

**Faculty of Science Course Syllabus  
Department of Biology**

**BIOL-MARI 3626: FIELD STUDIES OF MARINE MAMMALS**

**August 2017**

**Instructors:** Dr. Deborah Austin ([daustin@dal.ca](mailto:daustin@dal.ca))

Dr. Damian Lidgard ([damian.lidgard@dal.ca](mailto:damian.lidgard@dal.ca)), LSC Room 4087

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**Teaching Assistant:** TBA

**Field Teaching Assistant:** TBA

**Lectures:** Start Monday 14<sup>th</sup> August: classroom LSC 240, 9:00 AM – 5:00 PM. Please see schedule for further details.

**Labs:** Wednesday August 22<sup>nd</sup>; necropsy 11:00 AM – 4:00 PM

**Field trips:** Tuesday 22<sup>nd</sup> – Saturday August 26<sup>th</sup>; in the field at Digby Neck, NS

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### **COURSE DESCRIPTION**

A hands-on introduction to research on marine mammals. Lectures provide an overview of marine mammal ecology, population biology, social organization, conservation, and management. Labs include a necropsy of a pinniped and/or cetacean and applied learning sessions that give students an opportunity to experience various research techniques firsthand (e.g., photo-id, telemetry, acoustics etc.). On a five day field trip, the students will observe and identify marine mammals and seabirds in the Bay of Fundy from whale-watch boats and conduct group-based research projects.

### **COURSE PREREQUISITES**

[BIOL 2060.03](#) (or [BIOA 3001.03](#)) and [BIOL 3062.03](#) (or [BIOL 3630.03](#) or [PSYO 2160.03](#)), and [MATH 1060.03/STAT 1060.03](#)

### **OVERVIEW**

The course ‘*Field Studies of Marine Mammals*’ provides the student with an introduction to both the theoretical ecology of marine mammals and the current techniques that are used to study them. Topics include life history, foraging, population and reproductive ecology, conservation and management, distribution, physiology and anatomy. Each lecture provides a theoretical background but the emphasis is on techniques with examples from recent or current work. The main focus of the course is to conduct your own research project on marine mammals in the Bay of Fundy, including such key steps as formulating your hypothesis, collecting data, analysis of data, writing a scientific paper and providing a scientific presentation. Students will also participate in a necropsy on a cetacean and/or pinniped. The course is intensive and demanding and students should prepare to devote themselves entirely to the course for its duration.

## **COURSE OBJECTIVES/LEARNING OUTCOMES**

- Recall the general biology of marine mammal taxa
- Describe the differences and similarities between marine and terrestrial mammals and their relative ecological importance
- Understand the origins, taxonomic diversity, structure and ecological importance of the marine mammal orders and families
- Understand the meaning of life history, the life history characteristics of cetaceans and pinnipeds, the factors that shape their evolution and the techniques used to study life history
- Understand how marine mammal abundance is measured and the significance of life history parameters in population dynamics
- Understand how reproductive strategies have evolved, the types of strategies in marine mammals and their methods for studying reproductive ecology
- Basic understanding of the dietary techniques for estimating diet
- Understand the role genetics plays in conservation of marine mammals
- Understand the evolutionary physiological adaptations in marine mammals to adapt to diving, cold and swimming and the techniques for studying behaviour at sea
- Demonstrate awareness that science, law and politics play an important role in the conservation and management of marine mammals, and an understanding of the threats they face and mitigation options
- Understand sound propagation in water, fundamental sound component analysis (e.g. amplitude, frequency), sound production and receiving mechanisms in various marine mammal taxa and the impacts harmful sound can have on populations
- Develop competency in designing and conducting a scientific experiment on marine mammals in the field and follow through with a scientific publication and presentation
- Learn the basic anatomy of a marine mammal and the techniques used for a necropsy
- Become competent in identifying marine mammals and seabirds in the field
- Develop skills in note taking in the field and identification of species
- Learn how to identify marine mammals using photo-identification

## **COURSE MATERIALS**

There is no textbook for the course but there are many books at the Killam Library. PDFs will be available for each lecture on Brightspace.

