

EEB 461 and EEB 602 – Landscape Ecology

Online (no set meeting time, no physical room)

Instructor: Dr. Heather Bird Jackson

Email: hjacks15@tennessee.edu (use LE, for Landscape Ecology, as the start of subject line)

Office Hours: I am usually available during the following times M-F: 11:30am-1pm, 7:30pm-11:30pm.

Email me 24 hours in advance so I know to meet you, preferably on Zoom

(<https://tennessee.zoom.us/j/3537131294>). I can respond in less than 24 hours, but it isn't guaranteed.

Textbook

We will not have a textbook for this course. Rather, journal articles and popular news articles will be assigned and posted through Canvas.

Learning Outcomes

By the end of the course, if you engage fully with the material and opportunities for guided independent study, and you participate in class activities, then you will have gained at least the following:

1. An understanding of important issues, concepts, and methodologies relevant to landscape ecology.
2. Increased proficiency at reading, discussing, and critiquing scientific literature.
3. Enhanced ability to interpret, synthesize, and clearly communicate scientific research.
4. A greater capacity to evaluate claims about the impacts of human land use.
5. Exposure to career opportunities available in the field of landscape ecology.

Assessments

You will have two due dates to monitor on a weekly basis: Tuesday, 11:59pm and Saturday, 11:59pm. You can turn things in as soon as the assignment opens up on Canvas (usually the previous Friday morning at 12:00am). Some tasks are given points just for participation, while other tasks are given points based on merit. If you complete a task in good faith (i.e. you make an effort) you will get full participation points. Effort is not enough for full merit points, rather exceptional work is required.

1. Regular activities

a. Regular content

- i. For the first half of the semester, I will provide you with a recorded lecture and scientific reading each module. You will also be working on your private research.
- ii. For the second half of the semester, you will watch (or provide) student lectures and you will find and read a popular article within the purview of landscape ecology each module. You will also be working on a NetLogo experiment (more on this later).

b. Regular module questions

- i. The purpose of module questions is to make sure that you understand the content and are prepared for a thoughtful discussion.
- ii. After watching the lecture and reading the assigned reading you should answer the questions in the module questions for that module.

- iii. Your answers are due Tuesday before 11:59pm.
- iv. At 12:00am on Wednesday, my answers to the module questions become available.

c. Regular synthesis discussions

- i. The purpose of the synthesis discussion is to allow you to synthesize the content for the module with your experience and prior class material.
- ii. Each module, you will choose one of two options for the synthesis discussion. You don't have to do the same option each module.
 - 1. Live 45 minute Zoom discussion – At the beginning of the semester we will determine a time that is optimal for those most likely to participate in the Zoom discussion. At that day and time each module, those who are able and willing will meet and discuss the module's materials. You will turn in a short (~a few lines) written assignment at the end of this discussion (which you will have time to answer during discussion). You will receive full credit for the discussion with submission of the short writing assignment.
 - 2. Online discussion board – I will post a question to get an online synthesis discussion going. You can answer my question or start your own thread with a question or comment about the module's materials. The goal is that a substantive, natural discussion about the module's materials will result. You must post 2-3 questions or comments by Saturday before 11:59pm. Comments will receive full credit if they are substantive, but brief (generally fewer than three lines). "That is interesting," and "I agree" are not substantive comments unless they are followed by an explanation.

2. Research project

a. Project idea and review selection

- i. You will need to select and post the topic of your research project along with a link to a relevant review paper on a discussion board. Make sure no one else is doing the same project!

b. Project idea conference

- i. You will meet with me on Zoom to discuss your project idea.

c. Bibliography table set up

- i. You will submit an outline of your bibliography table and major figures.

d. Bibliography table conference

- i. You will meet with me on Zoom to discuss your bibliography table and

e. Research paper

- i. You will write a research paper based on your project idea and bibliographic table above. The most important sections of this paper will be the bibliographic table (kind of like an annotated bibliography, but more organized) and 1-3 original figures summarizing your research.

f. Research presentation

- i. You will record and post a 12 minute presentation for the class based on your research paper. This presentation should be posted the Tuesday prior to the module students will watch it.

g. Presentation module questions

- i. Prepare (and answer) two questions for other students that will help them consider the most important points of your research.

