Forests Through Time and Space Fall/ Winter, 2004/05
Winter Quarter Syllabus

This all-level program will give students a solid background in forest ecology, evolutionary biology, and the socio-political forces that have shaped forest ecosystems. Central questions we will explore are:

- What is a forest?
- How do we describe forests?
- How do forests change over time and space?
- What forces in current time and throughout history have shaped the forest ecosystems and the organisms within them?
- How have these forces acted on landscapes, forests, communities, species, populations, individuals, and genes?

Fall quarter, we covered many of the fundamental concepts in forest ecology and evolutionary ecology and addressed many of our primary questions. Students became familiar with local forests and many of the dominant species within them and gained an understanding of how these organisms interact to create a functioning ecosystem. We also focused on several of the primary nutrient cycles, particularly nitrogen.

Overview of Winter Quarter

This quarter, the unifying theme for most of our work will be how humans interact with forests and how we have impacted all of the world's forests. Modern Americans tend to view forests as resources—providing raw materials for lumber, food, land for farming, a place to live. Relatively recently, we have become more aware of other services we gain from forests: clean water, habitat for a variety of ecologically and economically important species (e.g. salmon), air purification and carbon storage. Balancing these often conflicting needs often ends up emphasizing short-term over long-term benefits.

Because of the dominant role of humans in global ecology, we also will examine some of the underlying social and political forces that have shaped forests. We will begin with an overview of the threats facing tropical forests and then focus on Madagascar as a case study. This will be followed by a more in-depth look at the water and carbon cycles in forests—two of the cycles most impacted by humans. A thorough understanding of these cycles is crucial since many human impacts multiply through these cycles into myriad levels within and between forest ecosystems. We will explore some of the less obvious organisms involved in the carbon cycle with several labs in the first three weeks of the quarter. An overview of human impacts in and risks to neotropical forests will complete the faculty presentations. The last two weeks of the quarter will primarily be student presentations of research projects.

Our field trips will expose students to several different views of forests as resources, including the most technologically advanced sawmill in the world that makes extremely efficient use of every log, and a pulp mill that recycles most of the cardboard in the PNW. Trips to view two very different interpretations of sustainable forestry will complete an overview of one type of human use of PNW forests. Our last field trip will be a completely gratuitous search for mating amphibians since they will be out in force and they feel really cool (plus one of the faculty is a convicted amphibian fondler).

Student research project

Students are expected to undertake a significant independent project this quarter (six credits). There will be a number of workshops to help you develop the skills needed to succeed, however you will need to carefully structure your time to fully develop your research project and complete it on time. See the *Research Project* handout for additional details.

Faculty

Paul Przybylowicz	Lab II 3271	Ext. 6476	email: przybylo@evergreen.edu
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Required Texts

An Introduction to Tropical Rainforests, 2nd edition. by T. C. Whitmore: ISBN: 0-19-850147-1

The Diversity of Life. by E. O. Wilson: Pub date: July 1999. Paperback with study edition included. ISBN: 0393-989-801

Principles of Terrestrial Ecosystem Ecology by F. Stuart Chapin III , Pamela Matson, Harold A. Mooney. ISBN: 0387954430

Isle of Fire: The political ecology of landscape burning in Madagascar. by Christian A. Kull. 2004. University of Chicago Press. ISBN: 0-226-46141-6 (paper)

Weekly Schedule:

Our weekly schedule is as outlined to the right. Fridays will be flexible, sometimes we will have class, other days we will take field trips.

	Mon	Wed	Fri
8:00 AM			
9:00 AM	9–1 **Lecture/ Workshop** Sem II D1107	9-12 **Lecture/ Workshop** Sem II D1107	9-12 **Lecture/ Workshop** Sem II D1107 or **Field Trip** all day
10:00 AM			
11:00 AM			
12:00 PM			
1:00 PM			1:30-4:30 **Lecture/ Workshop** Sem II D1107 or **Field Trip** all day
2:00 PM	2-3 **Research Project Group Meetings** begin Week 2		
3:00 PM			
4:00 PM			
5:00 PM			

Evaluation of student progress

Similar to last quarter, your progress and understanding will be evaluated through participation in class discussions, workshops, and labs. In addition, there will be weekly study questions and quizzes for the first seven weeks of the quarter.

Your research project will be evaluated on the periodic benchmarks submitted during the quarter, as well as the quality of the final paper and presentation.

Portfolio

You are required to maintain a portfolio throughout the quarter that will serve as a compilation of all your work. We will review your portfolio at the end of the quarter. Your portfolio (in a 3-ring binder) should contain the following sections.

- Class/ Lecture/ Reading notes—You may choose to put your reading notes in a separate section
- Written answers to the weekly study questions
- Workshops and other writing assignments
- Weekly quizzes
- Field exercises/ Reports

At the end of the quarter, we will provide a checklist for your portfolio. Please keep it organized, it will be a useful resource that way.