Gaskin, DE. The ecology of whales and dolphins. QL 737 C4 G24 1982

Reeves, RR et al. The Sierra Club Handbook of seals and sirenians. QL 737 P6 R44 1992

King, JE. Seals of the World. QL 737 P6 K5 1983

Ridgeway, SH and Harrison, R. Hand book of marine mammals (volumes 1 – 6). QL 713.2 H354 v. 1-6.

Riedman, M. The pinnipeds: Seals, sea lions and walruses. QL 737 P6 R54 1990

Evans, PGH. The natural history of whales and dolphins. QL 737 C4 E93 1987  
Berta, Annalisa. Marine Mammals: evolutionary biology QL 713.2 B47 1999  
Evans, Peter G.H. and Raga, J.A. (eds) Marine Mammals Biology and Conservation. QL 713.2 M354 2001  
Boyd, I. (ed) Marine mammals: advances in behavioural and population biology QL 1Z8 1992  
Perrin, W.F., Wursig, B., Thewissen, J.G.M. (eds) Encyclopedia of Marine Mammals. QL 701.2 E3 2002  
Hoelzel, R. (ed). Marine Mammal Biology: an evolutionary approach, QL 713.2 M37 2002

**Key journals to use as references:**

Marine Mammal Science  
Canadian Journal of Zoology  
Canadian Field Naturalist (especially COSEWIC status reports)  
Reports of the International Whaling Commission  
Aquatic Mammals  
Marine Ecology Progress Series  
Ecology  
Oikos  
Oecologia  
Proceedings of the Royal Society of London  
Polar Biology  
Journal of Zoology  
Journal of Animal Ecology  
Polar Biology  
Behavioral Ecology  
Behavioural Ecology and Sociobiology

**Article Searches via Dalhousie Online Databases:**

Google or Google Scholar  
Aquatic Sciences and Fisheries Abstract  
Web of Science  
Biological Abstracts

**COURSE ASSESSMENT**

**Field Project:** The main focus of the course is to conduct a research project on marine mammals in the Bay of Fundy, including such key steps as formulating your hypothesis, collecting data, analysis of data, writing a scientific paper and providing a scientific presentation. There will be five groups, each with four to five people, and each group will take on one of the projects outlined below. Each project idea listed below can only be assigned to one group.

*Project ideas*

Select one of the five projects below that interest you. Working as a group, formulate hypotheses that you want to test:

- 1) Distribution of marine mammals in the Bay of Fundy: Marine mammals in the Bay of Fundy tend to be observed in particular areas. What are the oceanographic features of these locations, i.e. depth, tide, temperature and why are marine mammals likely to be observed in these areas? Are all cetaceans attracted to the same oceanographic features or does it vary by species? Do cetaceans exhibit certain behaviours when encountering particular oceanographic features?
- 2) Associations between seabirds and cetaceans: Seabirds are sometimes observed in association with cetaceans. Investigate which species of seabird and marine mammal associate with each other and why they might be associating, i.e., what common resource might they share? Which cetacean activities attract seabirds? How does the size of seabird flocks vary among cetacean species and activities?
- 3) Short- and long-term site fidelity of cetaceans: Several cetacean species appear in the Bay of Fundy each year, of which some may exhibit short- (within a season) or long- (among years) fidelity to the area. Using the technique of photo-identification, investigate the degree of site fidelity by cetaceans to the Bay of Fundy. Evaluate whether all cetacean species are suitable candidates for photo-id. Determine the frequency of occurrence of individuals during the 5-day study period. Consider using association indices to determine whether some individuals are often seen together. Lastly, for humpback whales, examine the degree of long-term site fidelity to the area using the Gulf of Maine and Dalhousie photo-id catalogues.
- 4) Marine mammals and ecotourism: Whale watching tourism has been present in the Bay of Fundy for several decades. Examine whether these whale watch boats influence the behaviour of marine mammals in the Bay of Fundy? Examine whether all species of marine mammal are susceptible to disturbance, and of those that are, evaluate which behaviours are most likely to be influenced. Which factors might influence the behaviour of marine mammals while in the presence of a boat? Do whale watching boats induce stress on marine mammals? How would you determine whether an animal is stressed?
- 5) Marine mammal diving behaviour: Cetaceans exhibit different dive types which are related to their activity underwater. Characterise the dive types for the cetacean species observed. How do they differ among species? What are the factors that drive similarities or differences in the features of dives among individuals of the same species?

