

Fundamentals of Fisheries and Wildlife Ecology and Management

FW 101

Fall 2016

- Time and Date:** Tuesday and Thursday, 8:30a.m.-9:50a.m.
Room: Room 115 Center for International Programs (International Center)
Catalog Description: Ecological and sociological concepts of fisheries and wildlife ecology and management. Career opportunities.
- Instructor:** Dr. Henry (Rique) Campa, III
2A Natural Resources
Phone: 517.353.2042 (w/ voicemail)
E-mail: campa@msu.edu
Office Hours: Tues. 10:00 a.m.-11:00 a.m. and Wed. 10:00 a.m.-11:30 a.m.
or by appointment or stop by if the door is open
- Teaching Asst.:** Stephanie Shaffer
Ph.D. Fisheries and Wildlife Graduate Student
Office Hours: To be announced
Room 33 Natural Resources Building

SCHOLARLY EXPECTATIONS AND LEARNING OUTCOMES: An assumption of this course is that learning results from continually discussing and using concepts presented in class. While you are enrolled in FW101, you will be presented with multiple opportunities and responsibilities. Your main opportunity is to learn – whereas your main responsibility is to maximize your learning from the course (in cooperation, or collaboration, with your peers) by being prepared for class, participating in class discussions, and applying course material to your individual and group work.

By the end of this course, I expect students will be able to:

1. explain correctly how ecological and management concepts are used by natural resources managers to meet numerous objectives, including conserving fisheries and wildlife resources,
2. explain factors that impact the dynamic nature of terrestrial and aquatic ecosystems and how these systems can be manipulated to meet multiple objectives,
3. explain what and how fish and wildlife population characteristics and assessment techniques are used to maintain these populations and species,
4. explain the causes of species extinction and how threatened and endangered species are managed,
5. explain the needs and methods for assessing human users for managing fisheries and wildlife resources,
6. explain the purposes of regulations and legislation to conserve fisheries and wildlife resources,
7. explain the role of natural resources agencies, professional societies, and non-government organizations to conserve fisheries and wildlife resources,
8. demonstrate how integrating the management of people, ecosystems, and populations can be achieved to conserve fisheries and wildlife resources for multiple objectives,
9. identify and describe job opportunities (and their requirements) in the areas of fisheries and wildlife ecology and management, and
10. practice and develop professional-level communication, teamwork, and interpersonal skills.

COURSE PROTOCOLS: There is no required textbook. *Introduction to Wildlife and Fisheries: An Integrated Approach* by Willis et. al. 2009 is optional, but suggested. No material that will appear on the exams or on in-class quizzes/problem sets will come solely from the textbook. The pages/chapters listed for a respective day in the course schedule are from Willis et. al. Other “required” readings or videos are expected to be read/viewed prior to class. Please let me know if you can’t access them.

Expectations for Student Participation: Numerous topics will be discussed in this course; students are expected to be respectful of one another’s comments. Everyone is expected to show a professional level of commitment to cooperatively learning the course material. Demonstrating professionalism in the classroom includes: (1) willingness and ability to participate in class discussions or ask informed questions about course material, (2) having a cooperative and responsible work ethic with the instructor(s) and students in class to maximize learning, (3) demonstrating quality and originality of individual and group work, (4) being on time, (5) having a professional attitude and respect for the class and individual peers, and (6) no disruptive behaviors.

Expectations for Student Excellence: Completing all of your work only during class time will likely not be sufficient for most students to earn a 4.0 in this class. Excellence (i.e., higher grades) requires additional out-of-class effort and note-taking beyond reviewing PowerPoint slides. Students who rarely attend class, do not hand in assignments on time, don’t take notes, aren’t engaged in class periods with the material or instructors, miss exams, and receive less than a passing grade on exams should not expect to receive a passing grade. Likewise, just showing up for class does not constitute earning a 4.0.

Academic Integrity and Dishonesty: Academic dishonesty is (<https://www.msu.edu/~ombud/academic-integrity/index.html>; **accessed 16 Aug 2016**) not tolerated at Michigan State University or elsewhere and the consequences for this are taken seriously and may have a range of outcomes. All members of MSU’s community must be confident that the work of each individual has been responsibly and honorably acquired, developed, presented, and written. All students who are enrolled in university courses are expected to do their own work. Dishonesty includes, but is not limited to, cheating on assignments or exams; plagiarizing (<https://www.msu.edu/~ombud/academic-integrity/plagiarism-policy.html>; **accessed 16 Aug 2016**); engaging in unauthorized collaborations on academic work; submitting false records of academic achievement; and misusing, fabricating, or falsifying data.

