

“Restoration Ecology in the Commonwealth”

HON 152-001

Fall 2022

MWF 3:00 – 3:50 PM

Lewis Hall U135

Lewis Honors College Pledge of Excellence: *As a member of the University of Kentucky Lewis Honors College, I dedicate myself to intellectual inquiry, life-long learning, and critical thinking. I pledge to demonstrate personal and academic integrity both in and outside of the classroom. I pledge to always be willing to engage my peers in earnest and respectful discussion with an open mind.*

Instructor: Kenton Sena

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Office Hours: Wednesday 10:00 – 11:00, Thursday 9:00 – 10:00 and 2:00 – 3:00

Email or text/call (prior to 10:00 PM) preferred

Course Description:

Healthy ecosystems provide critical services, such as clean air and water, recreation opportunity, and wildlife habitat. Unfortunately, in post-industrial societies, many ecosystems have been severely degraded by decades of destructive resource extraction and poor management. Kentucky is home to a variety of valuable ecosystem types, including forests, streams, wetlands, and grasslands. Each of these ecosystem types have been impacted by various stressors over time. This semester, we will focus on urbanization as a key driver of landuse change and ecological impacts, with a particular focus on our campus. We will start with an introduction to ecology, overview the ecological effects of urbanization, and explore opportunities for restoration. Topics will include:

- Intro to ecology
- Social and ecological factors contributing to ecosystem degradation and shaping restoration options and outcomes
- City (and campus) as ecosystem

Student Learning Outcomes

This course satisfies the UK Core [Intellectual Inquiry in the Natural/Physical/Mathematical Sciences](#) requirement. By the end of the course, students should be able to:

- *Describe methods of inquiry that lead to scientific knowledge and distinguish scientific fact from pseudoscience.* Students will engage with scientific inquiry indirectly through consideration of readings, with emphasis on primary literature, as well as directly through data collection and analysis as part of a class research and service project.
- *Explain fundamental principles in a branch of science.* Students will learn the underlying scientific principles of ecological restoration in an urban context, including introductory ecosystem ecology and urban ecology.
- *Apply fundamental principles to interpret and make predictions in a branch of science.* As part of their research and creative project, students will collect and analyze data, interpret data, develop conclusions, and frame direction for additional research/investigation.

- *Demonstrate an understanding of at least one scientific discovery that changed the way scientists understand the world.* Students will engage with primary literature (peer-reviewed articles from journals such as *Ecological Restoration* and *Restoration Ecology*), including important discoveries and advancements shaping the field of ecological restoration.
- *Give examples of how science interacts with society.* Ecological restoration is an interdisciplinary field that interacts directly with society—social and economic values can dramatically influence priorities and goals in ecological restoration. The interplay of ecological restoration and society will be a primary focus of the course.
- *Conduct a hands-on project using scientific methods to include design, data collection, analysis, summary of the results, conclusions, alternative approaches, and future studies.* Students will conduct a research project at a campus project site. The instructor will mentor students through the scientific method, from study design to data collection and analysis, and interpretation of these analyses to develop conclusions and recommend further studies. A major product of this course will be a scientific report addressing the outcomes of the study.
- *Recognize when information is needed and demonstrate the ability to find, evaluate and use effectively sources of scientific information.* Students will be mentored through the process of locating, reading, and understanding peer-reviewed literature. An important course assignment will be a series of case study presentations, for which students will select peer-reviewed papers addressing ecological restoration in various ecosystems and present summaries to the class.

Required Materials: Reading schedule will be posted on Canvas; readings will be available online.

Summary Description of Course Assignments

- **Reading Checks**—To enable class discussion of assigned readings, students are expected to read and comprehend assigned readings in advance of class. To demonstrate reading comprehension, students will complete a brief annotation assignment prior to the beginning of the class for which the reading is due.
- **Case Studies**—Working in assigned teams, students will find and present a relevant case study addressing select areas of focus in urban restoration ecology. Students will critically review the paper and share with the class (oral presentation, no powerpoint), emphasizing aspects of ecological degradation assessed in the study, approaches to restoration, and monitoring for success. What about the paper was particularly interesting to you? What would you be curious to explore more?
- **Research Project** — As a class, we will evaluate urban degradation of a target campus site, and plan, implement, and monitor restoration activities. We will write a group research paper and give a final research presentation reporting our findings; detailed instructions for this assignment will be available via Canvas.
- **Service Project and Reflection** – As a class, we will engage in at least 12 hours of service work related to urban restoration. The instructor will arrange several potential service project options; students can also submit or develop other relevant service project options for approval. Students will complete a brief reflective assignment to critically engage with their service work.
- **Final Creative Project** – Students will use creative forms and media to reflect on a course topic, theme, and/or activity. Creative projects could draw from writing (creative nonfiction, poetry, fiction, etc.), visual arts (paint, creative photoessay, graphic design), performing arts (music, dance, theater etc.) or other creative approaches.

