Waterfowl Ecology and Management

RNR 4061 (4 cr.): Spring 2015
Lecture: Mon/Wed/Fri 1:30-2:30, RNR 142
Lab: Wednesday 2:30-5:30

INSTRUCTORS: Dr. Kevin Ringelman
Office: 310 RNR
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Cell Phone: 225-281-0711

MOODLE: TBA

COURSE DESCRIPTION AND GOALS
The goal of this course is to familiarize you with the ecology and management of North American waterfowl throughout their annual cycle, by applying broad concepts from life history theory, behavioral ecology, and conservation biology. Each week, we will strive to provide basic background information on specific topics, and integrate this with new advances on the forefront of waterfowl research. You will be exposed to methods of population monitoring and management, habitat management, and human dimensions of waterfowl conservation.

This class will provide you with a background in:
- Identification, aging, and sexing of North American waterfowl and wetland birds, both in the lab and in the field
- Critically reviewing scientific literature and technical reports
- Teamwork and communication skills through a class presentation on topic related to waterfowl ecology or management, as well as a written review paper.
- Interacting with waterfowl and wetlands researchers and managers, as well as other stakeholders concerned with waterfowl conservation

LECTURE AND LAB
Lectures will take place M/W/F in RNR 142. Lectures will focus on providing you with a background in waterfowl ecology and management, with time for discussion of current literature (readings TBA). Your participation in these discussions and overall
engagement during lecture are important. At all times, you are encouraged to ask questions and offer (substantive) commentary.

Labs will take place in RNR 206 unless otherwise stated. During the first two lab periods will be walking over to the LSU Museum of Natural Science to view research specimens and learn waterfowl identification. Other lab periods we will be going on field trips around the Baton Rouge area, and in some cases, trips will be long enough that we will forgo lecture that day. Please plan on attending all field trips; if you must miss a field trip, you will need to discuss make-up arrangements with me. Finally, we will designate several lab periods as data analysis “workshops” where you will work through exercises in small groups. In general, labs will last the full period, so please plan your schedules accordingly.

OVERNIGHT FIELD TRIPS
We will take at least two overnight weekend field trips to permit viewing waterfowl and wetland habitats, and to meet with researchers and managers. We may also take occasional field trips during the lab period on Wednesday afternoons. More details are provided in the class schedule.

READINGS:
- Additional readings as assigned

GRADING:
A classroom Powerpoint presentation is a major component of the class. The presentation will be prepared and presented by two-person teams. Requirements for these are described in a separate handout.

A (90.00-100); B (80-89.99); C (70-79.99); D (69.99-60); F (<59.99)

Grading:
- Midterm exams (2 @ 100 pts. each) 200
- Lab exam 100
- Class presentation 100
- Final exam 150
- Student paper 50
- Participation 40
- Field trips 60
- Total 700

Re-grades: Must be submitted directly to Dr. Ringelman, in person, within one week after exams are returned. The entire test will be re-graded; that is, there is the potential to both gain and lose points. Do not change your answers and ask for a re-grade.
**Participation:** Enthusiastic participation in lecture and lab is crucial, especially when we are hosting guest speakers. Attendance is obviously a prerequisite for participation. Guidelines for evaluating participation are as follows:

- **Excellent (40 points):** The student comes well-prepared, and always engages with the lecturer and other students in a constructive, positive manner. The student goes out of his/her way to ask questions and offer insightful commentary, and tends to lead classes in discussion.
- **Good (30 points):** The student is generally well-prepared, and often offers substantial commentary and questions. The student is an active participant in group discussions.
- **Satisfactory (20 points):** The student sometimes is well-prepared, and occasionally asks questions. The student participates in discussions when prodded.
- **Non-participant (10 points):** The student is rarely prepared for lecture, and rarely or ask questions or offers commentary. The student is disengaged from lecture and lab.
- **Negative participant (0 points):** The student is unprepared for lecture and lab, and wastes valuable time asking irrelevant questions or forcing the entire group to play catch-up.

**Field Trips:** For most field trips, you will be asked to keep a field notebook of waterfowl sightings and other natural history observations. The quality of these notebooks will be the primary determining factor of your field trip grade. 3 short field trips will be worth 10 points each; 2 overnight field trips will be worth 15 points each.

**CLASSROOM RESPECT**
- Class will begin on time. Please show up on time.
- Do not use your cell phones in class.
- Please stay focused in lecture. Most people cannot use their laptops and remain focused; if you use a laptop, it must have a privacy screen to avoid distracting other students.
- Field trips should be viewed as a privileged activity; show the utmost respect for the people and places we visit.

