HUMAN DIMENSIONS OF ECOSYSTEM MANAGEMENT

ENR 8400, Fall Semester 2018

Credits: 2 hours

Meeting times: Monday: 12:10 – 2:00PM, Kottman Hall, Rm. 245

Instructor: Adam Fix
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Columbus, OH 43210

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Office Hours: Week days, by appointment

COURSE DESCRIPTION

This course provides a broad, interdisciplinary overview of theories and frameworks for understanding and addressing environmental and natural resource management dilemmas. The course is divided into three parts:

Part I. Efforts to Understand and Treat Environmental Problems
This part of the course reviews early narratives, theories and ongoing debates concerning how human beings impact their environment and what can be done to alleviate these impacts. Many of the most contentious debates surround problems for which there is no objectively "right" answer. When one accepts the proposition there is no right way to manage ecosystems, it becomes clear that the primary point of contention is not *how* we should management ecosystems, but *for what purpose* should we manage ecosystems; thus, the need to find ways of addressing conflicts.

Part II. Disciplinary Perspectives on Environmental Problems
This part of the course consists primarily of a series of guest lectures from faculty across OSU who bring their expertise to help us understand and/or address various environment/ecological problems.

Part III. Toward a Systems Perspective and Integration of the Social and Ecological Sciences
In these discussions, students will be asked to integrate key concepts and ideas discussed in the beginning of the course with knowledge gained from other social and ecological sciences toward the ultimate goal of better understanding how to sustainably manage common pool resources. Throughout the latter half of the course, we discuss *socio-ecological systems*, as well as additional frameworks for understanding sustainable resource management that integrate knowledge across disciplines.

COURSE GOALS

This course will…

1. Describe early theories and historically-relevant debates concerning how human beings impact the natural environment.
2. Explore how theories and approaches from the social sciences can be used to assist us in understanding the causes and consequences of—and potentially the solutions to—environmental problems.
3. Explore the causes of environmental conflict and examine theories and frameworks for mitigating and managing conflicts.
4. Promote critical thinking concerning humankind's role as both the source and solution to environmental problems.

Students will…

1. Develop familiarity with early theories and historically-relevant debates concerning how human beings impact their biophysical environment.
2. Develop familiarity with theories and concepts employed in the conservation and management of natural resources.
3. Understand how theories and methods employed by social scientists can be used to assist researchers and practitioners in understanding the causes and consequences of environmental problems.
4. Understand the common causes of environmental conflict and examine theories and frameworks for mitigating and managing conflicts.
5. Think critically concerning humankind's role as both the source and solution to environmental problems.

Format:
The course will be a discussion/seminar format; students are expected to come to class and actively participate in class discussions.

Readings:
There is no required textbook for this course. All readings will be made available online through CARMEN. The daily readings are a critical part of this course. Students are expected to come to class ready to discuss the week's readings.

Participation:
Participation scores will be based on participation in classroom discussions. Regular attendance is a necessary, but insufficient, condition for a passing grade in participation. Students will have opportunities to add to class discussions throughout the quarter; these opportunities include: answering questions, responding to other students' ideas, asking questions, as well as in-class group work. Note: Reading and thinking about the assigned reading before class are critical for classroom participation.

Absences:
Two unexcused absences will result in a dropped letter grade on the final course grade (e.g., from A- to B-). Three or more unexcused absences will result in a failing course grade.

Mid-term Take-home Exam:
An essay-based, mid-term examination will be distributed in class on October 8 and due 1-week later (in class on October 15). The exam is worth 25% of your grade.

Issue Analysis Paper:
The purpose of the issue analysis paper will be to analyze the human/ social dimensions of a specific natural resource management or environmental issue that was *not* discussed in class. The issue analysis paper provides students with an opportunity to apply concepts learned in class to an issue of their choice. The format for this paper is flexible, but generally the paper should contain the following components:

1. *Introduction.* A brief introduction that explains the issue, delineates stakeholders/interests and their positions, and explains why the issue is of importance to society. Note: The introduction is where biophysical research is most relevant.

2. *Analysis (Body).* The purpose of the paper is to help students understand the root cause(s) of pressing environmental problems and apply theory and concepts introduced in the course to understanding these problems. In the body of the paper, students will describe the socio-cultural, economic, and political conditions that have given rise to the issue and/or prevent its meaningful resolution. In this section it is important to cite relevant research from the course and describe the theoretical "lens" (or lenses) through which the issue is being viewed.

