

## **FW 260: Principles of Wildlife Management**

**Spring 2020**

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

### **Instructor: Dr. George Wittemyer**

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### **Teaching Assistant: Kilo Ka'awa-Gonzales**

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### ***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:

Krausman, Paul R. 2002. Introduction to Wildlife Management: The Basics. Prentice Hall, New Jersey.

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:

	POINTS	PERCENTAGE
1. Quizzes	88	20%
2. 2 Midterm Exams @ 75 points each	150	36%
3. Comprehensive Final Exam	100	24%
4. Homework	70	16%
5. Discussion/Participation	ca.17	4%
5. Conservation Activity	10	2%
Total	435	100%

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-);  $\leq 59 = F$ ; 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

class. 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 to you 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)

1 Tues	21-Jan
	1.1 Course Intro
	1.2 Dr. Wittemyer Research Intro
2 Thurs	23-Jan
	2.1 Intro to Wildlife Management
	2.2 Suggested Text Reading - Chp 1-4
3 Tues Q1	28-Jan
	3.1 Intro to Wildlife Management (cont)
	3.2 Discussion Reading: Wildlife Professional 2012, Celebrating 75 Years
4 Thurs	30-Jan
	4.1 Wildlife Funding
	4.2 Reading: The Wildlife Professional 2012, Cornerstone of US Conservation
	4.3 Disucssion Reading: CPW Financial Sustainability 2018
	4.4 <b>Assignment 1 Agencies and Legislation</b>
5 Tues Q2	4-Feb
	5.1 Video: North American Model of Wildlife Management
	5.2 Reading: The Wildlife Professional 2012, Lifeblood of the States

	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
	<b>6.3 ASSIGNMENT 1 DUE</b>
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
	<b>11.1 Midterm</b>
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 <b>ASSIGNMENT 2 DUE</b>
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
	<b>14.5 ASSIGNMENT 3 DUE</b>
15 Tues Q6	10-Mar
	15.1 Welfare Factors
	15.2 Suggested Text Readings: Chp 8,13,14
	<b>15.3 ASSIGNMENT 4 DUE</b>
16 Thurs	12-Mar
	16.1 Welfare Factors Cont.
	16.2 Discussion reading: Vogel et al. 2015 Orangutan
	<b>16.2 ASSIGNMENT 5 DUE</b>

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)