lectures will be online asynchronous:
  - o Panopto recordings posted on Brightspace
  - o Lecture slides posted as pdfs on Brightspace
- Tutorials will be online synchronous (or in-person if possible):
  - o Fridays: 11:35-13:25
  - o Collaborate sessions via Brightspace (or in-person if possible)  
<https://ca.bbcollab.com/guest/d62acc422c034ac28c509bcf006b2cd4>
  - o Attendance is required, sessions will not be recorded
  - o Students scientific briefing presentation slides will be posted as pdfs on Brightspace
- Contact with instructor and TA:
  - o A Q&A at the end of each tutorial will offer students time to ask questions in person
  - o There is the discussion board on Brightspace to ask questions
  - o Email us with any questions or concerns, we can schedule chats or video calls if needed

### Course Assessment

Component	Weight (% of final grade)	Date
<b>Midterm exam</b>	15%	<i>Feb 18, 2022, 11:35-13:25 (online or in-person, tutorial time)</i>
<b>Final exam</b>	35%	<i>(Scheduled by Registrar)</i>
<b>Assignments</b>		
- Resource use survey I	2.5%	<i>Jan 14, 2022 (in tutorial) 11:35-13:25</i>
- Food choice assessment		
o Infographic	10%	<i>Mar 25, 2022, 11:35</i>
o Written reflection	10%	<i>Mar 25, 2022, 11:35</i>
- Resource use survey II	2.5%	<i>Apr 5, 2022 (in tutorial) 11:35-13:25</i>

### Other course requirements

- Oral Scientific Briefing 15% *in tutorial, different dates for each student*
- Written Scientific Briefing 15% *one week after student's oral briefing*

### 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

- 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 thus miss multiple requirements should be referred to Patricia Laws, 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 due to technological malfunction (internet failure, power outage) or other unforeseen circumstances will be integrated into the following lectures and tutorials in abbreviated form; only topics presented and discussed in lectures and tutorials will be tested in exams.
- 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.

## Course Content

Week	Day	Lecture
1	Th – Jan 6	Class schedule & Syllabus posted
	F – Jan 7	1 – Introduction
2	T – Jan 11	2 – Terrestrial mammals
	Th – Jan 13	3 – Ethics of resource use
3	T – Jan 18	4 – Whales & Whaling
	Th – Jan 20	5 – Other marine mammals
4	T – Jan 25	6 – Resource management
	Th – Jan 27	7 – Marine fish
5	T – Feb 1	8 – Diadromous & Freshwater fish
	Th – Feb 3	9 – Aquaculture
6	T – Feb 8	10 – Reptiles & Amphibians
	Th – Feb 10	11 – Conservation & Recovery
7	T – Feb 15	12 – Monitoring & Assessment
	Th – Feb 17	No class – study time
--- STUDY BREAK ---		
8	T – Mar 1	13 – Invertebrates
	Th – Mar 3	14 – Ecosystem consequences
9	T – Mar 8	15 – Wild birds
	Th – Mar 10	16 – Economy, Social & Market forces
10	T – Mar 15	17 – Wild plants
	Th – Mar 17	18 – Land-use & Habitat management
11	T – Mar 22	19 – Forestry
	Th – Mar 24	20 – Agriculture
12	T – Mar 29	21 – Pest control & Pollution
	Th – Mar 31	22 – Future of resource use

## 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](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](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](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 visit or e-mail the Indigenous Student Centre (1321 Edward St) ([elders@dal.ca](mailto:elders@dal.ca)).

**Information:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](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](https://www.dal.ca/academics/important_dates.html)

### **University Grading Practices**

[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)

## Student Resources and Support

### Advising

**General Advising** [https://www.dal.ca/campus\\_life/academic-support/advising.html](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](https://www.dal.ca/campus_life/communities/indigenous.html)

**Black Students 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/current-students.html](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](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](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](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](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>