

Environmental Policy and Management

Christopher Gore, Ph.D.

Ryerson University

1. Course Description

Why is public policy often inconsistent with scientific evidence or expert opinion? Are environmental and natural phenomena too complex for policymakers and politicians to translate into clear policy objectives? How do policymakers determine when to take action on environmental issues? When is evidence convincing? How does the political system evaluate risk? This course provides an advanced and critical analysis of the relationship between public policymaking and environmental issues. Drawing from a range of theories and case studies, students will develop the skills to evaluate and understand how challenging and controversial themes in environmental science such as risk, complexity, evidence, expertise, technology, and institutions, shape and are shaped by the policymaking process.

The course will be valuable for any students interested in developing an advanced understanding of policymaking relating to science, technology, and the environment. It is an interdisciplinary course that will require students to engage in critical discussion of a range of literature that has direct bearing on explaining how environmental issues, scientific evidence, and the policy process converge.

The course will be delivered as a seminar. Each week students will have several articles or books to read and review. When appropriate, the instructor will provide introductory remarks and context about the theme. The reading material will be complemented by guest presentations, in-class group case study evaluation, and general discussion.

The course is organized around four areas of emphasis.¹ These themes are iterative, building on one another; that is, they will not be addressed sequentially, e.g., theme 1, then theme 2, but will be treated concurrently:

1. ***Causes of and constraints on environmental policymaking:*** This theme will require students to consider the complexity and political nature of policymaking. It will examine the macro level factors that influence policy

¹ I wish to acknowledge that this framework is borrowed and adapted from Professor Kent Weaver's course description for PPOL 519, The Comparative Policy Process, taught at Georgetown University, and the structural-functional comparative approach articulated in Almond et al., *Comparative Politics Today*, New York: Pearson (2008). I also acknowledge borrowing ideas for readings and weekly themes from the course outlines developed by Frank Laird, Denver University; Jennifer Kuzma, University of Minnesota; and Joy Rhode, University of Michigan. I thank these individuals and many other members of the Science Technology and Environmental Politics (STEP) section of the American Political Science Association for their thoughts and suggestions.

decisions. It will also examine how knowledge and evidence about the environment is theoretically expected to translate into policy outcomes, the conditions that must be in place for that translation to occur, and the barriers to translating scientific knowledge into policy.

2. **Stages of the policymaking process:** This theme emphasizes how the policymaking process is expected to unfold in an ideal scenario, and how environmental issues and scientific evidence factor into this process. This theme focuses on agenda-setting, policy formulation and policy adoption more than on the implementation and evaluation of policy. This theme will help students examine how various forms of knowledge and evidence about the environment is weighted in policymaking, as well as how and why the policy process includes, excludes and favors various forms of knowledge.
3. **Strategic choices and tasks:** This theme examines what strategic choices and actions politicians and policymakers make to implement environmental policy, given the constraints they operate. For example, this theme examines how scientific evidence is 'framed' and communicated to produce politically and socially convincing policy. It will also consider the role of coalitions of experts and non-experts in influencing environmental policy outcomes, and how different interests try to use stories or narratives about environmental outcomes in order to implement policy goals.
4. **Case studies:** The fourth area of emphasis will be to consider a range of prominent historic and contemporary environmental issues both domestic and abroad that emphasize the above themes (1 through 3). Students will play a prominent role in sharing examples.

2. Course Requirements

Masters and PhD students will interact in this course simultaneously for three hours. PhD students will also meet for one hour separately from Masters students. As a result, some assignment expectations are slightly different – please read descriptions carefully.

Masters Students will be evaluated on the following five components:

Assignment/task	Value of Total Grade (100)	Date Due
General Participation (Participation 10% and attendance 5%)	15%	Ongoing
Presentation of issue and linkage to course theme	10%	Randomly assigned date
Book review	25%	Session 7
Research report	50%	Session 12

PhD Students will be evaluated on the following five components:

Assignment/task	Value of Total Grade (100)	Date Due
General Participation	15%	Ongoing
Presentation: critical observations, questions and pedagogical challenges	15%	Randomly assigned date
Book review	20%	Session 7
Research report	50%	Session 12

1. General Participation: 15% (all)

- a. **Date due:** Ongoing
- b. **Late penalty:** Failure to attend regularly and to contribute to class contributions will result in a diminished participation grade.
- c. **Description:** Your grade on this component will be a function of your active, considered, respectful, informed, critical, and constructive participation in the seminar. Regular and complete attendance is expected throughout the semester. Students are expected to demonstrate that the readings have been read thoroughly; that questions and concerns raised follow from careful reflection of potential answers or explanations; and that overall participation shows evidence of careful, constructive engagement with the course material.
- d. 10% of this grade for Masters students will be for general participation and 5% for attendance.
- e. **Additional expectations, PhD students:**
 - i. PhD students are expected to play a very active role in class discussion. I expect each student to make a meaningful and substantive contribution to class discussion every week. I expect that PhD students will raise questions for class consideration; share their own research experience and knowledge; and demonstrate clear evidence that the material has been read and evaluated.

