LANDSCAPE ECOLOGY (Spring 2008)
GEO5934-05/GEO4930-07

Class meets: Tuesday 11:00 am-1:30 pm, Room 317 Bellamy
Office hour: Tuesday 4-6 pm or by appointment

Instructor
Dr. Tingting Zhao, Department of Geography, 304 Bellamy
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Credit Hours: 3

Course Objectives
This course is designed to introduce students to concepts, methods, and applications of landscape ecology. Students are expected to understand how landscape structure and spatial configuration affect ecological processes through 1) class lectures, 2) reading and discussion of literature, and 3) an oral and written report on a chosen topic of landscape ecology.

Readings
Required Textbook
Turner, M., Gardner, R.H. and O'neill, R.V., 2003, *Landscape Ecology in Theory and Practice: Pattern and Process*. Springer.

Recommended Textbooks
Forman, R.T.T. and Wilson, E.O., 1995, *Land Mosaics: The Ecology of Landscapes and Regions*. Cambridge University Press.
Wiens, J.A. and Moss, M.R., 2005, *Issues and Perspectives in Landscape Ecology*. Cambridge University Press.

Journal Articles
Adler, P.B., Raff, D.A., and Lauenroth, W.K., 2001, The effect of grazing on the spatial heterogeneity of vegetation. Oecologia 128 (4): 465-479.
Arnot, C., Fisher, P.F., Wadsworth, R., and Wellens, J., 2004, Landscape metrics with ecotones: pattern under uncertainty. *Landscape Ecology* 19 (2): 181-195.
Foster, D.V., 1992, Land-use history (1730-1990) and vegetation dynamics in Central New England, USA. *Journal of Ecology* 80 (4): 753-771.
Hatt, B.E., Fletcher, T.D., Walsh, C.J., Taylor, S.L., 2004, The influence of urban density and drainage infrastructure on the concentrations and loads of pollutants in small streams. *Environmental Management* 34 (1): 112-124.
McGarigal, K. and Marks, B.J., 1995, FRAGSTATS: spatial pattern analysis program for quantifying landscape structure. Portland (OR): USDA Forest Service, Pacific Northwest Research Station; General Technical Report PNW-GTR-351.
Schumaker, N.H., 1996, Using landscape indices to predict habitat connectivity. *Ecology* 77 (4): 1210-1225.

Stephens, S.E., Koons, D.N., Rotella, J.J .and Willey, D.W., 2003, Effects of habitat fragmentation on avian nesting success: A review of the evidence at multiple spatial scales. *Biological Conservation* 115 (1): 101-110.
Taverna, K., Urban, D.L., McDonald, R.I., 2005, Modeling landscape vegetation pattern in response to historic land-use: A hypothesis-driven approach for the North Carolina Piedmont, USA. *Landscape Ecology* 20 (6): 689-702.
Thompson, C.M. and McGarigal, K., 2002, The influence of research scale on bald eagle habitat selection along the lower Hudson River, New York (USA). *Landscape Ecology* 17 (6): 569-586.
Tischendorf, L. and Fahrig, L., 2000, On the usage and measurement of landscape connectivity. *Oikos* 90 (1): 7-19.
Turner, D.P., Cohen, W.B. and Kennedy, R.E., 2000, Alternative spatial resolutions and estimation of carbon flux over a managed forest landscape in Western Oregon. *Landscape Ecology* 15: 441-452.
Urban, D.L., 2005, Modeling ecological processes across scales. *Ecology* 86 (8): 1996-2006.
Wang, D.H. and Medley, K.E., 2004, Land use model for carbon conservation across a midwestern USA landscape. *Landscape and Urban Planning* 69 (4): 451-465.
With, K.A., Gardner, R.H., Turner, M.G., 1997, Landscape connectivity and population distributions in heterogeneous environments. *Oikos* 78 (1): 151-169.

Electronic Materials
Class announcements, part of lecture materials, and journal articles will be posted on Blackboard course site LANDSCAPE ECOLOGY (GEO5934/4930, Sp08).

Oral and Written Report
Students will be divided into groups of 2-3 persons. Each group is required to organize a full session of class. For the session you lead, your responsibility includes selecting a topic relevant to landscape ecology, determining 2-3 journal articles (or book chapters) for you and the rest of class to read, making a 50-minute oral presentation, and leading discussion of the chosen articles. You are also required to submit a report (single-space two pages excluding figures, tables, and citation) by the end of the semester, summarizing concept, progress and future work of the topic you selected to present.

Grading
Your grade will be determined based on combined performance of contribution to class discussion (30%), oral presentation (30%), and written report (40%).

Course Policies
Attendance is required throughout the semester. Persistent informal talking and any reading or studying of other materials will not be tolerated. All changes to the course schedule made in class are the responsibility of the student. You are responsible for all missed class materials. Office appointments will be made only when there is a clear conflict with the student's course schedule.

Honor Code Statement
The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "be honest and truthful and…[to] strive for personal and institutional integrity at Florida State University" (Academic Honor Policy, http://www.fsu.edu/~dof/honorpolicy.htm).

Americans with Disabilities Act
During the first week of class, students needing academic accommodations should: 1) register with and provide documentation to the Student Disability Resource Center; and 2) bring a letter to the instructor from the Student Disability Resource Center, indicating the need for academic accommodations. For more information about services available to FSU students with disabilities, contact

Student Disability Resource Center
97 Woodward Avenue, South
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu

Syllabus Change Policy
This syllabus is subject to change with advance notice. The class schedule on our Blackboard course site gives the most up-to-date listing of our schedule.

Schedule
(subject to change)

Week	Date	Topic	Readings
1	Jan 8	Introduction	Turner 1
2	Jan 15	Scale	Turner 2; Tuner *et al.* 2000, Urban 2005
3	Jan 22	Pattern	Turner 4,5; McGarigal & Marks 1995
4	Jan 29	Patch and boundary	Forman 2,3; Arnot *et al.* 2004
5	Feb 5	Connectivity	Tischendorf & Fahrig 2000; Schumaker 1996, With *et al.* 1997
6	**Feb 12**	Model and hypothesis test	Turner 3,6; Taverna *et al.* 2005
	Topics and suggested readings for the student-led session due in class		
7	Feb 19	Ecosystem process	Turner 9; Wang & Medley 2004, Hatt *et al.* 2004
8	Feb 26	Habitat selection	Turner 8; Thompson and McGarigal 2002, Stephens *et al.* 2003
9	Mar 4	Landscape dynamics	Turner 7, Forman 12; Foster 1992, Adler *et al.* 2001
10	*Spring break. No class. Have fun!*		
11	**Mar 18**	**Student-led session I**	TBD
12	**Mar 25**	**Student-led session II**	TBD
13	**Apr 1**	**Student-led session III**	TBD
14	**Apr 8**	**Student-led session IV**	TBD
15	*AAG. No class. Travel safely!*		
16	**Written report due by 5 pm on Tuesday, Apr 22.** No delay will be accepted.		