Env St 806 and Geog 930: Local and Regional Approaches to Sustainability and Vulnerability

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During the 1960s and 1970s, environmental problems were initially thought of in local and regional terms (a lake polluted here, a school built on a chemical site there, and a nuclear accident at a yet another location). However, in the 1980s, the scale of concern shifted and environmental problems came to be increasingly defined in global terms and seen to have immense global implications (e.g., global warming, Ozone depletion, acid rain, and deforestation). The unifying theme of these approaches, what gives them focus, is a concern for *sustainability*. Since then, using modeling practices for the most part, global approaches to environmental problems dominated debates in environmental policy and politics.

More recently, however, a number of social and human sciences have been critical of the exclusive focus on *sustainability* and the singular focus on the *global scale* of environmental threats. They suggest, instead, that focus should shift to vulnerability/livelihood and to multiple scales of environmental problems.

In this course, we will critically engage all of these perspectives on environmental problems. In addition to the critical, conceptual engagement with these approaches and in order to give our discussions focus, we will study four particular environmental issues: climate change; water securities in the Middle East; biodiversity conservation in the tropics; and environmental justice within the US and between North and South. For the most part, our goal should be to *develop interdisciplinary sensibilities*, which will frame many of our discussions.

By the end of the course, students will be familiar with:

- Science studies approaches and epistemological debates.
- Major social science debates and theories related to sustainability and vulnerability
- Issues of power and socio-economic inequality as they condition both adaptive capacities and vulnerabilities to environmental changes.
- Major trends with respect to resource and environmental governance, including marketbased approaches
- Narrative and discourse analysis, and policy studies related to course themes

To accomplish these goals, various assignments will be employed, in addition to weekly readings and discussions:

• All students will be asked to write EIGHT critical responses (CRs) of the weekly readings and upload these on the class Learn@UW page under the Discussion Tab and under the particular week—by Monday at 2 p.m. (this means that there will be several weeks you will not have to turn in CRs, at your discretion). An attached sheet provides guidelines for these write-ups.

- All students will sign up to lead at least one class discussion. For the day that you lead discussion, you should come to class having read assigned readings carefully, as well as having considered all of the critical summaries circulated the day before. Please bring a written 1-2 page handout to class that includes some background information on the authors, major themes of the readings and points highlighted by written student responses, as well as several questions for discussion. You will start the class by providing a ten to fifteen minute introduction that highlights these elements to launch the discussion.
- There are three individual 'course projects' related to three different thematic units, to be assigned throughout the course. For instance, early in the semester, we will all come to class prepared to provide a five-minute review of disciplinary approaches to climate change. Two more assignments will be given later in the semester (see syllabus). A maximum of a two-page discussion of the assignment will be due to the class (on Learn@UW at least 24 hours before class meeting).
- All students will participate in the writing of one of several group 'publications.' This might take several forms (book reviews, policy briefs, or a state of knowledge paper). I will provide some sense of what is expected at the beginning of the semester, and I will ask groups to come up with a proposal after the first few weeks of the semester. These written products will count as the 'final project' for the course and will be submitted for publication by the end of the semester or soon thereafter, as appropriate.

This course will be run as a graduate level seminar. This means that reading, critical responses, and discussion are fundamental to the success of the course and your own learning. While reading, I expect you to think critically about the contributions, weaknesses, and questions raised by the authors (What is the author's primary argument? What elements are consistent or discordant with other approaches we have considered? Is the argument adequately supported?). See attached guidelines for critical responses for more questions I expect that you will consider in your critical reading of course texts. Given that we are all coming at these issues from very different perspectives, you *are not* expected to have understood everything based on your initial reading. The goal, instead, is to expose you to different debates and ways of approaching these issues. Please do come to class having read the assigned texts, having reflected on them, and with questions and issues for discussion. Also, you may find it useful to discuss the readings ahead of time with others in class. Beyond that, we will spend class time thinking through key issues raised by the text *as a group*----with the key aim of learning from one another and broadening our exposure.

