FW 260: Principles of Wildlife Management

Spring 2020

Wagar 231 at 15:00 to 16:15 Tues and Thurs

Instructor: Dr. George Wittemyer

Assistant Professor: Department of Fish, Wildlife, and Conservation Biology
Office: 101 Wagar
Office hours: 13:00-14:00 Tuesday and Thursday or by appointment
Phone: 970-491-6598
e-mail: g.wittemyer@colostate.edu

Teaching Assistant: Kilo Ka'awa-Gonzales

Graduate Student: Department of Fish, Wildlife, and Conservation Biology
Office: 211D Wagar
Office hours: 10:00-11:00 Tuesday and 1:00-2:00 Wednesday, or by appointment
e-mail: kilo.kaawagonzales@gmail.com

Synopsis:

Principles of ecology applied to management and conservation of fish and wildlife. This class is designed for Fish, Wildlife, and Conservation majors, but will be incorporating other natural resource fields where applicable.

Course Objectives:

1. Students will develop a general understanding of the assumptions, effectiveness, and limitations of theories and strategies used to manage fish and wildlife populations and their habitats.
2. Students will develop analytical problem-solving skills and will gain experience in data interpretation and graphical and mathematical models.
3. Students will develop a general appreciation for the challenges and opportunities inherent in fish and wildlife conservation.

Readings:

Your primary readings will be posted on Canvas.

For those seeking additional material to help understand the material in class, I used to assign the text book:


Material in the textbook closely mirrors that presented in class. Access to course materials will be provided through Canvas.
Supplies: You will need a calculator that can calculate logarithms for possible use on exams. Sharing calculators will not be allowed during exams.

Course Format:

1. Two lectures per week: Tues, Thurs: 3:00 – 4:15 pm 231 Wagar.
2. Come to class having read the assigned readings.
3. Weekly quizzes will be given via Canvas on the assigned reading and previous weeks lecture materials.
4. If you miss a class, it is your responsibility to get the notes from a classmate.
5. Please bring questions to class and ask them. Discussion in class is important.

Course Grading:

Tentative point allocation for evaluation of students:

<table>
<thead>
<tr>
<th>POINTS</th>
<th>PERCENTAGE</th>
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<tbody>
<tr>
<td>88</td>
<td>20%</td>
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<td>150</td>
<td>36%</td>
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<td>100</td>
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<td>10</td>
<td>2%</td>
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<tr>
<td>435</td>
<td>100%</td>
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Pass/Fail is not a grading option. Fish, Wildlife, and Conservation majors must earn a “C” or better in FW 260. Cutoffs for grades typically will be based on the following percentages: 90-100 = A (or A-); 80-89 = B (or B-); 70-79 = C (or C-); 60-69 = D (or D-); ≤ 59 = F; in some instances grades might be based on the performance of the entire class.

Quizzes:

We will have approximately weekly pre-class quizzes (~12 in total) during the semester administered using the Canvas test functions. These weekly quizzes are tentatively scheduled as indicated with a \( Q \) on your course schedule below. The quiz questions will be taken directly from course lectures and assigned readings, and will cover the period between quizzes. These regular quizzes are given to: 1) reduce “cramming” for exams by ensuring all students make frequent use of the material; 2) ensure better retention because you study and review material regularly; and 3) reward those who come prepared to class. I will drop the lowest in-class quiz score from the calculation of your grade. Late quizzes are not accepted and I do not give make up quizzes.

Exams:

Exam questions will be taken from lectures, guest lectures, textbook readings, and discussion readings (you are responsible for all information in reading assignments, even if it is not specifically covered in class). In general, exams will have some combination of true/false, multiple choice, matching, and short answer. Make-up or early exams are seldom given; rare exceptions are made for catastrophes truly beyond your control. In these cases, I must be notified before the exam and I must have written verification. If I do not have a valid excuse from you before the exam, you will receive a 0. I may choose to use a restricted average of other scores, instead of a makeup.
Once I have returned an exam you have 24 hours to identify any arithmetic errors on my part and I will correct them. If you did not detect arithmetic errors, but want question(s) re-graded, you must submit the exam with a written explanation of your arguments within one week after it was returned in class. Beware! If you submit an exam for re-grading I will re-grade the entire exam to ensure no other mistakes were made (this may or may not benefit you).

**Problem-Sets:**

We will have 6 take-home problem sets including an Excel lab during the semester. These are due at the start of the class on the due date and will be penalized 10% if received after the start of class on the due date. No problem sets will be accepted after the due date, unless I accept a catastrophic reason in advance.