3. Midterm exam

- a. We will have one exam midway through the course. At the beginning of the course, we will select a time to take the exam on campus that is convenient for most people in the course and when we can arrange for a proctor. If you are unable to attend the selected time, you will need to find your own proctor, subject to my approval and completion of the [UT Proctor Form](#).

4. NetLogo experiment

a. NetLogo project idea (2 participation points)

- i. You will sign up for a research experiment to be completed using NetLogo.

b. NetLogo experiment

- i. You will post the results of your experiment on the NetLogo discussion board.

5. Interview with a professional

a. Interview proposal

- i. Your group of 2-3 students will submit a list of three professionals that you would like to interview, in order from most to least preferred, along with a short explanation on how each person's career is relevant to landscape ecology.
- ii. After your list is approved by me, you will ask the first professional on your list for an interview and continue down your list until one works out. You will arrange for an interview between April 22 and April 29.

b. Interview preparation

- i. You will submit five or so questions to me which you can have on hand to ask in case you run out of questions during the normal flow of conversation.

c. Interview reminder

- i. You will remind your professional of your interview the night before by email (cc me).

d. Interview

- i. You will interview your professional on Zoom, record the interview, and post the interview to the class discussion board for others to view.

e. Interview attendance

- i. You will need to watch all of the interviews. You are strongly encouraged to attend the interviews of others live, if possible. If you do so, you may turn in a selfie or screenshot proving your attendance and you will receive full credit for that interview without any other work.
- ii. If you are unable to attend an interview, you must watch the recorded interview and provide me with a write-up of five major points from the interview. Your write-up with photos and/or summaries will be due by Saturday, May 5. This is your final.

Assessment Points

	Points per assignment	Assignments per semester	Total points	% of final grade	Point type
Regular activities			250	32%	

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Regular module questions	10	12	120	15%	participation
Regular synthesis discussion	10	13	130	17%	participation
Research project			240	31%	
Project idea and review selection	5	1	5	1%	participation
Project idea conference	5	1	5	1%	participation
Bibliography table set up	15	1	15	2%	participation
Bibliography table conference	5	1	5	1%	participation
Research paper	100	1	100	13%	merit
Research presentation	100	1	100	13%	merit
Presentation module questions	10	1	10	1%	merit
Midterm			100	13%	
Midterm exam	100	1	100	13%	merit
NetLogo experiment			105	14%	
NetLogo project idea	5	1	5	1%	participation
NetLogo experiment	100	1	100	13%	merit
Interview			80	10%	
Interview proposal	5	1	5	1%	participation
Interview preparation	5	1	5	1%	participation
Interview reminder	5	1	5	1%	participation
Interview	50	1	50	6%	merit
Interview attendance	15	1	15	2%	participation

	Total points	Percent of total
Overall	775	
Participation	315	41%
Merit	460	59%

Grading Scale

A	94%-100%
A-	90%-93.5%
B+	87%-89.5%
B	84%-86.5%
B-	80%-83.5%
C+	77%-79.6%
C	74%-76.5%
C-	70%-73.5%
D+	67%-69.5%
D	64%-66.5%
D-	60%-63.5%
F	<60%

Late assignments: Late assignments that do not affect your peers will be penalized 5% per calendar day (including weekends). However, if an assignment is meant to be collaborative and a collaboration is ineffective due to the lateness of your assignment, you can expect to get no more than 50% of the points. Timeliness with the Appalachian Plan assignments will be particularly important.

Extenuating circumstances: You may experience personal or professional hardship this semester and it may interfere with your ability to complete course material on time. Although I generally expect students to get work in time and to be held accountable for late work, I am happy to work with you if you are experiencing extenuating circumstances. Communicate with me about your situation as soon as possible.

