

Management of Wildlife Habitat ENR 5370 (3 Credits) Spring 2024

Meeting Time and Place:

Lecture—Wednesday & Friday (in-person), 11:30–12:25

W: Kottman 370

F: Heffner Wetland 128

Lab—Friday, 1:00-4:50

Heffner Wetland 128

Office hours, Wednesdays before or after class, other times by appointment

Happy to meet on ZOOM too if that works best

Instructor:

Dr. Gabriel Karns

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Teaching Assistant:

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Course Description: This course is designed for undergraduate and graduate students in wildlife biology, natural resources, and ecology. It will introduce students to the principles of wildlife-habitat relationships, natural history of major North American ecosystems with an Ohio focus, and the conservation and management of wildlife habitats within those ecosystems. The prerequisite for the course is Introduction to Forestry, Fisheries, Wildlife (ENR 3300) or ENR 319, graduate standing, or permission of instructor. Not open to students with credit for ENR 625.

Class Goals and Student Learning Objectives:

Broad goals are indicated with numeric bullets with specific learning objectives underneath:

1. Understand that wildlife management and conservation is often more about habitat management
 - a. Recognize that management efforts most often focus on influencing the environment in order to manipulate key habitat requirements as opposed to directly managing wildlife populations
 - b. Gain technical knowledge of tools and mechanisms by which managers can influence key habitat requirements of diverse wildlife
2. Appreciate the mutually dependent relationship of habitat and species traits
 - a. Demonstrate the key components of the habitat concept and habitat selection theories
 - b. Grasp the complimentary roles of how habitat structure and floristics influence wildlife habitat selection and utilization
 - c. Assess resource selection functions at various spatial scales that influence individual movements, home range patterns, up to species distributional limits
3. Grasp that Ohio has a diversity of habitats and that challenges to manage and conserve species and their habitats vary across ecosystems
 - a. Synthesize wildlife-habitat relationships via critiques of patterns that emerge from differing ecosystems
 - b. Understand the importance and influence of habitat configuration across habitat types

- c. Articulate short- and long-term implications of connectivity on wildlife populations across habitat types
4. Understand how current habitat features can be interpreted to inform future resources
 - a. Illustrate the ways in which anthropogenic influences shape wildlife-habitat relationships
 - b. Appraise the concepts of habitat selection to predict the impact of habitat features on resource availability
5. Realize that habitats can be managed towards different outcomes in order to satisfy diverse stakeholder interests and that all management decisions will favor certain taxa and disfavor others
 - a. Appreciate the vast diversity of management objectives for wildlife habitats
 - b. Develop technical guidance for landowners to achieve desired habitat management objectives

Texts: We will have several readings from a few different sources; PDFs will be posted on Carmen:

- [Morrison, M.L. & H.A. Mathewson. 2015. *Wildlife Habitat Conservation: Concepts, Challenges, and Solutions.*](#)
- [McComb, B.C. 2015. *Wildlife Habitat Management: Concepts and Applications in Forestry.*](#)

Evaluation: Carmen quizzes and exams will cover lecture material, assigned readings, and content gleaned from other course activities. Homework assignments will promote deeper exploration of specific topics, facilitate group work and team teaching, and encourage students towards active civic engagement in the related field. The group final project will demonstrate students’ synthetic grasp of content in bridging habitat concepts with management complexities via a property management plan.

Active participation in the class is encouraged through both small group and class discussion. On a semi-frequent basis, mini quizzes consisting of 1–3 questions covering material from the previous class will be given during lecture. These mini quizzes are meant to hold students accountable for the material covered in class, to encourage participation, and provide rapid feedback on students’ grasp of course content. Mini quizzes will be administered using [Top Hat](#). Top Hat quizzes will require that each student create an account through a smartphone, tablet, laptop, or other device capable of sending a text message.

Grading:	Final Project (30 + 15 + 30 + 75)	150 pts.
	Final Presentation	50 pts.
	Homework (5 @ 30 pts. ea.)	150 pts.
	TopHat questions/ Participation	50 pts.
	Exam I	100 pts.
	Exam II	100 pts.
	Final Exam	100 pts.
	TOTAL	700 pts.

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

Course Policies:

- Make-up exams or other missed material will only be given by special (advanced) permission.
- Late assignments will be penalized 10% per day in the absence of a valid documented excuse.
- Attendance is expected and will be tracked through Top Hat.
- All necessary course materials and lecture outlines will be posted to Carmen prior to class.
- Assigned readings need to be completed before class convenes. All material from reading assignments is fair game for discussion, quizzes, and exams (even if not discussed in detail in class).
- Please direct email communications through your OSU address and Carmen. Make sure you are receiving emails from that address and that you have access to Carmen.
- Academic misconduct will not be tolerated – see policy below.
- Please be respectful of others and restrict use of personal electronic devices during class activities.

Academic Misconduct: The Ohio State University’s Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: “Any activity that tends to compromise the academic integrity of the University, or subvert the educational process.” Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University’s Code of Student Conduct is never considered an “excuse” for academic misconduct, so I recommend that you review the Code of Student Conduct (<http://studentaffairs.osu.edu/csc/>), and specifically, the sections dealing with academic dishonesty. I am obligated by University Rules to report if I suspect academic misconduct in the course. Please see the Student Resource Guide if you have questions about this policy and contact me if you have any questions.