Your hypothesis and datasheets will be reviewed and marked before you go into the field so you can make any necessary changes before starting the project. After the field trip, you will be required to analyze the data (only simple statistics are expected), give a brief (15-20 minute) oral presentation on your project for the class and write up your project report as a scientific paper following the format required by *Canadian Journal of Zoology*. Formulating the proposal/hypothesis, data collection and analysis and oral presentation will be done in groups. However, the write up must be done individually and each person will be marked individually.

### *Equipment available*

Boat, with ship-board depth sounder, fish finder, thermometer and GPS  
Limited number of GPS units  
Limited number of timers  
Tide time-tables  
SLR cameras\*  
Binoculars

\* SLR cameras are not always available so if you have a digital SLR with a telephoto lens of > 200mm you will be encouraged to pursue the photo-id project.

**Proposal and Justification** You will be expected to provide a clearly formulated one or two sentence hypothesis, indicating the question you intend to examine. You may have more than one hypothesis, and you may have one overarching hypothesis and a number of very specific predications. Give a brief synopsis of previous studies that have examined similar questions, and based on your research and a theoretical understanding of your subject, state WHY your question is important. Further, given the existing published information on your subject, tell us why you expect certain results. Your data collection protocol should outline what data you will collect, when it will be collected and how it will be collected. Include a full list of methods and materials required, sufficient such that anyone could follow your methods and collect the data. Datasheets should also be submitted to indicate how you will record the data in the field. AN IMPORTANT DETAIL: do not make the spaces for recording data on your datasheet too small; give yourself a row height of at least 25 points. Depending on overall class size, projects will be done in groups of four or five. Only one project outline per group is required (however, project reports will be done individually).

**Oral presentation** As a group, give a short (15-20 minute) presentation on your research project using Power Point. Outline your hypothesis or question, the background to the questions asked (rationale), how you conducted your research (methods), what you found and what your results indicate about marine mammals in the Bay of Fundy area. This is to be done as a group and your group will receive a single mark. You will be marked on Presentation (5 marks) and Content (5 marks).

**Final report** Written report in journal style. Follow EXPLICITLY the Instructions to Authors for [Canadian Journal of Zoology](#). Prepare your report as if you were planning on submitting your manuscript to Canadian Journal of Zoology using *Canadian English* throughout. Look at past articles for ideas on what information should be included. Must have abstract, introduction, materials and methods, results and discussion sections as well as literature cited (see handout on Canadian Journal of Zoology format for more details). Report must be typed, double-spaced, written individually (each group member is responsible for producing their own report) although there will be collaboration on data collection and results. Figures/Tables can be shared amongst the group, as long as all members have participated in their design.

**Field book** In addition to the field project, everyone will be required to complete a field log during the fieldtrip. For this, each person will receive a weatherproof field book. **There are two separate tasks that you are required to enter into your field book (see example at end of this doc):**

- 1) **BACK OF THE BOOK, GIVE SPECIES DESCRIPTIONS:** For each new species of marine mammal and seabird encountered, you must provide a detailed description of their physical appearance and behavioural observations. For example: note the body parts observed (e.g., head, fin, etc.), note the direction they are swimming, numbers in a group, etc. Well-labelled sketches should be used to make note of physical appearances and are a useful tool and exercise. You can update this description with any other observations about this species throughout the rest of the field trip. The end result should be a detailed description of each species encountered in the field, one that you could read in the future to help you identify a marine mammal in the field. Remember, you can update your original entry with any other important observations you may have missed the first time- sometimes these animals give you only very small glimpses!
  
- 2) **FRONT OF THE BOOK, GIVE A DETAILED TIME LOG:** Each time you encounter a marine mammal or seabird, the time, species and number of individuals should be recorded. Any notes relating to your project (that don't fit on your data sheets) should also be recorded in your field book in this section.

The key here is that you must remain vigilant at all times while on the boat- always be scanning for sightings of marine mammals and seabirds, even if this is not relevant to your particular. Marks will be rewarded according to presentation, neatness and legible recordings. Always use pencil, date each page and provide a synopsis of prevailing weather conditions and any other comments relevant to that study day. Be thorough!

