

Policy, Science, and the Environment

ENVS 5000

University of Colorado

Fall Semester 2009

Roger A. Pielke, Jr.

Course Homepage:

http://sciencepolicy.colorado.edu/students/envs_5000

Calvin and Hobbes



Lecture and discussion sections meet in the conference room at 1333 Grandview:

http://sciencepolicy.colorado.edu/center_info/find_us.html

Class time: Tuesdays 11:00-1:30

Office Hours: Tuesdays, 9:15-11:00 and by appointment

Location: CIRES Center for Science and Technology Policy, 1333 Grandview Ave.

http://sciencepolicy.colorado.edu/center_info/find_us.html

Phone: 303-735-3940 (direct, but no voice mail)

email: pielke@colorado.edu

Purpose of the Course and Expectations

The course has two basic goals. First, to discuss issues arising at the intersection of policy, science and the environment that create challenges for effective decision making; and second, to introduce you to conceptual tools which are useful in thinking more effectively and responsibly about any problem of policy; and third, to develop and practice skills using the tools to analyze the various dimensions of a policy issue. To meet these goals, the course focuses on three primary activities: (1) core readings and discussion on aspects of environmental policy and the policy sciences; (2) periodic individual and shared assignments on substantive issues; and (3) a semester-long term project to be completed in groups.

Please note that six books are required reading for this course, other readings are either selected chapters or journal articles.

What you will get out of this class is proportional to what you put into the class. A good deal of the substantive material that we discuss will be brought to the class by you -- through the term project and our class discussions of the readings. Thus, it is critical to treat the term project as a semester-long effort, and not a final-week rush.

In order to get the most out of this course, you will need to come to class prepared, participate, and complete all of the assignments. I encourage you to use the office hours as an opportunity to discuss in more detail certain aspects of the course, share ideas on your case study, and to provide feedback on the course and the readings. The remainder of this syllabus details some of the important aspects of this course.

Course Texts

We will read each of the following books. These have been ordered through the CU Bookstore, are available online at the usual retailers, and will also be placed on reserve in Norlin Library.

Hulme, M. 2009. **Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity**, Cambridge University Press.

Smil, V. 2005. **Energy at the Crossroads: Global Perspectives and Uncertainties**, MIT Press.

MacKay, D. 2009. **Sustainable Energy: Without the Hot Air**, UIT. Online free at: <http://www.withouthotair.com/>

Pielke, Jr., R. 2007 **The Honest Broker: Making Sense of Science in Policy and Politics**, Cambridge University Press.

Optional: Clark, T. 2002. **The Policy Process: A practical guide for natural resource professionals**, Yale University Press.

Dahl, R. 1998. **On Democracy**, Yale University Press.

Requirements of the Course

Weekly Email One Pagers

Every week you are expected to turn in a one-page essay. We have established a list-serv for the course: envs5000@sciencepolicy.colorado.edu. Details will be provided in class. These should be submitted by the Sunday immediately preceding the relevant class. For some weeks I will suggest a question or theme to be addressed; for other weeks the topic will be open ended. The purpose of this exercise is to allow you an opportunity to discuss aspects of the readings, integrate other material with the week's focus, or to raise questions about what was unclear or unanswered by the readings. A secondary purpose is to ensure that you have an opportunity to provide me with feedback on the class and your progress/satisfaction in the course.

Individual and group assignments

Periodically throughout the semester you will be responsible for individual and group assignments related to the week's readings and topic. These will be discussed as the semester progresses. Some of the assignments will be associated with the semester-long term project.

Term Project

You will be responsible for a semester-long research project. The project will involve a final report, a website, and an oral presentation at the end of the semester. The project will involve various assignments during the semester that will comprise part of your project grade. The term project will be described separately.

Grading

Your grade will be determined as follows:

Weekly one pagers	15%	(no late submissions)
Individual and group assignments	35%	(periodically)
Term project	50%	(described in more detail separately)

University Syllabus Statements

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and www.Colorado.EDU/disabilityservices

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, {{insert your procedures here}} See full details at http://www.colorado.edu/policies/fac_relig.html

Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at

<http://www.colorado.edu/policies/classbehavior.html> and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

The University of Colorado at Boulder policy on Discrimination and Harassment (<http://www.colorado.edu/policies/discrimination.html>), the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships applies to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>.

