

Professor: Brett Goodwin

Phone: 777-2757

Meeting: Wed. 10:00 – 10:50, Starcher 103

Web page: via Blackboard (readings – PDF if available.)

Office: SH 215

e-mail: brett.goodwin@und.nodak.edu

Office hours: Mon. 10:00 – 10:50

Course Description and Objectives:

Through reading and discussion of topical papers, this course will both introduce you to the field of landscape ecology and explore some of the current advances in landscape ecology.

Additionally, the class discussions should allow you to develop your reading, reasoning and debating skills.

Evaluation:

Response to papers (5% each).....	70%	A ≥ 90%
Leading discussion	20%	B ≥ 80%
Reflective essay	10%	C ≥ 70%
		D ≥ 60%

Response to papers: Every week you will need to respond to the papers we are discussing both verbally during class and in writing before class. For your written response, you should record things such as questions about the paper, observations, thoughts about further research that could be done, critiques, etc. Make two copies of your written response – one will be handed to me at the beginning of the meeting for grade, the second you will keep to refer to during the discussion.

Leading discussion: Each student will be responsible for leading one discussion during the semester. To do so you will need to choose a second paper to complement the assigned reading. Provide the reference and either a copy or a PDF (preferred) to me at least a week before the meeting you will be leading. For the actual meeting you will need to moderate the discussion. This will mean that you will need to know the papers exceedingly well, have some background in the topics under discussion, and have some questions/topics for discussion planned for the inevitable lags in the conversation.

Reflective essay: Within one week of leading a discussion you will need to hand in a reflective essay for grade. In this essay you should reflect on the discussion that you lead. How did it go? What worked and what didn't? What would you do different next time? All of you will need to lead discussions at some point in your career and this exercise should help you to think about how to do that effectively. These essays should be at least three pages and need to be typed.

Tentative Schedule:

Week of	Topic	Assigned Reading
Jan. 10	No class on Jan. 10 Set up and organize	
Jan. 17	What is landscape ecology?*	(Turner 1989, Pickett and Cadenasso 1995)
Jan. 24	Spatial scale	(Schneider 2001)
Jan. 31	Causes of landscape pattern - disturbance	(Foster et al. 1998)
Feb. 7	Causes of landscape pattern - biotic	(Pickett et al. 2000)
Feb. 14	Quantifying landscape pattern	(Gustafson 1998)
Feb. 21	Quantifying landscape pattern	(Gehring and Swihart 2003)
Feb. 28	Neutral landscape models	(With and King 1997)
Mar. 7	Modeling landscapes	(Baker 1989)
Mar. 14	Spring Recess – no meeting this week	
Mar. 21	Conference – no meeting this week	
Mar. 28	Landscapes and populations	(Trzcinski et al. 1999)
Apr. 4	Organism movement - corridors	(Berggren et al. 2002)
Apr. 11	Organism movement - connectivity	(Goodwin 2003)
Apr. 18	Landscapes and communities	(Krauss et al. 2003)
Apr. 25	Landscapes and conservation biology	(Whited et al. 2000)
May 2	The future of landscape ecology*	(Wu and Hobbs 2002)
May 9	Exam Week	

* I will lead these discussions.

Literature Cited

Baker, W. L. 1989. A review of models of landscape change. *Landscape Ecology* **2**:111-133.

Berggren, A., B. Birath, and O. Kindvall. 2002. Effect of corridors and habitat edges on dispersal behavior, movement rates, and movement angles in Roesel's bush-cricket (*Metrioptera roeseli*). *Conservation Biology* **16**:1562-1569.

Foster, D. R., D. H. Knight, and J. F. Franklin. 1998. Landscape patterns and legacies resulting from large, infrequent forest disturbances. *Ecosystems* **1**:497-510.

Gehring, T. M. and R. K. Swihart. 2003. Body size, niche breadth, and ecologically scaled responses to habitat fragmentation: mammalian predators in an agricultural landscape. *Biological Conservation* **109**:283-295.

Goodwin, B. J. 2003. Is landscape connectivity a dependent or independent variable? *Landscape Ecology* **18**:687-699.

- Gustafson, E. J. 1998. Quantifying landscape spatial pattern: what is state of the art? *Ecosystems* **1**:143-156.
- Krauss, J., I. Steffan-Dewenter, and T. Tschardt. 2003. How does landscape context contribute to effects of habitat fragmentation on diversity and population density of butterflies? *Journal of Biogeography* **30**:889-900.
- Pickett, S. T. A. and M. L. Cadenasso. 1995. Landscape ecology: Spatial heterogeneity in ecological systems. *Science* **269**:331-334.
- Pickett, S. T. A., M. L. Cadenasso, and C. G. Jones. 2000. Generation of heterogeneity by organisms: creation, maintenance and transformation. Pages 33-52 in M. J. Hutchinson, E. A. John, and A. J. A. Stewart, editors. *Ecological consequences of environmental heterogeneity*. Blackwell Science Ltd., Oxford.
- Schneider, D. C. 2001. The rise of the concept of scale in ecology. *BioScience* **51**:545-553.
- Trzcinski, M. K., L. Fahrig, and G. Merriam. 1999. Independent effects of forest cover and fragmentation on the distribution of forest breeding birds. *Ecological Applications* **9**:586-593.
- Turner, M. G. 1989. Landscape ecology: The effect of pattern on process. *Annual Review of Ecology and Systematics* **20**:171-197.
- Whited, D., S. Galatowitsch, J. R. Tester, K. Schik, R. Lehtinen, and J. Husveth. 2000. The importance of local and regional factors in predicting effective conservation - Planning strategies for wetland bird communities in agricultural and urban landscapes. *Landscape and Urban Planning* **49**:49-65.
- With, K. A. and A. W. King. 1997. The use and misuse of neutral landscape models in ecology. *Oikos* **79**:219-229.
- Wu, J. and R. Hobbs. 2002. Key issues and research priorities in landscape ecology: An idiosyncratic synthesis. *Landscape Ecology* **17**:355-365.

Any student that needs special accommodations for learning or has special needs should discuss these needs with me as soon as possible.

Academic dishonesty (see the Code of Student Life) will result in a mark of 0 on the assignment. A second act of academic dishonesty will result in a mark of 0 in the course.