Course Outline

I reserve the right to alter this schedule, usually in favor of giving students more time. Any changes will be announced on Canvas and through email.

	Sunday	Topic	Project Timeline	Readings
Module 0	Jan. 7 (Official start is Jan. 10)	Introduction to the course		Syllabus; Course materials
Module 1	Jan. 14 (Jan. 15 is MLK holiday; Jan. 19 last day to add or drop without a "W")	What is landscape ecology? *Research project introduction	Project idea and preliminary search; sign up for conference	Fahrig 2005
Module 2	Jan. 21	Field methods	Project idea conferences	Robertson et al. 2013
Module 3	Jan. 28	Measuring landscape structure *Review project idea	Bibliography table set up and figure proposal; sign up for conference	Schindler et al. 2013
Module 4	Feb. 4	Models in landscape ecology *Expectations and format for research paper	Bibliography table and figures conferences	Cohen et al. 2014
Module 5	Feb. 11	Habitat loss and fragmentation *Bibliography table review	<i>Read, read, read... fill out table</i>	Mortelliti et al. 2011
Module 6	Feb. 18	What predicts sensitivity to habitat loss? (part 1) *Expectations and format for presentation	<i>Read, read, read... fill out table; Make summarizing figures, synthesize key points, explain why we should care;</i>	Hanski et al. 2004
Module 7	Feb. 25	What predicts sensitivity to habitat loss? (part 2) *How to read a popular article	Research paper due (Question; search protocol; biblio table; summary figure; 3 key take homes; + why should we care)	Fahrig et al. 2015

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Module 8	Mar. 4	What size is a landscape?	Sign up for interview groups; Sign up for presentations	Boscolo and Metzger 2009
SPRING BREAK				
Module 9	Mar. 18	Midterm exam (time and place TBD) *Feedback survey	Interview proposal	
Module 10	Mar. 25 (Fri. Mar. 30 is Spring Recess)	Student lectures *NetLogo project introduction	Download NetLogo and do tutorials; Sign up for experiment	Popular article
Module 11	Apr. 1 (Apr. 3 last day to drop with a "W")	Student lectures *Expectations and format for NetLogo experiment	Set up experiment in BehaviorSpace; Try to get questions answered during discussion; Do preliminary runs and check output; Run R code.	Popular article
Module 12	Apr. 8	Student lectures *NetLogo question roundup	Do final runs; Try to get questions answered during discussion; Conference, if needed	Popular article
Module 13	Apr. 15	Student lectures *Expectations for interview	NetLogo report due Saturday; Interview preparation	Popular article
Module 14	Apr. 22 (Classes end Fri. Apr. 27)	Interviews	Interview reminder; Interview	
Module 15	Apr. 29 (Apr. 30 is study day; Exam period May 1-8)	Interviews *Feedback survey	Interview reminder; Interview; Interview attendance	

Online Course Etiquette

Participate in a timely manner: If you have something that classmates need to respond to (discussion posts, collaborative projects), you must get those materials to them on time and well ahead of the due date.

Report glitches: If you discover any problems with the online course, please email me. Chances are your classmates are experiencing similar issues.

Provide substantive comments: Read everything in the discussion thread before replying. This will help you avoid repeating something someone else has already contributed. Acknowledge the points made with which you agree and suggest alternatives for those with which you don't. Keep it interesting by telling us when you disagree, but do so politely.

Be brief: You want to be clear without being preachy. Be direct. Stay on point.

Respect diversity: This course is a safe space for all genders, races, sexual orientations, political affiliations, abilities, ages, and religions. No form of harassment will be tolerated.

Write well: Write as if you were writing a term paper. Use correct spelling, grammatical construction and sentence structure.

Cite your sources: If your contribution to the conversation includes the intellectual property (authored material) of others, e.g., books, newspaper, magazine, or journal articles—online or print—they must be given proper attribution.

Be polite: Show each other intellectual respect by engaging with and challenging each other's ideas. But be nice about it. Criticism must be constructive, well-meaning, and well-articulated. Rants and profanity are not acceptable in this space.