**Final exam:** will consist of short answer and essay questions.

<b>Component</b>	<b>% final grade</b>	<b>Date due</b>
<i>Tests</i>		
Final Exam	25%	Mon 21 <sup>st</sup> Aug, 9-12AM
<i>Assignments</i>		
Necropsy report (individual)	2%	Thurs 17 <sup>th</sup> Aug, 9AM
Assignments (4) from workshops (pairs)	8%	In-class
Project proposal (group mark)	15%	Sat 19 <sup>th</sup> Aug, 9AM
Field book (individual)	10%	Mon 28 <sup>th</sup> Aug, 9AM
Oral Presentation (group)	10%	Tues 29 <sup>th</sup> Aug, 9AM
Final Report (individual)	30%	Thurs 31 <sup>st</sup> Aug, 5PM

**CONVERSION OF NUMERICAL GRADES TO FINAL LETTER GRADES  
FOLLOWS THE DALHOUSIE COMMON GRADE SCALE**

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

## **COURSE POLICIES**

As instructors of this course and regardless of reasons/evidence for late submission of work, Drs. Austin and Lidgard have the final decision on whether work is to be penalized for late submission.

First, if you are not going to be able to submit an assignment on the day it's due, please email or call one of the professors immediately to make alternative arrangements, assuming an excuse is valid; medical reasons for lateness requires a doctor's note upon return to class. If work is late, 10 % will be taken off for each day late until the assignment is discussed in class, after which a 0 will be given (except for legitimate medical reasons, with note from doctor, but see note above).

If you are late and hand your assignment into one of our mailboxes, make sure the main Biology office stamps the assignment with the date.

**COURSE CONTENT (TENTATIVE – MAY CHANGE DUE TO WEATHER, ETC.)**

<b>When</b>		<b>What</b>	<b>Who</b>
Mon Aug 14 <sup>th</sup>	9:00 - 10:00 AM	Intro to course	D Austin
	10:15 - 11:00 AM	Intro to marine mammals	D Austin
	11:15 AM - 12:45 PM	Distribution and habitat use	D Austin
	1:30-2:45	Methods in Marine Mammal Diets	M Cooper
	3:00 – 5:00 PM	Project proposals	D Austin
Tues Aug 15 <sup>th</sup>	9:00 AM – 12:00 PM	Conservation and management	D Austin
	1:00 - 3:00 PM	Life history: Sable Island grey seal project	D Lidgard
	3:00 – 5:00 PM	Project Group Work	
Wed Aug 16 <sup>th</sup>	9:00 – 10:30 AM	Marine Mammal Anatomy	D Lidgard
	11:00 AM – 12:30 PM	Necropsy Part One	DL, DA
	1:30 PM – 3:00 PM	Necropsy Part Two	DL, DA
	3:00 – 5:00 PM	Project Group Work	
Thurs Aug 17 <sup>th</sup>	<b>Hand in Necropsy Report 9am</b>		
	09:00 – 10:30	Population dynamics	D Austin
	10:45 – 11:45 AM	Ecology of pilot whales	GL: J Augusto
	12:45 – 1:45 PM	Reproductive ecology of pinnipeds	D Lidgard
	2:00 – 4:00 PM	Acoustics & Workshop	D Lidgard
	4:00 – 5:00 PM	Project Group Work	
Fri Aug 18 <sup>th</sup>	9:00 - 10:15 AM	Methods in Genetic Ecology	GL: T Frasier
	10:30 AM – 12:00 PM	Ecology of sperm whales	GL: TBA
	10:30 – 11:45 AM	Methods in Marine Mammal Physiology	GL: M Cooper
	2:00 - 4:00 PM	Telemetry & Workshop	DL / DA
	4:00 – 5:00 PM	Project Group Work	

