Field Ornithology

Instructor Information

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Our Teaching Pledge: We want you to learn and to gain experience in studying birds in the field. Please reach out should you have difficulty with activities during the course. It's much easier to improve performance early and we can work together to ensure that you achieve each and every learning objective.

Course Information

BIOSM3740/MEFB(ZOOL)510
Dates: 27 May – 10 June, 2024

General Course Description

Our goal is to provide an introduction to field methods that can be used to study birds. We will learn how to identify & study birds, explore various methods used, and get outside and put some field methods into practice. If you're interested in birds, we will build on that. If you're not (yet) interested in birds, we're going to try and change that!

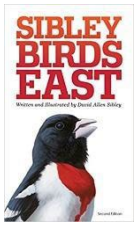
Course Learning Objectives

By the end of the course students will be able to:
1. Recognize the birds of the Isles of Shoals by sight and sound.
2. Appreciate the diversity of life-history strategies pursued by these birds.
3. Explore & practice a variety of field techniques used for studying birds including banding, census methods (point counts, transects, spot mapping), nest monitoring, & behavioral observations.
4. Keep an appropriately-detailed field journal.
5. Develop and test ecological hypotheses through a team or independent project, to summarize and analyze data, and to present scientific information appropriately in both written and oral form.
6. Appreciate that anyone can and everyone should be a "bird person."

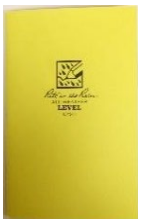
Class Structure & Requirements

Students must plan on being challenged to think critically, learn new information, and to apply themselves in this class.
This syllabus is a one-stop shop complete with links to resources and required readings.
Finally, students are required to have an open mind and consider all the things that birds (and their environment!) have to offer.

Required "Materials"



A Bird Field Guide. Any one of the following: Sibley Birds East by David Allen Sibley, ISBN: 0307957918; Peterson's Field Guide to Birds by Roger Tory Peterson (Eastern Region); Sibley Guide to Birds by David Allen Sibley.



A Field Notebook: Students can use any type of notebook for their field notebook but it should be no larger than 9x6 inches. This one is highly recommended.

Binoculars: If you have them, bring them with you. Otherwise a set will be provided for any

student who needs it (please let us know in advance).

A Bike Helmet: For protection from the gulls, you will need to wear a helmet when working with them. Please bring a standard bike helmet with you (not a more heavy-duty skateboarding or snowboarding helmet as they can cause injury to the gulls). We will have some "pre-loved" helmets on island in case you are unable to bring your own.

A willingness to <u>be outside</u>, conduct field studies, explore new environments, participate in ongoing research projects and enjoy birds!

Course Assessment

Assessment in science is about documenting and providing feedback to you about whether you:

- try things
- ask questions
- consider and test alternative ideas

We will help you by giving you feedback on these things, but you will also be reflecting on how well YOU think you're doing throughout the course.

This course uses a standards-based approach to assessing student learning.

You will receive a final course grade, but you won't receive points-based or letter-based grades on anything. Instead, you will receive feedback in the form of categorical scoring and comments on your work. Your final course grade will be determined through these categorical scorings and your own self-assessment of your work, and our thoughts on it. When you get feedback, it's meant to help you improve, so you will have opportunities to do just that, and will be able to <u>revise</u> certain assignments.

The work itself will come in the form of Presentations, Participation in Field Activities, a Research Project, a Final Exam, and various other items. Importantly, students must plan on

➔ critically reading primary scientific literature,
➔ collecting and analyzing your own data,
➔ building, testing, and evaluating ideas that help understand how the world works, and
➔ communicating your learning both orally and in writing.

Course Content & Assignments

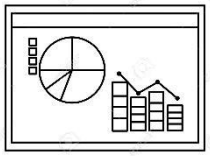
<u>Field Journal</u>: One way in which participation will be measured is by your <u>active</u> involvement and engagement in field and classroom activities, and by how well your participation is documented in your field journal. The journal should be a reference that can be used to find areas that you visited, help you identify organisms, and remind you of the methods used to collect data.

The journal will be evaluated based on completeness. The journal should be <u>legible</u> and all the information pertaining to field work should be relatively easy to find. The goal of a field journal is to provide a complete documentation of your time in the field. *You should be able to grab your journal a year from now and still be able to use it to generate the methods section for a report.*

The journal should include detailed entries about your daily activities including (but not limited to…):

- Field activities performed and observed
- Interesting observations
- Weather conditions (each day) and tides (as needed)
- Any unusual events or conditions that may have influenced your observations or data collection
- A complete list of the birds YOU observed on <u>each day</u>
- A complete list of all "non-birds" YOU observed on each day

<u>Writing Assignments:</u>



<u>Data Reports:</u> This course is designed for students to learn ornithological research methods by actually going into the field and gathering data. Students will summarize the methods and results of some of these data gathering

exercises. First, we will work in groups to write a report of our annual gull census. Each group will submit a single data report. Next, students will work in pairs to compose reports on our inter-island gull population study and our survey study. Finally, each student will submit a data report on their spot mapping work.