Student leaders have recognized the challenge of discouraging plagiarism from the academic community. The Associated Students of Michigan State University (ASMSU) have launched the *Spartan Code of Honor* academic pledge, focused on valuing academic integrity and honest work ethics at MSU. The Code is: “*As a Spartan, I will strive to uphold values of the highest ethical standard. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that honor is worth more than grades. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do.*” To learn more about the Code visit: <https://msu.edu/~ombud/academic-integrity/> (**accessed 16 Aug 2016**). Student conduct that is inconsistent with the academic pledge will be addressed through existing policies, regulations, and ordinances governing academic honesty and integrity: Integrity of Scholarship and Grades, Student Rights and Responsibilities, and General Student Regulations.

I will not tolerate cheating on exams. If I catch you cheating on an exam – including but not limited to looking at someone else’s paper, verbally or electronically sharing answers, looking at written notes or other materials, listening to recorded or otherwise electronically stored answers – you will receive a 0.0, be dismissed from the class with a grade of 0.0, and referred to the appropriate University authority. During exams, I don’t want to see or hear your cell phone. If I see your cell phone during an exam period, I will pick up your exam and you will not be able to complete it.

BEHAVIOR IN THE CLASSROOM: FW101 is a safe learning environment and I expect nothing less than professional behavior. Derogatory, discriminatory, rude and/or aggressive behaviors will not be tolerated.

What you do during class is (largely) up to you. However, I doubt you will receive the grade you want if you aren't engaged in the class and take notes. If you wish to bring your laptop to class, feel free – use it as you wish. As soon as what you are doing begins to impact other students, it ceases to be just your business. I will not let your behavior negatively impact others in this class. If I can hear you talking (i.e., during non-discussion periods), you are too loud and I will ask you to please be quiet or leave.

Once class starts, please turn off and put away your cell phone or any other electronic device(s) other than your calculator or computer that is being used for course activities. During class, I don't want to see or hear your cell phone-this includes during exams. The only electronic device that you will be allowed to use during exams is a calculator (i.e., not on a phone). If I see you using your cell phone or any other electronic device you don't have permission to use during an exam, I'll pick up your exam, ask you to leave the class, and you will receive a 0.0 on the exam.

ATTENDANCE AND ASSIGNMENT POLICIES: I do not take attendance, however, recognize that despite the size of the class, I am aware of who attends class, who works on crossword puzzles during class or checks e-mail or is on Facebook. If you are unable to attend class or are not interested in attending class on a particular day it is YOUR responsibility to make up the work missed. Before seeing me about what you missed, please obtain a copy of the PowerPoint slides (on our class Desire 2 Learn website) for the day and speak with another student in the class about getting any additional notes for the class. If you are still unclear about what was discussed in class please visit me in office hours (or make an appointment) to clarify any confusing issues. MSU's attendance policy can be found at: <https://www.msu.edu/~ombud/classroom-policies/index.html#attend-general> (accessed 16 Aug 2016).

Assignments are due on the date listed (i.e., for some "In-Class Problems"). **No late (or e-mailed) papers will be accepted without a valid University excuse (prior to the due date).** All students are expected to take exams on the date listed on the syllabus. Failure to attend the scheduled exam period will result in a 0.0 for the exam. Students arriving late for an exam will not be given extra time to complete the exam. All exams are closed book and closed note and must be completed independently.

COMMERCIALIZATION OF COURSE NOTES AND MATERIALS: MSU prohibits students from commercializing their notes of lectures and University-provided class materials without the written consent of the instructor (<https://reg.msu.edu/AcademicPrograms/Print.asp?Section=514>) (see point 9) (accessed 16 Aug 2016).

STUDENTS WITH DISABILITIES: So that all students have equal access in the course, please notify me if you have a situation that requires additional accommodations. If you have a special need that requires accommodations for lecture or exams, please inform me as early as possible in the semester (at least 2 weeks prior to an exam), so we can develop a plan to work with you. If you have not yet contacted the Resource Center for People with Disabilities (<http://www.rcpd.msu.edu/Services/Home>) (accessed 16 Aug 2016) please call 353-9642 (voice) or 355-1293 to make an appointment with a counselor.