Reread before you submit: Review your written posts and responses to ensure that you've conveyed exactly what you intended. Ask yourself whether your grammar and sentence structure are correct, your tone is appropriate, and your contribution is clear or not.

Adapted from Connor, P. 2015. Netiquette: Ground Rules for Online Discussions. Retrieved 16 November 2017, from <http://teaching.colostate.edu/tips/tip.cfm?tipid=128>.

Academic Integrity

I expect students to commit to UT's Honor Statement and UT's policy for academic integrity. By enrolling in the course for credit, you agree that written work may be examined using plagiarism detection software at the discretion of the Instructor.

UT's Honor Statement:

An essential feature of the University of Tennessee, Knoxville, is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.

UT's Academic Policies and Procedures states:

Each student is responsible for his/her own personal integrity in academic life...

Students are also responsible for any acts of plagiarism. Plagiarism is using the intellectual property of someone else without giving proper credit. The undocumented use of someone else's words or ideas in any medium of communication (unless such information is recognized as common knowledge) is a serious offense, subject to disciplinary action that may include failure in a course and/or dismissal from the university.

Specific examples of plagiarism are

- Collaborating on a graded assignment (such as a quiz!) without instructor's approval.

- Submitting work, either in whole or part, created by a professional service and used without attribution (e.g., paper, speech, bibliography, or photograph).
- Copying without proper documentation (quotation marks and a citation) written or spoken words, phrases, or sentences from any source.
- Summarizing without proper documentation (usually a citation) ideas from another source (unless such information is recognized as common knowledge).
- Borrowing facts, statistics, graphs, pictorial representations, or phrases without acknowledging the source (unless such information is recognized as common knowledge).

Disability Accommodations

Any student who feels s/he may need an accommodation based on the impact of a disability should contact one of us privately to discuss your specific needs **as soon as possible**. Please contact the Office of Disability Services at 865-974-6087 in 2227 Dunford Hall to coordinate reasonable accommodations for students with documented disabilities. *A common accommodation is to provide more time for quizzes. Please let me know if this is something you need ASAP.*

Mental Health and Stress Management

As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Tennessee services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Health website: http://studenthealth.utk.edu/clinics_mental.php.

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program.

Diversity

I strongly support UT's statement that "...the university welcomes and honors people of all races, creeds, cultures, and sexual orientations, and values intellectual curiosity, pursuit of knowledge, and academic freedom and integrity."

General Learning Outcomes for Biological Sciences

I encourage you to keep in mind the larger goals for students in biological sciences which are outlined in this statement from the Biology Division at UT:

Students seeking a degree in Biological Sciences (whether the concentration is in Biochemistry, Cellular, and Molecular Biology, Ecology and Evolutionary Biology, or Microbiology) are expected to be able to do the following by the time they graduate:

Explain and provide examples of each the five big ideas in Biology, using their knowledge of biological concepts gained from their course of study:

- **Evolution:** Populations of organisms and their cellular components have changed over time through both selective and non-selective evolutionary processes.
- **Structure and Function:** All living systems (organisms, ecosystems, etc.) are made of structural components whose arrangement determines the function of the systems.
- **Information Flow and Storage:** Information (DNA, for example) and signals are used and exchanged within and among organisms to direct their functioning.
- **Transformations of Energy and Matter:** All living things acquire, use, and release and cycle matter and energy for cellular / organismal functioning.
- **Systems:** Living systems are interconnected, and they interact and influence each other on multiple levels.

These biological concepts are more fully explained in the AAAS / NSF report “Vision and Change in Undergraduate Biology Education” (visionandchange.org)

Demonstrate the ability to perform the following scientific practices:

- Formulate empirically-testable hypotheses
- Interpret visual representations (figures and diagrams)
- Evaluate data and come to a conclusion (with evidence) (formulate an argument)

Student ability to achieve these learning objectives will be tested periodically as part of their departmental requirements.