Unlike scientific papers, our data reports will only have the following sections: A short statement of the goal, objective, or hypothesis; a methods section (when, where, & how the data collected and analyzed); a results section (what did you find?); and a conclusion statement. The results section must contain graphs, tables, and/or statistical analysis as appropriate. The instructors will be available for consultation to help choose appropriate statistics and to demonstrate how to perform specific tests.

Science Communication: You'll be working on one science communication assignment throughout the course. It will be on a topic and in a format entirely of your choosing (blog post, news article, short-form video, illustration, etc.), although some potential topics/avenues of investigation will be provided. You will first submit a pitch, then a draft, both of which you will receive feedback on. After that, you will submit a final product. The goal of science communication is to be scientifically accurate, while also being welcoming and engaging for a general audience (read: non-ornithologists). You are choosing your own topics because it helps to be genuinely interested in your piece—your enthusiasm will show, and it will be contagious!

Assignments and Presentations:

Throughout the course, students will conduct several small assignments focused on learning new field techniques, learning about the birds we see, and your ability to convey information. These assignments include, but are not limited to, the following:

- Focal Species Presentation
- Technology Presentation
- Gull Band Re-sights (minimum 50 unique bands, there will be a competition with a prize)
- Field Participation on Gull Project(s)
- General Field Participation

Research Project: This year, the class will develop, design, and carry out a collaborative research project that will be conducted by the entire class. The goal of this project is for students to conduct a research project on an aspect of avian biology that requires using field techniques learned and to present the project in both written an oral form. Students can work on specific components of the project, based on their interest and affinity for different project tasks (e.g. field data collection, statistics, writing). Ultimately, the entire class should be able to be co-authors on a manuscript that we develop on the project (co-authorship may require students to participate on the manuscript after the course is complete). Students will be evaluated on their contributions to the project including its design, field protocols, field data collection, data analyses, and writing of the different manuscript sections. As a class, you will develop the following:

- A two-page (minimum) project proposal will be due at the end of the first week of the class. The proposal must include the background, hypothesis/goal of the project, detailed methods, data analysis plan, and breakdown of tasks (who is doing what and when).
- A project data report (same structure as the data reports) is due on the last full day of the course. This report will be written collaboratively by all group members.
- An oral presentation of the project, to be given during the class' ornithology symposium. The presentation will be developed and delivered by all group members collaboratively. Every group member must both develop and present some element of the presentation.

➢ NOTE: If you feel very strongly about an idea for a project separate from the group

research project, you *can* do it solo, but know it will be more work on you, as you will be solely responsible for all the same elements as the group project.

The Exam: The exam will test your knowledge of

- identification of local species by sight & sound
- aspects of the biology, ecology, & behavior of birds
- the field techniques learned in class

The exam will begin with a walk around Appledore for the Field Portion (i.e., What bird is that? What is its common and scientific name?) and will be followed by a written portion that will cover the relative advantages and disadvantages of various field techniques, aspects of the natural history of birds seen during the course, etc. Any topic covered during the course is fair game.

Basis for Grading

Learning Portfolio: At the end of the course you will submit your final learning portfolio and self-reflection and we will use it to determine what course grade you have earned based on all your collected work for the course.

The Grades: The "Evidence of Learning" table on the next page outlines what is expected for each available grade category. Students must refer to the "Evidence of Learning" in their self-reflection and compare it to their final Learning Portfolio. A template of the learning portfolio and a larger version of the "Evidence of Earning" table are available here. Be sure to download the file and keep track of your assignment scores.

Other Syllabus Statements & Policies

Honest Work, Plagiarism, and Cheating: Ever taken an art class? Were you ever tempted to look over at someone else's artwork and copy down their correct answer? Doesn't even make sense, does it? That's because art is creative, and individual, and there's no right answer. You might think science is none of those things, but in fact, it is.

If you DO try to pass someone else's work off as your own, however, the assignment will not count and you will not be able to revise it. If you plagiarize again, you'll fail the course, so you're much better off just thinking your own thoughts and doing your own work.

Acknowledgement of Territory: I would like to acknowledge that our class gathers the ancestral lands of the Wabanaki Nations. The people of the Wabanaki Nations include the Abenaki, Maliseet, Mi'kmaq, Passamaquoddy, and Penobscot are indigenous to the Acadia region which includes Maine, areas in New Hampshire, and the Canadian Maritime Provinces.

