

Syllabus

Spring 2013 PINEMAP Distance Graduate Course: Climate and Forests

Course Coordinators

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Course Goals

- Explore climate change mitigation and adaptation issues in southern pine forests.
- Build capacity for integration among research disciplines and between research and education/extension.

Course Objectives

- Increase understanding of southern pine management, climate, climate change, carbon sequestration, and environmental controls on southern pine productivity.
- Increase understanding of the policy and economic realities and opportunities driving regional pine forest management.
- Increase understanding of education and communication principles as applied to effective outreach strategies, the process of program development and evaluation, and the strategies used by Cooperative Extension to support changes in behavior.
- Gain an appreciation for the breadth and complexity of the impact of climate change on southern pine forests.

Format

- 2 credit, letter-graded distance course; students register for course at home institution.
- Live course webinars will be broadcast via Adobe Connect **Tuesday, 9:30-11 a.m. EST.**
 - Live webinars are scheduled on the following dates: Jan. 15, Jan. 22, Jan. 29, Feb. 5, Feb. 12, Feb. 19, Feb. 26, March 26, April 2, April 9, April 16, and April 23.
 - To join the webinars, click on this link: <http://ufifas.adobeconnect.com/pinemap-grad-course/>, select "Enter as Guest," type your name, and click "Enter Room."
 - You will need access to a computer with high speed Internet and a USB headset with a microphone to participate in the webinars.
- You are required to complete readings each week and attend/participate in live webinars. If you miss a live webinar, recordings will be available.
- You are also required to post comments and responses on the online discussion board for 12 of the 15 course weeks.
- All materials and the online discussion board are hosted on the course web site: <http://gradcourse.pinemap.org>. To log in to the course web site the first time, enter your e-mail address, leave the password field blank, and click "log in"; the site will then ask you to create a password.

Assignments

Assignment 1: Individual research assignment

PINEMAP is designed to integrate interdisciplinary research to produce real world outcomes for planted pine management. This concept has two aspects: 1) integrating different research disciplines such as forestry and wildlife or social and biological sciences and 2) translating applied research results to users and stakeholders through education and Extension programs.

This assignment is designed to help you think about how this process works by reading two papers that demonstrate integration of research disciplines and interviewing a scientist who is interested in interdisciplinary applied research. A 5 page, double-spaced paper is due March 26. Detailed instructions for the assignment are posted on the course web site.

Assignment 2: Group Extension assignment

A key aspect of extension work is to know the material well enough to be able to teach the salient points (learning objectives) so that they can be delivered to your audience in a suitable format, language, and style that they can interpret and use. In some cases this means simplifying the message to get a point across. Remember you might be the most knowledgeable person in the room but if you can't make your audience understand the topic you'll have failed to transfer knowledge.

You will be assigned to an interdisciplinary group. Each group will develop an Extension fact sheet for a specific audience group, have the fact sheet evaluated by a team of reviewers, and synthesize feedback and revise the fact sheet. Groups will give a presentation and turn in a 2-3 page double-spaced paper on April 23. Detailed instructions for the assignment are posted on the course web site.

Grading

Grades will be based on three components: Assignment 1, Assignment 2, and online discussion; final grades will be assigned by your faculty advisor.

- **Assignment 1: 40 points**
- **Assignment 2: 30 points**
- **Online discussion: 30 points** (12 weeks, 2.5 points/week)
 - You are required to post **twice** on the online discussion board 12 of the 15 course weeks; you should post by midnight Saturday and Monday prior to the following dates: Jan. 22, Jan. 29, Feb. 5, Feb. 12, Feb. 19, Feb. 26, March 5 or 12, March 12 or 19, March 26, April 2, April 9, and April 16.
 - Your overall discussion grade will be determined by frequency, length, and thoughtfulness of your posts.

Course Schedule

You are expected to have read the indicated materials in advance of the corresponding date.

Prior to January 15

1. Develop 1-2 PowerPoint slides to introduce yourself to the class and e-mail to Jessica Ireland (jjtireland@ufl.edu) no later than January 14. Be prepared to introduce yourself during the Jan. 15 webinar.
2. Review Adobe Connect Instructions and check system requirements on your computer.
3. Log in to and familiarize yourself with the course web site, <http://gradcourse.pinemap.org>

Week 1 January 15

Welcome; course overview and introductions; climate basics

Live webinar Heather Dinon Aldridge, Applied Climatologist, State Climate Office of North Carolina

Optional readings:

1. Chapters 1 & 2 in: Ingram, K.T., K. Dow, and L. Carter. 2012. *Southeast Region Technical Report to the National Climate Assessment (DRAFT)*.
2. National Research Council of the National Academies. 2012. *Climate Change: Evidence, Impacts, and Choices: answers to common questions about the science of climate change*

Week 2 January 22

Climate modeling

Live webinar View lecture video, *High-resolution Climate Projections: Where do they come from and what can we use them for?* Dr. Katharine Hayhoe, Research Associate Professor of Atmospheric Sciences, Texas Tech University; discussion with Heather Dinon Aldridge

Readings/Videos:

1. Hayhoe, K., B. Jones, and J. Gross. 2011. Climate and Ecological Models in Glick, P., B.A. Stein, and N.A. Edelson, eds. *Scanning the Conservation Horizon: A Guide to Climate Change Vulnerability Assessment*. National Wildlife Federation, Washington, DC. [read pp. 51-61, stopping at “Ecological Response Models” on pg. 61]
2. View animated slideshow, “How Do Climate Models Work?”: <https://koshland-science-museum.org/explore-the-science/earth-lab/modeling> [click the “play” button twice to start the slideshow; be sure to watch all 4 stories embedded in the slideshow: Model Overview: How Do Climate Models Work?; Testing Models: How Are Climate Models Tested?; Diagnosing the Past: What Causes Climate Change?; and Estimating the Future: How Will Our Decisions Affect Climate?]
3. Watch video “Global Dynamical Climate Models-what they are and what they are not (part 1): <http://www.gfdl.noaa.gov/e-media-produced-by-gfdl-ccvp#cm101> [click on second video in “Climate Modeling 101 Video Series”]

****Post on online discussion board by midnight Saturday and Monday prior to Jan. 22.****

Week 3
January 29

Forestry basics

Live webinar Tim Martin, Professor, PINEMAP Project Director, School of Forest Resources and Conservation, University of Florida

Readings:

1. Guldin, J.M. and R.W. Guldin. 2003. Forest Management and Stewardship. In: *Introduction to Forest Ecosystem Science and Management, Third Edition*, R.A. Young and R.L. Giese, Eds. John Wiley and Sons, Hoboken, NJ. pp. 179-220. [read pp. 179-191 in detail, skim pp. 192-220]

****Post on online discussion board by midnight Saturday and Monday prior to Jan. 29.****

Week 4
February 5

Forests and climate

Live webinar Robert Teskey, Distinguished Research Professor, Warnell School of Forestry and Natural Resources, University of Georgia

Readings:

1. Leuzinger, S., Y. Luo, C. Beier, W. Dieleman, S. Vicca, and C. Körner. 2011. Do global change experiments overestimate impacts on terrestrial ecosystems? *Trends in Ecology and Evolution*. 26(5): 237-241.
2. Millar, C.I., N.L. Stephenson, and S.L. Stephens. 2007. Climate change and forests of the future: Managing in the face of uncertainty. *Ecological Applications* 17(8):2145-2151.
3. Ryan, M.G., M.E. Harmon, R.A. Birdsey, C.P. Giardina, L.S. Heath, R.A. Houghton, R.B. Jackson, D.C. McKinley, J.F. Morrison, B.C. Murray, D.E. Pataki, and K.E. Skog. 2010. A synthesis of the science on forests and carbon for U.S. forests. *Issues in Ecology* 13:1-16.

****Post on online discussion board by midnight Saturday and Monday prior to Feb. 5.****

Week 5
February 12

Genetics and adaptation

Live webinar John Davis, Professor of Forest Biotechnology and Molecular Biology, School of Forest Resources and Conservation, University of Florida

Readings:

1. Schmidtling, R.C. 2001. *Southern pine seed sources*. USDA Forest Service Southern Research Station General Technical Report SRS-44.

****Post on online discussion board by midnight Saturday and Monday prior to Feb. 12.****

Week 6
February 19

Life cycle assessment

Live webinar Doug Carter, Professor, School of Forest Resources and Conservation, University of Florida

Readings:

1. Malmsheimer, R.W. *et al.* 2008. Chapter 3: Preventing GHG emissions through wood substitution. *Journal of Forestry* 106(3): 132-135.
2. Malmsheimer, R.W. *et al.* 2008. Chapter 4: Preventing GHG emissions through biomass substitution. *Journal of Forestry* 106(3): 136-140.

****Post on online discussion board by midnight Saturday and Monday prior to Feb. 19.****

Week 7
February 26

Climate change perceptions

Live webinar Martha Monroe, Professor and Extension Specialist, School of Forest Resources and Conservation, University of Florida

Readings:

1. McCright, A.M. and R.E. Dunlap. 2011. Cool dudes: The denial of climate change among conservative white males in the United States. *Global Environmental Change* 21: 1163-1172.
2. Moser, S.C. 2010. Communicating climate change: history, challenges, process, and future directions. *Wiley Interdisciplinary Reviews: Climate Change* 1(1): 31-53.