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Tentative Schedule and Readings

Week 0; 8-25-09 **No class**

Please read Hulme, *Why We Disagree About Climate Change*

Week 1: 9-1-09 **Introductions**
Overview of the Course
Schedule Matters
Discussion of Hulme

Additional reading:

Sunstein, C. 2001. *Echo Chambers*, Princeton University Press.
<http://pup.princeton.edu/sunstein/echo.pdf>

9-3-09 The First 300 Days: An Assessment of Obama's Energy and Climate Policy

(required attendance)

Panel Discussion
7:00 - 9:00 pm
University of Colorado School of Law,
Wolf Law Building, Wittemyer Courtroom

Week 2: 9-8-09 **Evaluating Knowledge Claims**

Schkade, D., Cass, R. and R. Hastie, 2006. What Happened on Deliberation Day? June 2006, University of Chicago Law & Economics, Olin Working Paper No. 298
Available at SSRN: <http://ssrn.com/abstract=911646>

Brooks, D. 2003. People Like Us, *The Atlantic Monthly*, August.
<http://www.theatlantic.com/issues/2003/09/brooks.htm>

Chapters 1 and 2 pp. 3-44, “Encountering science and politics” and “The uncertain authority of science” in Bocking, S. 2004. **Nature’s Experts: Science, Politics and the Environment**, Rutgers University Press.

Sarewitz, D. 2004. How science makes environmental controversies worse, *Environmental Science & Policy*, 7:385-403.

Case study: *Has global warming stopped?*

Week 3: 9-15-08 Problem Orientation (Guest Lecture: David Cherney)

Rocheftort, D. A. and R. W. Cobb 1994. Problem definition: an emerging perspective, pp. 1-31 in *The Politics of Problem Definition: Shaping the Policy Agenda* (University Press of Kansas: Lawrence, KS).

Hilgartner, Stephen and C. Bosk, 1988. The rise and fall of social problems: a public arenas model, *American Journal of Sociology*, 94:(1):53-78.

Pielke, Jr., R. A. 1997. Asking the right questions: Meteorological research and societal needs, *Bulletin of the American Meteorological Society*, 78: 255-264.

Please read Chapter 5 “Problem Orientation” in Clark, and to the extent that you are interested in learning more about policy research as taught here, read the balance of Clark, T. W. 2002. **The Policy Process: A practical guide for natural resource policy makers**, Yale University Press.

For further reading:

Downs, A. 1972. Up and Down with Ecology -- the “Issue-Attention Cycle,” *The Public Interest* 28:32-50.

Rocheftort, D. A. and R. W. Cobb, 1994. **The Politics of Problem Definition**, University of Kansas Press.

Wallace, M. G., H. J. Cortner, S. Burke, 1995. Review of policy evaluation in natural resources, *Society and Natural Resources*, 8:35-47.

Week 4: 9-22-09 Introduction to the Federal Budget Process

U.S. House of Representatives, Committee on the Budget, 1995. *The Congressional Budget Process: An Explanation*, 105-67.

http://www.senate.gov/~budget/democratic/the_budget_process.pdf.

Obama, B.. 2008. *The FY 2010 Budget of the United States*.

<http://www.whitehouse.gov/omb/budget/fy2010/budget.html>.

Plus the Appendix:

<http://www.whitehouse.gov/omb/budget/fy2009/appendix.html>.

More than you want to know:

<http://www.cbo.gov/>
<http://www.whitehouse.gov/omb/>
<http://www.senate.gov/~budget/democratic/budprocess.html>
<http://www.whitehouse.gov/omb/budget/fy2004/>
<http://www.house.gov./budget/>
http://www.house.gov/budget_democrats/
<http://www.senate.gov/~budget/democratic/>
<http://www.senate.gov/~budget/republican/>

Week 5: 9-29-09 Decarbonization – Energy basics

Waggoner P E and Ausubel J E 2002 A framework for sustainability science: a renovated IPAT identity Proc. Natl Acad. Sci. 99 7860–5

Smil – Energy at the crossroads

Mackay – pp. 1-28, and pp. 328-337, read more as desired

Week 6: 10-6-09 Decarbonization -- Applications

Pielke, Jr., R. A., 2009. The British Climate Change Act: A Critical Evaluation and Proposed Alternative Approach, *Environmental Research Letters*, Vol. 4, No. 2.

Pielke, Jr., R. A., 2009 (submitted). Mamizu Climate Policy: An Evaluation of Japanese Carbon Emissions Reduction Targets, *Environmental Research Letters*.

Pielke, Jr. R.A., 2009 (submitted). Australia’s Emission Trading Scheme: An Evaluation of Targets and Timetables.

Case study: United States

Week 7: 10-13-09 Guest lecture - TBA

Week 8: 10-20-09 Student decarbonization presentations/projects due

Week 9: 10-27-09 Adaptation

Week 10: 11-3-09**Technological Fixes and Backstops**

Pielke, Jr., R. A., 2009. An Idealized Assessment of the Economics of Air Capture of Carbon Dioxide in Mitigation Policy, *Environmental Science & Policy*, Vol. 12, Issue 3, pp. 216-225.