ASSIGNMENTS/EVALUATION COMPONENTS:

1) Individual or Group In-Class Problems (15%) – During the semester there will be 6 class periods in which in-class quizzes/problems will be given about topics discussed in class or from the readings (**only the 4 best of these will count towards your grade**). **These quizzes/problems cannot be "made-up" if class periods are missed.** In essence, you will drop your 2 lowest scores or you can have 2 "personal

days” in case you cannot make it to class. For some problems, you will be given 24 hours to complete the assignment.

2) Exams - Exams (2 mid-terms [20% and 30%] and a final [35%]) will include any material discussed in class, handouts, and any assigned readings or videos and will evaluate a student’s knowledge and application of course material. All exams will be comprehensive and may include multiple choice, short answer, true/false, essay, and quantitative problem type questions. Please bring a calculator (i.e., not on your phone) to all exams. You may not share calculators on exams or use cell phones. You may only use a calculator on exams, leave all other electronic devices at home or in backpacks.

No “extra credit” assignments will be available for the class.

If you have any questions about the course or your progress at any time during the semester please feel free to visit me during my office hours, make an appointment or stop by whenever my office door is open.

Assignment and Exam Point Distribution:

<i>Item</i>	<i>Points</i>	<i>Percentage</i>
Exam I	80	20%
Exam II	120	30%
Final Exam	140	35%
In-class Problems	60	15%
TOTAL	400	100%

Grade Distribution:

Grade	Points	%	Grade	Points	%
4.0	372-400	93-100%	2.0	280-299	70-74%
3.5	340-371	85-92%	1.5	260-279	65-69%
3.0	320-339	80-84%	1.0	240-259	60-64%
2.5	300-319	75-79%	0.0	000-239	< 60%

POLICY ON REQUESTING REVIEW OF AN ASSIGNMENT OR EXAM FOR POSSIBLE GRADE CHANGE: Upon receipt of an assignment or exam it is in your best interest to review (and keep) your graded work to 1) ensure the points were added correctly and 2) ensure that points were not taken away incorrectly (i.e., you feel your answer is correct). If you have a discrepancy with the way in which points were added or the way in which a grade was assigned you need to follow the protocol described below.

- 1) On your assignment or exam clearly indicate in writing the problem or problems you have identified with grading on the top of the first page of the document. You may include this as a note on a separate sheet of paper if needed. If I am unclear about what you are asking me to review, I will request a meeting with you for further explanation. Out of fairness to you and your grade, I will not answer change in grade issues "on the spot". I request time to thoroughly look at your concern to give it fair consideration before making a decision.
- 2) You have **one (1) week** from the date the assignment or exam is **returned in class** to return your paper for review. For example, if a graded assignment is returned on Tuesday October 14 you have until Tuesday October 21 at 5pm to return your assignment and concern to me. Change in grade requests must be accompanied by the document you want reviewed. Failure to include the affected assignment or exam will result in no review. **If after one week since distributing the assignment or exam you have not submitted a change in grade review request you are acknowledging that you are in agreement with the grade received.**
- 3) I will return all change of grade requests by the class period after the request was received with either a change in grade or a reason why your grade stands as indicated.
- 4) Numeric grade changes (points were added incorrectly) will be revisited at any time during the semester.

Date	Item or Activity	Readings
01 September	Course Overview and Expectations (Campa)	
06 September	Fisheries and Wildlife Systems: What are they, what do we need to know to manage them? Topics may include: definitions of wildlife, fish, fishery, fisheries; differences among biology, science, conservation, restoration, preservation (Campa)	Chapter 1, Willis et al. 2009
08 September	Ecosystems and Ecosystems Ecology: Wetlands – Topics may include: habitat, sampling, wetland types, management (Monfils)	Chapters 12, 13, and 15, Willis et al. 2009
13 September	Our History and Future Topics may include: general history, early scientists, successes/failures, habitat degradation, threatened and endangered species, emerging issues (Campa); In-Class Problem #1	Chapters 1 & 14, & Chapter 11 (Sections 11.1-11.4), Willis et al. 2009 <u>Required reading: Leopold's Land Ethic</u> http://www.aldoleopold.org/AldoLeopold/LandEthic.pdf (accessed 22 Aug 2016)
15 September	Ecosystems and Ecosystem Ecology: Lakes and Streams – habitat, sampling, regions of lakes and streams, management (Infante)	Chapters 12, 13, and 15, Willis et al. 2009
20 September	Wolf Ecology and Management in Michigan (Beyer)	
22 September	Ecological Concepts Topics may include: ecosystems, communities, populations, biodiversity, trophic levels, food chain, succession, niche, home range, territory, niche, keystone species (Good); In-Class Problem #2	Chapter 2, Willis et al. 2009
27 September	Ecosystems and Ecosystem Ecology: Forests and Grasslands – Topics may include: habitat, sampling, management (Roloff or Campa, TBA)	Chapters 12, 13, and 15, Willis et al. 2009
29 September	EXAM 1	
04 October	Wildlife Disease Ecology and Management Topics may include: environments necessary for diseases to persist, zoonotic diseases, management of disease, conservation medicine (Tsao)	

