Course Syllabus

Objectives:

- To recognize the birds of the Isles of Shoals by sight and sound
- To learn and appreciate the diversity of life-history strategies pursued by these birds
- To learn and practice a variety of field techniques used for studying birds including banding, census methods (point counts, transects, spot mapping), nest monitoring, and behavioral observations
- To keep an appropriately detailed field journal
- To develop and test ecological hypotheses through an independent project, to summarize and analyze data, and to present scientific information appropriately in both written and oral form.

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Text:
One of the following field guides to North American or eastern North American birds:
Peterson's Field Guide to Birds by Roger Tory Peterson (Eastern Region) or
The Sibley Guide to Birds by David Allen Sibley or
Sibley Birds East by David Allen Sibley
Optional (PDF available from instructor):
Handbook of Field Methods for Monitoring Landbirds, US Forest Service GTR-144, by CJ Ralph et al.

Grading:
Grades will be determined based on the following:

Field Journal	5%
Assignments and Presentations	20%
Research Report	10%
Social Media Engagement	5%
Research Project	30%
Exam	30%

Active engagement in all aspects of the class is required.

In addition to the items listed above, the instructors reserve the right to adjust a student's course grade due to lack of participation in required course activities.

Field Journal:
One way in which participation will be measured is by your active 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 legible 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
- Any unusual events or conditions that may have influenced your observations or data collection
- A complete list of the birds observed on each day

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:

- Gull Census Group Report
- Focal Species Presentation
- Technology Presentation
- Spot Mapping Report
- Gull Band Re-sights (minimum 50, 10 unique)

Research Reports

This course is designed for students to learn ornithological research methods by actually going into the field and gathering data. Students will be asked to summarize the results of some of these data gathering exercises. First, we will work in groups to write up a report of our annual gull census. Each group will submit a single final report and will receive the same grade for the report. Second, students will each submit their own individual lab report on either our inter-island gull population project **or** our survey study. Finally, each student or student pair will submit a research report on their independent project (see below).

Think of these reports as brief scientific papers. The reports should include a short **introduction** (what was the goal, objective, or hypothesis of the study), a **methods** section (when, where, and how were the data collected and analyzed), a complete **results** section (what did you find?), and a brief **discussion**/conclusion section (What may explain any unexpected results? What were some of the drawbacks or limitations of your study? How might you conduct the study differently for better results?). The results section should 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.

Research Project

Students will complete a research project on some aspect of avian biology that requires using field techniques learned in the course. Students may elect to conduct their project individually or in pairs. Choose wisely—you will be spending much of the second week working on your project. These projects will be graded on creativity, complexity, and presentation of the project idea and results. Ideas should be discussed with the instructor to ensure that the project is of the appropriate scope and is feasible given the time constraints. These projects will be evaluated on the following components:

- A one-page **project proposal** including the hypothesis/goal of the project, the methods, and the anticipated results will be due at the end of the first week of the class. For students electing to conduct their project in pairs, a single proposal must be submitted which must demonstrate a clear and exact 50/50 distribution of the data collection. Projects conducted in pairs are expected to have an increased amount of data collection relative to those conducted individually.

- A **project report** (same structure as the research reports) is due on the last full day of the course. Students conducting their projects in pairs are required to submit an independently-written individual report.
- An **oral presentation** of the project, to be given during the class' ornithology symposium. Projects conducted in pairs will be presented as a single presentation which must be exactly evenly presented by both students. Presentations are limited to 5-6 minutes for projects conducted by individual students and 9-11 minutes for projects conducted by student pairs.

Social Media

Each student is required to participate in social media engagement in some way throughout the course. The easiest ways to accomplish this include:

- Posting on Twitter about course activities and/or cool and interesting facts that you've learned. Please use the course hashtag, #SMLbirds, when using Twitter for the course. A minimum of 20 Tweets posted throughout the course is required.
- Contributing to our course photo album by adding photo to this Google Drive file (http://bit.ly/2VNv4bo). Name each photo that you upload with your last name followed by the number photo that you have uploaded (e.g. Covino1, Covino2, …). A minimum of 20 photos posted throughout the course is required
- Writing about our adventures and creating a blog page. A minimum of 4 posts, each at least a couple paragraphs in length and including at least 2 photos, is required. The posts need to be evenly spaced throughout the course.
- Creating short video clips of our adventures that can later be shared (after approval). A minimum of 4, 60-second clips that span the length of the course is required.

Participation in social media can be achieved by other means as well – just run your ideas by the instructors first. Participation **must** occur **throughout** the course (not just in the last couple days).

Exam

The exam will test your knowledge of

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

The exam will begin with a walk around Appledore (i.e., What bird is that?) 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.