Sat Aug 19 <sup>th</sup>	<b>9:00 AM EMAIL PROJECT PROPOSALS &amp; DATASHEETS</b>		
	9:00 – 11:00 AM	Marine Mammal/Seabird Id & Workshop	DL / DA
	1:00 – 3:00 PM	Photo-Identification & Workshop	DL / DA
	3:00 – 5:00 PM	Project proposal briefing	DL / DA
Sun Aug 20 <sup>th</sup>	<b>STUDY DAY</b>		
Mon Aug 21 <sup>st</sup>	9:00 AM – 12:00 PM	<b>FINAL EXAM</b>	
	12:00 – 5:00 PM	<b>FREE</b>	
Tues Aug 22 <sup>nd</sup>	9:00 AM	Meet in LSC parking lot	
	1:00 PM	Arrive in Whale Cove campground, Digby Neck	
		Set up camp and lunch	
	5:00 – 8:00 PM	On water with Petit Passage	
Wed Aug 23 <sup>rd</sup>	7:45 AM - 12:45 PM	On water with Petit Passage	
Thurs Aug 24 <sup>th</sup>	7:45 AM - 12:45 PM	On water with Petit Passage	
Fri Aug 25 <sup>th</sup>	9:00 AM – 5:00 PM	On water with Brier Is. Whale & Seabird Cruises	
Sat Aug 26 <sup>th</sup>	9:00 AM - 1:00 PM	On water with Petit Passage	
	3:00 - 7:00 PM	Drive home and unload	
Sun Aug 27 <sup>th</sup>	<b>STUDY DAY</b>		
Mon Aug 28 <sup>th</sup>	<b>Hand in Field Books 9am</b>		
	9:00 AM - 12:00 PM	Project Guidance	
	12:00 PM onwards	FREE	
Tues Aug 29 <sup>th</sup>	9:00 AM- 12:00 PM	Oral Presentations	
	1:00 – 3:00 PM	Project Guidance	
Wed Aug 30 <sup>th</sup>	9:00 AM- 12:00 PM	Project Guidance	
	12:00 PM onwards	STUDY DAY	
Thurs Sept 31 <sup>st</sup>	5:00 PM	HAND IN FINAL REPORT	

## **DETAILED DESCRIPTION OF FIELD TRIP**

Field-work will be conducted off a chartered whale watching boat in the Bay of Fundy, leaving each day from Digby Neck or Brier Island. Right and humpback whales will be commonly observed and trips will be tailored to sight these two species, however we will watch for all marine mammals, including harbour and grey seals, minke and fin whales and harbour porpoises. Keep in mind, however, there are no guarantees marine mammals will be seen with every outing; such is the risk with any field work. You will also be expected to identify and log each seabird sighting. There will be a lecture on marine mammal and marine bird identification before you go into the field.

During the field trips we will be camping on Digby Neck at a local campground. You will be sharing tents and cooking facilities. We will be in “field conditions”, although there are showers at the campground. Please bring your own sleeping bag and sleeping pad, or borrow one if you do not own one, and warm clothing for camping. We will be getting up early every morning (6:00 am), therefore it is imperative that everyone is able to sleep by a decent hour, so noise should be kept to a minimum.

Cooking: All meals will be provided. Snacks on the boat between meals are your own responsibility. Please let us know about ANY DIETARY REQUIREMENTS (vegetarian etc.) well in advance. We will rotate through project groups to help with all meals and all dishes throughout the trip. After you have cooked a meal, the following day you will be responsible for washing the dishes. Meals are planned in advance, and the ingredients bought, so each group will simply have to prepare the meal with the help of instructions.

NOTE: Alcoholic beverages will not be permitted during the field trip.

### **Field Trip Details**

Charter: Petit Passage Whale Watch (<http://www.ppww.ca>) and Brier Island Whale and Seabird Cruises (<http://www.brierislandwhalewatch.com/>)

Campsite: <http://www.whalecovecampground.com/>, (902) 834-2025

### **Required Field Gear**

We will not have much room in the vehicles so PLEASE DO NOT OVER PACK. However, you should ensure that you have sufficiently warm clothing and bedding. The weather in the Bay of Fundy can change rapidly, and can be very cool and damp even in the middle of summer. Fog is common in the evenings, so please, bring lots of warm clothing and good raingear. Even when it's not raining (and it WILL rain), the boat can get somewhat wet, so a pair of rain pants makes you a lot more comfortable when sitting out for hours at a time.