06 October	Populations Dynamics and Structure Topics may include: characteristics of populations - natality/recruitment, growth, causes of mortality, population structure, yield (Winterstein)	Chapter 3, Willis et al. 2009
11 October	Additions and Deletions Topics may include: population removal, stocking, introductions, reintroductions, hunting, trapping, fishing (Hayes)	Chapter 10, Willis et al. 2009
13 October	Animal Sampling Topics may include: purpose and problems, passive and active capture, electrofishing (Roth)	Chapter 7, Willis et al. 2009
18 October	Environmental Toxicology in Fisheries and Wildlife Management (Murphy)	
20 October	Introductions and Invasives (Good) Topics may include: “native”, “introduced”, “invasive”, common vectors of introductions, environmental impacts (positive and negative), management and policy implications	
25 October	Population Assessment: Use of Age, Growth and Sex Information Topics may include: methods for determining age and sex; using sex and age information in management decisions (Winterstein); In-Class Problem #3	Chapter 8 & 9, Willis et al. 2009
27 October	SYNTHESIS AND DISCUSSION DAY (Campa)	
01 November	Genetics in Wildlife and Fisheries Topics may include: species, subspecies, natural selection and adaptation, inbreeding, outbreeding, case studies (Scribner)	Chapter 4, Willis et al. 2009
03 November	Nutrition and Environmental Physiology Topics may include: nutrients, vitamins, minerals and other elements, digestive tract physiology; body temperature and regulation; oxygen in water systems, food types, and food quality and quantity (Campa); In-Class Problem #4	Chapter 5, Willis et al. 2009 Required video: Ruminant GI Tract https://www.youtube.com/watch?v=SVNNJf_28KE (accessed 22 Aug 2016)

08 November	Behavior Topics may include: researching animal behavior, studying animal behavior for managing populations and threatened , endangered, and invasive species (Wagner)	Chapter 6, Willis et al. 2009
10 November	EXAM 2-Comprehensive	
15 November	Public Lands – Practices and Policies (Campa); In-Class Problem #5 Topics may include: missions, practices, and policies on public lands—similarities and differences	About the US Forest Service http://www.fs.fed.us/aboutus/meetfs.shtml (accessed 22 Aug 2016)
17 November	MDNR Fisheries Division (Randy Claramunt, MDNR)	Chapter 17 (Section 17.1) & Chapter 18, Willis et al. 2009
22 November	Natural Resources Communications and Outreach (Pusateri Burroughs)	Required reading: In-class material will be distributed on 22 Nov 2016.
24 November	HAVE A HAPPY THANKSGIVING!	
29 November	Criminal Justice in Natural Resources (Great Lakes Law Enforcement Case Study) (Good); In-Class Problem #6 Topics may include: common pool resource use, concept of “harm”, connections to traditional law enforcement, fisheries law enforcement strategies (deterrence), jurisdictional complexities.	
01 December	Humans: The Third Dimension of Fisheries and Wildlife Management (Riley) Topics may include: assessing the attitudes and values of stakeholders, impacts of wildlife	Chapter 16, Willis et al. 2009
06 December	MDNR Wildlife Division Programs and Developing Regulations (Brent Rudolph, MDNR)	
08 December	Being a Professional, Getting the Career of Your Choice and Future Challenges in FW Management (Schneider, Shaffer)	
12 December, Monday	FINAL EXAM-Comprehensive (7:45-9:45a.m.) In our classroom.	See “Schedule of Courses” under FW101 for Fall 2016 (accessed 21 August 2016)