3. *Solutions.* In the final section of the paper, students should offer ideas for how the problem/issue they have chosen might be solved, mitigated, or otherwise managed. If the problem is irreconcilable given prevailing social conditions, then you need to describe why this is the case (i.e., what barriers prevent or hamper resolution?), and describe whether and how you think prevailing social conditions can change

A minimum of **8 outside sources** (i.e., sources not discussed in class) are required for this paper; in addition, students must cite relevant course readings where appropriate (note: Wikipedia is not an acceptable source; students should only cite relevant, peer-referred literature). Initial draft papers should be limited to 1,500 words (not including title and reference list) and formatted to use 1" margins and 12-point *Times New Roman* font. Information must be properly attributed and cited; presenting information from other sources without proper attribution is not acceptable. You may use any standard citation style that uses a Name/Year (e.g. Smith & Smithers, 2000) format, such as APA or Chicago styles. Papers must be your original work. **Final papers are limited to 3,000 words. Additional guidance on papers will be provided in class and made available on Canvas.**

Lecture Discussion Questions:
Each student will be responsible for submitting lecture discussion questions for 3 class dates. Lecture discussion questions must be submitted on Canvas three days prior to lecture (i.e., by 12-noon, on the Friday preceding the lecture). Students are responsible for generating at least 2 questions per reading/paper. You should sign up for dates on Canvas during Week 1.

Grading:

Assignment	Due	Points	Portion of Final Grade
Participation	**NA**	**10**	**10%**
Issue analysis paper (draft)	**29 OCT**	**20**	**20%**
Mid-term examination	**08-15 OCT**	**25**	**25%**
Lecture Discussion questions	**NA**	**15**	**15%**
Final issue analysis paper	**10 DEC**	**30**	**30%**
Total	***NA***	***100***	

Academic Misconduct:
Faculty Rule 3335-31-02 defines academic misconduct as any activity that tends to compromise the academic integrity of the institution or subvert the educational process. Academic misconduct (e.g. plagiarism, cheating, and other forms of misconduct) will not be tolerated in this course. Please see the Student Resource Guide or the instructor if you have questions about this policy.

Disabled Students:
Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor as soon as possible to discuss potential accommodations for their specific needs. You might also wish to contact the Office for Disability Services (614-292-3307, in room 150 Pomerene Hall) who provide assistance coordinating reasonable accommodations for students with documented disabilities.

- COURSE TOPICS AND READINGS -

PART 1. EFFORTS TO UNDERSTAND AND TREAT ENVIRONMENTAL PROBLEMS

1. (27 AUG) Human Populations and Environmental Problems

Ehrlich, P. R., and A. H. Ehrlich. 1990. Why isn't everyone as scared as we are? Pages 13-23 *in* The Population Explosion. Simon & Schuster, Inc., New York, NY.

Simon, J. L. 1980. Resources, population, environment: An oversupply of false bad news. *Science* 208(27): 1431-1437.

Ehrlich, P. R., and D. Kennedy. 2005. Millennium Assessment of Human Behavior. *Science* 309:562-563.

Dunlap, R. E., and A. K. Jorgenson. 2012. Environmental Problems. The Wiley-Blackwell Encyclopedia of Globalization. John Wiley & Sons, Ltd.

(3 SEP) LABOR DAY – NO CLASS

2. (10 SEP) On Sustainability and Collapse

Read sections: *Abstract*, *Introduction*, and *Resources and International Studies* (pp. 1-2) in Manno, J.P. and A.J. Fix. 2017. Environmental Sustainability and Sustainable Development. In Denemark, R.A. and Marlin-Bennet, R. (Eds.), *The International Studies Encyclopedia,* 2nd Ed. Malden, MA: Wiley-Blackwell.

Diamond, J.M. 2012. What Makes Countries Rich or Poor? Review of Why Nations Fail: The Origins of Power, Prosperity and Poverty by Acemoglu and Robinson. The New York Times Review of Books (June 2012).

Page, S. E. 2005. Are we collapsing? A review of Jared Diamond's Collapse: How societies choose to fail or succeed. *Journal of Economic Literature, 43*(4), 1049-1062.

O'Donnell, J. 15 Sep 2017. How vulnerable are we to collapse? *SAPIENS.*

3. (17 SEP) Social Traps and the Tragedy of the Commons

Read section: *Our Common Future and the Future of the Commons* (pp. 3-4) in Manno, J.P. and A.J. Fix. 2017. Environmental Sustainability and Sustainable Development. In Denemark, R.A. and Marlin-Bennet, R. (Eds.), *The International Studies Encyclopedia,* 2nd Ed. Malden, MA: Wiley-Blackwell.