2. Presentation:

- a. **Presentation of issue and linkage to course theme: 10% (Masters)**
 - i. **Date due:** Ongoing
 - ii. **Late penalty:** Failure to attend or present on the assigned date without adequate notice or a medical reason will result in '0'.
 - iii. **Description:** Later in the semester all students will have to write a research paper on an issue relating to science, technology or environment policy. For this evaluation component, students must provide a short summary of their topic AND make a clear and direct link between the topic and the weekly course theme, e.g., if

you will be writing a paper on vaccines and you are assigned the week on 'public participation and democratizing science' then you will have to discuss how vaccines connect to issues in public participation. Presentations will be no longer than 5 minutes. Students must end their presentation with one critical question linking their topic to the weekly theme – a question that might be useful for class discussion. Presentations will be evaluated based on the quality of the linkage between the topic and the course theme, and based on the clarity of your explanation of the science-policy challenges of your topic.

- b. **Critical observations, questions and pedagogical challenges of theme: 15% (PhDs)**
 - i. **Date due:** Ongoing (completed in the class time separate from Masters students)
 - ii. **Late penalty:** Failure to attend or present on the assigned date without adequate notice or a medical reason will result in '0'.
 - iii. **Description:** Each student will function as a theme leader or theme co-leader per week. That individual will be responsible for leading discussion on three issues relating to the course theme. Students must NOT summarize the articles, but summarize and identify common observations and themes amongst the articles, and most importantly, raise critical questions left open by the material. Further, students must also identify pedagogical challenges with the theme; that is, they must consider what makes the process of learning about the theme challenging, and ways that that challenge might be overcome if teaching this material at an undergraduate level. Student presentations will be evaluated based on whether there is evidence of careful consideration and reflection of the theoretical, empirical, and pedagogical challenges of the topic and whether they demonstrate preparedness, illustrated through comfort in communication and knowledge of the reading material.
 - iv. Students are **not** permitted to use Powerpoint in this presentation.
 - v. These presentations will take place in the first hour of the class. On the day that a PhD student presents, they will also be the first person to respond to the Masters student presentations.
3. **Book review: All (25%)**
- a. **Date Due: Session 7.**
 - b. **Late Penalty:** 2 grades per day, beginning after the end of Session 7, reapplied at 12:00am each new day.
 - c. **Length:** Eight pages double spaced maximum, 12 point font.
 - d. **Description:**
 - i. Each student must obtain, read and review *Science in Environmental Policy. The Politics of Objective Advice*, by Ann

Campbell Keller (MIT Press, 2009). The book is available for purchase as an e-book from MIT Press.

- ii. In this assignment students must complete an academic book review. Students should consult leading journals in science, technology and environmental studies and policy for examples of book reviews. At minimum, your review must: 1) provide a summary of the book and its arguments; 2) reflect on strengths and/or concerns with the book; and, 3) critically evaluate the contribution the book is making to the advancement of knowledge on the relationship between science and policy. Reviews will be evaluated based on the presence of the above three requirements, as well as the quality and clarity of your written work; the organization of your ideas; the quality of the examples (cited) from the book that you use to support your observations; and, the demonstration of critical insight and analysis.
- iii. Book reviews **must** quote directly from the book to emphasize arguments and observations. All direct quotes must have “quotation marks” and page numbers provided (e.g., 56).