Your grade for the course will be determined as follows:

Weekly critical responses	20%
Class participation	10%
Leading class discussion	15%
Three assignments	15%
Final project	40%

Grades breakdown:

A = 93% - 100% AB = 87% - 92% B = 82% - 86% BC = 77% - 81% C = 72% - 80% D = 67% - 71% F = below 67%

Again, given the diverse training and backgrounds you each have, I fully expect variable substantive contributions from each of you, especially depending on the topic for the week. However, for all students to earn an A, you should plan on fulfilling all of the above course requirements in a complete and timely manner, and demonstrating effort and interest in learning for each unit. You *will not* be downgraded for your lack of familiarity with the topics, but only if you demonstrate lack of interest, effort, or enthusiasm for learning.

The only required book that students should purchase is Eakin. Please make sure to get a copy before week 7 of class, March 6. Order it online. A copy of the book will be kept on reserve in Steenbock Library.

Eakin, H. (2006). Weathering Risk in Rural Mexico: Climatic, Institutional and Economic Change. Tucson: University of Arizona Press.

Week I: January 24: Introduction

Course and student introduction, review of syllabus and expectations. Discussion of readings.

Week II: January 31: Critiques of Modeling: 'Top Down' Science and Engaging 'Local' knowledges:

Assignment One: introduction, due February 7

[Themes: science studies approaches, critiques of modeling, ways of knowing, positivism, epistemology. Basic introduction to STS critiques and ways of knowing discussions with specific focus on modeling and global governance, to be picked up again in later weeks.]

Readings:

Taylor, P. J. (2005) Ch 4. Reconstructing heterogeneous webs in socio-economic research. *Unruly Complexity*, University of Chicago Press.

Turner, M. (2003) Methodological reflections on the use of remote sensing and geographic information science in human ecological research. *Human Ecology* **3**(2): 255 - 279.

Edwards, P. (2001) Representing the Global Atmosphere: Computer Models, Data, and Knowledge about Climate Change. In Miller, Clark and P. Edwards (eds) Changing the Atmosphere: Expert Knowledge and Environmental Governance. MIT Press, Cambridge., 31-66.

Shackley, S. Ch 4. Epistemic Lifestyles in Climate Change Modeling, in Miller, C. and P. Edwards (eds) Changing the Atmosphere: Expert Knowledge and Environmental Governance. MIT Press, Cambridge., 107-134.

Week III: February 7: Vulnerability, Adaptation, and Place-based approaches:

[Themes: human dimensions of global change, vulnerability, adaptation, place-based approaches, integrating social and biophysical sciences, value of local-scale/qualitative work]

Assignment One due: After having read some critical reflections on modeling approaches in week II, please come to class prepared to highlight some of the major issues/limits with respect to the modeling projects you did last semester. Please think about constraints, assumptions, your training/preparation, data issues, etc.

Key question to consider: what is value of bringing in more local-scale studies and sociopolitical/economic information to studies of environmental change, and what are the challenges of doing so? What might this offer to studies sustainability/vulnerability/ adaptation in particular?

Assignment Two: Introduction, due 2/14

Readings:

Liverman, D. and R. Cuesta (2008) Human interactions with the Earth system: people and pixels revisited *Earth System Processes and Landforms*. 33: 1458-1471.

Thomas, D. S. G. and C. Twyman (2005). Equity and justice in climate change adaptation amongst natural-resource-dependent societies. *Global Environmental Change* **15**(2): 115-124.

Turner, B. L. II, R. Kasperson, et al. (2003). A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences (PNAS)* **100**(14): 8074 - 8079.

Turner, B. L. II et al, (2003) Illustrating the coupled human-environment system for vulnerability analysis: Three case studies, *PNAS* **100** (14): 8080-8085.

Luers, A. L. (2005). The surface of vulnerability: An analytical framework for examining environmental change. *Global Environmental Change Part A* **15**(3): 214-223.

Pfaff, A., K. Broad, et al. (1999). Who benefits from Climate Forecasts? *Nature* **397**(25 February): 645-646.

Sayre, N. (2004). Viewpoint: the need for qualitative research to understand range management. *Journal of Range Management* **57**: 668 - 674.

Week IV: February 14: Interdisciplinarity:

[Themes: disciplinarity, interdisciplinarity, complexity, bridging social and natural science approaches.] Details on the final group projects will be provided.

