

## **NRES 458: Biodiversity and Conservation Biology**

**Lecture:** TNR 354 9:00 – 9:50 Tuesday and Thursday

**Lab:** TNR 354 10:00 – 11:50 Tuesday

**Instructor:** Sophie Demchik

**Office Hrs:** TNR 375 TBA

**Textbook:** Primack, R. B. 2012. *A Primer of conservation Biology, Fifth Edition*. Sinauer Associates, Sunderland, MA.

The text is not required. *Use it if you need supplemental background information.*

### **Description:**

Theoretical framework for identifying threats and solutions to long-term preservation of species and biological communities; includes concepts from traditional, landscape, and population ecology, genetics, sociology and economics.

### **Course Learning Outcomes:**

- Classify diversity at different spatial scales
- Identify threats to biodiversity
- Examine various aspects of restoration and conservation biology
- Discuss conservation biology from a regional basis and using case studies

### **Topics:**

#### Diversity at Different Scales

- Landscape
- Community
- Species
- Genetic (among populations, within populations, within individual)

#### Threats

- Invasive Species
- Excessive harvest
- Habitat loss

#### Restoration and Conservation Biology

- Policy frameworks
- Restoration versus Reclamation
- Conservation versus Protection

#### Habitat Restoration Focus

- Sand barrens
- Prairies/grasslands
- Savannas

- Northern hardwoods
- Microsites

#### Regional Approach

- Midwest
- Central America

#### **Field Trips:**

*This class is heavily field-based, and includes the following labs:*

Emmons Creek Fishery Area	9/17/19
Emmons Creek Fishery Area	9/24/19
Little Plover Fisheries Area	10/8/19
CWES (Forest restoration)	10/15/19
City of Stevens Point property (wetlands)	10/29/19
Wisconsin River riparian forest site	11/5/19
Northern hardwood site (Route X)	11/19/19

#### **Literature Critiques:**

As a natural resource professional, you will be expected to be able to read, understand, and implement technical information found in current literature in your field. The vast volume of information coming out in biodiversity and conservation biology can be overwhelming. To help you establish habits that will allow you to utilize this information throughout your career, you will review and summarize 4 recent peer-reviewed journal articles from appropriate journals (*Conservation Biology, Ecological Applications, Biological Conservation, etc.*). In your summary, you should include overviews of the Introduction, Methods, Results, and Discussion sections of the papers. Also include a copy of the abstract of the paper. Your summaries are to be submitted through Canvas and should be 1-2 typed pages. Each summary is worth 25 points.

#### **Due Dates for Literature Critiques:**

**Oct 5, Oct 19, Nov 2 and Nov 16**

#### **Reflection Essay:**

Write a one-page assessment of what you learned from this class and how you hope to use it. Tell me how this class fits into the broader concept of your classes here and the jobs you hope to get once you leave here. This is written at the end of the semester and is due the last day of class (Dec 12).

### **Case Study Presentations:**

Working in *pairs*, you will choose, research, and present a topic in biodiversity/conservation biology as a **case study**. You may choose any level of biodiversity (single species recovery, genetic diversity within species, community, landscape), but make sure to include the following:

1. Define the issue (location, species involved, community characteristics, etc.)
2. Clearly state the threats that required conservation intervention
3. State the pros and cons of implementing conservation efforts
4. What specific conservation efforts were implemented (biological, ecological, legal etc. tools)
5. How were efforts monitored
6. What was the outcome

Prepare a 20-minute presentation utilizing PowerPoint or other tools. Provide the class with an outline and a list of sources used. No two groups can choose the same topic, so I will keep a list of chosen topics and the associated groups. Do not start researching until you check with me about the topic. The Case Study Presentation is worth 100 points.

### **Grading:**

<b>Assignment</b>	<b>Points</b>
Lab assignments (6 x 35 pts)	210
Literature Critiques (4 x 25pts)	100
Case Study Presentation	100
Professionalism	50
Reflection	50
Final Exam	100
<b>Total</b>	<b>610</b>

Grade	%
A	≥ 93
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	≤ 59

**ACADEMIC INTEGRITY:** You will adhere to the Student Academic Standards outlined in Chapter UWS 14 of the Wisconsin Administrative Code (<http://www.uwsp.edu/dos/Documents/CommunityRights.pdf>). Cheating or plagiarism related to any of the course assessments will result in a score of zero for that assessment.

**SPECIAL NEEDS:** Please see me as soon as possible if you require special accommodations due to physical limitations, a learning disability or other issues.

### Tentative Lab Schedule

Date	Lecture/Lab (T)	Lecture (TH)
9/3 to 9/5	Introduction/ <b>Savannas and Barrens</b>	Savannas and Barrens
9/10 to 9/12	<b>Article Discussion 1:</b> Barrens Restoration	Emmons Creek/Pollinators
9/17 to 9/19	Field Trip: Emmons Creek/DNR speaker	Genetics of Seed Source
9/24 to 9/26	Field Trip: Emmons Creek Fishery Area	Case Study: Restoring Sauk Prairie
10/1 to 10/3	Little Plover Restoration: Mike Demchik	Prairies
10/8 to 10/10	Field Trip: <b>Little Plover Fishery Area</b>	Little Plover
10/15 to 10/17	Field Trip: <b>CWES</b>	CWES/Site Quality Assessment

10/22 to 10/24	<b>Article Discussion 2:</b> Riparian Forests	Wetlands/Managing for Wildlife: Wood Duck, Ruffed Grouse, Woodcock
10/29 to 10/31	Field Trip: <b>Dewey Marsh</b>	Riparian Forestry
11/5 to 11/7	Field Trip: <b>Riparian Forest</b>	Case Study: Georgia Riparian Restoration
11/12 to 11/14	<b>Article Discussion 3:</b> Old Growth Attributes	Northern Hardwoods
11/19 to 11/21	Field Trip: <b>Northern Hardwood Site</b>	Northern Hardwoods/1 Student Presentation
11/26 to 11/28	Tropical Conservation Biology	<b>THANKSGIVING</b>
12/3 to 12/5	4 Student Presentations	2 Student Presentations
12/10 to 12/12	4 Student Presentations	Reflection/Review/Evaluations