**Updated Course Schedule Available via Canvas*

Class Participation: This is a discussion-based class; students will be expected to attend class and participate in discussion. Participation points will be awarded based on the following rubric:

- A Rarely absent; attentive in class; no visible distractions; regularly participates in class discussion
- B Occasionally absent; sometimes distracted in class; contributes to class discussion sometimes
- C Frequently absent; frequently distracted; only engages in discussion when called upon
- D Poor attendance; rarely attentive; frequently distracted; does not contribute to discussion

Classroom Conduct: Cell phones should be silent (no talking or texting) during class. All class participants (students and instructor) will treat one another with dignity and respect.

Submission of Assignments: All assignments will be submitted on Canvas, unless otherwise stated. Late work will not be accepted except when prior arrangements have been made with the instructor. Students anticipating difficult extenuating circumstances should discuss with the instructor in advance to request an extension.

Grading Distribution

The breakdown of grading is as follows (400 pts total):

Assignment	Due Date*	Pts
Reading Checks (10 pts each x 8)	Due before class on assigned days (see schedule)	80
Case Studies (10 pts each x 4)	Due before class Oct 12/14, Oct 19/21, Nov 11/14, and Nov 18/21	40
Research Presentation	Dec 5	60
Research Paper	Dec 7	60
Creative Project	Dec 7	60
Service Learning Participation and Reflection	Dec 7	40
Class Participation	Oct 10, Dec 7	60

*Due Dates tentative; see schedule on Canvas for current due dates

Service Learning Opportunities: The following are options to fulfill the service-learning requirement for this course. The instructor will update this list with additional options as they become available; consult the updated list in the assignment portal on Canvas.

- Watershed-focused monitoring project, volunteer training: Sept 16, location and time TBD
- Honeysuckle removal work day: Masterson Station Park, **Oct 15**, 1 – 3 PM
- Tree/shrub planting: Masterson Station Park, **Nov 5**, 9:00 AM - ???
- Class project site prep and planting: dates TBD, but during class time.

Midterm Grades: Mid-term grades will be posted in myUK by the deadline established in the [UK Academic Calendar](#). Note that there is no final exam for this class.

Grading Scale: Final grades will be assigned as follows: > 90.0 A, 80.0-89.9 B, 70.0-79.9 C, 60.0- 69.9 D, E< 60.0.

Attendance policy: Attendance is required—students must inform the instructor ASAP in the case of an excused absence (see excused absence details below), and make arrangements with the instructor to make-up missed work. As noted above, attendance is incorporated in the participation grade. Students with unexcused absences should coordinate with classmates to address missed material.

Official Correspondence to Students: The instructor will use Canvas and GroupMe to communicate with the class as a whole, but will use UK email to communicate with individual students. Students are responsible to either check their UK email regularly, or (if they choose to use a different email service) to ensure that their UK emails are forwarded to their preferred email account. Students are also responsible to ensure that appropriate Canvas notifications (e.g., notifications for “announcements”) are turned on.

Additional Resources for Academic Success

- **The Writing Center.** Call (859) 257-1368, or visit the Writing Center – located on the 5th floor of the W.T. Young Library. For more information, visit: <https://wrd.as.uky.edu/writing-center>
- **Presentation U! Peer Tutoring.** Visit Pres. U! Peer Tutoring if you need help with any of the following: brainstorming project topics, creating outlines, essay writing, research papers, effectively using APA/MLA style, practicing oral presentations, designing and constructing effective visual aids, including PowerPoint, Prezi, websites, videos, and digital projects. Pres. U! Peer Tutoring is conveniently located at the Hub in W. T. Young Library and at the eStudio located in the Student Commons of the R.G. Anderson Building. Visit <https://www.uky.edu/presentationU/tutoring> for complete hours. Tutoring services are available on a drop-in basis, as well as a scheduled face-to-face or online appointment. For questions about this service, please contact Rachael Deel at rachael.deel@uky.edu.
- **The Study.** The Study offers free, drop-in peer tutoring in over 40 UK CORE Math, Science and Business courses. There are two locations: The Study North (off Avenue of Champions) and the Study Central. View a complete list of subjects and the full tutoring schedule at <https://www.uky.edu/thestudy/about-us>.

