Course Description
Hands-on introduction to research on marine mammals. Lectures provide an overview of marine mammal adaptations, evolution, population biology, social organization, conservation, and management. Labs include a necropsy and techniques of photographic identification of individuals. On a several-day camping trip, students observe marine mammals from whale-watch boats and conduct research projects.

Course Prerequisites
BIOL 2060.03, BIOL 3062.03 (or BIOL 3630.03 or PSYO 2160.03), STATS 1060.03 (or equivalent)
CROSS-LISTING: BIOL 3626.03

Course Objectives/Learning Outcomes
By the end of the course students will be able to:

- Describe characteristics of the different groups of marine mammals.
- Describe examples of marine mammal distribution and habitat use, and explain how they are studied.
- Describe marine mammal population dynamics and explain how it is studied.
- Discuss issues relating to marine mammal conservation, and identify structures in place for the conservation and management of marine mammal populations.
- Name and identify a variety of local marine mammal and seabird species, including in the field and through photo ID.
- Explain various anatomical, physiological, and behavioural adaptations of marine mammals to the marine environment.
- Identify elements of marine mammal anatomy during a necropsy.
Describe examples of foraging and reproductive ecology in marine mammals, and explain how they are studied.

Describe examples of marine mammal social structures and techniques used to study them.

Conduct literature and online searches of primary and secondary sources using electronic databases and online search tools

Develop and carry out a field study, from initial proposal stage to final data analysis and interpretation, on some aspect of the biology of marine mammals in the Bay of Fundy.

Participate constructively in a field camp setting (e.g. cooking, cleaning, shared living in tents).

Produce a scientific report based on the field study.

Deliver an oral presentation relating the field study findings.

**Course Materials**

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

**Key books in the Dalhousie Library:**

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


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


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


**Article Searches via Dalhousie Online Databases:**

Do not use Google or Google Scholar and expect a thorough return of published material. Please use the following:

ASFA – Aquatic Sciences and Fisheries Abstract is decent for marine mammal research although few behavioural studies

Web of Science – Abstracts from many relevant journals

Biological Abstracts: A good place to start, though fewer direct journal links.
# Course Assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Value (%)</th>
<th>Date due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis and data protocol</td>
<td>10</td>
<td>Friday Jul 29, 9AM</td>
</tr>
<tr>
<td>Midterm exam</td>
<td>15</td>
<td>Friday Jul 29, 11AM – 12:15PM</td>
</tr>
<tr>
<td>Necropsy lab report</td>
<td>5</td>
<td>Saturday Jul 30, 9AM</td>
</tr>
<tr>
<td>Field book</td>
<td>10</td>
<td>Friday Aug 5, 9AM</td>
</tr>
<tr>
<td>Final exam</td>
<td>20</td>
<td>Monday Aug 8, 9AM -12PM</td>
</tr>
<tr>
<td>Oral presentation</td>
<td>10</td>
<td>Tuesday Aug 9, 9:00 – 13:00PM</td>
</tr>
<tr>
<td>Final report</td>
<td>30</td>
<td>Wednesday Aug 10, 5PM</td>
</tr>
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Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A+</td>
<td>(90-100)</td>
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<tr>
<td>B+</td>
<td>(77-79)</td>
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<tr>
<td>C+</td>
<td>(65-69)</td>
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<tr>
<td>D</td>
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<tr>
<td>A</td>
<td>(85-89)</td>
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<td>B</td>
<td>(73-76)</td>
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<tr>
<td>C</td>
<td>(60-64)</td>
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<tr>
<td>F</td>
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<tr>
<td>A-</td>
<td>(80-84)</td>
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<tr>
<td>B-</td>
<td>(70-72)</td>
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<tr>
<td>C-</td>
<td>(55-59)</td>
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</table>

Course Policies

1. It is important to keep up with work. Unexcused late assignments will be deducted at a rate of 10% per day. Valid excuses include those for sickness or emergencies.