An Analysis of Climate Engineering as a Response to Global Warming, by Dr. J Eric Bickel and Lee Lane.

http://fixtheclimate.com/fileadmin/templates/page/scripts/downloadpdf.php?file=/uploads/tx_templavoila/AP_Climate_Engineering_Bickel_Lane_v.4.0.pdf

Reponses:

Pielke,

http://fixtheclimate.com/fileadmin/templates/page/scripts/downloadpdf.php?file=/uploads/tx_templavoila/PP_Climate_Engineering_Pielke_v.3.0.pdf

Smith.

http://fixtheclimate.com/fileadmin/templates/page/scripts/downloadpdf.php?file=/uploads/tx_templavoila/PP_Climate_Engineering_Pielke_v.3.0.pdf

IME, 2009. *Geo-Engineering – Giving us time to act?* Institution of Mechanical Engineers, London, UK.

http://www.imeche.org/NR/rdonlyres/872412E4-BE9E-42D3-85EC-39F1889C74CB/0/Geoengineering_Giving_us_the_time_to_act.pdf

Week 11: 11-10-09 Student adaptation presentations/projects due**Week 12: 11-17-09 Politics of Climate Change****Examples of different perspectives:**

Prins, G., Cook, M., Green, C., Hulme, M., Korhola, A., Korhola, E.R., Pielke, Jr., R., Rayner, S., Sawa, A., Sarewitz, D., Stehr, N., and H. von Storch, 2009. How to get climate policy back on course. Institute for Science, Innovation and Society, Oxford University and London School of Economics, The Mackinder Programme, LSE.

http://sciencepolicy.colorado.edu/admin/publication_files/resource-2731-2009.17.pdf

Shellenberger et al. 2009. Fast, Clean, & Cheap: Cutting Global Warming's Gordian Knot, *Harvard Law & Policy Review*, <http://thebreakthrough.org/blog/Fast%20Clean%20Cheap.pdf>

USCAP, A Blueprint for Legislative Action, http://www.us-cap.org/pdf/USCAP_Blueprint.pdf

Chakravarty et al. 2009. Sharing global CO2 emission reductions among one billion high emitters, PNAS

Week 13: 11-24-06 NO CLASS – HAPPY THANKSGIVING

Week 14: 12-01-09 Democracy and Expertise

What is/are the role(s) of the expert in a democracy?

Pielke, Jr. R. 2007. **The Honest Broker: Making Sense of Science in Policy and Politics**, Cambridge University Press.

Optional:

Lippmann, W. 1932. The scholar in a troubled world, *The Atlantic Monthly*, pp. 148-152.

Fallows, J. 2003. Who shot Mohammed Al-Dura?, *The Atlantic Monthly*, June:49-56.

Kysar, D. A. and J. Salzman, 2003. Environmental Tribalism, *Minnesota Law Review*, 87:1092-1125.

Ruhl, J. B. 2002. A Manifesto for the Radical Middle, *Idaho Law Review* 38:385-407.

Sunstein, C. 2003. Beyond the Precautionary Principle, *University of Pennsylvania Law Review* 151:1003-1058.

Week 15: 12-08-09 Course Wrap Up/Grad Student panel

Lynn, Jr., L. 2001. The making and analysis of public policy: a perspective on the role of social science, Chapter 8, pp. 187-218 in D. L. Featherman and M. A. Vonovskis (eds.) **Social Science and Policy-Making: A Search for Relevance in the Twentieth Century** (University of Michigan Press).

Brunner, R. D. 1991. The policy movement as a policy problem, *Policy Sciences* 24:65-98.

Wildavsky, A. 1985. The once and future school of public policy, *The Public Interest* 79:25-41.

Clark, T. W. 2002. **The Policy Process: A practical guide for natural resource policy makers**, Yale University Press.

Schelenberger, M. and T. Nordhaus, 2004. The Death of Environmentalism, The Breakthrough Institute

http://www.thebreakthrough.org/images/Death_of_Environmentalism.pdf

ENVS Grad Student panel

Fisher, E. 2005. Lessons learned from the Ethical, Legal and Social Implications program (ELSI): Planning societal implications research for the National Nanotechnology Program, *Technology in Society*, 27:321-328.

Gent C.E. 2000. Needle exchange policy adoption in American cities: Why not? *Policy Sciences*, 33:125-153.

Logar, N. And L.K. Pollack, 2005. Transgenic fish: is a new policy framework necessary for a new technology? *Environmental Science & Policy* 8:17-27.

Vogel, J. M. 2004. Tunnel vision: The regulation of endocrine disruptors, *Policy Sciences*, 37:277-303.

Week 16: 12-12-09 7:30-10:00PM Final Exam