ENVIRONMENTAL CONSERVATION

Geography/EnvSt 339

SPRING 2019

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Course Description. In this course we study environmental conservation from a geographical perspective reviewing the biophysical, institutional, and socioeconomic dimensions of environmental problems in order to develop more effective conservation solutions. Environmental conservation is itself a social process. Thus, we pay careful attention to how changes in values, scientific understandings of nature, economy and politics affect conservation practice. Not only will we trace the major debates in environmental conservation but will also explore how differences in people's biophysical, economic and political surroundings have led to different perceptions of environmental problems and their solutions.

Through this class, you will develop an understanding of the major approaches to environmental conservation, their relative strengths and weaknesses, and how they developed historically. Case material will come from around the world with a historical overview of environmental conservation thought and action in the United States.

We will touch upon a range of environmental issues in this course including: toxic waste, soil erosion, air/water pollution, mining impacts, grazing impacts, wilderness protection, and wetland mitigation but focus on two large and cross-cutting environmental challenges: biodiversity loss and climate change. Aspects of biodiversity protection will be covered in the U.S. context by first covering different ideas and understandings of the need to protect wilderness followed by arguably one of the strongest rule-based conservation policies: the Endangered Species Act. Biodiversity conservation in all its forms (national parks to community-based approaches) in a developing world context will be the focus of weeks 7-10. During this part of the course, we will be conducting a role-playing exercise within discussion section based on community-based conservation efforts in Tambopata, Peru. Climate change will be the second major focus with differential vulnerability and responsibilities covered in weeks 5-6 and various approaches to reduce GHG emissions and vulnerabilities (in WI and elsewhere) in weeks 7, 11,13-14.

Learning Goals. By participating in this course, you will better understand (among other things):

1. The role of values, ecology, and institutions in shaping environmental threats and conservation response in a range of different contexts.
2. The history of conservation thought and action in the United States.
3. The major categories of federal land in U.S., their management and political controversies surrounding private use of these lands.
4. The factors contributing to the uneven distribution of environmental harms both globally and within the United States and how this is affected by race, class, and physical geography.
5. The strengths and weaknesses of major “rule-based” and “incentive-based” conservation programs and policies.
6. The ecological importance of biodiversity and major challenges and opportunities facing biodiversity conservation particularly in the developing world.
7. The evolution of domestic and international policy to address climate change.

8. Challenges and prospects for a transition away from our economy's dependence on fossil fuels.

Learning Materials. Learning materials for this course include readings, on-line modules, and streaming videos. The required materials assigned for each week and unless otherwise stated, you should complete them prior to your discussion section meeting each week. All materials are available through the course's Canvas website (https://canvas.wisc.edu/courses/130796). Recommended materials are also listed for some weeks. These materials are only recommended for those of you that wish read further on a particular topic covered in lectures. We have developed on-line modules covering conservation issues related to climate change. These modules are accessible through the course webpage. Within each module there are 10 questions. You will receive 3 points for answering (retries are allowed) all of these questions correctly (3 x 7 modules=21 total points). You will be expected to complete the module (and associated quiz) by the lecture period to which the module is tied. This is because we build from what you have learned in these modules to do group-based problem solving during lecture periods. Videos are also be used in this class. Some videos will be shown in lecture and others will be assigned as required viewing. These can be accessed through links from our course webpage but please note that if you are viewing these on mobile devices, make sure that you view them on a wireless connection to avoid significant data charges from your service provider. Access to reserve videos is restricted to students in this course. Students may not copy, share, distribute or otherwise allow or facilitate any unauthorized access to the content or the passwords issued. Individuals who violate this provision will be subject to disciplinary action under the UW-Madison Academic and/or Non-Academic Misconduct Codes. Videos assigned as required reading will have study guides.

You will be tested on the material presented in lectures, videos, required readings and learning modules in exams. In your reading, focus on the author's main arguments and the evidence s/he uses to support his/her arguments. Environmental issues are often controversial, so read critically.

Grading. Grades will be determined on the basis of a total of 300 points:

EXAMS: 140 points for three exams held during the lecture period: exam 1 on Feb 26th, covering weeks 1-5; exam 2 on April 9th, covering weeks 6-10; and exam 3 on May 2nd, covering weeks 11-14. Exams will consist of multiple-choice, T/F and short answer questions. Students must take the exams at the scheduled dates/times. Make-up exams can only be arranged if Prof. Turner is notified in person in advance. *All make-up exams will be composed primarily of essay questions.*

Letter Grade	Cumulative %
A	>92
AB	>88
B	>82
BC	>78
C	>69
D	>60
F	≤60

ASSIGNMENTS AND PARTICIPATION: 160 points. Discussion section activities are critical parts of this course. There will be one major assignment out of section (Tambopata role play) along with a number of smaller assignments. In addition, your attendance and active participation in discussion and lecture are important. *Your grade will depend partly on how much you enhance the learning experience of your fellow students in discussion section and in lecture.* Therefore attendance is **mandatory**. A syllabus for your discussion section will be given to you at your first section meeting.

