

## **ENR 2360: Ecology and Conservation of Birds**

### **Instructor**

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### **Course Logistics**

One-week course held at Stone Laboratory, Put-in-Bay, Ohio, June 10- June 16, 2018.

Sunday check-in and orientation. Class meets Sunday evening; Monday-Friday, 8 am - 5 pm with breaks for lunch and dinner (further evening class activities may also be scheduled); and Saturday, 8 am – 12 pm.

### **Course Format**

2 semester credit hours consisting of lecture and field work

This one-week, residential course immerses students in place-based learning from morning to night. Lectures occur at The Ohio State University's Stone Laboratory. Field work involves trips to observe and survey birds at Magee Marsh Wildlife Area, Ottawa National Wildlife Refuge, Black Swamp Bird Observatory, and the Lake Erie Islands of South Bass, North Bass, and Kelly's.

### **Course Description**

ENR 2360 provides students with an introduction to the ecology and conservation of birds, with a special emphasis on field ornithology and student research projects. This course is designed for undergraduate students from any field. It integrates concepts related to avian ecology, management, research, 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 student research projects and by the examination and discussion of current challenges in avian conservation.

### **Course Materials**

**Required Text:** National Geographic Guide to Birds (OSU-Marion Bookstore)

**Required Course Materials:** 1 4x7 Rite in the Rain Spiral Notebook (OSU-Marion Bookstore/Stone Lab)

**Recommended Course Materials:** 1 pair 7x35 or 8x40 binoculars (any optics retailer near you), however, pairs are available to be borrowed from Stone Lab for the duration of the course

**Course Outline (Subject to change)**

<b>Day</b>	<b>Time</b>	<b>Description</b>	<b>Readings/Due Dates</b>
Sunday	4:00p - 5:00p	Orientation: Introduction to Stone Lab	pp. 6-13 in Nat Geo
	5:00p - 6:00p	Dinner	
	6:30p – 8:30p	Course introduction	
		Lecture 1: Introduction to Ornithology and Field ID	
Monday	7:00 - 7:45a	Breakfast	Field Quiz 1
	8:00 - 12:00p	Field Trip – South Bass Island	
	12:00 - 12:45p	Lunch	
	1:00 - 2:00p	Lecture 2: Avian Habitat Relationships	
	2:00 – 4:30p	Research Project Planning	
	5:00 - 6:00p	Dinner	
	6:00 – 9:00	Research Project Work Time	
Tuesday	7:00 - 7:30a	Breakfast	Field Quiz 2
	7:30 - 4:30p	Field Trip – Black Swamp Bird Observatory/Magee Marsh (Lunch included)	
		Dinner	
	5:00 - 6:00p	Research Project Work Time	
	6:00 - 9:00p	Research Project Work Time	
Wednesday	7:00 - 7:45a	Breakfast	Field Quiz 3  Current Research/Management Article(s), TBA
	8:00 -12:00p	Field Trip: North Bass Island	
	12:00 - 12:45p	Lunch	
	1:00 – 4:30p	Lecture 3: The Avian Life Cycle	
		Discussion: Current Challenges in Avian Conservation	
		Lecture 4: Populations/Communities and Survey Methodologies	
	5:00 - 6:00p	Dinner	
	6:00 – 9:00p	Research Project Work Time	
Thursday	7:00 - 7:30a	Breakfast	

	7:30 - 4:30p	Field Trip: Ottawa National Wildlife Refuge	Field Quiz 4
	5:00 - 6:00p	Dinner	
	7:00 - 9:00p	Stone Lab Lectures	Life Histories Due 7pm
Friday	7:00 - 7:45a	Breakfast	
	8:00 - 12:00p	Field Trip: Kelly's Island	Field Quiz 5; Notebooks Due – 12 pm
	1:00 – 4:30p	Research Project Work Time	
	5:00 - 6:00p	Dinner	
	6:00 – 9:00p	Research Project Presentations & Exam Review	Research Projects Due – 6pm
Saturday	7:00 - 7:45a	Breakfast	
	8:00 – 10:00a	Final Exam – Bird ID and Course Content	

## Major Assignments

**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:** 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.

**Life History Assignment:** 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. Each species must be summarized in a page or less of text, typewritten in Times New Roman, 12-point font, with 1 inch margins. Students must at least use the following two sources that will be provided to them at Stone Lab: The Second Breeding Bird Atlas of Ohio, and the Birds of North America online, in addition to other sources from the Stone Lab library.

**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 will do an 8-10-minute PowerPoint presentation of your research in the following format:

For project presentations, you need five sections that include the following information:

- I. Introduction
  - 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
  - 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
  - Present your results in a table or graph; In addition to presenting summarized data in table or graph form, verbally summarize the main pattern(s) you found
  
- IV. Discussion
  - 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 and any additional references that you used (3)

## **Grading Information**

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	<u>+ 150 points, 30%</u>
<b>Total</b>	<b>500 points</b>

## **Grading Scale**

93-100%	A
90-92.9%	A-
87-89.9%	B+
83-86.9%	B
80-82.9%	B-
77-79.9%	C+
73-76.9%	C
70-72.9%	C-
67-69.9%	D+
60-66.9%	D
<60%	E

## **Attendance Policy**

Students are expected to actively participate in all class sessions, including lectures, fieldwork and laboratory time.

## **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 <http://studentlife.osu.edu/csc/>.

## **Disability Services**

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 614-292-3307, TDD 614-292-0901; <http://www.wds.ohio-state.edu/>.