SPRING 2023

WILDLIFE ECOLOGY AND CONSERVATION BIOLOGY

WLDL 458/658

Urban Ecology Center, Milwaukee, WI

A UWSP student photo of a hummingbird during a field course to Costa Rica. Ecotourism is popular in Costa Rica.

2BStudents will be able to:

1. Discuss concepts in conservation biology as they relate to local, national, and global issues.
2. Analyze problems encountered in the field of conservation biology.
3. Design, conduct, and present a wildlife ecology project on squirrels.
4. Collaborate with a team in person and/or in an online environment.
5. Discuss conservation biology issues with your peers.

Men argue.
Nature Acts.

Voltaire

Course Description and Objectives

Welcome the WLDL 458/658, Wildlife Ecology and Conservation Biology. This course will introduce you to the relatively young science of Conservation Biology and the issues that conservation biologists engage. From its roots conservation biology was developed as a deeply collaborative discipline and as such the approaches used and the tools needed are widely varied. However, if there is a central theme that unifies conservation biology, it is the preservation of biological diversity and ecosystem function. To accomplish this, many stakeholders including scientists, corporations, governmental agencies, private land-owners, and others are invited to participate in the design and success of the various programs and studies.

Wisconsin was home to some of the founders of the field as we know it today. In fact, we are about an hour's drive from both the homestead of John Muir near Portage and the famous shack of Aldo Leopold near Baraboo. In addition to these western pioneers of the preservationist and conservationist ethics, the Native Americans in Wisconsin had already been practicing sustainable development through the principles of honorable harvest, which teaches to take only one you need, never more than half, and always leave a gift in return.

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LECTURE: MW 8:00-8:50 TNR 352, DISCUSSION: W 2:00 – 3:50 TNR 352

ZOOM/LIVE - OH BY APPOINTMENT OF FIND ME AFTER CLASS

SPRING 2023

WILDLIFE ECOLOGY AND CONSERVATION BIOLOGY

WHETHER WE AND OUR POLITICIANS KNOW IT OR NOT, NATURE IS PARTY TO ALL OUR DEALS AND DECISIONS, AND SHE HAS MORE VOTES, A LONGER MEMORY, AND A STERNER SENSE OF JUSTICE THAN WE DO.

Wendell Berry

"Ungrading"

The most stressful part of a course for both the student and the teacher is grades and grading. What if we could all just focus on learning? What if you knew your grade before the semester even began? I've been rethinking how I assess learning since the Covid semester. Instead of accumulating points in the traditional way, we are going to use contract grading this semester in this course. Basically, how much work are you willing to put in for an A or for a B. Each assignment will be assessed on a 3-point scale; 1=try again, 2=good but could improve, 3=satisfactory or good job. When you get a job, this is more likely what you will experience, except without the numbers. There will be 10 weekly midterm exam/reflections, 4 challenges, weekly policy discussion that will be student led, and a semester-long research project conducted as a class. Reflections and Challenges can be submitted multiple times until you are satisfied with your grade. There are due dates, but I will accept revised reflections and challenges through the last day of the semester on May 12th.

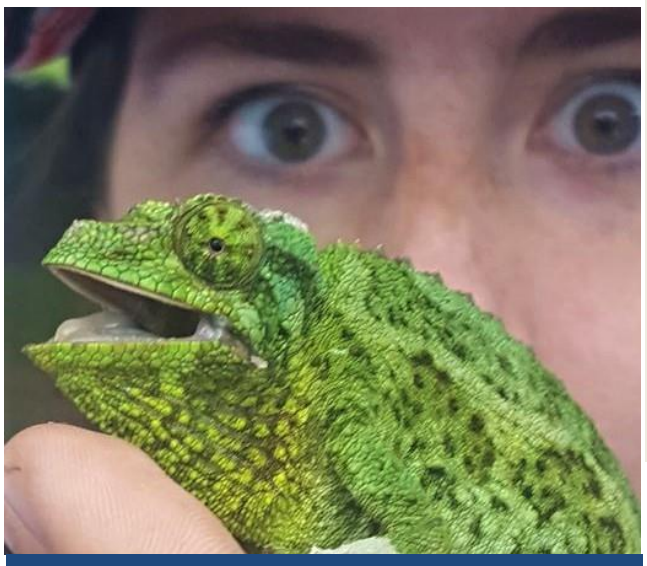
For a grade of A the student will complete 10 weekly reflections worth at least 25 points (maximum 30 points), 3 challenges worth 9 points, lead a policy discussion with your team, collect data and present with your research team, and complete a self and peer evaluation.

For a grade of B the student will complete 8 weekly reflections worth at least 20 points (24 maximum), 2 challenges worth at least 9 points, lead a policy discussion with your team, collect data and present with your research team, and complete a self and peer evaluation.

Because this is required for the major and is a capstone course, the grades of C and lower are reserved for students that don't fulfill their contract after discussion with the instructor. There will be a midterm grade reflection to see if you are on track for your contracted grade. You will also be required to complete a final grade reflection.