Letter grades for the course will be assigned based on the cumulative percentages of all work (e.g. out of 300 points) using a standard curve (see table to right). The distribution of cumulative scores vary from year to year and therefore in determining grades at the end of the semester, the cumulative score breaks between certain letter grades may be lower than those listed here (e.g. one may receive a higher letter grade than would be expected from the standard curve presented to right).

Graduate students: Graduate students who take this course will be assessed separately from other students in the course (exams and common work). In addition, extra work will be required. If you are an undergraduate student taking this course for honors credit, you will need to take part in one extra-curricular activity and write a reflection paper. See Professor Turner for details.

Academic Integrity and Misconduct

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to studentconduct.wiscweb.wisc.edu/academic-integrity/.

UW-Madison's Dean of Students Office identifies academic misconduct as an act in which a student:

- Seeks to claim credit for the work or efforts of another without authorization or citation;
- Uses unauthorized materials or fabricated data in any academic exercise;
- Forges or falsifies academic documents or records;
- Intentionally impedes or damages the academic work of others;
- Engages in conduct aimed at making false representation of a student's academic performance;
- Assists other students in any of these acts.

Examples include but are not limited to: cutting and pasting text from the web without quotation marks or proper citation; paraphrasing without crediting the source; using notes or electronic devices in an exam when such is not allowed; using another person's ideas, words, or research and presenting it as one's own by not properly crediting the originator; stealing examinations or course materials; or collaboration that is contrary to the stated rules of the course. See UW-Madison's webpage on Academic Integrity (https://www.students.wisc.edu/doso/academic-integrity/) for more information.

Diversity and inclusion

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." https://diversity.wisc.edu/

Respect for cultural and human biological diversity are core concepts of geography. In this course, each voice in the classroom has something of value to contribute to class discussion. UW-Madison is committed to diversity and welcomes individuals of all ages, backgrounds, citizenships, abilities, education, ethnicities, family statuses, genders, gender identities, geographical locations, military experience, political views, races, religions, sexual orientations, and work experiences.

COURSE OUTLINE AND READINGS

Please note: readings may be changed but with no net increase in volume or difficulty

REQ = Required materials, content included on exams.
REC = Recommended materials offering greater depth on topic but not included on exams.

WEEK ONE

Jan 22 – Course introduction

Jan 24– Population and institutions

REQ: On-line (ungraded) quiz on climate change
REQ: Cohen, J. 1998. "How many people can the earth support?" New York Review of Books 10/8/98
REQ: Worster, D. 1993. The nature we have lost. pp 3-15 in *The Wealth of Nature*. New York: Oxford Univ. Press.
REC: Guha, R. 2003. How much should a person consume? *Vikalpa 28(2): 1-11*.
REC: Sabin, P. 2013. Betting the future of the planet. Pgs 217-227 In *The Bet: Paul Ehrlich, Julian Simon, and the Gamble over Earth's Future*. New Haven, CT: Yale University Press.
REC: World Resources Institute. 2003. Environmental governance. Whose voice? Whose choice? in *Decisions for the Earth* pp. 1-12. WRI: Washington, D.C.
REC: Climate Science 101 module (for those of you who score <80% on background quiz)

WEEK TWO

Jan 29 – European conquest and changing nature-society relations in North America

Jan 31 – Manifest destiny, environmental transformation, and the early roots of conservation thought

REQ: VIDEO: The Wilderness Idea. 1992.
REQ: Thoreau, H.D. 1990. The value of wildness. pgs 36-39 In *American Environmentalism: Readings in Conservation History*, ed. R.F. Nash,. New York: McGraw-Hill.
REQ: Leopold, A. 1998. Wilderness as a form of land use. In *The Great New Wilderness Debate*, eds. J. B. Callicott and M. P. Nelson, 75-84. Athens: University of Georgia Press.
REQ: Foreman, D. 2004. Rewilding North America. pp. 128-143 in Foreman, D. *Rewilding North America: A Vision for Conservation in the 21st century*. Washington, D.C.: Island Press.
REQ: Marris, E. 2011. Weeding the jungle. pp. 1-15 in *Rambunctious Garden: Saving Nature in a Post-Wild World*. New York: Bloomsbury.
REC: Pollan, M. 1991. The idea of a garden. In *Second Nature*, pp. 209-238. New York: Dell Publishing

