GEOG 6226/8226/ESCI 6226/INES 8226 Landscape Ecology
Spring 2022

Meeting time: Wednesdays, 2:30 - 5:15 pm
Location: Online on Canvas until January 24th, thereafter McEniry 401
Course credits: 3
Instructor: Dr. Sara Gagné
Office: McEniry 314
E-mail: sgagne@uncc.edu
Office hours: Mondays, 1:00 pm - 3:00 pm, or by appointment.
Please use your UNCC e-mail address to contact me. I will not respond to e-mails from other addresses.

Teaching assistant: Jennifer Bates
E-mail: jbates11@uncc.edu
Office hours: Wednesdays, 1-2 pm, or by appointment

Course objectives

This course is intended as an introduction to the field of landscape ecology, the study of the interaction between spatial patterning and ecological processes. We will explore the theories and principles underlying the major themes in landscape ecology and delve into the applied aspects of the science. Lectures will be complemented by group discussions of a (roughly) weekly reading. Readings have been selected to provide you with a thorough understanding of the topics covered in lecture and/or to be representative of current research. Weekly discussions and short assignments are intended to sharpen your critical-thinking and communication skills. The course will culminate with a final exam intended to test your understanding of major concepts.

Assessment

Participation	10%
Reading presentation	15%
Pre-discussion summaries and critiques	30%
FRAGSTATS assignment	15%
Final exam (take-home questions)	30%

Grading scheme

A	90-100%	Commendable
B	80-89%	Satisfactory
C	70-79%	Marginal
U	< 70%	Unsatisfactory

Reading presentation

At the beginning of every discussion, one pair of students will present their summary of the assigned reading.

For conceptual articles, i.e., those not describing original research, the summary should describe:

- the need for article or the importance of the topic covered,
- the thesis of the article, i.e., the major point the author(s) is trying to get across,
- the major concepts described in the article; these should be explained so that they are understood by the class, and
- the article's conclusions or take-home messages.

For original research articles, the summary should describe:

- the research objective(s), goal(s), and/or question(s),
- the need for the research or its importance according to the author(s),
- the methods used to address the research objective(s)/goal(s)/question(s),
- the major results with reference to at least one table or figure; the figure or table should be explained to the class,
- the author(s)' explanation or interpretation of the results in the Discussion section, and
- the conclusions or take-home messages.

Presentations should be 15-20 minutes in length and structured around Powerpoint or Prezi slides. Your grade will reflect the degree to which you covered the above elements in your presentation.

Pre-discussion summaries and critiques

Pre-discussion summaries and critiques are intended to help structure your critical analysis of the reading and to help prepare you for the upcoming discussion.

Prior to each discussion, you are expected to submit: (1) an abstract-like summary of the reading (at least 300 words) that describes as many of the elements included in a summary presentation as possible, (2) the single most important take-home message from the reading, (3) three critiques of the reading that you will use as the basis for your comments during the discussion, and (4) a question you have about the reading that you want answered during the discussion.

Submit all four items in one document at the end of each discussion. The summary of the reading should be in paragraph form whereas items 2-4 can be in bullet form. Students doing a summary presentation for a reading do not have to submit a pre-discussion summary and critique that week.

Late policy

Deadlines for submission of work are clearly indicated in this syllabus. Late submissions will be accepted and graded according to the following schedule: work submitted up to 24 hours after the deadline will receive a 25% penalty; work submitted between 24 and 48 hours after the deadline will receive a 50% penalty; and work submitted more than 48 hours after the deadline will not be accepted.

UNC Charlotte Code of Student Responsibility

You are expected to observe the UNC Charlotte Code of Student Responsibility (see http://legal.uncc.edu/policies/up-406).

UNC Charlotte Code of Student Academic Integrity

You are expected to observe the UNC Charlotte Code of Student Academic Integrity (see http://legal.uncc.edu/policies/up-407). The Code prohibits cheating, the fabrication and falsification of information, multiple submission of the same work for credit, plagiarism, the abuse of academic materials, and complicity in academic dishonesty.

If you are unclear as to what constitutes a violation of the Code, please see the TA or me during office hours.

Students with disabilities

If you have a disability for which you wish to receive academic accommodations, please provide me with a letter of accommodation from the Office of Disability Services at the beginning of the semester. For more information about disability services go to http://ds.uncc.edu/.

Class recordings

Class sessions will all be audio- and/or video-recorded for the purposes of student-participant reference and access by other students enrolled in the same course (including students enrolled in different class sections or break-out groups). Student consent to being recorded during class is a condition of class participation. If you do not consent to being recorded during class, you will need to deactivate your video camera, keep your mute button activated, and participate only via the chat feature. Students are not permitted to make their own recordings of class sessions or to share or distribute University recordings of class sessions. NOTE: Students with specific electronic recording accommodations authorized by the Office of Disability Services may record classes; however, the instructor must be notified of any such accommodation prior to recording. Any distribution of such recordings is prohibited.