4. Research paper: Advancing policy in science, technology or environmental studies: All (50%)

- a. **Date Due: Session 12**
- b. **Late penalty:** 2 assignment grades per day, beginning after the end of Session 12, reapplied at 12:00am each new day.
- c. **Length:** Master’s students – 15 pages maximum; PhD students – 18 pages maximum (excluding title page, references, appendices etc.).
- d. **Description:** In this assignment, students must write an argumentative essay focused on how to overcome the challenges of integrating science and policy for one specific field or issue of their choosing. This is similar to a policy analysis paper – a paper that presents context about an issue, evaluates the existing challenges with response to the issue, and then advances recommendations for responding to that issue. The central difference is that the paper must substantiate any recommendation with documented evidence and it must be situated in some theoretical lens surrounding environmental or science policy, e.g, literature on public perceptions of risk or public participation in policy processes.
- e. Students are free to examine the challenge of integration broadly, or to focus on one particular challenge, e.g., public participation. All papers must be written as if preparing to submit the work to an academic journal such as the *Review of Policy Research: The Politics and Policy of Science and Technology*. For this reason, all papers must demonstrate knowledge of relevant literature relating to the theoretical framework and/or empirical evidence connected to your paper, and must be situated in relation to this work. Students are free to focus on any issue they are interested in provided it allows for a clear, specific analysis of the challenges of science–policy integration.

- f. Students are strongly encouraged to speak to the instructor prior to beginning their paper to determine if their focus is suitable. Students are also strongly encouraged to draw from the course readings and the bibliographies of course readings to assist in the development of an analytical framework for the paper. A more detailed assignment description will be provided Session 4.

3. Class Schedule Required Reading

Keller, Ann Campbell. 2009. *Science in Environmental Policy. The Politics of Objective Advice*. Ascher. Cambridge, MIT Press.

Session 1. Introduction: Hockey sticks, salmon and the political system

Session 2. What is policy, what is science? How are the processes different?
Everett, Sophia. 2003. The policy cycle: Democratic process or rational paradigm revisited? *Australian Journal of Public Administration*, 62(2), pp. 65–70

Jasanoff, Sheila. 1996. Is Science Socially Constructed – And Can It Still Inform Public Policy? *Science and Engineering Ethics*, pp. 263–276.

Myers, Norman. 2007. Scientific uncertainty and public policy.

Encyclopedia of the Earth,

http://www.eoearth.org/article/Scientific_uncertainty_and_public_policy

Simeon, Richard. 1976. Studying Public Policy. *Canadian Journal of Political Science*, Vol. 9, No. 4., pp. 548–580.

Session 3. Science and politics: Translating goals to actions

Bocking, Stephen. 2004. *Nature's Experts: Science, Politics and the Environment*. New Brunswick, New Jersey: Rutgers, pp. 16–44.

Hulme, Mike. 2009. *Why we disagree about climate change*.

Cambridge: Cambridge University Press, pp. 72–108.

Government of Ontario. 2010. *Climate Progress. Ontario's Plan for a Cleaner, More Sustainable Future. Annual Report 2009–2010*.

http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_085413.pdf

Goulder, Lawrence H. & W.H. Parry. 2008. *Instrument Choice in Environmental Policy*. Resources for the Future Discussion Paper 08–07.

<http://www.rff.org/documents/RFF-DP-08-07.pdf>

Session 4. Science as a public problem: Risk and communication

Beck, Ulrich. 1992. *Risk Society*. Sage, pp. 19–50. Reader. 6

Beck, Ulrich. 2009. Risk Society. In *Ideas on the Nature of Science*, edited by David Cayley. Fredericton, New Brunswick: Goose Lane, pp. 92–101.

Hartley, Sarah and Grace Skogstad. 2005. Regulating genetically modified crops and foods in Canada and the United Kingdom: Democratizing risk regulation. *Canadian Public Administration*, Vol. 48, No. 3, pp. 305–327.

Jasanoff, Sheila. 1997. Civilization and madness: the great BSE scare of 1996. *Public Understandings of Science*, 6, pp. 221–232.

Session 5. Agenda-setting and the environment: Framing and narratives
Guston, David. 2001. Boundary organizations in Environmental Policy and Science, *Science, Technology and Human Values*, Vol. 26, No.4, pp. 399–408.

Pralle, Sarah and Jessica Boscarino. 2011. Framing Trade-offs: The Politics of Nuclear Power and Wind Energy in the Age of Global Climate Change, *Review of Policy Research*, Vol. 28, No. 4, pp. 323–346.

Roe, Emery. 1991. Development Narratives, Or Making the Best of Blueprint Development. *World Development*, Vol. 19, No. 4, pp. 287–300.

Stone, Deborah A. 1989. Causal Stories and the Formation of Policy Agendas. *Political Science Quarterly*, Vol. 104, No. 2, pp. 281–300.

Session 6. Forms of knowledge

Leach, Melissa and Ian Scoones. 2005. Science and citizenship in a global context. In *Science and Citizens*, edited by Melissa Leach, Ian Scoones and Brian Wynne. London: Zed Books, pp. 15–38.