Snapshot Wisconsin: There are more than 1000 trail cameras throughout the state hosted by citizen volunteers. The data is used by the WDNR for species management plans. This buck was captured by the camera in Schmeeckle Reserve in 2019.

UWSP students work in a taro patch in the Waipio Valley during a field course to Hawaii in 2017. Your effectiveness as a wildlife biologist will be improved if you are willing to work together with the stakeholders. Sometimes that means getting in the muck.



UWSP student holds a Jackson's chameleon, an invasive species in Hawaii. Biosecurity is a priority in delicate island ecosystems.

Teamwork

ONE MAN ALONE CAN BE PRETTY DUMB SOMETIMES, BUT FOR REAL BONA FIDE STUPIDITY, THERE AIN'T NOTHIN' CAN BEAT TEAMWORK.

EDWARD ABBEY

Research Presentation

The team presentation will be a study focusing on squirrel behavioral ecology. We will work on a national study of squirrel optimal foraging using Giving Up Densities. I will go over the details during the discussion sections where we can also put together teams. This will be challenging and interesting as we will collect the data prior to spring break so there will be snow on the ground. We will discuss the best way to do this as a class. There will also be a peer assessment portion to this assignment with team members assessing each other on contribution and participation throughout the semester.

WILDLIFE ECOLOGY AND CONSERVATION BIOLOGY

SYLLABUS SPRING 2022

Week		Topic	Pages in Conservation Biology
1	January 23rd	Welcome Back	
	January 25th	The Rise of Conservation Biology	26-45
		Discussion: Teams	
2	January 30th	Biodiversity Concepts I	54-66
	February 1st	Biodiversity Concepts II	67-77
		Discussion: Squirrel GUD experiment	
	February 1-5th	Reflection 1	
3	February 6th	Global Patterns of Biodiversity I	82-91
	February 8th	Global Patterns of Biodiversity II	92-113
		Discussion: Protected lands and biodiversity	
	February 9-12th	Reflection 2	
4	February 13th	Values of Biodiversity I	118-137
	February 15th	Values of Biodiversity II	
		Discussion: Student led - State wildlife policies	
	February 15-19th	Reflection 3	
5	February 20th	Biodiversity and Ecosystem Services I	141-158
	February 22nd	Biodiversity and Ecosystem Services II	159-180
		Discussion: Student led – Pittman-Robertson Act	
	February 22-26th	Reflection 4	
6	February 27th	Ecological Economics I	181-194
	March 1st	Ecological Economics II	195-210
		Discussion: Structured Decision Making	
7	March 6th	Extinction I	215-229
	March 8th	Extinction II	230-245
		Discussion: Student led – Lacey Act	
	March 8-12th	Reflection 5	
8	March 13th	Habitat Loss I	249-276
	March 15th	Habitat Loss II	277-289
		Discussion: Migratory bird policies	
	March 15-19th	Reflection 6	
9	March 27th	Overexploitation I	293-326
	March 29th	Overexploitation II	
		Discussion: Student led – International policies	
	March 29-April 2nd	Reflection 7	
10	April 3rd	Invasive Alien Species I	329-368
	April 5th	Invasive Alien Species II	
		Discussion: Biosecurity – Hawaii Case Study	
11	April 10th	Climate Change I	
	April 12th	Climate Change II	369-391
		Discussion: Stats with Jamovi	392-400
	April 12-16th	Reflection 8	
12	April 17th	Species-level Conservation I	405-422
	April 19th	Species-level Conservation II	423-440
		Discussion: Stu led – Endangered Species Act	
			445-460
13	April 24th	Community and Ecosystem Conservation I	461-474
	April 26th	Community and Ecosystem Conservation II	
		Discussion: Presentations I	
	April 26-30th	Reflection 9	
14	May 1st	Landscape-level Conservation I	479-496
	May 3rd	Landscape-level Conservation II	497-519
		Discussion: Presentations II	
15	May 8th	Ex Situ Conservation I	521-540
	May 10th	Ex Situ Conservation II	541-551
	May 10-14th	Reflection 10	

UWSP RELEASES COVID-19 CAMPUS GUIDELINES

COVID-19 and other precautions

- We will follow university guidance (which includes CDC guidance) regarding COVID-19, RSV, influenza, and other health-related issues. Please reference the UWSP's website related to COVID. The CDC website provides guidance on isolation and precautions related to COVID. As needed, we will announce policy changes that affect you in this class. It is expected that everyone will respect the needs and preferences of classmates and instructors. I will be following CDC mask guidelines, which change weekly. If Portage County is medium or high risk for Covid spread I will be wearing a mask. Ironically, the one week I didn't wear a mask at Treehaven I got sick (flu in the summer).
- CDC community risk maps (https://www.dhs.wisconsin.gov/covid-19/data.htm) are based on the number of positive cases and the number of hospitalizations. Since most people are no longer reporting positive Covid cases from home tests, these maps are flawed. I likely caught Covid from a student in December 2022 when community risk in Potage County was low, but infection was high with students returning from Thanksgiving break. In December 2022, the National Institutes of Health developed a website to make it easier to report home tests https://makemytestcount.org/. Please use this when you take home Covid tests and share it with others.