Take Care of Yourself: A recent American College Health Survey found stress, sleep problems, anxiety, depression, interpersonal concerns, death of a significant other, and alcohol use among the top ten health impediments to academic performance. Students experiencing personal problems or situational crises during the semester are encouraged to contact the OSU Counseling and Consultation Services (614-292-5766; www.ccs.osu.edu) for assistance, support, and advocacy. **This service is free and confidential.**

Reporting Incidents of Bias: To ensure a safe learning environment, please speak to me immediately if you feel that you have experienced bias (whether based on race, ethnicity, gender identity or expression, sexual orientation, religion, national origin, age or sex) within the classroom. You can also anonymously report any incidents of bias experienced on campus to the [Bias Assessment Response Team](#) (BART).

Writing Assistance: Writing is a critical form of communication, and effective writing takes time, effort, and practice. The Center for the Study and Teaching of Writing (<http://cstw.osu.edu/writing-center>) “...offers free help with writing at any stage of the writing process for any member of the university community. During our sessions, consultants can work with you on anything from research papers to lab reports, from dissertations to resumes, from proposals to application materials.” Please take advantage of this resource to submit the best possible writing assignments in this course.

Special Needs: If you need an accommodation based on the impact of a disability, please contact me to discuss as soon as possible. We can discuss the course format, anticipate your needs and explore potential accommodations. I rely on the Office for Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies. If you have not previously contacted the Office for Disability Services, I encourage you to do so (<http://www.ods.ohio-state.edu>, Phone: 614-292-3307).

LECTURE OUTLINE – ENVIRONMENT AND NATURAL RESOURCES 5370

Week	Class	Date	Topic	Reading/ Assignment/ Notes
1	1	10-Jan	Introduction to wildlife habitat mgt	
	2	12-Jan	Habitat concept	M&M Chpt 1 Kirk et al. 2018
2	3	17-Jan	Theories of habitat selection	McComb Chpt 3
	4	19-Jan	<u>OWMA Attendance Encouraged</u>	
3	5	24-Jan	Quantifying habitat selection, part I	*1 – Wildlife Habitat Spotlight
	6	26-Jan	Quantifying habitat selection, part II	M&M Chpt 3
4	7	31-Jan	Landscape suitability models	
	8	2-Feb	Exam I	
5	9	7-Feb	Habitat fragmentation and edge effects	M&M Chpt 7 McComb Chpt 15
	10	9-Feb	Wildlife habitat corridors	
6	11	14-Feb	Population genetics and habitat	M&M Chpt 6 McComb Chpt 16
	12	16-Feb	Survey of Ohio Forest Types	
7	13	21-Feb	A Guide for Small Patch Forest Management	<i>Guest: Matt Shumar, OBCI</i> M&M Chpt 11
	14	23-Feb	Basic forest ecology & succession	
8	15	28-Feb	A silvicultural framework for understanding wildlife habitat, part I	
	16	1-Mar	A silvicultural..., part II	McComb Chpt 17
9	17	6-Mar	Forest-wildlife relationships (2-minute talks)	*2 – Lightning Talks
	18	8-Mar	Exam II	
SPRING BREAK				
10	19	20-Mar	Grasslands & habitat mgt	
	20	22-Mar	<i>Field Trip</i>	*3 – A. Prairie Reserve DUE
11	21	27-Mar	<i>Async</i> -Wetlands & habitat mgt	
	22	29-Mar	OPEN Group work session	*4 – Wetlands Module DUE
12	23	3-Apr	Grasslands & habitat mgt	
	24	5-Apr	Rangelands/Ag ecology & mgt	*5 – Horse Rich Dirt Poor DUE
13	25	10-Apr	OPEN Group work session	
	26	12-Apr	Habitat mitigation & restoration	
14	27	17-Apr	Urban ecosystems	
	28	19-Apr	REVIEW	<u>FINAL PROJECTS DUE</u>
Exam		24-Apr	12:00-1:45 PM	Comprehensive

LAB OUTLINE – ENVIRONMENT AND NATURAL RESOURCES 5370

Week	Date	Topic
1	12-Jan	Introducing the group final project assignment—property habitat management plan; Assign properties
2	19-Jan	<i>No Lab, OWMA Attendance Encouraged</i>
3	26-Jan	Habitat suitability models; Background research for habitat management properties; Habitat management plan goals & objectives
4	2-Feb	<i>No Lab, Exam #1 in Lecture</i>
5	9-Feb	Communication initiated with landowner; Guest Speaker or Field Trip TBD; Property Background & Sketch DUE (30 points)
6	16-Feb	Revising goals, objectives for final project; Connecting with natural resource professionals; Final project rubric and guidelines (Guest: Emilee Hardesty, ODNR)
7	23-Feb	CAUV & OFTL Discussion, cost-share conservation programs, ODNR Division of Forestry Management Plans (Guest: Cotton Randall, ODNR); Goals & Objectives DUE (15 points)
8	1-Mar	Forest management-focused Field Trip TBD
9	8-Mar	<i>No Lab, Exam #2 in Lecture</i>
	15-Mar	<u>SPRING BREAK</u>
10	22-Mar	Grassland/ag management-focused Field Trip TBD; Mike Retterer (Guest) – ODOT / Ohio Pollinator Habitat Initiative / Pheasants Forever
11	29-Mar	<i>No Lab</i>
12	5-Apr	Wetland management-focused Field Trip TBD; Dr. Bob Gates (Guest)
13	12-Apr	Dr. Jo Peacock Restoration, Anthony Tambini w/ Tambini Outdoors; Final presentation rubric & guidelines; INDIVIDUAL Rough Drafts DUE (30 points)
14	19-Apr	FINAL REPORTS (75 pts) / PROJECT PRESENTATIONS (50 pts)

****Field trip schedule subject to change due to site availability, weather, and other constraints****