

Forest and Soil Ecosystem Services

University of Florida

SWS 4932/SWS 6932

N.B. Comerford and others

Fall 2009

3 Credits

Course topic: Ecosystem services are the conditions and processes through which forest ecosystems, including their component soils and species, sustain and fulfill human life. These services include carbon sequestration, biodiversity, stabilization of hydrologic cycles, removal of air pollutants, aesthetic beauty, moderation of weather extremes and mitigation of natural disasters. Academic interest in ecosystem services was first evident in the refereed literature in the early 1980s but has gained significant stature only in the past decade. Likewise, policy makers have increasingly focused on ecosystem services in the past decade, developing many new incentive schemes for production of these services.

Course Goal: This course will provide a systematic overview and basic understanding of the concept of forest ecosystem services from interdisciplinary and international perspectives. Instructors and students will come from six universities in the US and Brazil. By the end of the course, students will be familiar with the categories of forest and soil ecosystem services, aware of different disciplinary approaches and literature on ecosystem services, and experienced in cross-cultural communication among Brazilian and US students. **Graduate students will develop an in-depth understanding of one forest or soil ecosystem service by developing comprehensive information on the selection of their choice. All students will spend extensive discussion time in the Message Board Room of the course. Students will also learn to bring unique and current information from all sources into the discussion.**

Pre-requisites: Course is open to all graduate and advanced undergraduates.

How to participate in the course:

Students will be able to log into the website (see site address below) using their email address. Modules, reading, etc. will be available via the site. There will also be a message board/bulletin board that will be used for students and professors to communicate. A large portion of the course will be via the message board. As you will see below, participation is mandatory.

Here are some lessons learned from last year:

1. Consistent participation is required, or the grade suffers.
2. Just logging in is not considered participation. The student must add significantly to the discussion via questions, answers, starting new threads of discussion, bringing in new articles or websites that apply. In short, this is not like a lecture where you can attend and go home. You are always in class and meaningful participation is mandatory.

3. All views are tolerated, but evidence is required. The topics get far ranging and can be socially exciting when one considers the role government can play. People's political views do come out. All views are valid and all discussion is valid as long as it is done respectfully.
4. The question comes up...how many posts a week should I make? That is not a valid question because you should be on the bulletin board daily and participating daily. The question is how well am I contributing to the discussion in both learning from others and adding to the experience.

Contact Information:

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Class Web site: <http://soils.ifas.ufl.edu/courses/soilservices/>

Teaching Assistant:

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Contact information for professors at the other universities:

Dr. Larry Morris, University of Georgia-Athens lmorris@uga.edu
Dr. Lucian Lucia, North Carolina State University lucian.lucia@ncsu.edu
Dr. Antonio Higa, Universidade Federal de Paraná higa@ufpr.br
Dr. Nariam Barros, Universidade Federal de Viçosa nfbarros@ufv.br
Dr. Renato de Almeida Sarmento, Universidade Federal de Tocantins
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Schedule of Topics

Topic 1 – Ecosystem Services (August 31 to September 9) - Comerford

- a. What are ESs?
- b. How are ESs used in concepts of sustainability and conservation
- c. What are the perceived economic values of ESs; how does one consider economic value of outside-the-market services
- d. What are the Forest and Soil ESs?

Topic 2 – Economic valuation of Forest Ecosystem Services (September 10 to September 21) - Lucia

- a. Conceptual frameworks for economic valuation
- b. Methods for non-market valuation
 - a. Stated preference
 - b. Revealed preference
- c. Overview of value estimates
- d. Limitations and alternatives to economic valuation

Topic 3 - Production Services (September 22 to October 2) - Barros

- a. Lumber and Pulp
- b. Bioenergy
- c. Chemical Extractives
- d. Charcoal
- e. Pine straw
- f. Miscellaneous

Topic 4 – Physically related Forest and Soil ESs (October 5 to October 14) - Morris