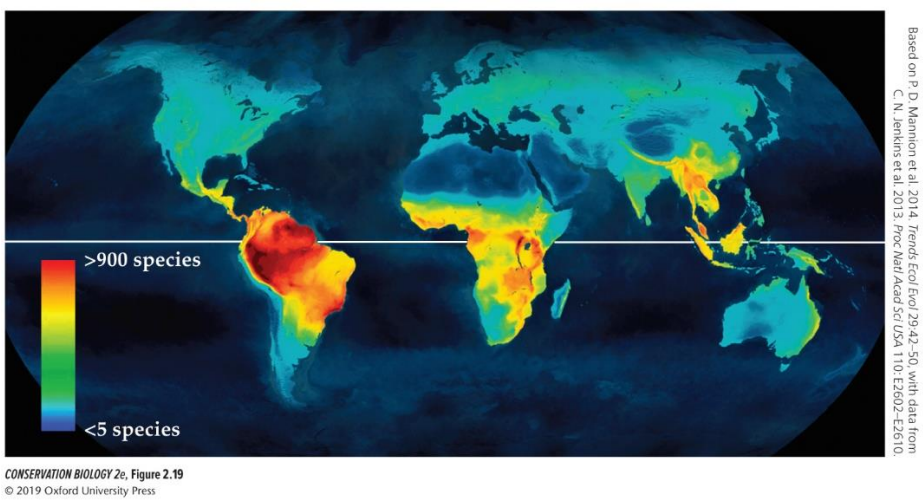


Figure 4.8 in our textbook perfectly illustrates the implication of Rapoport's Rule known to many conservation biologists. With smaller species ranges near the equator, more species can coexist and therefore you find higher biodiversity as you move from higher latitudes to lower latitudes.

SCIENCE

EDUARDO RAPOPORT: HE SHOULD BE IN OUR BOOK

Eduardo Rapoport (1927-2017) was an Argentinian ecologist known widely for his work in soil biology, invasive species ecology, urban ecology, and biogeography, and is best known for Rapoport's Rule. Rapoport's Rule states that latitudinal ranges of plants and animals are generally smaller at lower latitudes (i.e. near the equator) than at higher latitutes (i.e. closer to the poles). As a professional you may have the opportunity to attend national and international meetings and listen to a variety of presentations and speakers in your field. In my professional career, two of these among the hundreds stand out as truly special. In 1995, at the Annul Meetings of the American Society of Mammalogist in Burlington, Vermont, I heard Ernst Mayr (he was 91 at the time), one of the greatest evolutionary biologists of the 20th century, give an intimate talk on his career. In 2007, at the International Mammalogical Congress in Mendoza, Argentina, I heard Eduardo Rapoport (he was 80 at the time) give a talk in Spanish on his career as an ecologist, much of it living in exhile in Venezuela. In both cases you could hear a pin drop. In both cases the audience hung on every word and understood that this was a once in a lifetime moment. I hope each of you have those moments in your careers.

HTTPS://WWW.UWSP.EDU/REGREC/PAGES/STUDENT-SCHEDULE.ASPX

JOBS

Top 10 Skills Employers Want in College Graduates in 2020

NATIONAL ASSOCIATION OF COLLEGES AND EMPLOYERS

Career services practitioners should advise their college students seeking full-time employment after graduation to craft a well-written resume. Why? In part, because employers responding to NACE's Job Outlook 2019 survey said they will seek evidence of solid written communication skills on their candidates' resumes.

When NACE asked employers participating in its *Job Outlook 2019* survey which skills and qualities—beyond a strong GPA—they most want to see on students' resumes, more than four out of five indicated written communication skills, making it the most sought-after attribute in 2019 (See Figure 1).

Problem-solving skills and an ability to work as part of a team were also highly desired.

The top 10 don't move much. In 2022, the top skill was problem-solving (85.5%), followed by analytical/quantitative skills, ability to work in a team, and written communication.

Verbal communication, on the other hand, dropped from the seventh most sought-after attribute in 2019 to 11th in 2022, while flexibility/adaptability jumped into the top 10 at number 8, possibly representing a pre/post pandemic shift. Other highly valued attributes that employers want to see evidence of on resumes this year include initiative and a strong work ethic.
https://www.naceweb.org/talent-acquisition/trends-and-predictions/future-forward-key-issues-and-recommendations-for-success-in-2022/

Graduation Day: It's weird. You've been in school since you were six and now you have to get a real job. You've been practicing skills the entire time you were in college, but can you communicate those to a potential employer?