**Discussions:**

We will have in class discussions on materials posted on Canvas. In addition, there are questions posted under each discussion that you are to answer online. We will then discuss these questions as a group to help synthesize the material.

**Conservation Activity:**

Each student will be required to conduct an activity relating to conservation (preferably of fish and wildlife) during the semester. The activity cannot be an assignment or project from another class and it must be accomplished within the semester. Possibilities include, but certainly are not limited to: 1) work at local conservation groups or zoos, 2) assisting ongoing scientific research programs 3) participation in conservation education programs, 4) delivering a public talk or seminar, 5) involvement in a conservation activity with the Student Chapter of The Wildlife Society, the Society for Conservation Biology, or the American Fisheries Society, or other student group, 6) writing to politicians regarding conservation issues or offering comments on EIS during public comment period (note: signing online form letter does not count and you must turn in letter to get credit), 7) writing articles regarding conservation issues for the popular press, 8) volunteering as part of an environmental clean up or invasive species removal program, 9) attending a public meeting of the wildlife commission, natural resources board, etc. In the final day of class, students will turn in a brief (1 paragraph) typed description of their activity and include a photograph of you participating in the activity.

**Helpful Hints:**

1. Ask questions; 2. Rewrite your lecture notes; 3. Test yourself by writing questions in the margin of your notebook paper, next to relevant lecture material; 4. Use flash cards for studying vocabulary; 5. Study with a partner or group; 6. Use the TA office hours – they are there to help you, 7. Keep up with the material. In theory you should be studying 6-9 hrs/wk for a 3 credit class, but for some it will take more time and for others it will take less.

**Academic Dishonesty And Disruptive Behaviors:**

Cheating and plagiarism will not be tolerated in class. If found cheating, you will receive a failing grade. Distractive behaviors such as talking to neighbors, reading newspapers, regularly coming to class late (unless prior authorization has been given), or leaving class early are also not acceptable; students engaged in such activities may be asked to leave the
Instances of academic dishonesty and disruption also may be referred to the Office of Judicial Affairs, which can result in University disciplinary action (see Student Rights & Responsibilities section of the CSU General Catalog for more information). As an instructor it is my responsibility to ensure all students have an equal opportunity to learn the material without disruption or distraction. I take that responsibility seriously and will not tolerate such disturbances.

Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, we will ask you to sign the CSU Honor Pledge as part of completing all of our major assignments. While you will not be required to sign the honor pledge, we will ask each of you to write and sign the following statement on your papers and exams:

"I have not given, received, or used any unauthorized assistance."

**Attendance And Participation:**

You are expected to attend all classes, but I will not take roll. As adults I leave it in your responsible hands to get notes from your peers (not from me or your TA) and do the required reading. However, we will have random clicker questions in class and during discussions. Your participation as assessed through these clicker based measures in class will be used as your participation grade.

**Special Needs:**

Please let me know as soon as possible if you have any special needs. If any student has a learning disability please contact the Resources for Disabled Students in the General Services Bldg. That way we can work to accommodate you as soon as possible. It is your responsibility to work with RDS and bring necessary paper work to me.

**COURSE SCHEDULE** (subject to change, be sure to check Canvas for latest updates)

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>21-Jan</td>
<td>1.1 Course Intro</td>
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<td>1.2 Dr. Wittemyer Research Intro</td>
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<td>23-Jan</td>
<td>2.1 Intro to Wildlife Management</td>
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<td>2.2 Suggested Text Reading - Chp 1-4</td>
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<td>28-Jan</td>
<td>3.1 Intro to Wildlife Management (cont)</td>
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<td>3.2 Discussion Reading: Wildlife Professional 2012, Celebrating 75 Years</td>
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<td>30-Jan</td>
<td>4.1 Wildlife Funding</td>
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<td>4.2 Reading: The Wildlife Professional 2012, Cornerstone of US Conservation</td>
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<td>4.3 Discussion Reading: CPW Financial Sustainability 2018</td>
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<td>4.4 <strong>Assignment 1 Agencies and Legislation</strong></td>
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<td>4-Feb</td>
<td>5.1 Video: North American Model of Wildlife Management</td>
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<td>5.2 Reading: The Wildlife Professional 2012, Lifeblood of the States</td>
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5.3 Reading: Nelson - An Inadequate Construct
5.4 Discussion Reading: Organ and Fritzell (2000)
5.5 Hunting Trends Discussion