McGregor, Deborah. 2004. Coming Full Circle: Indigenous Knowledge, Environment, and Our Future. *American Indian Quarterly*, Summer & Fall, Vol. 28, Nos. 3 & 4, pp. 385–410.

Film: “Ghosts of Futures Past”

Session 7. Book club and paper roundtable

This class will be dedicated to two activities: 1) discussion and reflection on the book review; and, 2) roundtable discussion on moving ahead with your research paper. All students will have to explain what stage they are at with respect to their research, and will have to explain the subject of their paper, central question driving their paper, tentative argument, and questions for peer feedback.

Session 8. Citizen and non-government influence on environmental policy

Bernstein, Steven and Benjamin Cashore. 2000. Globalization, Four Paths of Internationalization and Domestic Policy Change: The case of EcoForestry in British Columbia. *Canadian Journal of Political Science*, Vol. 33, No. 1, pp. 67–99.

Bob, Clifford. 2001. Marketing Rebellion: Insurgent groups, international media and NGO support. *International Politics*, 38, pp. 311–334.

Fischer, Frank. 2009. *Democracy & Expertise*. Oxford: Oxford University Press, pp. 48–76.

Savan, Beth, Christopher Gore, Alexis Morgan. 2004. Shifts in environmental governance in Canada: how are citizen environment groups to respond? *Environment and Planning C*, 22,4, pp. 605–619.

Session 9. Comparing and Drawing Lessons in Environmental

DeLeon, Peter and Phyllis Resnick–Terry. 1999. “Comparative Policy Analysis: Deja` Vu All Over Again?” *Journal of Comparative Policy Analysis: Research and Practice* 1, pp. 9–22.

Jasanoff, Sheila. 2005. *Designs on Nature. Science and Democracy in Europe and the United States*. Princeton: Princeton University Press, pp. 13–29.

Illical, Mary and Kathryn Harrison. 2007. “Protecting Endangered Species in the US and Canada: The Role of Negative Lesson Drawing”, *Canadian Journal of Political Science*, 40, 2, pp. 367–394. (Read after reading Rose!)

Rose, Richard. 2005. *Learning from Comparative Public Policy*. London and New York: Routledge, pp 1–26.

Session 10. Policy Convergence and Divergence in Environmental Policy

Howlett, Michael. 2000. Beyond Legalism? Policy Ideas, Implementation Styles and Emulation–Based Convergence in Canadian and U.S. Environmental Policy. *Journal of Public Policy*, 20, 3, pp. 305–329. (Read after Knill and Lenschow).

Knill, Christoph. 2005. Introduction: Cross–national policy convergence: concepts, approaches and explanatory factors. *Journal of European Public Policy*, 12:5, October, pp. 764–774.

Lenschow, Andrea, Duncann Liefferink, and Sietske Veenman. 2005. When the birds sing. A framework for analyzing domestic factors behind policy convergence. *Journal of European Public Policy*, 12:5, October, pp. 797–816.

Schreurs, Miranda. 2003. Divergent Paths: Environmental Policy in Germany, the US, and Japan. *Environment*, Vol. 45, No. 8, pp. 9–17.

Session 11. Science in the international system

Bernstein, Steven. 2002. Liberal environmentalism and global environmental governance. *Global Environmental Politics*, Vol. 2, No. 3, pp. 1–16.

Haas, Peter. 1992. Introduction: Epistemic Communities and International Policy Coordination. *International Organization*, Vol. 46, No. 1, pp. 1–35.

Stone, Diane. 2004. Transfer agents and global networks in the ‘transnationalization’ of Policy. *Journal of European Public Policy*, Vol. 11, No. 3, June, pp. 545–566.

Wilkening, Ken. 2011. Science and International Environmental nonregimes: The case of Arctic Haze, *Review of Policy Research*, Vol. 28, No. 1, pp. 125–148.

Recommended:

Goldman, Michael. 2004. Imperial Science, Imperial Nature: Environmental Knowledge for the World (Bank). In *Earthly Politics*, edited by Sheila Jasanoff and Marybeth Long Martello. Cambridge: MIT Press, pp. 55–80. Reader.

Session 12. Wrap up: Moving forward

Choi, Bernard CK, Tikki Pang, Vivian Lan, Pekka Puska, Gregory Sherman, Michael Goddard, Michael J Ackland, Peter Sainsbury, Sylvie Stachenko, Howard Morrison, and Clarence Clottey. 2005. Can scientists and policy makers work together? *Journal of Epidemiology and Community Health*, 5, 59, pp. 632–637.