The course provides an introduction to the biological and social aspects of renewable and nonrenewable natural resource management. In addition to the management of fisheries and wildlife populations and their habitats, emphasis will be placed on forestry, vegetative communities, and non-renewable (fossil fuel) natural resources. Students will read and discuss the biological, physical, and social aspects of natural resource management. (SP of odd years) Prerequisite: BIO 120

**Instructor Information**
Dr. Todd Levine  
Office: 305 Rankin Hall  
Phone: 262-524-7283  
Email: tlevine@carrollu.edu  
Office hours:  
- Monday 10 - 11 am  
- Tuesday 10 - 11:30 am  
- Thursday 4-4:45 pm

**Course Meeting Information:**
- Tuesday and Thursday 8:00 am until 9:50 am  
- Bergstrom 103  
- Field trips as arranged  
Please bring your own internet enabled device, but do not use it until prompted to do so.

**Course Description and Materials**

**Required Textbook:**

**Supplemental Materials:**
Additional resources will be provided and students will be expected to use the Carroll University Library to access some peer reviewed literature for the class. Students are expected to bring electronic or printed copies with them to class for discussion.

**Course content:**
This course is structured around the history of natural resource management and the interaction of science and social elements. Important themes will include History, Public Trust Doctrine, Natural Resource Law, Soil and Water Resources, Wildlife and Forestry Resources and Non-biological/non-renewable resources. The textbook will be supplemented by outside readings and information as appropriate. Students will discuss issues of social and environmental/ecological pertinence from both historic and current sources. Students will work on analyzing reading materials through discussion leadership, case studies and a paper on a management issue in Wisconsin.
Objectives and Assessments

Student Learning Outcomes:
Upon successful completion of the course a student should:

1) Discuss the history of natural resource management in America and how it has changed throughout history
2) Explain the public trust doctrine and its role in the management of natural resources
3) Identify how scientific and social elements of natural resource management interact
4) Identify the unique challenges of managing renewable and nonrenewable resources
5) Be able to find, read and integrate peer reviewed literature into the understanding of natural resources questions
6) Apply knowledge from other sciences and social sciences to problems in natural resource management

Assessment of Student Learning:
Exams (3 lecture exams, 1 exam + comprehensive final) 100 points 450 points
Quizzes 5 - 20 points 150 points
Wisconsin Management Issue 75 points 75 points
Case studies 25 points 100 points
Readings and discussion leadership 25 points 25 points

* Note: point value should be taken as a guide and may be modified as needed by course opportunities, student and instructor needs/constraints.

Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93%+</td>
<td>At the instructor's discretion and based on academic performance, class citizenship and evidence of effort/learning not specifically evaluated, grades may be adjusted up to 1 letter. For example, exemplary student engagement with speakers or organizations might exhibit learning beyond class objectives. Or actively distracting other students through inappropriate social or device use could be considered poor class citizenship.</td>
</tr>
<tr>
<td>AB</td>
<td>89-92.99%</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>83-88.99%</td>
<td></td>
</tr>
<tr>
<td>BC</td>
<td>79-82.99%</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>70-78.99%</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>60-69.99%</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>&lt;60%</td>
<td></td>
</tr>
</tbody>
</table>
Assignment and activity descriptions:

Exams - Exams will include a variety of answer types that include multiple choice/matching, fill in the blank, short answer, graphing and essay.

Quizzes - May be distributed on-line or in class and may be announced or unannounced. Quizzes help students self-evaluate in a lower stakes environment and may be used to ensure that material and participation are current and active.

Review of Wisconsin Management Issue - Each student will write a short paper (between 4 and 6 pages of text, double spaced; supporting materials such as works cited and original graphs or illustrations extra) that will employ peer-reviewed sources, gray literature and possibly popular media. Appropriate topics might include eutrophication of Green Bay, wolf hunting, captive crane breeding, frac sand mining, harmful cyanobacterial blooms, forest harvest proposals, wetland development/draining/reconstruction and other current issues affecting the natural resources of Wisconsin or a nearby region.

Case Studies - Students will write a brief case study on topics germane to the course materials. These case studies will evaluate scientific evidence and the social context of issues in management. Some choices in case studies may be available, depending on opportunity.

Some important course policies:

Exams No make up exams will be given except for prior written excuse (minimum 10 school days) from faculty or evidence of emergency (e.g. police report or hospital verification).

Late assignments Will not be accepted without prior written permission of the instructor. Even with permission, a late penalty may be assessed and grade assignments reduced accordingly.

Assignment submission All assignments must be submitted through the course site in DOCX or PDF format, no exceptions.

Attendance You are responsible for attending class and for all graded activities and information provided during classes. In class activities and quizzes may not be made up without prior written instructor permission or verified emergency (e.g. hospital paperwork). Missing more than 3 classes without verification may result in reduction of final grade.
Course Policies

Accommodation for disabilities:
All requests for accommodation of disabilities must be made to Ms. Martha Bledsoe (mbledsoe@carrollu.edu, 524-7335), Director of Services for Students with Disabilities at Carroll University. After hearing from Martha, I will then make any necessary accommodations.
*If you suspect that you may have a disability that affects your learning, please pursue your options, even if you do not yet have a formal diagnosis. I cannot make exceptions without an appropriate and professionally verified basis.