WEEK THREE

Feb 5 – Progressive Era conservation

Feb 7 – Our public lands

REQ: Wilkinson, T. (2016). Yellowstone and beyond: Are the national parks being loved to death? *The Christian Science Monitor*. July 24, 2016
REQ: Walker, P. and L. Fortmann (2003). Whose landscape? A political ecology of the 'exurban' Sierra. Cultural Geographies 10: 469-491.
REC: Gottlieb, R. 1993. Reconstructing environmentalism: Complex movements, diverse roots. *Environmental History Review, 17*, 1-19

WEEK FOUR

Feb 12 – Environmentalism and the 1970s dawn of the environmental movement

REQ: Hays, S. P. 1990. From conservation to environmentalism. pp 144-152 In *American Environmentalism: Readings in Conservation History*. Edited by R. F. Nash. New York, McGraw-Hill**.**

REQ: Norris, S. 2004. Only 30: A portrait of the Endangered Species Act as a young law. BioScience: 288-294.

REQ: Albrecht, V. S., & Christman, J. N. The Endangered Species Act. Retrieved from http://library.findlaw.com/1999/Jan/1/241467.html on August 15, 2011. (4 pages)

REC: Andrews, R.N.L. 1999. Chapter 12: Nationalizing pollution control pgs 227-254 In *Managing the Environment, Managing Ourselves: A History of American Environmental Policy.* New Haven: Yale University Press.

Feb 14 – Inequalities of environmental exposure

REQ: Kay, J. and C. Katz. 2012. Pollution, poverty, people of color: The factory on the hill. Environmental Health News, June 4, 2012.

WEEK FIVE

Feb 19 – Environmental justice movement

REQ: Bullard, R. 1994. Environmental racism and the environmental justice movement. Pgs 254-265 In Merchant, C. Ed. (1994). Ecology. Atlantic Highlands, NJ: Humanities Press International.

REQ: Katz, C. and J. Kay 2012. 'We are Richmond.' A beleaguered community earns multicultural clout. Environmental Health News, June 5, 2012.

REQ: Video: "Laid to waste: A Chester neighborhood fights for its future" Producers: R. Bahar and G. McCollough, April 1996.

Feb 21 – Analyzing climate impacts in rich and poor countries

REQ: Online module. Climate Impact Case Studies: Bangladesh and the Sahel

WEEK SIX

Feb 26 – Exam 1 (Weeks 1-5)

Feb 28– Determining responsibilities for reducing greenhouse gas emission reductions

REQ: Online module. Debating Greenhouse Gas Emission Responsibilities

WEEK SEVEN

Mar 5 – International agreements to address climate change

REQ: Online module. International Agreements for Climate Change Mitigation

Mar 7 – Biodiversity overview

REQ: Kolbert, E. "The Sixth Extinction?," The New Yorker, May 25, 2009. pp. 53-59.

REQ: Vandermeer,J. & I. Perfecto. 2005. Chapter 2 Breakfast of Biodiversity. IFDP, Oakland, CA.

REC: Tilman, D. 2000. Causes, consequences and ethics of biodiversity. *Nature* 405:208-211.

WEEK EIGHT

Mar 12– From slash-and-burn to industrial agriculture - the quest for sustainability.

Mar 14– Sustainable logging in tropical forests – Reforming institutions and norms

REQ: Vandermeer,J. & I. Perfecto. 2005. Chapter 3 Breakfast of Biodiversity. IFDP, Oakland, CA.
REQ: Laurance, W.F., J. Sayer, and K.G. Casseman. 2014. Agricultural expansion and its impacts on tropical nature. *Trends in Ecology & Evolution* 29 (2): 107-116.
REQ: Putz, F.E. et al. 2012. Sustaining conservation values in selectively logged tropical forests: the attained and the attainable. *Conservation Letters* 5: 296-303.
REQ: Kormos, C.F. and B.L. Zimmerman. Response to: Putz et al., Sustaining conservation values in selectively logged tropical forests: the attained and the attainable. *Conservation Letters* 7(2): 143-144.

SPRING BREAK

WEEK NINE

Mar 26 – Is the Amazon like 'Avatar'? Indigenous rights and gold mining

Mar 28 – National parks and extractive reserves.