**UNIVERSITY POLICY STATEMENTS**

**Attendance:** LSU policy statements 22 and 24 and Faculty Senate resolution 12-3 state that individual faculty determine excuse and unexcused absences, and that attendance can be graded by randomly taking attendance during 12 randomly selected lectures. An unexcused absence during any graded activity will result in a 0 for the activity. Excused absences and make-up opportunities will be granted for university-approved off-campus activities, religious holidays, professional development activities, job interviews, and severe illnesses. Please contact me before course activities if possible to schedule a make-up.

**Academic integrity:** Cheating and plagiarism will not be tolerated in any form; it damages the integrity of the student, the department, and university, and can far-reaching effects into the future (e.g. “I don’t hire RNR grads anymore because I had one who cheated his (her) way through and was an awful employee”). We use of plagiarism detection software. Students
violating the Academic Dishonesty policy of the LSU Code of Student Conduct will be referred to Student Advocacy & Accountability.

**Disability statement:** Louisiana State University is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you have a disability that may have some impact on your work in this class and for which you may require accommodations, please see a staff member in Disability Services (115 Johnston Hall) so that such accommodations can be considered. Students that receive accommodation letters, please meet with me to discuss the provisions of those accommodations as soon as possible.

**Credit expectations:** For each earned credit, students must spend a minimum of 1 hour per week in lecture class or 3 hours per week in lab, and a minimum of 2-3 hours per week of studying/homework outside of class

**SUGGESTED TOPICS FOR PAPER 1 (BIOLOGY/ECOLOGY):**

- **Waterfowl Ecology**
  - Evolutionary history/systematics
  - Hybridization
  - Waterfowl biology/ecology of taxa found on other continents
  - Variation among life-history traits in breeding waterfowl
  - Population dynamics of waterfowl
  - Proximate drivers of populations
  - Decline and recovery of (taxa)
  - Density dependence at various spatial and temporal scales
  - Inter- and/or intra-specific competition for breeding/wintering resources
  - Disease ecology (botulism, cholera, flu, etc.)
  - Courtship, pair-bonding
  - Cues, signaling and behavior (vocalizations, plumage, etc.)
  - Territoriality and home range of (taxa) during the breeding or wintering season
  - Nest site selection
  - Brood parasitism
  - Incubation rhythms
  - Estimates of nest success and causes of mortality (lots here…)
  - Estimates of brood survival and causes of mortality
  - Migration ecology (proximate and ultimate drivers, shortstopping, etc.)
  - Full annual-cycle modeling
  - Analytical and agent-based models of waterfowl ecology
  - Arctic geese and ecosystem ecology
  - Movements and foraging of wintering waterfowl
  - Nutrient dynamics of breeding or wintering waterfowl
  - Bioenergetics, metabolism
  - Time budgets of breeding/wintering waterfowl
  - Influence of agriculture on waterfowl
  - Cross-seasonal effects
  - Impact of lead poisoning/pollutants on waterfowl mortality and populations
Potential influences of climate change on breeding waterfowl (many topics here…)

SUGGESTED TOPICS FOR PRESENTATION (MANAGEMENT, ETC.)

Species of conservation concern
The effectiveness of various intensive management practices for breeding waterfowl
An evaluation of the effectiveness of artificial nesting structures
Predator impacts and management for breeding waterfowl
Moist-soil management for food production for wintering waterfowl
Agricultural management for food production for migrating and wintering waterfowl
Management of wetland complexes for wintering waterfowl
Carrying capacity modeling (many aspects to consider here…)
Pen-raised/released mallard programs
The impact of hunting on (specific taxa) populations
Waterfowl banding for harvest analysis and management
Adaptive Harvest Management
The Harvest Information Program
The influence of decoys on waterfowl harvest, potential research biases
The influence of hunting pressure on daily movement and foraging of wintering waterfowl
The Migratory Bird Conservation Act of 1929
The Federal Aid in Wildlife Restoration Act of 1937
The North American Waterfowl Management Plan
The Conservation Reserve Program
The Wetland Reserve Program
Alternative Land Use Services (ALUS) in Canada
The use of conservation easements for preservation of waterfowl habitat
Ducks Unlimited, Inc.
Delta Waterfowl Foundation
Participation and the economic impact of waterfowl hunting in the United States
Hunter recruitment and retention – a review of options for increasing hunter participation
Waterfowl hunter satisfaction