Attendance Policy Specifically for this Course

Attendance is critical to student success. Because a significant component of this seminar class is in-class discussion, student attendance and participation are factored into a student’s final grade. Students missing class should arrange to meet with a peer regarding material missed prior to scheduling a meeting with their instructor during office hours.

Academic Integrity Policy Specifically for this Course

You are expected to adhere to the university's policy on academic integrity. Fabrication, plagiarism, cheating and other violations of the code will not be tolerated in this course. When you are using other people’s ideas to make a point, you must give the source credit through proper attribution. Merely cutting and pasting Web site information into your assignment without attribution is wrong and a resulting charge of plagiarism can result in a failing final grade for the course. As indicated in the “Academic Integrity” section below, students in this course are hereby notified that “double submission, self-plagiarism, or unauthorized resubmission of one’s own work” is considered a violation of academic integrity. Honors students that are found guilty of an academic integrity violation through the University’s Academic Ombud office will be dismissed from the Lewis Honors College.

Sections Required by UK

Academic Policy Statements: Please refer to the [Academic Policy Statements](#) webpage for detailed information on excused absences and acceptable excuses, religious observances, verification of absences, make-up work, excused absences for military duties, unexcused absences, Prep Week and Reading Days, accommodation due to disability, and non-discrimination statement and Title IX information.

Rules Regarding Academic Offenses: Please refer to the [Academic Offenses Rules](#) for Undergraduate and Graduate Students webpage for detailed information on plagiarism, cheating, and misuse of academic records.

Resources Available to Students: Please refer to the [Resources Available for Students](#) webpage for detailed information on Bias Incident Support Service (BISS), UK Counseling Center, Disability Resource Center, Libraries, Martin Luther King Center, Non-discrimination/Title IX, Office of LGBTQ* Resources, Veterans Resource Center, and Violence Intervention and Prevention Center.

Diversity, Equity, and Inclusion:

The University of Kentucky is committed to our core values of diversity and inclusion, mutual respect and human dignity, and a sense of community ([Governing Regulations XIV](#)). We acknowledge and respect the seen and unseen diverse identities and experiences of all members of the university community (<https://www.uky.edu/regs/gr14>). These identities include but are not limited to those based on race, ethnicity, gender identity and expressions, ideas and perspectives, religious and cultural beliefs, sexual orientation, national origin, age, ability, and socioeconomic status. We are committed to equity and justice and providing a learning and engaging community in which every member is engaged, heard, and valued.

We strive to rectify and change behavior that is inconsistent with our principles and commitment to diversity, equity, and inclusion. If students encounter such behavior in a course, they are encouraged to speak with the instructor of record and/or the [Office of Institutional Equity and Equal Opportunity](#). Students may also contact a faculty member within the department, program director, the director of undergraduate or graduate studies, the department chair, any college administrator, or the dean. All of these individuals are mandatory reporters under University policies.

Lewis Honors College Diversity Officer

Every college at the University of Kentucky has diversity officers to enhance the work of diversity, equity, and inclusion. Dr. Tara M. Tuttle (tara.tuttle@uky.edu) is the Assistant Dean for Diversity, Equity, & Inclusion for Lewis Honors College. Diversity officers are charged with cultivating a culture of belonging, establishing strategic objectives for recruitment and retention, providing programs and trainings fostering cultural competencies, and assessing college efforts to improve the academic and cultural climate for minoritized or underrepresented student, staff, and faculty populations. The Assistant Dean for Diversity, Equity, & Inclusion is available to those in the Lewis Honors College community who need support in responding to incidents of bias and discrimination or who seek resources to further develop their cultural agility. Students are also welcome to reach out to Associate Dean Pearl James and Dean Christian Brady with any concerns.