- water bottle to take on boat
- sleeping bag, sleeping pad and pillow
- appropriate clothing for the field: - warm clothes, ie. fleece, wool, gore-tex, toques, gloves; good rain gear; appropriate footwear (not flip-flops): well-soled sandals/hiking boots/running shoes/rubber boots
- sunscreen/hat/sunglasses
- bug repellent
- pencils/pens/clipboard

- we will need a few people to bring tents that they are willing to share with others!  
Please inform us if you own a tent, and then we will organize people into tents.

**Recommended Field Gear**

binoculars

camera

flashlight or headlamp

travel alarm or watch alarm

**Provided Field Gear**

We will provide food, stoves, propane, cooking pots and dishes. Field books will also be provided. People are welcome to bring laptops if they wish for data entry, but we cannot be responsible for any items lost or stolen. There is free wifi available at the campground.

TIME	SIGHTING
5:50	→ 1 Humpback flipper slapping, ~10 times!
5:52	→ Second humpback joined, traveled alongside boat, more directed and faster travel than last pod
5:56	→ ~30 white-sided dolphins travelling in different directions, all around boat
6:06	→ passed Greater Shearwater floating
6:08	→ passed another Greater Shearwater floating
6:11	→ Greater Shearwater flew bow → stern
6:27	→ 2 Northern Gannets flew on starboard side, bow to stern ~100m away
6:31	→ 2 Humpbacks, tail lobbed >30 times, then flipping over, slapping fins, became too blurry to see
6:49	→ 1-3 harbour porpoises, maybe more? Surfacing briefly around a Herring Gull, ~10-20m from the boat
6:52	→ Northern Gannet, circling a spot ~10m from boat. Second gannet on other side of boat, flew over head, bow → stern
6:53	→ 4 more Gannets flying starboard side
6:56	→ 1 Black-backed gull on rocks as we approached the dock
7:00	→ arrived back at the harbour

TIME	SIGHTING
9:01	→ 1 Northern Gannet off starboard flying, then plunged for prey
9:03	→ 2 Northern Gannets off starboard, flew towards boat but then were blown away, portside
9:10	→ Greater Shearwater flew around stern
9:16	→ Greater Shearwater (2) flew by starboard side of boat, bow to stern
9:17	→ Herring Gull flying stern to bow, ~20m from starboard side
9:22	→ 1 Greater Shearwater flew across bow, port to starboard
9:23	→ 1 Herring gull juvenile flew from starboard to port across bow
9:24	→ 1 Greater Shearwater floating off starboard side
9:29	→ 2 Northern Gannet floating off starboard
9:34	→ 1 Herring Gull flew past port side, bow to stern, fairly low ~10m
9:35	→ ~20 Phalaropes sitting on water in front of bow, flew away all together as we approached
9:40	→ 2 Greater Shearwater flew starboard side, bow → stern
9:45	→ 1 Greater Shearwater floating port side

DATE: Aug. '22

Left the Dock: 8:50am

Weather: very thick fog, slight wind, fog not over yet

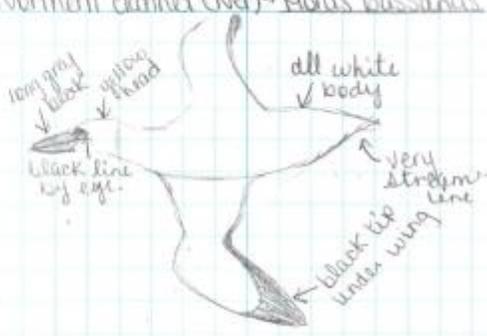
Example: Front of book: Log Entry

56 Northern Gannet (NG) → *Nous bassanus*

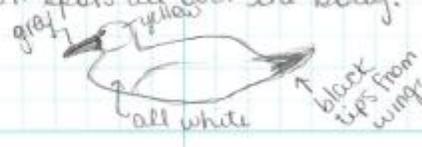


- commonly seen flying or floating on open water far from shore.
- usually seen in groups of 2-3. (unless diving (as pictured left); at which time many are seen (5+).
- fly very high then pull wings back & fall into the water.
- diving behaviour only seen from far off.
- from far away it can be confused with a gull. Flying pattern is slightly different but black tips are most important.
  - ↳ see difference, gulls found on page 60-62.