Contacting the instructor:
The best way to contact me is via email: tlevine@carrollu.edu. I will check my email at least once each day during the week between Monday and Thursday (I am often in the field on Fridays preparing for field trips or conducting research). Responses to emails may take 48 hours during the week and likely longer over weekends, however I try to respond to emails before the next class period. If you have not received a response by the next class period, please speak with me in person.

Syllabus modification:
This syllabus may be modified by the instructor at any time. Students will always be notified at least one class meeting in advance, both in class and via email, of any modifications to the syllabus. Please note that an electronic syllabus will be available on the Learning Management System, where it will be updated with additional information as necessary.

eLearning and email:
I will use My Courses and email frequently to disseminate information to the class. It is the responsibility of the student to check her/his email and eLearning at least once every weekday in order to retrieve learning guides or receive notice of any modifications to the syllabus for the next few class meetings. Late assignments I do not accept late assignments. If you fail to submit an assignment on time, you may earn 0 points for the assignment. I reserve the right to permit a late submission under certain circumstances (instructor’s judgment) ONLY WHEN I AM NOTIFIED AT LEAST 48 HOURS PRIOR TO THE ASSIGNMENT DUE DATE AND YOU PROVIDE EVIDENCE OF A DOCUMENTED EMERGENCY. If a late assignment is accepted, it may lose up to 10% per day after the assignment is due.

Plagiarism and academic dishonesty:
Plagiarism is using someone else’s ideas or work and presenting it as your own ideas or work. Plagiarism – in any form – will not be tolerated in this course. For this course the sanction imposed by the instructor on a student who plagiarizes may be 0 points for the assignment for the first offense and automatic failure of the course for the second offense. Students who are observed looking at another student’s paper, a cheat-sheet, or any other information not allowed during quizzes or exams may receive 0 points for that quiz or exam. A student who copies another student’s work and the student who allowed the other student to copy her/his work may each
receive 0 points for that assignment. A student who uses an author’s words as her/his own may receive 0 points for that assignment. If you copy more than two or three consecutive words from an author, then you are plagiarizing that author. To avoid plagiarizing an author, read the author’s writing, step away and reflect on the writing for several moments, and then paraphrase the author using your own words. Do not quote another author in your scientific writing. There will be no exceptions to the plagiarism rule; if you are caught plagiarizing, you will very likely receive 0 points for the assignment. Unless specified by the instructor, all student assignments in this course are to be completed independently. This does not preclude discussion of course material during or outside of lecture or lab by two or more students, but it does require students to write and complete all assignments independently. If there is any question in a student’s mind whether she/he might be inadvertently plagiarizing, the student should contact the instructor and ask for clarification for that particular instance. The penalties for plagiarism are severe, and no exceptions will be granted to any student who plagiarizes or allows another student to copy her/his work. For more information on Carroll University’s policies and procedures on plagiarism and student academic integrity, plagiarism is defined on page 40 to 44 of the 2014-15 Student Handbook (http://www.carrollu.edu/campus/safety/pdfs/studentHandbook.pdf) as: “Committing plagiarism, is seeking to claim credit for the work or effort of another without authorization or citation. This includes both appropriation and imitation of another person’s writings or ideas. For example, using another person’s ideas, words, or research and presenting it as one’s own by not properly crediting the originator. This applies to materials obtained through both traditional and electronic means.”

Plagarism in groups is also taking individual credit for another person’s work on a group project.

Tentative Course Schedule

01 24 January Resources, Footprint & Population Size; What is natural resource management?
02 26 January Introduction - Past, present and future of management
          Chapter 1
03 31 January Economics, Ethics and Critical thinking
          Chapter 2
04  2 February Law and Public Policy
          Public Trust Doctrine
          Environmental Law and Policy
          * ETHICS CASE STUDY DUE
05  7 February Human Population Challenge
          Chapter 4
06  9 February EXAM 1
07 14 February Winter identification & economic value of trees
          Forestry with Retzer Nature Center
08 16 February Field exercise: evaluating a woodlot
          Forestry with Retzer Nature Center
09  21  February  Forestry wrap up  
Chapter 14  
10  23  February  Nature of Soils  
Chapter 6  
* FORESTRY CASE STUDY DUE  
11  28  February  Soil conservation and sustainable agriculture  
Chapter 7  
12  2  March  Rangeland management  
Chapter 13  
13  7  March  EXAM 2  
14  9  March  Lessons from ecology  
Chapter 3  
SPRING BREAK  
15  21  March  Fisheries  
Chapter 12  
16  23  March  Tentative visit to the Steelhead Facility on the Root River  
17  28  March  Wildlife management  
Chapter 16  
* WISCONSIN WILDLIFE ISSUE CASE STUDY DUE  
18  30  March  Plant and animal extinctions  
Chapter 15  
19  4  April  Case studies in wildlife conservation and biological communities  
20  6  April  EXAM 3  
21  11  April  Sustainable Waste Management  
Chapter 17  
22  13  April  Water Pollution  
Chapter 11  
Clean Water Act  
23  18  April  Air Pollution  
Chapter 18  
24  20  April  Minerals and Mining  
Chapter 21  
25  25  April  Non-renewable Energy  
Chapter 22  
26  27  April  Sustainable Energy System(s)  
Chapter 23  
27  2  May  Flex Day  
(to be used for discussion/integration of topics or to move to take advantage of opportunities)  
4  May  Reading Day!  

Exam 4 + Final Exam  
TR, T, R .........................................................8:00 - 9:50 am Wednesday, May 10 ............................... 8:00 am