I’m happy to approve other relevant topics (for either paper) as well!
<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Lecture</th>
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<tbody>
<tr>
<td>Wed.</td>
<td>1/14</td>
<td>Introduction to waterfowl, morphology</td>
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<tr>
<td>Fri.</td>
<td>1/16</td>
<td>Waterfowl taxonomy</td>
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<tr>
<td>Mon.</td>
<td>1/19</td>
<td>No class - MLK</td>
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<tr>
<td>Wed.</td>
<td>1/21</td>
<td>Intro to waterfowl ID</td>
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<td>Fri.</td>
<td>1/23</td>
<td>Annual cycle, mating systems</td>
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<tr>
<td>Mon.</td>
<td>1/26</td>
<td>Habitat selection and territoriality</td>
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<td>Wed.</td>
<td>1/28</td>
<td>Research and writing methods</td>
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<td>Fri.</td>
<td>1/30</td>
<td>Reproductive ecology</td>
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<td>Mon.</td>
<td>2/2</td>
<td>Nesting ecology</td>
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<td>Wed.</td>
<td>2/4</td>
<td>Intro to aging and sexing waterfowl</td>
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<td>Fri.</td>
<td>2/6</td>
<td>Guest speaker - Jim Ringelman <em>(confirmed)</em></td>
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<td>Fri.-Sat.</td>
<td>2/7</td>
<td>Overnight to Rockefeller refuge <em>(confirmed)</em></td>
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<tr>
<td>Mon.</td>
<td>2/9</td>
<td>Breeding ecology - brood ecology and management</td>
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<td>Wed.</td>
<td>2/11</td>
<td>Molt and molt migrations</td>
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<td>Fri.</td>
<td>2/13</td>
<td>1st PAPER DUE; Breeding grounds management</td>
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<td>Mon.</td>
<td>2/16</td>
<td>No class - Mardi Gras</td>
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<tr>
<td>Wed.</td>
<td>2/18</td>
<td>Breeding, migration, and wintering geography</td>
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<td>Fri.</td>
<td>2/20</td>
<td>Migration ecology</td>
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<td>Mon.</td>
<td>2/23</td>
<td>EXAM 1</td>
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<tr>
<td>Wed.</td>
<td>2/25</td>
<td>(no lecture)</td>
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<tr>
<td>Fri.</td>
<td>2/27</td>
<td>Foraging ecology, nutrition, energetics</td>
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<tr>
<td>Mon.</td>
<td>3/2</td>
<td>Wintering grounds management part 1</td>
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<tr>
<td>Wed.</td>
<td>3/4</td>
<td>Intro to Sherburne WMA</td>
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<td>Fri.</td>
<td>3/6</td>
<td>Guest speaker - Larry Reynolds <em>(confirmed)</em></td>
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<td>Sat.</td>
<td>3/7</td>
<td>Fri.-Sat. overnight to Dickson Aviary, Shreveport <em>(confirmed)</em></td>
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<td>Mon.</td>
<td>3/9</td>
<td>Wintering grounds management part 2</td>
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<td>Wed.</td>
<td>3/11</td>
<td>Mike Kaller - waterfowl foods and lab</td>
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<td>Fri.</td>
<td>3/13</td>
<td>Wetland management</td>
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<tr>
<td>Mon.</td>
<td>3/16</td>
<td>EXAM 2</td>
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<td>Wed.</td>
<td>3/18</td>
<td>Guest speaker - Sammy King <em>(confirmed)</em></td>
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<td>Fri.</td>
<td>3/20</td>
<td>Waterfowl policy and management - historical</td>
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<td>Mon.</td>
<td>3/23</td>
<td>Waterfowl policy and management - current</td>
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<tr>
<td>Wed.</td>
<td>3/25</td>
<td>Guest speaker - Bret Collier <em>(confirmed)</em></td>
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<td>Fri.</td>
<td>3/27</td>
<td>Nuisance species</td>
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Mon. 3/30  Human dimensions
Wed. 4/1   Guest speaker - Mike Brasher (confirmed)
Fri.  4/3   No class - spring break

Mon. 4/6   No class - spring break
Wed. 4/8   No class - spring break
Fri. 4/10  No class - spring break

Mon. 4/13 Future of waterfowl management
Wed. 4/15 Lab review
Fri. 4/17 Student presentations

Sat. 4/18 Mottled Duck nest searching???

Mon. 4/20 Student presentations
Wed. 4/22 Lab Exam
Fri. 4/24 GRAD STUDENT PAPER DUE; Concluding remarks

Mon. 4/27 FINAL EXAM
Lab
(none)

Waterfowl ID lab - geese and dabbling ducks

Waterfowl ID lab - diving ducks and sea ducks

Aging and sexing by wing; dissections and internal anatomy

Field Trip - Capital Lakes

Nesting data analysis exercise

Field trip - Whistling-duck banding

Field trip - Sherburne WMA

Mike Kaller - waterfowl foods and lab

Wading bird ID lab

Workshop in band recovery and survival analysis
Workshop in telemetry data analysis

Lab review

Lab Exam