Hardin, G. 1968. The tragedy of the commons. *Science* 162:1243-1248.

Platt, J. 1973. Social traps. *American Psychologist* 28:641-651.

Burger, J., and M. Gochfeld. 1998. The tragedy of the commons 30 years later. *Environment* 40(10):4-13, 26.

Ostrom, E., Burger, J., Field, C. B., Norgaard, R. B. and D. Policansky. 1999. Revisiting the commons: Local lessons, global challenges. *Science* 284: 278-282.

4. (24 SEP) Environmental Problems and Social Conflict

Read sections: *Definitions and Logic of Sustainability* and *Critics of the Sustainable Development Paradigm* (pp. 4-8) in Manno, J.P. and A.J. Fix. 2017. Environmental Sustainability and Sustainable Development. In Denemark, R.A. and Marlin-Bennet, R. (Eds.), *The International Studies Encyclopedia,* 2nd Ed. Malden, MA: Wiley-Blackwell.

Rittel, H. W. J., and M. M. Webber. 1973. Dilemmas in a general theory of planning. *Policy Sciences* 4:155-169.

Colvin, R. M., G. B. Witt, and J. Lacey. 2015. The social identity approach to understanding socio-political conflict in environmental and natural resources management. Global Environmental Change **34**:237-246.

Adams, W. M., D. Brockington, J. Dyson, and B. Vira. 2003. Managing Tragedies: Understanding Conflict over Common Pool Resources. *Science* 302:1915-1916.

5. (01 OCT) Conceptualizing Treatments for Environmental Problems

Read section: *Sustainability and the Social and Environmental Sciences* (pp. 8-10) in Manno, J.P. and A.J. Fix. 2017. Environmental Sustainability and Sustainable Development. In Denemark, R.A. and Marlin-Bennet, R. (Eds.), *The International Studies Encyclopedia,* 2nd Ed. Malden, MA: Wiley-Blackwell.

Alexander, S. 2012. The Sufficiency Economy: Envisioning a Prosperous Way Down. *Simplicity Institute Report 12s:* 1-27.

Sunderlin, W. 1995. Global Environmental Change, Sociology, and Paradigm Isolation. *Global Environmental Change,* 5 (3): 211-220.

Cialdini, R. B. 2003. Crafting Normative Messages to Protect the Environment. *Current Directions in Psychological Science* 12 (4):105-109.

PART 2. DISCIPLINARY PERSPECTIVES ON ENVIRONMENTAL PROBLEMS

6. **(08 OCT) Guest Lecture - Robyn Wilson (Associate Professor, School of Environment and Natural Resources): Perspectives on the Psychology of Environmental Problems**

Steg, L., and Vlek, C. 2009. Encouraging Pro-Environmental Behaviour: An Integrative Review and Research Agenda. *Journal of Environmental Psychology,* 29: 309-317.

Schultz, P.W. 2013. Strategies for Promoting Proenvironmental Behavior: Lots of Tools but Few Instructions. *European Psychologist,* 19 (2): 107-117.

Weber, E.U. 2015. Climate Change Demands Behavioral Change: What are the Challenges? *Social Research: An International Quarterly,* 82 (3): 561-580.

7. **(15 OCT) Guest Lecture – Kerry Ard (Assistant Professor, School of Environment and Natural Resources): Perspectives from Environmental Sociology**

Bullock, C., Ard, K., and G. Saalman. 2018. Measuring the Relationship between State Environmental Justice Action and Air Pollution Inequality, 1990-2009. *Review of Policy Research.*

Ard, K. 2015. Trends in Exposure to Industrial Air Toxins for Different Racial and Socioeconomic Groups: A Spatial and Temporal Examination of Environmental Inequality in the U.S. from 1995 to 2004. *Social Science Research,* 53: 375-390.

8. **(22 OCT) Guest Lecture - Mark Moritz (Associate Professor, Department of Anthropology), Perspectives on Coupled Human and Natural Systems**

Moritz, M., et al. 2016. Studying the Logone Floodplain, Cameroon, as a Coupled Human and Natural System. *African Journal of Aquatic Science,* 41 (1): 99-108.

Folke, Carl. 2006. "Resilience: The emergence of a perspective for social–ecological systems analyses." *Global Environmental Change* 16 (3): 253-267.

Liu, J., T. Dietz, S. R. Carpenter, C. Folke, M. Alberti, C. L. Redman, S. H. Schneider, E. Ostrom, A. N. Pell, J. Lubchenco, W. W. Taylor, Z. Ouyang, P. Deadman, T. Kratz, and W. Provencher. 2007. Coupled Human and Natural Systems. *AMBIO: A Journal of the Human Environment* 36:639-649.