Evidence of Learning (How to determine your final course grade)

Instructions: Go through the grade criteria under each type of course assignment type (Data Reports & Sci Comm, Field Assignments, Presentations & Exam, and Research Project) and highlight the cells that match your Learning Portfolio. This may differ across assignment types. Then collectively deterimine which final course grade matches you the best. Final decisions will be made by the instructors.

	Data Reports & Sci Comm	Field Assignments	Presentations & Exam	Research Project
A	All data reports "good". Thoughtful pitch of science communication project with substancial improvement between draft and final round submission.	All assignments "Good".	All assignments "Good".	Proposal "complete" upon first submission. Remaining components "Good".
A-	Most data reports "good", may have one as "fair". Thoughtful pitch of science communication project with substancial improvement between draft and final round submission.	Most assignments "Good", may have no more than two "fair" but no "poor" or "ND" assignments.	Most assignments "Good", may have no more than two "fair" but no "poor" or "ND" assignments.	Proposal "complete" upon first submission. Remaining components "Good".
B+	No more than two data reports "fair", remaining reports "good". Pitch of science communication not well developed or draft requires substancial revision but shows great improvement through the final submission.	Most assignments "Good", may have no more than two "fair" but no "poor" or "ND" assignments.	Most assignments "Good", may have no more than two "fair" but no "poor" or "ND" assignments.	Proposal may require a revision on first submission but second submission addresses any issues and "Complete". Remaining components "Good" or with no more than one "fair". (Note, for B+ students can either need a revision on the proposal OR have one "fair", but not both.
B	Two or three data reports "fair", remaining "good". Pitch of science communication not well developed and draft requires substancial revision but shows great improvement through the final submission.	Most assignments "Good", may have two or three "fair" but no "poor" or "ND" assignments.	Most assignments "Good", may have two or three "fair" but no "poor" or "ND" assignments.	Proposal may require a revision on first submission but second submission addresses any issues and "Complete". Remaining components "Good" or with no more than one "fair".
B-	No more than three data reports "fair", at least one "good". Pitch of science communication not well developed and draft requires substancial revision and shows some/moderate improvement through the final	About half assignments "Good", may have no more than three "fair" with no "poor" or "ND" assignments or two "fair"	About half assignments "Good", may have no more than three "fair" with no "poor" or "ND" assignments or two "fair"	Proposal may require a revision on first submission and shows improvement on second submission but does not address all issues; second submission may be "revise". Remaining components "Good" or with no more than one
C+/C/C-	May have all four data reports "fair", or have one or two "poor" (C or C-). Pitch of science communication poorly developed and or draft requires substancial revision. Subqequent submissions may (C+ or C) or may not (C-) and show improvement through the final submission.	At least two "Good" assignments; remaining assignments may be "fair" or "poor" (more fair = C+ or C, more poor = C-). C+ or C may not have any "ND" assignments. C-	At least two "Good" assignments; remaining assignments may be "fair" or "poor" (more fair = C+ or C, more poor = C-). C+ or C may not have any "ND" assignments. C- may	Proposal may require a revision on first submission and shows little improvement on second submission and does not address all issues and scored "revise". At least one of the remaining components are "Good", remaining may be "fair" (C+/C) or "poor" (C-), with no "ND" components.
D	All four data reports "fair" or "poor". Pitch of science communication does not meet requirements and draft requires substancial revision with little ot no revision is done on for the final submission.	Mixture of mostly "fair" and "poor" assignments. May have up to three "ND" assignments.	Mixture of mostly "fair" and "poor" assignments. May have up to three "ND" assignments.	Proposal still at "revise" after second submission with substancial issues. Remaining components may be "fair" and/or "poor" with one or more "ND" component.
F	Most writing assignments do not follow guidelines and/or are "incomplete".	More than three "ND" assignments.	More than three "ND" assignments.	Proposal and/or most other components "Inc" or "ND".

Tentative Schedule*

Off-island boat trips are listed in RED. Field time in BLUE. Field Technique Shifts in GREEN.

Meal Schedule: Breakfast 0730;
Lunch 1230; Dinner 1800
Sunday: Brunch 1000;
Dinner 1700

Some field activities will be done as a class, and others will be done in pairs, as assigned.