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 10:00;
Dinner 1700

Some field activities will be done in groups (Team Gull and Team Songbird), some 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)
Friday, May 24		**1:45 PM: Arrive at SML dock. 2:45 PM: depart Portsmouth for SML.**	Safety intro, course intro. Settle in.; Intro to Appledore Walk Intro to birds & Songbird ID Lecture (K.C.); Select focal species for presentations.	Gull Repro Lecture (M.E.) Daily bird list Read gull research papers.
Saturday, May 25	Observe at banding station (M.E.) Morning bird walk (K.C.)	*Signals for Survival* movie; Gull nest monitoring intro (M.E.); Gull nest measurements (split into teams); Work on species presentations	Ageing and sexing Lecture (K.C.); Split by teams: Observe at banding station/Birding & Gull banding demonstration	Intro to the islands tour @ 1845; Daily bird list; Work on presentations; Read general field methods papers
Sunday, May 26 **Brunch 1000; Dinner 1700**	Observe at banding station (M.E.) Morning bird walk (K.C.)	Communication Lecture (K.C.); Song list Animal Behavior Lecture (M.E.) Gull Observations (LT = 1143)	Focal species presentations (students); Select technologies for presentations; Data management intro. (M.E.)	Migration Lecture (K.C); Daily bird list; *Life of Birds* (To fly or not to fly); Work on presentations
Monday, May 27	Assist at banding station Gull nest checks	Gull census preview (M.E.); The Great Appledore Gull Census 2019!	How to write a research report (K.C.); Gull census report (groups); Gull nest checks	Daily bird list; *Life of Birds* (Demands of the egg); Work on group report
Tuesday, May 28	Assist at banding station Gull nest checks	Smuttynose trip & Gull population study preview (M.E.); Preliminary data collection (on Appledore)	Smuttynose Island Gull Survey & data collection; 1315 d. Appledore, 1700 d. Smuttynose; Smuttynose data entry (& analyses)	Daily bird list; *ROCK TALK (2000);* Read point count/ transect papers; ***Group report (gull census) due***
Wednesday, May 29	Assist at banding station Gull nest checks	Intro to survey methods (transects & point counts), discuss survey research Q & report; Star Is survey methods 0815d Appledore 1130d Star	Establish Appledore survey; Surveys; Gull obs. (LT = 1414); Discuss surveys & data entry; Gull population study data analyses	Daily bird list; *Life of Birds* episode (Problems of parenthood); Read Seabird restoration papers

Thursday, May 30	Surveys Assist at banding station Gull nest checks	Technology presentations (students &K.C.); Seabird restoration lecture (Liz Craig)	Seabird restoration on White Island; 1130 d. Appledore, 1600 d. White Surveys	***Gull population research report due;*** Daily bird list; Work on project proposals
Friday, May 31	Surveys Gull nest checks Assist at banding station	Intro to spot mapping (K.C.); Target netting Yellow Warblers; Spot mapping practice	Data entry catchup; Work on project proposals; Surveys Gull Obs (LT =1542)	***Independent project proposal due***; Daily bird list
Saturday, June 1	Surveys Spot mapping Assist at banding station	Gull nest checks; Check swallow boxes; TRES banding; Discuss independent projects;	Discuss survey data & analyses Gull obs LT =1622; Surveys; Final survey analyses	Eider crèche observations Daily bird list; Read research paper(s)
Sunday, June 2 **Brunch 1000; Dinner 1700**	Eider crèche observations Spot mapping Gull nest checks	Eider reproductive biology discussion (0800); Independent projects; Gull research (~1130, Julie Ellis);	Intro to Barn Swallows; Swallow banding; Independent projects; Gull obs LT =1704;	***Surveys research report due;*** Data entry catchup; Spot mapping; Daily bird list
Monday, June 3	Assist at banding station Spot mapping Gull nest checks	Possible trip to Lunging Island – cormorants & gull resighting: 0930 d Appledore, 1130 d. Lunging	Introduction to seabirds (M.E.); Independent projects; Spot mapping	Daily bird list; *Life of Birds* episode (Signals & songs); Read research paper(s)
Tuesday, June 4	Assist at banding station Spot mapping Gull nest checks	Spot mapping Independent projects Seabird Cruise & Whale Watch (1000 d Appledore)	Seabird Cruise & Whale Watch (1500 a Appledore) Spot mapping write-up	Daily bird list; *ROCK TALK (2000);* ***Spot mapping report & data due***
Wednesday, June 5	Study time	More swallow banding (TRES/BARS); Independent projects;	Data entry catchup; Work on independent projects; FINAL Gull nest checks	Practice Symposium Daily bird list
Thursday, June 6	Study time	**Field Journal Due;** ***Exam*** *(field & classroom);* Gull band numbers due	Prepare for presentations; Course evaluation ***Independent project reports due.***	***Field Ornithology Symposium - presentation of independent projects***
Friday, June 7	Course Bird List – Broad Cove @ sunrise	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.