Face coverings in the classroom

It is the current policy of UNC Charlotte that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the 49er

community. Such behaviors specifically include the requirement that all students properly wear CDC-compliant face coverings in all indoor spaces on campus, including classrooms and labs, **regardless of vaccination status**. Failure to comply with this policy in the classroom or lab may result in dismissal from the current class session. If the student refuses to leave the classroom or lab after being dismissed, the student may be referred to the Office of Student Conduct and Academic Integrity for charges under the Code of Student Responsibility.

Absence policy

Students are expected to attend every class and remain in class for the duration of the session when it is safe to do so in accordance with university guidance regarding COVID-19. Failure to attend class or arriving late may impact your ability to achieve course objectives which could affect your course grade. An absence, excused or unexcused, does not relieve a student of any course requirement. Regular class attendance is a student's obligation, as is a responsibility for all the work of class meetings, including tests and written tasks.

Students are encouraged to work directly with their instructors regarding their absence(s). For absences related to COVID-19, please adhere to the following:

- **Complete your Niner Health Check** each morning.
- **Do not come to class if you are sick**. Please protect your health and the health of others by staying home. Contact your healthcare provider if you believe you are ill.
- **If you are sick**: If you test positive or are evaluated by a healthcare provider for symptoms of COVID-19, indicate so on your Niner Health Check to alert the University. Submit a copy of your Niner Health Check notification email to your instructors. Upon learning that you have tested positive or have been diagnosed for symptoms of COVID-19, either from your reporting or from Student health Center testing or diagnosis, representatives from Emergency Management and/or the Student Health Center will follow up with you, and your instructors will be notified of the need for accommodations, as necessary.
- If you are **unvaccinated** and have been notified to self-quarantine due to exposure, indicate so on your Niner Health Check to alert the University. Representatives from Contact Tracing/Emergency Management and/or the Student Health Center will follow up with you as necessary. Submit a copy of your Niner Health Check notification email directly to your instructors.

If you are **vaccinated AND symptomatic AND have been notified to self-quarantine** due to exposure, indicate so on your Niner Health Check to alert the University. Representatives from Contact Tracing/Emergency Management and/or the Student Health Center will follow up with you as necessary. Submit a copy of your Niner Health Check notification email directly to your instructors.

Readings

Dorrough, J., & Ash, J. E. (1999). Using past and present habitat to predict the current distribution and abundance of a rare cryptic lizard, Delma impar (Pygopodidae). Australian Journal of Ecology, 24, 614–624.

Forman, R. T. T. (2002). The missing catalyst: design and planning with ecology roots. In B. Johnson & K. Hill (Eds.), Ecology and design: frameworks for learning (pp. 85-110). Washington, D.C.: Island Press.

Jackson, H. B., & L. Fahrig. (2015). Are ecologists conducting research at the optimal scale? Global Ecology and Biogeography, 24, 52-63.

Ricketts, T. H. (2001). The matrix matters: effective isolation in fragmented landscapes. The American Naturalist, 158, 87-99.

Ries, L., & Sisk, T. D. (2008). Butterfly edge effects are predicted by a simple model in a complex landscape. Oecologia, 156, 75-86.

Rodewald, A. D., Kearns, L. J., & Shustack, D. P. (2011). Anthropogenic resource subsidies decouple predator–prey relationships. Ecological Applications, 21, 936-943.

Rundlöf, M., & Smith, H. G. (2006). The effect of organic farming on butterfly diversity depends on landscape context. Journal of Applied Ecology, 43, 1121-1127.

Rytwinski, T., & L. Fahrig. (2011). Reproductive rate and body size predict road impacts on mammal abundance. Ecological Applications, 21, 589-600.

Wiens, J. A. (2002). Central concepts and issues of landscape ecology. In K. J. Gutzwiller (Ed.), Applying landscape ecology in biological conservation (pp. 3-21). New York: Springer-Verlag.

SCHEDULE (subject to change)

Week	Date	Topic
1	Jan 12	Introduction to course
2	Jan 19	What is landscape ecology? *Discussion: Wiens (2002)*
3	Jan 26	How is landscape structure quantified? *Begin FRAGSTATS assignment*
4	Feb 2	*Work on FRAGSTATS assignment*
5	Feb 9	The issue of scale *Discussion: Jackson & Fahrig (2015)*
6	Feb 16	Habitat fragmentation **FRAGSTATS assignment due**
7	Feb 23	Habitat edges *Discussion: Ries and Sisk (2008)*
8	Mar 2	Animal movement in human-altered landscapes *Discussion: Ricketts (2001)*
9	Mar 9	NO CLASS – Spring Break
10	Mar 16	Landscape change *Discussion: Dorrough and Ash (1999)*
11	Mar 23	Road ecology *Discussion: Rytwinski & Fahrig (2011)*
12	Mar 30	The ecology of agricultural landscapes *Discussion: Rundlof and Smith (2006)*
13	Apr 6	Urban landscape ecology *Discussion: Rodewald et al. 2011*
14	Apr 13	NO CLASS – Dr. Gagné at IALE-NA
15	Apr 20	Landscape conservation planning *Discussion: Forman (2002)*
16	Apr 27	Summary and take-home messages

The final exam period is Wednesday, May 11th, 2 - 4:30 pm.