

Forest Ecology of the Pacific Northwest (OR & WA): CRN 40685
Session II - Summer 2004 – July 27 – September 2

Instructor: Anne Fiala

Office Hours: Lab I Rm 3064, Tuesday 11-1:00 pm, or by appointment

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Class Website: <http://academic.evergreen.edu/f/fialaa/forestecology.htm>

Class Directory: \\masu\workspace\PRG_ForestEcology\

Sub-folders:

- **Students** - students can create their own folders under this subfolder, and they have exclusive permissions here.
- **Projects** - everyone in your program has equal rights here - to swap and share stuff.
- **Handouts** - students have read-only access to the contents of this folder – I will place ppt files in this folder after class.
- **Faculty** - no student access
- **Dropbox** – kind of like a postbox. Students can hand stuff in to this folder but can't open, read, delete or copy anything out of here. Once a file is pasted to this directory, it's gone, they don't see it again. (great for handing stuff in)

Class Meetings:

Lectures: **Tu,Th** 9:00 a.m-10:50 Lab 1 2033,

Labs: **Th** 1-5 p.m., Slab I - 3041 (We will meet here and head out in the field each lab)

*One lab will be held overnight – date to be determined.

Final Exam: Thursday, August 26, 1:00 pm.

Required Course Materials:

Text: Forest Ecology. 2003. J.P. Kimmins (available from the TESC Bookstore). There is also a course reserve copy in the library available for closed check-out.

Class Fees:

To be determined. Costs will be incurred for van rental for the weekly labs and overnight field trip. In addition there will be costs for food and lodging on the overnight field trip. When these fees are determined, they will be charged to student accounts, and students will be required to pay these charges.

Be Prepared:

The labs will be conducted in the field so we can get hands-on experience in forest ecosystems. Please come prepared to spend several hours in ambient weather conditions. Due to possible exposure to cold temperatures, rain, and/or poison oak, **no one should attend lab in shorts and/or sandals.** Please wear sturdy shoes.

Course Description:

This course is designed for students interested in learning about Pacific Northwest (PNW) forests. Focuses of study will include basic taxonomy, stand structure, forest dynamics and succession, nutrient cycling, disturbance and ecological issues currently facing PNW forests (e.g., post-fire management). Class time will be divided between lecture, discussion and field-based labs. There will also be one overnight field trip to visit multiple forest structure types in Washington and Oregon.

Overall Objectives:

1. To understand how forest ecosystems function and to predict how they are likely to respond to disturbance.
2. To learn techniques for gathering information about forest ecosystems that you may use or encounter throughout your life.
3. To expose you to important ecological issues currently faced by natural resource professionals and to show how knowledge of ecology can help you understand and solve similar problems.

During the term, more specific learning objectives will be given with each reading assignment.

Attendance:

Attendance at lectures, labs, and the field trip is REQUIRED. Absence from class may result in loss of credit, so please participate and come to class!

EVALUATION:

I will use four procedures to evaluate your progress toward course goals: weekly quizzes, weekly lab exercises, participation in lectures and discussion, and performance on the final exam.

Weekly Quizzes: Quizzes are given each week. They will consist of defining terms or describing topics. Answers should be short and to the point. The quizzes will help to make sure you are understanding some of the important topics covered, and give you an idea of the types of questions that may be in the final exam.

Research Paper Discussion: Each student (in groups of 4) will be responsible for leading a discussion of a class reading. In preparation for leading a discussion, the students will prepare a list of issues and questions related to the reading. Additional data, tables, figures, or bibliographic references are welcome (but not required). These should be distributed at the beginning of the discussion if they are provided. When leading a discussion, begin with a brief summary of the “why”, “what”, and “who cares” of the paper. Then begin the discussion with a question, prompt when the discussion gets off course, and move on to the next question when you think it is time. The articles will be located in the [\\masu\workspace\PRG_ForestEcology\handouts\](#) folder.

Lab Assignments: During labs, you will be working in groups on an assigned project. Each student must turn in a separate, **self-created** lab assignment. Identical write-ups are unacceptable. Laboratory reports will be due at the beginning of the next week’s laboratory session unless otherwise noted. Attendance will be taken at each lab. If you miss a lab, do not turn in the assignment for that lab since most labs require your active participation.

Exams: There will be a final exam. The final exam will be comprehensive, covering topics presented in lecture and assigned readings during the course. Types of questions will include multiple choice, true/false, and mini-essay questions. Mini-essay questions will take 2 to 4 sentences to answer and will be scored on content and coherence. I will provide an answer key for the final exam and make it available after the final exam. If you feel I have mis-graded an answer, you may return your exam to me with a written explanation of why you deserve more credit. A reference to the source of your information (text or other published material) will improve your case. Make your explanation concise, logical, and factual.