57 Northern Gannet (NG) → *Nous bassanus*



- extremely stream line bird.
- Very large, with very distinctive features.
  - ↳ i: yellow head, black lip wings, and over all shape.
- have lots of black lining around eyes.
- young are same sleek shape but with black wings and dark spots all over the body.



Example: Back of book: Species Identification

## **ACCOMMODATION POLICY FOR STUDENTS**

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie's Student Accommodation Policy can be accessed here:

[http://www.dal.ca/dept/university\\_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html](http://www.dal.ca/dept/university_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html)

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Advising and Access Services Centre (AASC)** prior to or at the outset of the regular academic year. More information and the *Request for Accommodation* form are available at [www.dal.ca/access](http://www.dal.ca/access).

## **ACADEMIC INTEGRITY**

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

The Academic Integrity website (<http://academicintegrity.dal.ca>) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie's *Policy on Intellectual Honesty* and *Faculty Discipline Procedures* is available here:

[http://www.dal.ca/dept/university\\_secretariat/academic-integrity/academic-policies.html](http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html)

## **STUDENT CODE OF CONDUCT**

Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:

“The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

- the integrity and proper functioning of the academic and non – academic programs and activities of the University or its faculties, schools or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members.”

The full text of the code can be found here:

[http://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

## **SERVICES AVAILABLE TO STUDENTS**

The following campus services are available to help students develop skills in library research, scientific writing, and effective study habits. The services are available to all Dalhousie students and, unless noted otherwise, are free.

<b>Service</b>	<b>Support Provided</b>	<b>Location</b>	<b>Contact</b>
<b>General Academic Advising</b>	Help with <ul style="list-style-type: none"> <li>- understanding degree requirements and academic regulations</li> <li>- choosing your major</li> <li>- achieving your educational or career goals</li> <li>- dealing with academic or other difficulties</li> </ul>	<b>Killam Library Ground floor</b> Rm G28 <i>Bissett Centre for Academic Success</i>	In person: Killam Library Rm G28 By appointment: <ul style="list-style-type: none"> <li>- e-mail: <a href="mailto:advising@dal.ca">advising@dal.ca</a></li> <li>- Phone: (902) 494-3077</li> <li>- Book online through MyDal</li> </ul>
<b>Dalhousie Libraries</b>	Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography	<b>Killam Library Ground floor</b>  Librarian offices	In person: Service Point (Ground floor) By appointment: Identify your subject librarian (URL below) and contact by email or phone to arrange a time: <a href="http://dal.beta.libguides.com/sb.php?subject_id=34328">http://dal.beta.libguides.com/sb.php?subject_id=34328</a>
<b>Studying for Success (SFS)</b>	Help to develop essential study skills through small group workshops or one-on-one coaching sessions Match to a tutor for help in course-specific content (for a reasonable fee)	<b>Killam Library 3<sup>rd</sup> floor</b>  Coordinator Rm 3104  Study Coaches Rm 3103	To make an appointment: <ul style="list-style-type: none"> <li>- Visit main office (Killam Library main floor, Rm G28)</li> <li>- Call (902) 494-3077</li> <li>- email Coordinator at: <a href="mailto:sfs@dal.ca">sfs@dal.ca</a> or</li> <li>- Simply drop in to see us during posted office hours</li> </ul> <b>All information can be found on our website: <a href="http://www.dal.ca/sfs">www.dal.ca/sfs</a></b>
<b>Writing Centre</b>	Meet with coach/tutor to discuss writing assignments (e.g., lab report, research paper, thesis, poster) <ul style="list-style-type: none"> <li>- Learn to integrate source material into your own work appropriately</li> <li>- Learn about disciplinary writing from a peer or staff member in your field</li> </ul>	<b>Killam Library Ground floor</b> Learning Commons & Rm G25	To make an appointment: <ul style="list-style-type: none"> <li>- Visit the Centre (Rm G25) and book an appointment</li> <li>- Call (902) 494-1963</li> <li>- email <a href="mailto:writingcentre@dal.ca">writingcentre@dal.ca</a></li> <li>- Book online through MyDal</li> </ul> We are open six days a week <b>See our website: <a href="http://writingcentre.dal.ca">writingcentre.dal.ca</a></b>