

**Professor:** Brett Goodwin

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**Meeting:** Wed. 13:00 – 14:50, Starcher 103

**Office hours:** by appointment

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

**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:**

	A ≥ 90%
Response to papers (5% each).....50%	B ≥ 80%
Leading discussion (10% each).....30%	C ≥ 70%
Reflective essays (2%, 4%, 4%).....10%	D ≥ 60%

**Leading discussion:** Each student will be responsible for leading three discussions 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.

**Response to papers:** When you are not leading the discussion 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.

**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. 7	No meeting this week – pick time	
Jan. 14	Administration, background	
Jan. 21	What is landscape ecology?*	(Turner 2005)
Jan. 28	Quantifying landscape pattern I	(Li and Wu 2004)
Feb. 4	Quantifying landscape pattern II	(Winfrey et al. 2005)
Feb. 11	Quantifying landscape pattern III	(Jaeger et al. 2007)
Feb. 18	Organism movement I	(Rizkalla and Swihart 2007)
Feb. 25	Organism movement II	(Bélisle 2005)
Mar. 3	<b>Spring Recess – no meeting this week</b>	
Mar. 10	Organism movement III	(Fahrig 2007)
Mar. 17	Landscapes and populations I	(Fleishman and MacNally 2007)
Mar. 24	Landscapes and populations II	(Driscoll and Weir 2005)
Mar. 31	Landscapes and populations III	(Bender and Fahrig 2005)
Apr. 7	Landscapes and communities I	(Collinge et al. 2003)
Apr. 14	Landscapes and communities II	(Ewers et al. 2007)
Apr. 21	Landscapes and communities III	(Krauss et al. 2003)
Apr. 28	Wrap up	
May 5	<b>Exam Week</b>	

\* I will lead this discussion.

### Policies:

If you have emergency medical information to share with me, if you need special arrangements in case the building must be evacuated, or if you need accommodations in this course because of a disability, please make an appointment with me as soon as possible. If you plan to request disability accommodations, you are expected to register with the Disability Support Services (DSS) office (190 McCannel Hall, 777-3425 v/tty).

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

### REFERENCES CITED

Bélisle, M. 2005. Measuring landscape connectivity: The challenge of behavioral landscape ecology. *Ecology* **86**:1988-1995.

Bender, D. J. and L. Fahrig. 2005. Matrix structure obscures the relationship between interpatch movement and patch size and isolation. *Ecology* **86**:1023-1033.

Collinge, S. K., K. L. Prudic, and J. C. Oliver. 2003. Effects of local habitat characteristics and landscape context on grassland butterfly diversity. *Conservation Biology* **17**:178-187.

- Driscoll, D. A. and T. Weir. 2005. Beetle responses to habitat fragmentation depend on ecological traits, habitat condition, and remnant size. *Conservation Biology* **19**:182-194.
- Ewers, R. M., S. Thorpe, and R. K. Didham. 2007. Synergistic interactions between edge and area effects in a heavily fragmented landscape. *Ecology* **88**:96-106.
- Fahrig, L. 2007. Non-optimal animal movement in human-altered landscapes. *Functional Ecology* **21**:1003-1015.
- Fleishman, E. and R. MacNally. 2007. Measuring the response of animals to contemporary drivers of fragmentation. *Canadian Journal of Zoology* **85**:1080-1090.
- Jaeger, J. A. G., H.-G. Schwarz-von Raumer, H. Esswein, M. Müller, and M. Schmidt-Lüttmann. 2007. Time series of landscape fragmentation caused by transportation infrastructure and urban development: a case study from Baden-Württemberg, Germany. *Ecology and Society* **12**:22. [online] URL: <http://www.ecologyandsociety.org/vol12/iss1/art22/>.
- 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.
- Li, H. and J. Wu. 2004. Use and misuse of landscape indices. *Landscape Ecology* **19**:389-399.
- Rizkalla, C. E. and R. K. Swihart. 2007. Explaining movement decisions of forest rodents in fragmented landscapes. *Biological Conservation* **140**:339-348.
- Turner, M. G. 2005. Landscape ecology: What is the state of the science? *Annual Review of Ecology Evolution and Systematics* **36**:319-344.
- Winfree, R., J. Dushoff, E. E. Crone, C. B. Schultz, R. V. Budny, N. M. Williams, and C. Kremen. 2005. Testing simple indices of habitat proximity. *American Naturalist* **165**:707-717.