Assignment Two due today: Please come to class prepared to give a 5 minute presentation of how your discipline (or one that you feel most allied with) contributes to climate change debates, with particular focus on vulnerability and adaptation. Please also provide a handout to the class with key themes, contributions, and a bibliography of recent/representative/central readings or theorists.

Readings:

Harrison, S., D. Massey, et al. (2004). Thinking across the divide: perspectives on the conversations between physical and human geography. *Area* 36(4): 435 - 442.

Redclift, M. (1998). Dances with wolves? Interdisciplinary research on the global environment. *Global Environmental Change* **8**(3): 177-182.

Parkes, M. et al (2005) All hands on deck: transdisciplinary approaches to emerging infectious disease. Ecohealth, 2 (4): 258 - 272.

Miller, et al (2008) Epistemological Pluralism: Reorganizing Interdisciplinary Research. *Ecology* and Society, 13 (2): 46.

Week V: February 21: IPCC, Science Management and Governance of Climate Change

[Themes: epistemic communities, management and politics of science, international governance and negotiations, emergence of international scientific bodies, construction of global environment, scalar politics, uncertainty and engagement with science]

For half of the class, we will have a panel discussion on politics and management of science related to climate change as part of the IPCC process, Kyoto and related negotiations. For the second half of the class, we will have a discussion more specifically on the ways that science studies and other scholars have approached these issues

Readings:

Taylor, P. and F. Buttel (1992). How do we know we have global environmental problems? science and the globalization of environmental discourse. *Geoforum* **23**(3): 405 - 416.

Jasanoff, S. and M. L. Martello, Eds. *Earthly Politics: local and global environmental governance*. Cambridge, MA, MIT Press. Introduction, "Globalization and Environmental Governance' and Ch 1 "Heaven and Earth: The politics of environmental images."

Norgaard, R. (2004) Learning and Knowing Collectively *Ecological Economics* (49):231-241.

Prins, G. and S. Rayner (2007). Time to ditch Kyoto. *Nature* 449(7165): 973-975. Schellnhuber, J. (2007). Kyoto: no time to rearrange deckchairs on the Titanic. *Nature* 450 (7168): 346-346.

Victor, D. G., J. C. House, et al. (2005). A Madisonian Approach to Climate Policy. *Science* 309 (5742): 1820-1821.

Week VI: February 28: Revisiting Science Studies

[Themes: critiques of science, place and epistemology, paradigm shift, situated knowledges]

Readings:

Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism as a Site of Discourse on the Privilege of Partial Perspective. *Feminist Studies* **14**(3): 575-599.

Kirsch, S. (2002) John Wesley Powell and the mapping of the Colorado plateau, 1869-1879: Survey science, geographical solutions, and the economy of environmental values *Annals of the Association of American Geographers* 92 (3): 548-572.

Latour, B. 1999. Circulating Reference: Sampling the Soil in the Amazon Forest. *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge, MA: Harvard University Press.

Callon, M. 1986. Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay. In Michel Callon (ed.), *Power, Action, and Belief: A New Sociology of Science*. London: Routledge, 196-223.

Week VII: March 6: Case Study: Place-based Approaches to Vulnerability and Adaptation to Climate Change in Rural Mexico

[Themes: socio-economic and political considerations related to vulnerability and adaptation, socio-cultural process and differentiated vulnerabilities, complexity and transdisiplinarity and interdisciplinarity]

Readings:

Eakin, H (2006) Weathering Risk in Rural Mexico: Climatic, Institutional and Economic Change. University of Arizona Press.

Vasquez-Leon, M., C. T. West, et al. (2003). A comparative assessment of climate vulnerability: agriculture and ranching on both sides of the US-Mexico border. *Global Environmental Change* 13(3): 159-173.

Week VIII: March 13: Narrative and Discursive Approaches to Environmental Change

[Themes: narrative, discourse analysis, methods, political ecology, discourses of degradation]

Readings:

Cronon, W. (1992). A place for stories: nature, history, and narrative. *The Journal of American History* **78**(4): 1347 - 1376.

