Seminar on Contemporary Environmental Issues in Forest Ecosystems

GEOGRAPHY 372 / BIOLOGY 373, Spring 2010, Thursdays 2:50 – 5:50
202 Jefferson Academic Center
Professor: D. Kulakowski, Email: dkulakowski@clarku.edu
Office: 105 Jefferson Academic Center
Office hours: Mondays 2:40 pm – 4:40 pm and by appointment

Seminar topic
Forests are among the most important ecosystems on Earth and they are being greatly affected by climate change and human activities. Understanding how ecosystems function and how they change in response to human activities and fluctuations in the Earth system are important goals of contemporary geographical and ecological research. Beyond having inherent scientific value, such inquiries have become integral to national and international policies and practices of ecosystem management. This graduate-level seminar considers contemporary research themes in the field of forest ecology. The seminar will examine primary literature dealing with topics such as the effects of climate change on forest ecosystems and the causes and consequences of natural and anthropogenic disturbances in forest ecosystems.

Course structure
Class will meet once per week. During the first approximately ten weeks of the semester class time will be devoted to discussing and critically evaluating selected journal articles. It is imperative that everyone do all the reading prior to class and come prepared to discuss it. Each week each students will be asked to briefly summarize and begin the discussion of one of the assigned readings. When reading the papers keep in mind key questions such as but not limited to:

- What is the main message or contribution of this paper?
- Are the conclusions justified based on the evidence and logic presented?
- Why is it important?
- How does it fit into the larger body of literature?

The final one-third of the semester will consist mainly of student-led seminar presentations of their term papers.

Note: Class will not be held on March 11 (Spring break) and April 15 (AAG meeting)

Grading: The final course grade will be based on the following:

10% weekly presentations of papers
40% Term paper
20% Oral presentation of term paper
30% Overall contribution to the seminar
Seminar Schedule and Assigned Readings - GEO 372/BIO 373 - Spring 2010

Specific readings from the list below will be assigned on a weekly basis. Additional readings may be added as new journal articles are published. Your suggestions of other relevant readings are also welcome. Additional readings relate to student-led seminar topics will also be assigned.

Key concepts of forest ecology and management


Indirect climatic effects: insect outbreaks


Kuparinen, A., O. Savolainen, F. M. Schurr. 2010. Increased mortality can promote evolutionary adaptation of forest trees to climate change Forest Ecology and Management in press.


Indirect climatic effects: forest fires


Kitzberger, T., P. M. Brown, E. K. Heyerdahl, T. W. Swetnam, and T. T. Veblen. 2007. Continental-Scale Synchrony in Wildfires and Climate in Western North America over the Past 5 Centuries. PNAS.


Interacting disturbances


Indirect climatic effects: forest die-off


Policy considerations


