



# Geog 137: Top ten global environmental problems

Spring 2018

Lectures: Tue & Thu 10:30 a.m. - 12 noon @ 145 McCone Hall

Section (101): Wed 11-12 @ 135 McCone Hall

Section (102): Wed 3:30-4:30 @ 145 McCone Hall



## Professor and GSI

Name	e-mail	Office	Office hours
Dr. Robert Rhew	rrhew@berkeley.edu	539 McCone Hall	Tue & Wed 2-3 p.m. or by appt
Roxane Roger Buetens	crogersb@berkeley.edu	TBD	Wed 12-1 p.m.

Course website – <https://bcourses.berkeley.edu>

## Course description:

Conceptualizing global environmental problems is difficult because of the complexity of the issues, the magnitude of the problems, and the different time scales of action versus reaction. These issues apply both to the natural earth system as well as human societies. This course will examine the scientific basis underlying the largest environmental threats, and then reframe the issues to explore the societal basis of those problems. In the end, the “top ten” list may expand to twenty or collapse to two. The ultimate goal is not to enumerate, but rather to conceptualize global environmental issues both in term human systems and earth system science.

## At the end of the course, you should be able to:

- Evaluate fundamental scientific arguments regarding major global environmental problems
- Identify and assess proximate and more distal causes to major environmental forcings
- Place local/regional environmental issues in the global context
- Synthesize common societal themes between different scientific issues
- Discuss the scientific practice and how it is translated to public policy
- Find examples of successful implementation of strategies that can be transferred

The first half of the course will provide students with the scientific basis behind five of the most pressing global environmental problems of the land, atmosphere, hydrosphere and biosphere: global biodiversity loss, diminishing freshwater resources, human-induced climate change, air pollution and threats to the world’s oceans. Students will then synthesize themes to identify common societal links underpinning these issues. The result will be a different category of global environmental problems, ones that address societal structures that may be responsible or inhibiting solutions. Topics will include: science and society, international politics, power and justice, environmental ethics, and evolutionary forces on society.

## Grading:

- 40% Assignments and Section participation. (see back)
- 20% Science midterm
- 20% Group Presentation II (poster): based on satisfying criteria, originality, depth of understanding.

Note: This poster assignment may incur an expense of ~\$50 for your group, to be divided among up to 4 members of your group.

20% Final paper: based on individual final 3-5 page paper: supported arguments, originality of composition, writing style, proper referencing and synthesis of material.

## Grading policies:

*On assignments:* It is your responsibility to ensure that your bcourses assignments are completed on time. Points will be deducted if assignments are late, regardless of whether or not a technical glitch occurred. Thus, do not wait until the last minute to turn in assignments.

*On group presentations:* It is essential that everyone play a role in the group presentations. It is possible that individuals within a group can receive different scores.

*On all work:* Ensure the highest academic integrity (see box on back of sheet).

**8 Assignments and Section Participation (40%):** GENERALLY: assignments will be posted Wednesdays and due the following week on bcourses Tuesday at 11 p.m. Late submission policy will be strict: 25% deduction immediately past the deadline up to 12 hours late. 50% up to 2 days late. Assignments not accepted after that. Last minute computer problems are not considered a valid excuse.

Because assignments are coupled with sections, they may be 2-part assignments: In this case, the main part will be due before section and the rest of it will be based on completion of the assignment within section. Hence, section attendance and participation will be part of the overall score.

**Weekly sections start the 2<sup>nd</sup> week (1/24/18):** Wed 11 a.m. -12 p.m. at Room 135, or Wed 3:30-4:30 p.m. at Room 145 (same as lecture room). The review sections will involve multiple presentations, discussion of the reading materials, and review of assignments. It is expected that each student read the material and participate actively during the sections. Participation grading will be based on team assignments and individual participation.

### **Reminder of the Berkeley campus code of conduct**

Review the campus code of conduct (<http://sa.berkeley.edu/code-of-conduct>), with attention to what constitutes plagiarism (<http://sa.berkeley.edu/conduct/integrity>):

“Plagiarism is defined as use of intellectual material produced by another person without acknowledging its source, for example:

- Wholesale copying of passages from works of others into your homework, essay, term paper, or dissertation without acknowledgment.
- Use of the views, opinions, or insights of another without acknowledgment.
- Paraphrasing of another person’s characteristic or original phraseology, metaphor, or other literary device without acknowledgment.”

### **READINGS**

Readings appear on the syllabus to match the lecture topic. It is recommended to review the readings before lecture.

#### **A. Required Books : In Earth Sciences library on course reserves**

1. Kolbert, E. The Sixth Extinction: an unnatural history (2014).
2. Pearce, F. When the Rivers Run Dry (2006) (also see EPUB)
3. Oreskes, N. and Conway, E., Merchants of Doubt (2011)
4. Roberts, C., The Ocean of Life: the Fate of Man and the Sea (2013)
5. Klein, N. This Changes Everything: Capitalism vs the Climate (2015)



#### **B. Book excerpts**

1. Wilson, E.O. Consilience, Ch 2, 6, 12
2. Gore, A. Earth in the Balance, Ch 12, 13
3. Wilson, E.O. Half-Earth: Our Planet’s Fight for Life (2016)

#### **C. Assessment reports on bcourses or for download directly from websites:**

1. Millennium Ecosystem Assessment synthesis reports (<http://www.maweb.org/>)
  - a. Ecosystems and Human Well-being: Biodiversity synthesis
2. U.S. Global Change Research Program, Fourth National Climate Assessment, Volume 1 (2017)
  - a. Executive Summary, 26 pp ([science2017.globalchange.gov](http://science2017.globalchange.gov))
  - b. selections from: Full Report, 470 pp. doi: 10.7930/J0J964J6
3. The 2014 Scientific Assessment of Ozone Depletion
  - a. Twenty Questions and Answers About the Ozone Layer: 2014 update
  - b. Executive Summary

#### **D. Additional articles and readings to be posted on bcourses**