Alatout, S. Towards a bio-territorial conception of power: territory, population, and environmental narratives in Palestine and Israel. *Political Geography* **25**, 6: 601-621.

Hajer, M. 'Doing Discourse analysis: Coalitions, practices, meanings' in M. van den Brink, T. Metze *Words Matter in Policy and Planning: Discourse Theory and Method in the Social Sciences*.

Fairhead and Leach (1996) Misreading the African Landscape, Society and Ecology in a Forest-Savanna Mosaic *Selections*. (and L. Naughton review)

Liverman, D. (2008). Conventions of climate change: constructions of danger and the disposession of the atmosphere. *Journal of Historical Geography* forthcoming.

Week IX: March 20: Water Securities in the Middle East

Focus on constructions of scarcity/abundance, water politics, and role of socio-political difference in conditioning water use and access.

[Themes: water and conflict, water securities, importance of historical and geographical context, constructions of scale/abundance/scarcity, socio-political inequality]

Readings:

Harris, L. (2002). Water and Conflict Geographies of the Southeastern Anatolia Project. *Society and Natural Resources* **15**: 743-759.

Alatout, S. (2007) State-ing Natural Resources through law: the codification and articulation of water scarcity and citizenship in Israel. *The Arab World Geographer* 10(1):16-37.

Alatout, S. (2008) 'States' of scarcity: water, space, and identity politics in Israel, 1948-59. Environment and Planning D: Society and Space **26**: 959-982.

Harris, L. (2006). Irrigation, Gender, and Social Geographies of Waterscape Evolution in Southeastern Turkey. *Environment and Planning D: Society and Space* **24**(2): 187 - 213. Postel, S. L. and A. T. Wolf (2001). Dehydrating Conflict. *Foreign Policy*(Sept/Oct): 60 - 67.

Hutlin, J (1995) The Nile: Source of Life, Source of Conflict, in Leif Ohlsson (ed.), *Hydropolitics: Conflicts over Water as a Development Constraint* London: Zed Books: 29-54.

Postel, S. and A. Wolf. 2001. Dehydrating Conflict. Foreign Policy September 1.

Week X: March 27: Inequality, Hazards, and Differential Vulnerabilities

Readings:

Newell, P. (2005). Race, Class and the Global Politics of Environmental Inequality. *Global Environmental Politics* **5**(3).

Neumayer, Eric and Thomas Plumper (2007). The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981–2002. *Annals of the Association of American Geographers* 97(3): 551-566.

Alson, M. (2006). The Gendered Impact of Drought. *Rural Gender Relations: issues and Case studies*. Bock and Shortall.

Week XI: April 3: Spring Recess

NO CLASS

Week XII: April 10: Biodiversity and Poverty in the Tropics

Assignment Three: Introduction, due April 17

[Themes: communities, indigenous knowledge, resource tenure, poverty, forest governance]

Readings:

Angelsen A, Wunder S. 2003. Exploring the Forest—Poverty Link: Key Concepts, Issues and Research Implications *CIFOR*, Bogor, Indonesia. 70 pp

Ostrom E, Nagendra H. 2006. Insights on linking forests, trees, and people from the air, on the ground, and in the laboratory. *PNAS* November: 9 pp

Díaz S, Fargione J, Chapin F, Tilman T. 2006. Biodiversity Loss Threatens Human Well-Being. *PLoS Biol* 4: 5 pp

Naughton, L. et al. (2007) Burning Biodiversity: Woody Biomass use by commercial and subsistence groups in western Uganda's forests *Biological Conservation* 134: 232-241.

Week XIII: April 17: Environmental Health and Justice

[Themes: ecology, epidemiology, social and cultural dimensions of health outcomes, place-based vulnerability, data issues and constraints]

Assignment Three due today

Last part of class: mini-lecture and discussion on environmental justice to prep for coming week and research project.

Readings:

Mitman, G. (2007) 'Choking Cities' in Breathing Space: How Allergies Shape our Lives and our Landscapes. Yale University Press, New Haven. (*or other selection*)

Klinenberg, Eric (2002) *Heat Wave: a social autopsy of disaster in Chicago* (chapter on race/place)

Patz, J. et al (2004) Unhealthy landscapes: policy recommendations on land use change and infectious disease emergence. *Environmental Health Perspectives*, 112 (10): 1092-1098.

