

Philosophy 5360-6360

Topics in History and Philosophy of Science: Ecology

Professor: Anya Plutynski

Phone: 801-581-7424

Email: [plutynski@philosophy.utah.edu](mailto:plutynski@philosophy.utah.edu)

Office: OSH 338J

Office Hours:

### **Course Description:**

What is ecology? What is the aim of ecology? To some, ecology is a scientific discipline, whose object is to study the interactions of organisms and their environments. To others, ecology is synonymous with the environmental movement. The focus of this course will be on the historical development of ecology as a professional science, and we will also be paying attention to the political ramifications of ecological ideas and how they have been incorporated into environmental discussions concerning wilderness conservation, and population control. The aim is to situate ecological ideas in their cultural and political environments, exploring interrelated ideas of "nature's economy" and political economy.

As this is a philosophy class, the aim of this class is not simply to understand the history of ecology for its own sake, but also to use this historical work as a way of approaching questions about science and science policy, such as the following:

- How do scientists develop models of the natural world?
- When do we say a model is "well-confirmed"?
- How is ecology, as a science, different from other sciences? For instance, are ecological systems complex in a way that prohibits robust, or "law like" generalizations in ecology?
- How ought we to move from models and theory to policy?

### **Course Requirements:**

Because this course is based on lecture/discussion format, class participation is essential. The reading material is an integral part of this course and provides a basis for weekly discussions. I will assign thought questions each week to help direct your reading and stimulate discussion. Short written answers to these

questions constitute a major part of your discussion grade. Two take-home exams will also be assigned.

Undergraduates:

Discussion/Participation: 30%

First take-home exam (Due Friday Feb. 10): 30%

Second take-home exam (Due Friday March 31): 40%

Graduates:

See last page of syllabus.

If any problems arise, academic or personal, that might jeopardize your performance in the class, please inform me at my next available office hour or leave a phone message at 1-7424. I want you to both succeed in and enjoy this class.

Any students with disabilities that may prevent him or her from demonstrating his or her abilities should contact me as soon as possible, so that we can discuss accommodations necessary to assure full participation and facilitate your educational opportunities.

Students are expected to familiarize themselves with the university policies on plagiarism and assume responsibility for honesty in all course work.

Schedule of Readings:

Origins of Ecology:

Worster, *Nature's Economies* pp. 26-55, 115-187

Koerner, *Linnaeus: Nature and Nation*, pp. 82-112

Darwin, *Origin of Species*, Burrow Ed. Pp. 114-129

Robert Young, "Malthus and the Evolutionists; the Common Context of Biological and Social Theory," in *Darwin's Metaphor: Nature's Place in Victorian Culture*, pp. 23-55

Ecology in the 20<sup>th</sup> Century:

Kingsland, "Defining Ecology as a Science" in Real and Brown, *Foundations of Ecology: Classic Papers with Commentaries*.

Worster, pp. 191-253, 258-339, 359-387

Muir, *Our National Parks*. Boston: Houghton Mifflin. 1901. pp. 1-15, 30-36

Cronon, "The Trouble With Wilderness: or, Getting Back to the Wrong Nature." *Environmental History*. 1996. 7-28

Balance of Nature:

Forbes, "The Lake as Microcosm" in Real and Brown, *Foundations of Ecology: Classic Papers with Commentaries*.

Daniel Schneider, "Local Knowledge, Environmental Politics, and the Founding of Ecology in the United States: Stephen Forbes and the 'Lake as Microcosm'" *Isis* 91 (2000) pp. 681-705

Tansley, "The Use and Abuse of Vegetational Concepts and Terms," in Real and Brown

Tobey, *Saving the Praries: The Life Cycle of the Founding School of American Plant Ecology* pp. 155-190

Lindeman, "The Trophic-Dynamic Aspect of Ecology" in, Real and Brown

Film Showing: THE JACKSON HOLE WILDLIFE PARK

Leopold, 1966. *A Sand Country Almanac*, New York: Ballantine pp. 237-295

Cooper, "Teleology and Environmental Ethics."

Sober, "Philosophical Problems for Environmentalism"

From Science to Policy:

Bocking, *Ecologists and Environmental Politics: A History of Contemporary Ecology*, pp. 89-115.

Film Showing: RACHEL CARSON'S SILENT SPRING

Carson, *Silent Spring*, selections: pp. 13-23, 44-55, 97-119, 168-194, 244-262.

Norton, "Extinction and Zero-Infinity Dilemmas," from *Why Preserve Natural Variety*

Meyers, *Biodiversity and the Precautionary Principle*, in *Ambio* 22-74

Ehrlich, *The Population Bomb*, pp. 46-67, 158-173.  
Haller, *Apocalypse Soon? Selections*

Jamieson, "Managing the Future: Public Policy, Scientific Uncertainty," in D. Sherer, *Upstream/Downstream: Issues in Environmental Ethics*

#### Graduate Student Requirements:

Graduate students in this course will be responsible for all undergraduate readings and assignments. In addition, graduate students will attend a bi-weekly meeting (otherwise known as eco-lunch) outside regular class to discuss the readings in greater depth, along with the following books. You are required to write a 750-word review of two out of the following books, which you may substitute for the discussion portion of the undergraduate class grade.

Cooper, *The Science of the Struggle for Existence*

Mitman, *The State of Nature: Ecology, Community and American Social Thought* University of Chicago Press; (October 1, 1992)

Haller, *Apocalypse Soon? Wagering on Warnings of Global Catastrophe*

Spencer Weart, *The Discovery of Global Warming*. Harvard University Press; (September 30, 2003)

You also have the option of substituting a 15-20 page research paper in place of the two take-home exams. If you decide to choose this option, you must abide by the following schedule:

Approval of Paper Topic: Feb. 1

Discussion of Paper Sources: March 1

Rough Draft ?

Final Draft?