2. You are expected to attend and participate in all course activities.

3. Safety precautions. You MUST adhere to all safety guidelines including those that will be discussed in the first week of classes. While on the field trip, if you plan to leave the group, you must use the buddy system—stay in groups of 2 or more—AND inform the instructors of where you are going and when you will return. For everyone’s safety, consumption of alcoholic beverages is NOT permitted on the field trip.
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Session</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon July 25th</td>
<td>9:00 - 10:00 AM</td>
<td>Intro to course</td>
<td>NH</td>
</tr>
<tr>
<td></td>
<td>10:15 - 11:00 AM</td>
<td>Intro to marine mammals</td>
<td>NH</td>
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<tr>
<td></td>
<td>11:00 AM - 12:00 PM</td>
<td>Distribution and habitat use</td>
<td>NH</td>
</tr>
<tr>
<td></td>
<td>1:00 - 3:00 PM</td>
<td>Population dynamics</td>
<td>MC</td>
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<td></td>
<td>3:00 - 5:00 PM</td>
<td>Project Proposals</td>
<td>NH, MC</td>
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<tr>
<td>Tues July 26th</td>
<td>9:00 - 10:30 AM</td>
<td>Conservation and management</td>
<td>MC</td>
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<td>Marine mammal identification</td>
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<td></td>
<td>1:00 - 4:00 PM</td>
<td>Photo ID</td>
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<tr>
<td>Wed July 27th</td>
<td>9:00 - 10:30 AM</td>
<td>Acoustics</td>
<td>GL: Julien Delarue</td>
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<td></td>
<td>10:30 AM - 12:00 PM</td>
<td>Telemetry</td>
<td>GL: TBA</td>
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<td></td>
<td>1:00 - 4:00 PM</td>
<td>Anatomy and Physiology</td>
<td>NH, MC</td>
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<tr>
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<td>9:00 - 10:15 AM</td>
<td>Strandings</td>
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<td>Marine mammal identification</td>
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<td>1:00 - 4:00 PM</td>
<td>Anatomy and Physiology</td>
<td>NH, MC</td>
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<tr>
<td>Fri July 29th</td>
<td>9:00 AM - 12:00 PM</td>
<td>Study time</td>
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<td>1:00 - 2:30 PM</td>
<td>Project proposal briefing</td>
<td>NH, MC</td>
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<tr>
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<td>2:30 - 5:00 PM</td>
<td>Study time</td>
<td>FREE</td>
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<td>Sat July 30th</td>
<td>9:00 AM - 12:00 PM</td>
<td>Meet in LSC parking lot</td>
<td>TBA</td>
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<tr>
<td></td>
<td>1:00 - 2:30 PM</td>
<td>On water</td>
<td>TBA</td>
</tr>
<tr>
<td></td>
<td>3:00 - 5:00 PM</td>
<td>On water</td>
<td>TBA</td>
</tr>
<tr>
<td>Sun July 31st</td>
<td>7:45 AM - 12:45 PM</td>
<td>On water</td>
<td>TBA</td>
</tr>
<tr>
<td>Mon Aug 1st</td>
<td>7:45 AM - 12:45 PM</td>
<td>On water</td>
<td>TBA</td>
</tr>
<tr>
<td>Tues Aug 2nd</td>
<td>9:00 AM - 12:00 PM</td>
<td>Lecture: TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>Wed Aug 3rd</td>
<td>7:45 AM - 12:45 PM</td>
<td>On water</td>
<td>TBA</td>
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<tr>
<td></td>
<td>1:00 - 3:00 PM</td>
<td>Optional: lunch at nearby café</td>
<td>TBA</td>
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<tr>
<td></td>
<td>3:00 - 7:00 PM</td>
<td>Drive home and unload</td>
<td>TBA</td>
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<td>9:00 AM - 1:00 PM</td>
<td>FREE</td>
<td>GL: TBA</td>
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<tr>
<td></td>
<td>1:00 - 2:15 PM</td>
<td>Genetics</td>
<td>MC</td>
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<td></td>
<td>2:30 - 4:30 PM</td>
<td>Studying marine mammal diets</td>
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<td>Fri Aug 5th</td>
<td>9:00 AM - 12:00 PM</td>
<td>Reproductive ecology of marine mammals</td>
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<td></td>
<td>1:00 - 3:00 PM</td>
<td>Long term Sable Island grey seal project</td>
<td>GL: DL</td>
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<td></td>
<td>2:30 - 5:00 PM</td>
<td>Final project expectations, How to design a</td>
<td>NH</td>
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<tr>
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<td>presentation, Informal exam review</td>
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<td>Independent work</td>
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<td>Sat Aug 6th</td>
<td>9:00 AM - 12:00 PM</td>
<td>Social structure of sperm whales</td>
<td>GL: TBA</td>
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<td></td>
<td>1:00 - 3:45 PM</td>
<td>Pilot whales</td>
<td>GL: TBA</td>
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<td>Research paper discussion</td>
<td>NH, MC</td>
</tr>
<tr>
<td>Sun Aug 7th</td>
<td></td>
<td>FREE</td>
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<tr>
<td>Mon Aug 8th</td>
<td>9:00 AM - 12:00 PM</td>
<td>FINAL EXAM</td>
<td>NH, MC</td>
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<td>Tues Aug 9th</td>
<td>9:00 AM - 12:00 PM</td>
<td>Oral presentations</td>
<td>NH, MC</td>
</tr>
<tr>
<td>Wed Aug 10th</td>
<td>5:00 PM</td>
<td>HAND IN FINAL REPORT</td>
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NH: Nina Hamacher; MC: Margi Cooper; DL: Damian Lidgard; GL: Guest Lecturer; TBA: To be announced
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:

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.

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

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:
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**.

<table>
<thead>
<tr>
<th>Service</th>
<th>Support Provided</th>
<th>Location</th>
<th>Contact</th>
</tr>
</thead>
</table>
| **General Academic Advising**    | Help with                                                                        | Killam Library Ground floor Rm G28 Bissett Centre for Academic Success | In person: Killam Library Rm G28
By appointment:
- e-mail: advising@dal.ca
- Phone: (902) 494-3077
- Book online through MyDal |
| **Dalhousie Libraries**          | Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography | Killam Library Ground floor 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:
| **Studying for Success (SFS)**   | 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) | Killam Library 3rd floor Coordinator Rm 3104 Study Coaches Rm 3103 | To make an appointment:
- Visit main office (Killam Library main floor, Rm G28)
- Call (902) 494-3077
- email Coordinator at: sfs@dal.ca or
- Simply drop in to see us during posted office hours
All information can be found on our website: www.dal.ca/sfs |
| **Writing Centre**               | Meet with coach/tutor to discuss writing assignments (e.g., lab report, research paper, thesis, poster) - Learn to integrate source material into your own work appropriately - Learn about disciplinary writing from a peer or staff member in your field | Killam Library Ground floor Learning Commons & Rm G25 | To make an appointment:
- Visit the Centre (Rm G25) and book an appointment
- Call (902) 494-1963
- email writingcentre@dal.ca
- Book online through MyDal
We are open six days a week
See our website: writingcentre.dal.ca |
BRIEF DESCRIPTION OF ASSIGNMENTS

Project Proposal and Justification (10%): Provide a clearly formulated one or two sentence hypothesis, indicating the question you intend to examine. Give a brief synopsis of previous studies that have examined similar questions, and based on your reading and a theoretical understanding of your subject, state WHY your question is important. Further, given the existing published information on your subject, tell me 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).

Midterm Exam (15%): Short answer, true/false and/or multiple choice.

Necropsy lab report (5%): You will be expected to answer short questions about the necropsy.

Field book (10%): Everyone will be given 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 (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. Based on these observations, you should update your description of the species. 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 project area. Marks will be rewarded according to presentation, neatness and legible recordings. Always date each page and provide a synopsis of prevailing weather conditions and any other comments relevant to that study day. Be thorough!

Final exam (20%): Short answer and essay questions.
Oral presentation (10%): As a group, give a short (10-15 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. Done as a group project, and your group will receive a single mark. You will be marked on presentation and content.

Final report (30%): Written report in journal style. Follow EXPLICITLY the guidelines for Canadian Journal of Zoology (http://www.nrcresearchpress.com/page/cjz/authors). 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, emphasis on OWN) 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 WORK AND FIELD PROJECTS

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. 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. Data should be collected jointly in the group. Note, you will be observed in the field and in the lab to ensure that the work is shared EQUALLY amongst all group members.

Groups and project ideas (no two groups can do the same topic) must be chosen and approved by 1 PM on Tuesday July 26th. Then decide what data you should collect and how you should collect it (see Proposal above for more details).