REQ: Peres, C. 2005. Why we need megareserves in Amazonia. Cons Biology. 19: 728-733.
REQ: Kayapó People's Manifesto June 2013. Downloaded 1/11/14 from http://raoni.com/news.php
REQ: Fearnside, P. and R. Schiffman. Opinion: The Amazon on the brink. Once a leader in protecting the region's vast forests, Brazil is now moving in the opposite direction. New York Times. September 26, 2018.
REQ: Rosa-Aquino, P. 4 Indigenous leaders on what Bolsonaro means for Brazil. Grist [On-line] November 5, 2018. Accessed 1/14/2019.
REC: Nepstad et al 2004 "Inhibition of Amazon deforestation and fire by parks and indigenous lands" Cons Bio. 20:66-73.
REC: Londono, E. Jair Bolsonaro, on Day 1, undermines indigenous Brazilian's rights. The New York Times. January 2, 2019. https://www.nytimes.com/2019/01/02/world/americas/brazil-bolsonaro-president-indigenous-lands.html. Accessed 1/14/2019.
REC: Faleiros, G. ed. Looted Amazon. Mineria Ilegal. RAISG and InfoAmazonia. December 10th 2018. Accessed 1/14/2019

WEEK TEN

Apr 2 – Community-based conservation and incentive-based conservation

REQ: Western, D. and R. Wright. 1994. Background to Community-Based Conservation. pp. 1-14 in Western, D. and R.M. Wright. Natural Connections. Island Press: Washington, D.C.
REQ: Video: *Milking the Rhino*. (First 41 minutes required)

Apr 4 – Direct payments for conservation

REQ: Ellison, K. and G. C. Daily 2003. Making conservation profitable. Conservation in Practice 4(2):13-19.
REQ: Ferraro, P.J. & A. Kiss. 2002. "Direct Payments for Biodiversity Conservation." Science 298: 1718-1719
REC: Putz, F.E. and K.H. Redford (2009). Dangers of carbon-based conservation. *Global Environmental Change* doi:10.1016/j.gloenvcha.2009.07.005

REC: Phelps, J., E.L. Webb and A. Agrawal (2010). Does REDD+ threaten to recentralize forest governance? *Science* 328: 312-313.

WEEK ELEVEN

Apr 9 – Exam 2 (covers weeks 6-10, 50 points)

Apr 11 – Market-based approaches to climate mitigation

REQ: Online module. International Incentive-based Mechanisms for Reducing GHG Emissions
REQ: Nhantumbo, Isilda. 2011. "REDD+ in Mozambique: new opportunity for land grabbers?" *International Institute for Environment and Development*. [online] Accessed 1/14/2019.

WEEK TWELVE

Apr 16 – Economic growth/urbanization and prospects of environmental conservation (Env Kuznets, poverty-environment)

REQ: East is grey from The Economist.
REQ: Davis, M. 2006, Slum Ecology. Inequity intensifies Earth's natural forces 6 pp. in Orion. March/April.
REQ: 1 page handout with Kuznet curves from World Resources Institute 1996-7. Washington. D.C.

Apr 18 – Sustainable Development

REQ: World Commission on Environment and Development. 2010. Towards sustainable development. pp 207-217 In: Conca K and Dabelko GD (eds) Green Planet Blues, Westview Press, Boulder, CO.
REC: Lele, S. 2004. Sustainable Development – A Critical Review. pp. 252-264. In: Conca K and Dabelko GD (eds) Green Planet Blues, Westview Press, Boulder, CO.

WEEK THIRTEEN

Apr 23 – Renewable energy technologies 101

REQ: Online module. Assessing Energy Alternatives to Fossil Fuels
REC: Roberts, David. 2016. Here's what it would take for the U.S. to run on 100% renewable energy. *Vox* [online]. Accessed 1/14/2019.

Apr 25 – Climate change mitigation in the United States

REQ: Online module: Divergent National Energy Polices: the U.S. vs Germany
REQ: Howarth, R.W., A. Ingraffea, and T. Engelder. 2011. Should fracking stop? Nature 477: 271-275
REC: Environmental Defense Fund. 2015. Aliso Canyon leak sheds light on national problem. Methane leaks occurring across our national gas supply chain take a huge climate toll. [online]. Accessed 1/14/2019.

WEEK FOURTEEN

April 30 – Climate change adaptation: Planning for climate change in Wisconsin

REQ: Online module. Wisconsin Climate Impacts

May 2 – Exam 3 (covers weeks 11-14, 40 points)