Honesty Code: I trust that your completed assignments will be of your own creation. It is acceptable to work in groups and discuss assignments, but the final product should be your own. If you use outside resources (e.g. textbook, web sites, journal articles) to complete your work, please reference them accordingly.

Note on the Text:

Kimmins' Forest Ecology is a comprehensive textbook describing the basic ecological principles relating to Pacific Northwest forests. This book is also challenging for an undergraduate class. I use this text because it is simply the best basic forest ecology reference we have. The principal strengths of Forest Ecology are that it strives to link human activities and ecosystem processes, and that it includes information on both plants and animals. On the other hand, it contains enough details and additional references to last a lifetime!

We will work our way through most of the text. This does not, however, mean that we will emphasize everything equally, or that I will expect you to remember everything you read. I will give you reading objectives that help you focus on what I think is most important in the context of this course. At the same time, you must learn to **read with an eye toward generalization, rather than detail**. After reading a section, summarize its main points in one or two sentences.

We will begin the term by looking at "the big picture" - we will discuss the whole ecosystem and some of its functions. We will then step back and look at individual components involved in these functions. I will introduce the course with Chapters 1-3 then skip to Chapters 14-15 to focus on biological organization in ecosystems. We will then return to Chapters 4-12 to learn about plant biology and the effect of the physical environment on biological systems. Finally we will conclude with Chapters 17-19 as we learn about how forests change over time.

Summer 2004 - Lecture and Lab Schedule –Subject to Change!

WEEK	Time	Topic	Text Chapters
7/27-7/29			
Tue - Lec	9-10	Course Structure, Introduction to Forest Ecology	1,2
	10-11	Forest Ecosystems and Types in the PNW	3
Thur - Lec	9-10	Population Ecology	14
		Community Ecology	15
Lab	1-5	<u>Forest Composition</u>	
8/3-8/5			
Tue - Lec	9-10	Discussion: Evergreen coniferous forests of the Pacific Northwest - Waring and Franklin 1980	Journal article
	10-11	Productivity	4
Thur - Lec	9-10	Nutrient Cycling	5
	10-11	Ecosystem classification and intro to physical determinants	6, 7
Lab	1-5	<u>Plant Classification: Identifying Plant Associations</u>	
August 10-12			
Tue - Lec	9-10	Physical Determinants in Ecosystems – Cont'd	8-10
	10-11	Physical Determinants and Ecological Gradients	11-13
Thur - Lec	9-10	Succession	17
	10-11	Discussion: Disturbances and structural development of natural forest ecosystems with silvicultural implications, using Douglas-fir forests as an example - Franklin et al. 2002	Journal article
Lab	1-5	<u>Forest Succession - Forest Structure and Composition through Time</u>	
August 17-19			
Tue - Lec	9-10	“Natural” forest and forest health	18
	10-11	Discussion: The fallacy of passive management for firesafe forest reserves - Agee 2002	Journal article
Thur - Friday		Overnight Lab to H.J. Andrews Long Term Ecological Research Forest, Sisters Ranger District, and Wind River Experimental Forest – all day Thursday and Friday	
August 24-26			
Tue	9-10	Ecosystem Management	19
	10-11	Wrap up	
Thur - LAB	9-11	LAB (Note change of time): SOILS	? Have on Tuesday instead?
Thur - PM	1-3	<u>FINAL EXAM</u>	
August 31-Sept 2			
		Evaluation Week	

Tentative Lab Schedule -

Lab Times: All labs are on Thursdays from 1:00 – 5:00 pm and will meet in Slab I 3041, unless otherwise announced. Transportation in motor pool vans will be provided for all off campus labs.

July 29: Forest Composition

Purpose: To begin to systematically examine forest sites. We will observe biotic (the living components of the environment) features of riparian and upland forest types, comparing species composition, diversity, and distribution. (Outdoor Lab - *** Meet at the trail entrance in Parking Lot F***)

August 5: Plant Classification: Identifying Plant Associations

Purpose: To examine a plant association guide that is representative of classification systems used by resource managers. To understand strengths and weaknesses of classification guides and when and how to use them. (Outdoor Lab - Capitol Forest)

August 12: Forest Succession - Forest Structure and Composition through Time.

Purpose: To examine changes in community structure and composition over time so you will be better prepared to evaluate and project the past, present, and future development of an ecosystem. (Outdoor Lab – Capitol Forest)

*Tentatively: August 19-20: Overnight Lab to H.J. Andrews Long-Term Ecological Research Forest, Sisters Ranger District, and Wind River Experimental Forest

Purpose: In the Pacific Northwest, much of our new information about forest ecosystems and forest practices comes from research activities at these sites. During this overnight field trip we'll examine studies that have shaped many of our current concepts of old-growth forests and long term-productivity.

August 26: Soils **** Could switch to the Tuesday of that week ****

Purpose: To become familiar with abiotic and biotic characteristics of soils and to understand the incredible influence soils have on forest plant growth and development. (Outdoor Lab - TESC)