Introduction to the ecology and conservation of birds, with special emphasis on field ornithology and student research projects.

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Office Hours: Monday, Tuesday, Wednesday  7-9 pm

Meeting Time and Location: Summer Session (12-18 August 2016)  
One-week course, Sunday–Saturday, daily (8am-4pm).  
Course held at Stone Laboratory, Put-in-Bay, Ohio

Course Description: This course is designed for undergraduate students from any field. It integrates concepts related to the design of ecological studies, avian ecology, habitat management, and conservation to foster an understanding of how research and management can support bird conservation. Throughout the course, we will expose students to methods used in field ornithology, build field identification skills, and encourage critical thinking through use of student research projects.

Course Objectives:
1. Increase knowledge and understanding of key concepts in avian ecology and conservation  
2. Encourage critical thinking through examination and discussion of current challenges in avian conservation and management  
3. Build skills in field ornithology, including bird identification and survey methodology, and designing/conducting field research projects.

Course Content:

1. Key Concepts in Avian Ecology & Behavior  
   A. Habitat relationships of birds  
   B. Foraging ecology & behavior  
   C. Population & Community ecology  
   D. Avian Annual Cycle: Winter ecology, breeding ecology, migration  
   E. Migration & stopover ecology; migratory connectivity

2. Conservation and Management of Birds  
   A. Importance of birds to humans and the environment  
   B. Anthropogenic influences on birds  
   C. Issues in bird conservation  
   D. Managing habitat for birds  
   E. Endangered & threatened birds of Ohio & North America

3. Field Ornithology (throughout course)  
   A. Making bird observations / Basics of birding  
   B. Field identification of birds – knowledge of 50 local species  
   C. Population survey methodology  
   D. Tracking technologies  
   E. Independent research project
Required Text: National Geographic Guide to Birds (OSU-Marion Bookstore with online order option)

Required Course Materials:
- 1 4x7 Rite in the Rain Spiral Notebook (OSU-Marion Bookstore/Stone Lab),
- 1 pair 7x35 or 8x40 binoculars – any optics retailer near you

Course Schedule:

<table>
<thead>
<tr>
<th>Day</th>
<th>AM activity/topic (8am-12pm)</th>
<th>PM activity/topic (1pm-4pm)</th>
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<tbody>
<tr>
<td>Sunday:</td>
<td>Arrival</td>
<td>6pm-8pm: Lecture - <em>Introduction to Bird Identification</em></td>
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<tr>
<td>Monday:</td>
<td>South Bass Island</td>
<td>Lecture – <em>Avian conservation</em></td>
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<td>Tuesday:</td>
<td>Ottawa Natl. Wildlife Refuge</td>
<td>Ottawa NWR</td>
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<tr>
<td>Wednesday:</td>
<td>North Bass Island</td>
<td>Lecture - <em>Avian Life Cycle; Migration/Movements</em></td>
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<td>Thursday:</td>
<td>Black Swamp Bird Observatory</td>
<td>Magee Marsh Wildlife Area; Project work time</td>
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<tr>
<td>Friday:</td>
<td>Kelly’s Island;</td>
<td>Project work time; <em>Projects Due 5pm</em></td>
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<tr>
<td>Saturday:</td>
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<td>6-8 pm <em>Project presentations</em>; Exam Review</td>
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Course Evaluation:

- Field trip participation: 50 points, 10%
- Field notebooks: 50 points, 10%
- Life History Assignment: 50 points, 10%
- Identification quizzes: 50 points, 10%
- Research project: 150 points, 30%
- Final exam: + 150 points, 30%

Total 500 points

Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
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<tr>
<td>A-</td>
<td>90-92%</td>
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<tr>
<td>B+</td>
<td>87-89%</td>
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<td>B</td>
<td>83-86%</td>
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<tr>
<td>B-</td>
<td>80-82%</td>
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<td>C+</td>
<td>77-79%</td>
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<td>C</td>
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<td>D+</td>
<td>67-69%</td>
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<tr>
<td>D</td>
<td>60-66%</td>
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<tr>
<td>E</td>
<td>&lt;60%</td>
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Field Trips: All field trips are required and participation expected. Unexcused absences for a field trip will result in a letter grade deduction (e.g., A to B).

Field Notebooks & Life History Assignment: Each student will record the species and number of birds encountered on trips along with basic habitat descriptions and behavioral observations. In addition, students must also keep a list of all species detected on Gibraltar Island during the week. For 15 of the species detected on Gibraltar, students must write a brief summary of the natural history of the species, including a brief overview of its full life cycle – breeding, migration, and wintering habits, which include descriptions of habitat, foraging behavior (e.g., types of food eaten, methods to obtain food), and nesting habits.