- a. Soil conservation and stability
- b. Water yield
- c. Flood mitigation

Topic 5 – Chemically related Forest and Soil ESs (October 15 to October 26) - Comerford

- a. Water quality (filtering, water treatment, biological filtering, plant remediation)
- b. Air quality
- c. Nutrient Cycling
- d. Carbon Sequestration

Topic 6 – Biologically related Forest and Soil ESs (October 27 to November 4) - Higa

- a. Biodiversity (plant and chemical)
- b. Wildlife habitat and diversity
- c. Pollination
- d. Seed Dispersal
- e. Control of Pests

Topic 7 – Case studies applying economic valuation to different categories of services reviewed in topics 4, 5, and 6 (November 5 to November 16) - Lucia

Topic 8- Spiritualism as an ecosystem service (November 17 to November 25) - Morris

Topic 9-Putting it all together (November 30 to December 2) - Comerford

Course Details:

Operation of Class:

- a. A team of professors from the University of Florida, University of Georgia, North Carolina State University, State University of New York-Syracuse, Universidade Federal de Viçosa, Universidade Federal de Tocantins and Universidade Federal de Paraná will run the course. Students will interact with the faculty from all universities.
- b. Lecture and class materials are available via the internet.

- c. Discussion will occur primarily via the bulletin board where students from all universities will deal with class material and provide their input to questions posed by the professors and fellow students. **THE BULLETIN BOARD IS MANDATORY AND VERY IMPORTANT. LACK OF PARTICIPATION IN THE BULLETIN BOARD WILL DRASTICALLY AFFECT THE STUDENT'S GRADE.**
- d. For Graduate Students, a one page proposal for a powerpoint presentation on a service of concern, including a list of 3 - 6 key references, will be due by September 29. The presentation will be due on a date worked out with the professor.
- e. Readings will be available through the course web site or the library; there is no assigned textbook.
- f. Students will find it necessary to find related materials from the web and library in order to participate in the discussion. Failure to participate and failure to bring in new information not provided by the course will adversely affect one's grade.

Methods of Assessment and Grading for graduate students:

Examinations:	45%
Bulletin Board & Attendance:	45%
Presentation:	10%

Methods of Assessment of Grading for undergraduate students:

Examinations:	60%
Bulletin Board & Attendance:	40%

Exam Schedule (3 Exams)

October 2

November 13

December 4

Final Exam.....if you are happy with your grade after 3 exams you do not have to take the final.

Academic Honesty: The University of Florida requires all members of its community to be honest in all endeavors. Cheating, plagiarism, and other acts diminish the process of learning. When students enroll at UF they commit themselves to honesty and integrity. Your instructor fully expects you to adhere to the academic honesty guidelines you signed when you were admitted to UF. As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand the University of Florida expects it students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University." Furthermore, on work submitted for credit by UF students, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." It is to be assumed all work will be completed independently unless the assignment is clearly defined as group

project, either verbally or in writing by the professor. This policy will be vigorously upheld at all times in this course.

Software Use: All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

UF Counseling Services: Students experiencing crisis or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. Both the Counseling Center and Student Mental Health provide confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal or lacking clear career and academic goals, which interfere with their academic performance. The Counseling Center is located at 301 Peabody Hall (next to Criser Hall). Student Mental Health is located on the second floor of the Student Health Services in the Infirmary.

1. University Counseling Center, 301 Peabody Hall, 392-1575; personal and career counseling: www.counsel.ufl.edu
2. Student Mental Health, Student Health Care Center, 392-1171, personal counseling: <http://www.shcc.ufl.edu/smhs/>
3. Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual assault counseling
4. Career Resource Center, Reitz Union, 392-1601, career development

Services for Students with Disabilities: The Dean of Students Office coordinates the needed accommodations of students with disabilities. This includes the registration of disabilities, academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services, and mediating faculty-student disability related issues. Dean of Students Office, 202 Peabody Hall, 392-7066, www.dso.ufl.edu