Date	Early Morning (0600-0700)	Morning (0900-12:00)	Afternoon (1400-1700)	Evening (1900-2100)
Monday, May 27		**1:30 PM: Arrive at SML dock. 2:45 PM: depart Portsmouth for SML.** **[Follow instructions provided by SML]**	Safety intro, course intro. Settle in.; Intro to Appledore Walk Intro to birds & Songbird ID Lecture (K.C.); Select focal species for presentations.	Intro to the islands tour @ 1845; Daily bird list; SML History Lecture [30:22] Gull research papers [Optional More gull research papers]
Tuesday, May 28	Morning Bird Walk (K.C);	Gull Repro Lecture (S.S.) Introduction to Gull Nest Monitoring & Sample Collection (K.C. and Maddie); Gull Nest Checks	Ageing and sexing Lecture (K.C.); Migration Lecture (K.C); Focal species presentations (students); Select technologies for presentations	*ROCK TALK (2000);* Daily bird list; Work on presentations; General field methods papers [Optional More field methods]
Wednesday, May 29	Learn How to Band Songbirds (meet at banding station; AIMS at 0545)	Gull census preview (K.C.); The Great Appledore Gull Census 2024!; Gull Nest Checks	How to write a data summary report (S.S.); Gull census report (groups); Gull nest checks	*Signals for Survival* movie; Daily bird list; Work on presentations; Safe fieldwork strategies for at-risk individuals; Demery & Pipkin
Thursday, May 30	Assist at banding station (1) 0545-0715 Gull nest checks	Animal Behavior Lecture (S.S.); Gull Observations (LT = 1107, start at 1037, back ~1200)	Communication Lecture (K.C.); Song list; Gull nest checks	Daily bird list; *Life of Birds* (Demands of the egg); Work on group report; Seabird restoration papers;
Friday, May 31	Assist at banding station (2) 0545-0715 Gull nest checks	Seabird restoration on White Island; 0815 d. Appledore, ~1215 d. White;	Technology presentations (students); Discuss Group Research Project; Intro to Science Communication (S.S.)	Daily bird list; *Life of Birds* (To fly or not to fly); Research project papers [Optional Other cool research]; ***Group report (gull census) due***
Saturday, June 1	Assist at banding station (3) 0545-0715; Gull nest checks	Introduction to seabirds (S.S.); Seabird Cruise & Whale Watch (1000 d Appledore)	Seabird Cruise & Whale Watch (1500 a Appledore); Project proposal work time	Daily bird list; *Life of Birds* episode (Problems of parenthood); Point count/ transect papers; ***Science Communication Pitch Due***

Sunday, June 2 **Brunch 1000; Dinner 1700**	Assist at banding station (4) 0545-0715; Gull nest checks	Discuss research projects; Intro to spot mapping (K.C.); Spot mapping practice	Intro to survey methods (transects & point counts), discuss survey research Q & report; Appledore Surveys	Work on project proposals; Daily bird list; ***Project proposal due***;
Monday, June 3	Assist at banding station (5) 0545-0715; Gull nest checks	Star Island; 0815 d. Appledore, 1100 d Star; Spot mapping	Project Work Time; Discuss survey data & analyses; Spot mapping; Gull nest checks	***Science Communication Draft Due***; Daily bird list;
Tuesday, June 4	Spot mapping Assist at banding station (optional) Gull nest checks	Smuttynose trip & Gull nesting study preview (S.S.); Preliminary data collection (on Appledore); Project Work Time	Smuttynose Island Gull Nesting & data collection; 1315 d. Appledore, 1700 d. Smuttynose; Smuttynose data entry (& analyses)	***Surveys data report due;*** Daily bird list; *ROCK TALK (2000);*
Wednesday, June 5	Assist at banding station (optional) Spot mapping Gull nest checks	Data entry catchup; Project Work Time; Gull nest checks; Eider crèche observations	GBBG isotopic ecology (K.C.); Misc. Writing Time; Misc. Field work Time	Eider crèche observations; Data entry catchup; Spot mapping; Daily bird list
Thursday, June 6	Assist at banding station (optional) Spot mapping Gull nest checks	Intro to Barn Swallows; Swallow banding; Spot mapping; Project Work Time	Eider reproductive biology discussion (Maddie); Check swallow boxes; TRES banding; Project Work Time;	Daily bird list; *Life of Birds* episode (Signals & songs); Spot mapping; ***Science Communication Final Draft Due***;
Friday, June 7	Assist at banding station (optional) Spot mapping Gull nest checks	More swallow banding (TRES/BARS); Project Work Time	Gull banding (maybe); Misc. Writing Time; Misc. Field work Time	Daily bird list; ***Gull nesting report due; Spot mapping report due***
Saturday, June 8	Study time	Misc. Writing Time; Misc. Field work Time Project Work Time	Data entry catchup; FINAL Gull nest checks (get final data to Maddie)	Practice Symposium Daily bird list
Sunday, June 9 **Brunch 1000; Dinner 1700**	Study time; **Field Exam (0730)**	**Field Journal Due;** ***Exam*** *(classroom);* Gull band numbers due	Prepare for presentations; Course evaluation ***Project reports due.***	***Field Ornithology Symposium - presentation of projects***
Monday, June 10	Course Bird List – Broad Cove @ sunrise	Submit Self-assessment Depart :-(		

* Please be prepared to be flexible. We may change the schedule depending upon the weather, availability of boats, the whims of the instructors, etc.