Identification Quizzes: Quizzes will take place in the field and/or lab depending on time/weather conditions

Final Exam: The final exam will consist of multiple choice and short answer. It will include an ID component and cover all aspects of the course except for the research project.
Research Project: Students will work collaboratively with the instructor to identify a focused research project that can be accomplished during the one-week course. Appropriate projects might include examining:

- What are the associations between habitat type and numbers of Red-winged blackbirds or Yellow Warblers?
- How does abundance of Red-winged Blackbirds or Yellow Warblers vary across islands?
- What is the relationship between singing rate (# songs per unit time) and habitat type or time of day?
- Foraging observations of Red-winged Blackbirds (% mayflies in diet)
- Variation in activity budgets (% time resting, foraging, etc.) of Red-winged Blackbirds among individuals or across times of day or along shoreline versus interior of island.
- Nest attendance and provisioning rates on Gibraltar.
- Variation in flock size of resting gulls
- Frequency with which gulls scan for predators
- How flock size influences scanning behavior
- Does the number of Canada Geese within flocks differ among islands?
- Does behavior (activity budgets) of geese differ among individuals with and without goslings?
- Does relative abundance of Red-winged Blackbirds (or Tree Swallows, etc.) differ among islands?
- What is the time budget / behavior of Canada Geese on Gibraltar Island vs. South Bass Island?
- What is the pattern of nest attendance for Herring Gulls?
- Does average dive duration and distance moved per dive vary with dive order (1st, 2nd, etc) for Double-crested Cormorants?
- What are the time budgets of Great Blue Herons?
- Is there a difference in adult: gosling ratios of Canada Geese between South Bass & Gibraltar Islands?
- Do ground-foraging birds prefer shaded or sunny areas?
- Does habitat use of Great Blue Herons vary with time of day?

You will have time to collect data in late afternoons and evenings, and some limited time during field trips. Data should be quantified (able to be counted, averaged, etc.). For example, rather than writing long verbal descriptions of behaviors of individual birds, you could first develop categories of behavior (e.g., foraging, flying, preening, scanning, fighting) and then record the % of time individuals engage in each, or the rate at which a behavior occurs.

You may select to do a 4 page report (12 pt font, Times New Roman, double-spaced, not including any tables and graphs) of your project OR a 10 minute powerpoint presentation of your research. See further details on the next page.
For project reports/presentations, you need five sections that include the following information:

I. Introduction (~½ -1 page)
   - State your research question(s) (in actual question format)
   - Explain/describe why that question(s) is interesting to you and its possible applications to the field of avian ecology and conservation

II. Methods (~1/2 – 1 page)
   - Describe your methodology in detail (includes dates, times, place, methodology, number of individuals observed, etc.). Be sure to include time spent observing (for surveys or observations of behaviors). Your methods should be in sufficient detail that someone can replicate your study.

III. Results (~1/2 – 1 page for text)
   - Present your results in a table or graph; In addition to presenting summarized data in table or graph form, write a verbal summary of the main pattern you found

IV. Discussion (1-2 pages)
   - Explain the patterns that you found; here you propose possible explanations for the patterns you observed. Why might you have seen that pattern? You can discuss both methodological reasons (e.g., bias) and ecological ones,
   - Compare your work to a related scientific article (depending upon internet access). Compare the methodological approaches and the findings between that article and your study. Discuss how the information in the article influences your thinking about your research question.

V. Literature Cited
   - Provide the full citation for the article (author names, year published, title, journal name with volume & page numbers) that you compared your study too
   - Provide the full citation for any additional references that you used

Academic Misconduct: IT IS THE RESPONSIBILITY OF THE COMMITTEE ON ACADEMIC MISCONDUCT TO INVESTIGATE OR ESTABLISH PROCEDURES FOR THE INVESTIGATION OF ALL REPORTED CASES OF STUDENT ACADEMIC MISCONDUCT. THE TERM “ACADEMIC MISCONDUCT” INCLUDES ALL FORMS OF STUDENT ACADEMIC MISCONDUCT WHEREVER COMMITTED; ILLUSTRATED BY, BUT NOT LIMITED TO, CASES OF PLAGIARISM AND DISHONEST PRACTICES IN CONNECTION WITH EXAMINATIONS. INSTRUCTORS SHALL REPORT ALL INSTANCES OF ALLEGED ACADEMIC MISCONDUCT TO THE COMMITTEE (FACULTY RULE 3335-5-487). FOR ADDITIONAL INFORMATION, SEE THE CODE OF STUDENT CONDUCT AT HTTP://STUDENTLIFE.OSU.EDU/CSC/.

Special Needs: Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/. 