Course Schedule:

Date	Reading	Discussion Topic/Assignment
M Aug 22	Syllabus	Introduction to Course and Class Project
W Aug 24	<i>No Reading</i>	Introduction to Ecology

F Aug 26	Ripple and Beschta, 2012: " Trophic Cascades in Yellowstone: The first 15 years after wolf reintroduction. " Due: Reading Response	Intro to Ecology: Competition
M Aug 29	<i>No Reading</i> : In class Carbon and Nitrogen Cycles	Intro to Ecology: Symbioses
W Aug 31	Franklin et al. 2012: " Influence of herbaceous ground cover on forest restoration of eastern US coal surface mines. " Due: Reading Response	Intro to Ecology: Soil, Water, and Air
F Sep 2	Zipper et al. 2011: " Forest restoration potentials of coal-mined lands in the eastern United States. " Due: Reading Response	Intro to Ecology: Soil, Water, and Air
M Sep 5	NO CLASS: LABOR DAY	
W Sep 7	<i>No Reading</i> : In Class: Explore Project Site Assign: Research Paper and Presentation, Creative Project, and Service-Learning Project	Intro to Class Project
F Sep 9	Pouyat et al. 2010: " Chemical, physical, and biological characteristics of urban soils. " Due: Reading Response	Ecosystem Degradation: Urban Soils
M Sep 12	<i>No Reading</i>	Guest Lecture: Claire Hilbrecht
W Sep 14	Nowak et al. 2001: " People and Trees: Assessing the US Urban Forest Resource " Due: Reading Response	Ecosystem Degradation: Urban Forests
F Sep 16	Cohn, 2005: " Urban Wildlife " Due: Reading Response	Ecosystem Degradation: Urban Wildlife
M Sep 19	*Dr. S at KWRRRI Conference*	Guest Lecture: Stacy Borden
W Sep 21	Walsh et al. 2005: " The urban stream syndrome: current knowledge and the search for a cure " Due: Reading Response	Ecosystem Degradation: Urban Streams
F Sept 23	<i>No Reading</i> ; In Class: Brainstorm urbanization impacts to project site	Class Project: Evaluate Degradation and preliminary sampling
M Sep 26	<i>No Reading</i> : Class meets in Greenhouse 12	Guest Lecture: Shari Dutton
W Sep 28	<i>No Reading</i> : Lecture/discussion re: examples of restoration ecology	Intro to Restoration Ecology
F Sep 30	Benayas et al. 2009. Enhancement of biodiversity and ecosystem services by ecological restoration: A meta-analysis.	Restoration Goals: Ecosystem Services

	Due: Reading Response	
M Oct 3	<i>No Reading</i>	Hold for Guest Lecture or project work
W Oct 5	Balaguer et al. 2014: " The historical reference in restoration ecology: Re-defining a cornerstone concept. " Due: Reading Response	Restoration Goals: Reference
F Oct 7	<i>No Reading</i> : In Class: Brainstorm goals for project site	Class Project: Restoration Goals
M Oct 10	Case Study: Restoring Urban Soils	
W Oct 12	Case Study: Restoring Urban Soils	
F Oct 14	<i>No Reading</i> <i>Due: Research Paper Draft Introduction and Methods</i>	Guest Lecture: Kevin Lewis and Matthew Staton
M Oct 17	Case Study: Restoring Urban Forests	
W Oct 19	Case Study: Restoring Urban Forests	
F Oct 21	No Reading	Guest Lecture: Mac Hall
M Oct 24	NO CLASS: FALL BREAK	
W Oct 26	*Dr. S out of town* <i>Workshop research and creative projects</i>	
F Oct 28	<i>No Reading</i>	Class Project: Planting
M Oct 31	<i>No Reading</i>	Class Project: Planting
W Nov 2	*Dr. S out of Town* <i>Workshop research and creative projects</i>	
F Nov 4	*Dr. S out of Town* Class Canceled	
M Nov 7	<i>No Reading</i>	Class Project: Monitoring
W Nov 9	<i>No Reading</i>	Class Project: Monitoring
F Nov 11	Case Study: Human Dimensions of Urban Restoration	
M Nov 14	Case Study: Human Dimensions of Urban Restoration	
W Nov 16	<i>No Reading</i>	Class Project: Analysis
F Nov 18	Case Study: Restoring Urban Wildlife	
M Nov 21	Case Study: Restoring Urban Wildlife	
W Nov 23	NO CLASS: THANKSGIVING BREAK	
F Nov 25	NO CLASS: THANKSGIVING BREAK	

M Nov 28	Research report peer review	
W Nov 30	Creative Project Workshop	
F Dec 2	No Class: Use the day for research and creative project work	
M Dec 5	Final Research Presentation with project partners	
W Dec 7	Final Creative Project Presentations and end-of-semester celebration Due: Final Research Paper Due: Service Learning Reflection	
F Dec 9	NO CLASS: READING DAY	
Dec 12 – 15 Finals Week		