****Post on online discussion board by midnight Saturday and Monday prior to Feb. 26.****

Week 8
March 5 or 12
(depending on
your Spring
Break week)

Southern Forest Futures

Asynchronous work

1. Complete reading:
Wear, D.N. and J.G. Greis. 2011. *The Southern Forest Futures Project: Summary Report*. USDA Forest Service Southern Research Station.
2. View webinar recording, *Southern Forest Futures: Comparing driving forces*, David N. Wear, Project Leader, USDA Forest Service, Economics of Forest Protection and Management

****Post on online discussion board at least twice prior to March 5 or 12.****

Week 9
March 12 or 19
(depending on
your Spring
Break week)

Introduction to Extension and Assignment 2

Asynchronous work

1. Complete readings:
 - a. Miller, J.E. 2001. How to write low literacy materials. *Journal of Extension* 39(1).
 - b. University of Wisconsin-Extension. 2003. *Welcome to Enhancing Program Performance with Logic Models* [Read pp. 7-25]
 - c. Optional: University of Wisconsin-Extension. 2001. *Cooperative Extension Program Planning in Wisconsin*.
2. View narrated PowerPoint presentation, *Introduction to Extension and Assignment 2*, Martha Monroe
3. Complete web quest, *Exploring the World of Extension*.

****Post on online discussion board at least twice prior to March 12 or 19.****

Week 10

Spring Break (during week of March 5, 12, or 19)

Week 11
March 26

Extension audience assessment: Forest landowners

Live webinar Bill Hubbard, Southern Regional Extension Forester

Readings:

1. Butler, B.J., M. Tyrrell, G. Feinberg, S. VanManen, L. Wiseman, and S. Wallinger. 2007. Understanding and reaching family forest owners: Lessons from social marketing research. *Journal of Forestry* 105(7):348-357.
2. Kittredge, D.B. 2004. Extension/outreach implications for America's family forest owners. *Journal of Forestry* 102(7):15-18.
3. Measells, M.K., S.C Grado, H.G. Hugues, M.A. Dunn, J.O. Idassi, and R.J. Zielinske. 2006. Educational Needs of Southern Forest Landowners. *Journal of Extension* 44(5). <http://www.joe.org/joe/2006october/rb4.php>
4. Salmon, O., M. Brunson, and M. Kuhns. 2006. Benefit-Based Audience Segmentation: A Tool for Identifying Nonindustrial Private Forest (NIPF) Owner Education Needs. *Journal of Forestry* 104(8): 419-425.
5. Snyder, L.B. and S.H. Broderick. 1992. Communicating with woodland owners: Lessons from Connecticut. *Journal of Forestry* 90(3):33-37.
6. Telg, R., T. Irani, and J. Varvorines. 2008. *Extension marketing: Campaign planning and audience analysis*. EDIS publication AEC397. Gainesville, FL: University of Florida IFAS Extension.
7. For Assignment 2, read at least one reading for your specific audience group (list provided in Assignment 2 description).

****Post on online discussion board by midnight Saturday and Monday prior to Mar. 26.****

Week 12
April 2

Assignment 2 discussion

Live webinar Discuss Assignment 2 ideas, ask questions, get feedback

****Post on online discussion board by midnight Saturday and Monday prior to April 2.****

Week 13
April 9

Extension product quality control

Live webinar Mark Megalos, Extension Forestry Specialist, Department of Forestry and Environmental Resources, North Carolina State University

Readings:

1. Douglass, M. 1998. *Developing a Concept of Extension Program Evaluation*. University of Wisconsin-Extension.
2. Herron, E., K. Stepenuck, and L. Green. 2009. *Tools for Effective Outreach: Getting the Word Out. Volunteer Water Quality Monitoring Factsheet XII*. University of Rhode Island and University of Wisconsin.
3. Lenart, M. 2011. *Translational science writing: Poster to web-based factsheet*. Presentation given at National In-Service on Climate & Forests Extension Programming.

****Post on online discussion board by midnight Saturday and Monday prior to April 9.****

Week 14**April 16****Integration and team science**

Live webinar Wendy-Lin Bartels, Research Associate, Department of Agricultural Communication and Education, University of Florida

Readings:

TBD

****Post on online discussion board by midnight Saturday and Monday prior to April 16.****

Week 15**April 23****Assignment 2 presentations; course evaluation**

Live webinar