Project ideas
From one of the project ideas below, each of which addresses a particular question, formulate a hypothesis that you want to test.

1) **Distribution of marine mammals in the Bay of Fundy**: Marine mammals in the Bay tend to be observed in particular areas. What characterizes these locations (i.e. depth, tide, temperature) and why are marine mammals likely to be observed in these areas?

2) **Associations between seabirds and cetaceans**: Seabirds are sometimes observed in association with cetaceans. Investigate which species associates with each other and why they might be associating (i.e., what common resource or habitat might they both share?).

3) **Photo-identification of cetaceans and seals**: Can you use photographic-id techniques to individually identify marine mammals in the Bay of Fundy? Are all species suitable for this technique? Can you match individuals with those from existing photo-id databases (e.g. humpbacks, right and pilot whales), and from those identified in previous years of the course?

4) **Marine mammals and ecotourism**: Do whale watching boats influence the behaviour of marine mammals in the Bay of Fundy? Which behaviours can be observed from the boat? 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**: What are the surfacing intervals and dive patterns of the different marine mammals observed in the Bay of Fundy? Do they differ between individuals and species and what factors may drive these similarities or differences?

6) **Student project ideas**: Be brave and creative and come up with your own idea. Feel free to discuss your thoughts with us.

You will be required to hand in your hypothesis and datasheets by 9:00 AM on Friday July 29th via e-mail or in person. These will be marked and given back to you by the end of the day so you can make any necessary changes before leaving for the field. After the field trip, you will be required to analyze the data (only simple statistics are expected), give a brief (15 minute) oral presentation on your project for the class and write up your project 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.

The final report is due by 5 PM on Wednesday August 10th.
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
Charts of area

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

Field Conditions
Field-work will be conducted off a chartered whale watching boat in the Bay of Fundy, leaving each day from Tiverton, Long 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, that there are no guarantees that 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 at 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, http://www.ppww.ca/, (902) 834-2226

Schedule (subject to change, dependent on weather)
Saturday Jul 30: depart Halifax 9am, arrive Whale Cove 1pm, lunch, evening charter 5 – 8:30 pm
Sunday Jul 31: morning charter 7:45am – 12:45 pm
Monday Aug 1: morning charter 7:45am – 12:45 pm
Tuesday Aug 2: evening charter 5:00pm – 8:30 pm
Wednesday Aug 3: morning charter 7:45am – 12:45 pm, optional lunch at a nearby Café, return to Halifax between 5 & 7pm
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 Wi-Fi available at the campground.

APPENDIX

A2. Example: Front of book: Log Entry
Northern Gannet (NG) Houns bossouws

- Commonly seen flying or floating on open water far from shore.
- Usually seen in groups of 2-3. (Unless diving ship (as pictured left).)
- All white body with yellow head, black tip wings, black tail.
- Grey tail.
- Very large, white, streamlined body.
- In a bullet shape diving 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.

- Extremely streamlined bird.
- Very large, with very distinctive features.
- White head, black tip wings, and over all shape.
- Have lots of black diming around eyes.
- Young are same sleek shape but with black wings and dark spots all over the body.
- Grey tail.
A2: Example: Front of book: Log Entry

TIME SIGHTING

5:50→1 Humpback flippers slapping, ~10 times!
5:52→Second Humpback joined, traveled alongside boat, more directed and faster travel than lost pod
5:56→~30 white-sided dolphins, traveling in different directions, all around boat
6:06→Passed Greater Shearwater flying
6:08→Passed another Greater Shearwater flying nearby
6:11→Passed Greater Shearwater flying bow-to-bow
6:20→2 Northern Gannets flew on starboard side, low to stern ~100 m away
6:31→1 Humpback, tail lobbed >30 times, then flipping over, stopping first, became too slow to see
6:49→1-3 harbour porpoises, maybe more?
   Surfacing briefly around a Herring Gull, ~10-20 m from the boat
6:52→Northern Gannet circled a spot ~10 m from boat, second gannet on other side of boat, flew over
   head, bow-to-starboard
6:55→4 more Gannets again, one boat-side
6:56→1 Black-legged Kittiwake on rocks as we approached but took off
7:00→Arrived back at the harbor