Pulido, L., S. Sidawi, et al. (1996). An Archaeology of Environmental Racism in Los Angeles. *Urban Geography* **17**(5): 419 - 439.

Kirsch, S. and Mitchell, D (2004) The nature of things: dead labor, nonhuman actors, and the persistence of Marxism. *Antipode*. 36 (4): 687-705.

Orrin Williams. 2005. Food and Justice: The Critical Link to Healthy Communities. In Dacid Naguib Pellow and Robert Brulle (eds.), *Power, Justice, and the Environment: A Critical Appraisal of the Environmental Justice Movement*. Cambridge: MIT Press.

Agyeman, J., Robert Bullard, and Bob Evans (2002). Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity. *Space and Polity* **6**(1): 77-90. *Several food security related readings TBD*

Week XIV: April 24: Market Approaches, Privatization, and Ecosystem Services

[Themes: water privatization, commodification, neoliberal natures, payments for ecosystem services, wetland banking, valuation, devolution of environmental governance]

Readings:

Robertson, M. M. (2004). "The neoliberalization of ecosystem services: Wetland mitigation banking and problems in environmental governance." *Geoforum* **35**(3): 361-373.

Heynen, N. et al. (2007) Neoliberal Environments. Routledge. Introduction

Wunder, S. (2006), Are direct payments for environmental services spelling doom for sustainable forest management in the tropics? *Ecol. Soc.*, 11(2).

Jenkins, M., et al. Markets for Biodiversity Services: Potential Roles and Challenges, *Environment*, 46(6).

Grieg-Gran, M., et al. (2005), How can market mechanisms for forest environmental services help the poor? Preliminary lessons from Latin America, *World Dev.*, 33(9), 1511-1527.

Week XV: May 1: Discussion

Week XVI: May 8: Discussion:

GUIDELINES FOR WRITING CRITICAL RESPONSES TO COURSE READINGS

For eight of the weeks, you will be expected to write a critical response related to the assigned readings. This should include an overview/summary of all readings, though you may choose to focus on some more than others in your commentary. Please also include the full citation for each reading in your response.

What I expect:

- A summary of what you think the main concepts and arguments are. You should be able to do this in two or three sentences. Please also state the primary argument or viewpoint of the author whenever possible. What is the author trying to say? How does he/she go about saying it?
- A critical evaluation of each reading, again in just a few sentences. This may include the following:
 - Within what theoretical tradition does this argument locate itself? From which theorists does it borrow?*
 - interrogating the logic of the argument. Does it hold together? Are there contradictions?
 - thinking about the implications of the argument for how we understand the key terms of the course 'nature', 'discourse', 'vulnerability', 'sustainability, etc...*
 - What argument is the author *not* making, although a careless or conventional reader might mistake her for putting it forward?*
- Consider questions/issues raised by the reading. Tell me how this article made you
 think differently, made you uncomfortable, supported what you already thought, etc.
 This could also be written in the form of a question that you would pose to the
 author.
- You may write these in paragraph form, or in point form.

NOTE: you may choose to address readings separately, but a more synthetic approach, considering the set of themes/readings together is likely to be more useful, both for you, and the class

Some questions to think about when critically evaluating the readings:

- What counts as 'Nature', 'degradation' or 'vulnerability' in the article?
- Who is the author addressing, especially in terms of earlier theories or approaches?
- What is the most significant blind spot of this work?
- Does this issue involve you? Your work? If so, why? If not, why?
- What is the central thesis or concern for this set of readings?*
- What is/are its/their most unlikely, surprising, or provocative claims?*
- What makes this work worth reading? Who ought to read this?*
- Identify any key concepts or definitions in the piece*
- What evidence does the author offer in support of arguments? Methods used?
- Are their any points or sections that you found particularly difficult to comprehend? Pose a question to work on and think about those sections.
- All CRs should end by posing question(s) for discussion. These should be oriented towards comprehending an idea you did not understand, posing an argument in opposition to the text, or taking on a particular element of the argument, etc.