Ostrom, Elinor. 2009. A General Framework for Analyzing Sustainability of Social-Ecological Systems. *Science* 325 (5939*):* 419-422.

9. **(29 OCT) Guest Lecture - Jeremy Brooks (Assistant Professor, School of Environment and Natural Resources): Evolutionary Perspectives on Social-Ecological Systems**

Please read the articles in this order:

1. Richerson, P., and Henrich, J. 2012. Tribal Social Instincts and the Cultural Evolution of Institutions to Solve Collective Action Problems. *Cliodynamics,* 3 (1): 38-80.

2. Waring, T.M., et al. 2015. A Multilevel Evolutionary Framework for Sustainability Analysis. *Ecology and Society,* 20 (2): 34.

3. Andrews, J., and M. Borgerhoff Mulder. 2018. Cultural Group Selection and the Design of REDD+: Insights from Pemba. *Sustainability Science,* 13: 93-107.

4. Wilson, D.S., and J.M. Gowdy. 2012. Evolution as a General Theoretical Framework for Economics and Public Policy. *Journal of Economic Behavior and Organization,* 90S: S3-S10.

10. **(05 NOV) Perspectives from Sustainable Development and Post-Development Theory**

Read from *Origins of the International Movement for Sustainable Development* until the end (pp. 13-23) in Manno, J.P. and A.J. Fix. 2017. Environmental Sustainability and Sustainable Development. In Denemark, R.A. and Marlin-Bennet, R. (Eds.), *The International Studies Encyclopedia,* 2nd Ed. Malden, MA: Wiley-Blackwell.

Sachs, Wolfgang. Introduction. In *The Development Dictionary: A Guide to Knowledge as Power,* 2nd Ed. London & New York: Zed Books, 2010: xv-xx.

Esteva, Gustavo. Development. In *The Development Dictionary: A Guide to Knowledge as Power,* 2nd Ed. London & New York: Zed Books, 2010: 1-24.

Shiva, Vandana. Resources. In *The Development Dictionary: A Guide to Knowledge as Power,* 2nd Ed. London & New York: Zed Books, 2010: 228-242.

(12 NOV) VETERANS DAY – NO CLASS

PART 3. TOWARD A SYSTEMS PERSPECTIVE AND INTEGRATION OF THE SOCIAL AND ECOLOGICAL SCIENCES

11. (19 NOV) Adaptation, Vulnerability and Adaptive Capacity

Ostrom, E. 2007. A diagnostic approach for going beyond panaceas. *Proceedings of the National Academy of Sciences* 104 (39):15181.

Pahl-Wostl, C. 2009. A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes *Global Environmental Change*. 19: 354-365.

Smit, Barry, and Johanna Wandel. 2006. Adaptation, adaptive capacity and vulnerability. *Global Environmental Change* 16 (3): 282-292.

12. (26 NOV) Traditional Ecological Knowledge

Read: Sustainability and Indigenous Peoples (pp. 10-11) in Manno, J.P. and A.J. Fix. 2017. Environmental Sustainability and Sustainable Development. In Denemark, R.A. and Marlin-Bennet, R. (Eds.), *The International Studies Encyclopedia,* 2nd Ed. Malden, MA: Wiley-Blackwell.

Zedler, J.B. 2016. Integrating traditional ecological knowledge with adaptive restoration. *Ecosystem Health and Sustainability* 2 (6): 1-2.

Davis, A. and Ruddle, K. 2010. Constructing confidence: rational skepticism and systematic enquiry in local ecological knowledge research. *Ecological Applications* 20 (3): 880-894.

Whyte, K.P. 2013. On the role of traditional ecological knowledge as a collaborative concept: A philosophical study. *Ecological Processes* 2 (7): 1-12.

13. (03 DEC) Barriers to an Interdisciplinary Understanding of Socio-Ecological Systems

Heberlein, T. A. 1988. Improving Interdisciplinary Research: Integrating the Social and Natural Sciences. *Society & Natural Resources* 1:5-16.

Phillipson, J., P. Lowe, and J. M. Bullock. 2009. Navigating the social sciences: interdisciplinarity and ecology. *Journal of Applied Ecology* 46:261-264.

MacMynowski, D. P. 2007. Pausing at the brink of interdisciplinarity: Power and knowledge at the meeting of social and biophysical science. *Ecology and Society* 12 (1): 20.