

**PBIO 3/569A: Restoration Ecology**  
**Syllabus**  
**Winter 2008**

Instructor: Jared L. DeForest, Ph.D.  
Email: deforest@ohio.edu  
Office: 309 Porter Hall  
Phone: (740) 593-0742  
Office Hours: By appointment or immediately after class  
Lecture: MW, 9 - 10, Porter Hall 417  
Laboratory: T, 1 - 3, Porter Hall 304  
Website: Blackboard

**Course Objectives:**

The goals of this course are to acquaint students with the fundamentals of restoration ecology with the intent of applied land management. Students will learn (1) the philosophy & challenges restoration ecologists face such as time & monetary restrictions; (2) the principles of restoration at several scales-from reintroducing an endangered species to communities; (3) the basic principles of biodiversity & biogeochemistry to restore ecosystem function. An integral portion of the course will be used to develop a working restoration plan to restore/reclaim an actual parcel of land. Course will discuss several scales of restoration (organism to landscape), but emphasis will be placed on a holistic approach to terrestrial ecosystem restoration in context of a changing climate.

**Course Materials:**

A variety of peer-review journal articles will be used. Example journals: *Restoration Ecology*, *Forest Ecology & Management*, and *Ecological Applications*.

**Grades:**

Course grades are weighted as follows:

Exam I	10%	Lab Assignments	20%
Exam II	10%	Restoration Plan: Written	15%
Final Exam	15%	Restoration Plan: Oral	10%
Class Participation	10%	Weekend Field Trips	10%

The two exams are 50 minutes and will be graded on a 100 point scale. Exams cannot be made-up without prior notice to the instructor. Final letter grades will be assigned based upon the OU grading scale.

**Lecture Topic Schedule**  
(subject to change)

<b>Week</b>	<b>Starting Date</b>	<b>Subject</b>
1	1/7	Introduction & Problems
2	1/14	Philosophies & Challenges in Restoration
3	1/21	MLK Day (NO CLASS)
	1/23	Mechanics in Ecological Restoration & Land Management
4	1/28	<b>Exam I</b>
	1/30	Disturbance & Succession
5	2/4	Biodiversity & Restoration
6	2/11	Biogeochemistry & Ecosystem Functioning
7	2/18	<b>Exam II</b>
	2/20	Issues of Scale: Individual to Landscape
8	2/25	Anthropogenic & Exotic Species Influence on Restoration
9	2/3	Metrics of Success: Indicator species
10	3/10	Synthesis and Review
Finals	3/19	<b>FINAL EXAM @ 8:00 am in Porter 417</b>

**Laboratory:**

The laboratory has three main objectives: 1) visit areas that are degraded, undergoing restoration, or reclaimed ecosystems; 2) discuss assigned readings lead by students; and 3) develop restoration proposal with teammates. Overall, the laboratory will present more 'nuts & bolts' (*i.e.*, applied) information than what is in the lecture. On weeks 2 and 3, we will depart for a field trip at 1:10 p.m., sharp, from Porter Hall 304. Please notify me in advance if you will not be able to attend a field trip. One grade point will be subtracted from your final grade for every minute you are late, no exceptions. There are two mandatory weekend field trips on January 19 and 26. These weekend field trips are an essential component of the course and each is worth 5% of your final grade. Schedule a full day for weekend field trip (8am - ~8pm).

**Laboratory Schedule**  
(subject to change)

<b>Week</b>	<b>Date</b>	<b>Subject</b>
1	1/8	Planning restoration projects (select teams)
2	1/15	Field trip - The Ridges
	<b>1/19</b>	<b>Mandatory Weekend Field Trip - The Wilds</b>
3	1/22	Field trip - Acid mine drainage
	<b>1/26</b>	<b>Mandatory Weekend Field Trip - Reclaimed Strip Mine</b>

4	1/29	TBA - Reading discussion (RD)
5	2/5	Discuss land management methods - RD
6	2/12	Discuss ecological & social criteria to judge success - RD
7	2/19	The cost of restoration, issues of scale - RD
8	2/26	Forecasting scenarios restoration Mechanics of an oral presentation
9	3/4	Invasive Species - RD
10	3/11	Oral Presentations

### Restoration Plan:

The restoration plan will involve independent research, involve ecological theory, land management practices, budgeting, and forecasting. I consider the process of contacting agencies for the information required for the plan as important to your education as developing the plan itself. In short, I will provide basic guidelines of what is required in the plan, but no actual data about your site. For example, your team will be responsible to find your parcel of land, likely from a non- or governmental source (e.g., ODNR, US Forest Service, or Nature Conservancy). The plan will be written in the form of a proposal and will provide all the necessary information to restore/reclaim a real parcel of land that has been altered by human activities. An oral presentation will be given of the restoration proposal to a theoretical government agency to implement the plan. Evaluation of restoration plan will be assessed by three means; *Critical Thinking* (analyze & evaluate), *Creative Thinking* (idea development), and *Practical Thinking* (problem solving).

### Restoration Plan Assignment Schedule

Week	Date	Assignment	Assignment Due
1	1/8	Select Site & Project	---
2	1/15	---	Site Description
3	1/22	Start Introduction	Project Description
4	1/29	Start Land Management Plan	Introduction
5	2/5	---	---
6	2/12	Start Budget Plan	Land Management Plan
7	2/19	Start Oral Presentation	---
8	2/26	Start Forecasting	Budget Plan
9	3/4	Start Plan Recommendations	Forecasting
10	3/11	---	Oral Presentations
	3/14	---	Restoration Plan