6 Thurs 6-Feb
6.1 Human Dimensions
6.2 Reading: Lischka et al. 2018
6.3 ASSIGNMENT 1 DUE

7 Tues Q3 11-Feb
7.1 Wildlife Management Approaches
7.2 Lecture Background Reading: Wilcove and Blair 1995 (Ecosystem Management)
7.3 Lecture Background Reading: Grumbine 1997 (Ecosystem Management)

8 Thurs 13-Feb
8.1 Guest Lecture: Eric Bergman CPW

9 Tues Q4 18-Feb
9.1 Assign 2 Excel Primer
9.1 Ethics and Values in Wildlife Management
9.2 Discussion Reading: Murie (1954)
9.4 Discussion Reading: NYT Isle Royale Wolves (2013)
9.5 Discussion Questions: Ethics and Advocacy

10 Thurs 20-Feb
10.1 Excel Primer Cont.
10.3 Midterm Review

11 Tues 25-Feb
11.1 Midterm

12 Thurs 27-Feb
12.1 Wildlife Populations - Exponential
12.2 Suggested Text Reading - Chps 5,6,7
12.3 Assignment 3 Exponential Growth
12.4 ASSIGNMENT 2 DUE

13 Tues Q5 3-Mar
13.1 Wildlife Populations - Regulation and Logistic
13.3 Suggested Text Reading - Chps 5,6,7
13.4 Assignment 4 Logistic Growth

14 Thurs 5-Mar
14.1 Wildlife Populations - Life Tables Introduction
14.2 Suggested Text Reading - Chp 5 (pp 92-110), Chp 6 (pp 121-122)
14.3 Discussion Reading: Wittemyer et al. 2013 (Elephant Demography)
14.4 Assignment 5 Life Tables
14.5 ASSIGNMENT 3 DUE

15 Tues Q6 10-Mar
15.1 Welfare Factors
15.2 Suggested Text Readings: Chp 8,13,14

15.3 ASSIGNMENT 4 DUE

16 Thurs 12-Mar
16.1 Welfare Factors Cont.
16.2 Discussion reading: Vogel et al. 2015 Orangutan
16.2 ASSIGNMENT 5 DUE
Mar 18-22 Spring Break

17 Tues Q7 24-Mar
17.1 Wildlife Habitat
17.2 Suggested Text Reading: Chapt 16
17.3 Discussion Reading: Mule Deer Habitat Management (Bergman et al. 2014)

18 Thurs 26-Mar
18.1 Predation
18.2 Text Reading - Chp 9

19 Tues Q8 31-Mar
19.1 Predation (Cont)
19.2 Discussion Reading: Leopold 1949 (Thinking Like a Mountain)

20 Thurs 2-Apr
20.1 Discussion Reading: Ripple and Beschta 2005 (Trophic Cascade)
20.2 Discussion Questions: Predation
20.3 Midterm 2 Review

21 Tues 7-Apr

21.2 Midterm 2

22 Thurs 9-Apr
22.1 Hunting and Harvest Theory
22.2 Text Reading - Chp 10
22.3 Assignment 6 Part I Harvest Theory

23 Tues Q9 14-Apr
23.1 Harvest (Cont)
23.2 Discussion Reading: Smith et al. 2011 (Impacts of Marine Fishing)
23.3 Discussion Questions: Overfishing

23.4 Assignment 6 Part I Due
23.5 Assignment 6 Part II Harvest Theory

24 Thurs 16-Apr
24.1 Wildlife Diseases
24.2 Text Reading - Chp 11

24.3 Assignment 6 Part II Due

25 Tues Q10 21-Apr
25.1 Wildlife Diseases (Cont)
25.2 Discussion Reading: Fricket al. 2010 (White Nose Syndrome)
25.3 Discussion Reading: WNS Brochure
25.4 Discussion Questions: WNS and bats

26 Thurs 23-Apr
26.1 Animal Behavior and Wildlife Management

27 Tues Q11 28-Apr
27.1 Human Wildlife Conflict (Dr. Stewart Breck of the National Wildlife Research C

28 Thurs 30-Apr
28.1 Animal Behavior Cont. (animal space use)
28.2 Discussion Reading: Loss et al. 2013 (domestic cats)
28.2 Discussion Questions: Impacts of domestic cats

29 Tues Q12 5-May
29.1 The future of Wildlife Management
29.2 Reading: Wildlife Professional 2012, What the Future Holds
29.3 Discussion Reading Orr 2007
29.4 Discussion Reading Knight 2007
29.5 Discussion Conservation and Optimism

30 Thurs 7-May
30.1 Conclusions/Final Review
30.2 Text Reading - Chp 19

**30.3 Conservation Activity Description DUE!**

31 Monday 11-May
Final (9:40-11:40 AM)