

ECO 490: SENIOR SEMINAR (Spring 2001)

THE ECONOMIC APPRAISAL OF ENVIRONMENTAL ASSETS: Valuing Nature

“In a world where money talks, the environment needs value to give it a voice.”
(Frances Cairncross, p. 43)

“...Although ecosystem valuation is certainly difficult and fraught with uncertainties, one choice we do not have is whether or not to do it.” (Robert Costanza, *et. al.* p. 7)

SEMINAR DESCRIPTION:

The primary objective of this seminar is two folds: (1) To study the methodological and ethical foundations of modern economics approaches to the *valuation* of environmental (ecosystem) services. Typical examples of such undertaking may involve the assignment of *monetary values* to: animal species that are threatened with extinction, such as the spotted owl, the blue whale, etc.; a reduction in human life expectancy due to a prolonged exposure to a certain type of air pollution; the aesthetic value of a mountain range; the multiple services of forest (for example, the maintenance of biodiversity, watershed service, carbon sequestration, etc.) and so on. (2) To show how estimates of the economic values (monetary benefits and costs) of environmental and natural resource services can be a valuable part of the information base needed to conduct a full fledged and comprehensive *cost-benefit analysis*. Cost benefit analysis is a standard technique used to estimate and evaluate the *net* benefits arising from public projects and on the basis of which policy choices about resources and environmental quality are made. This part of the seminar will also include an extensive discussion of the related issues of discounting and intergenerational equity.

In deed, over the past two decades, significant progress has been made in the development of new and improved techniques used for imputing monetary values to various aspects of ecosystem services. Despite such a progress, however, economic valuation of environmental services remains to be one of the most fascinating and controversial subject matters of economic studies in recent years. On the other hand, these are the very reasons that make valuation of an ecosystem services to be an appropriate senior seminar topic dealing with the general issues of natural resource management and conservation.

REQUIRED TEXT:

Hussen, Ahmed M., *Principles of Environmental Economics: Economics, Ecology and Public Policy*, Routledge, 2000.

WEEKLY LECTURE AND DISCUSSION TOPICS WITH CORRESPONDING KEY READING ASSIGNMENTS:

Week 1: March 27

Lecture topic: A quick review of some key environmental and natural resource economic concepts

Week 2: April 3

Reading Assignments: 1. Chapter 4 of the main textbook, pp. 67-85.
2. Garciela Chichilnisky and Geoffrey Heal, "Economic returns for the biosphere," *Nature*, vol. 391, Feb. 1998

Topic for L & D: Ecosystem services and why their values should be imputed in monetary terms.

Week 3: April 10

Reading Assignments: 1. Costanza, *et. al.*, "The value of the world's ecosystem services and natural capital." *Nature*, vol. 387, 1997
2. van Wilgen, *et. al.*, "Valuation of Ecosystem services: A case study from South African fynbos ecosystem," *BioScience*, vol. 46, no. 3, March 1996.

Topic for L and D: Is it desirable, let alone possible, to evaluate the welfare contributions of the biosphere to the world economy?

Weeks 4 and 5: April 17 and 24

Reading Assignment: 1. Chapter 14 of the main textbook, pp. 287-299
2. Several case studies

Topic for Lecture: Methods of imputing total economic value for environmental goods and services when people's preferences for these goods and services can be extracted from market information in both direct and indirect ways.

Discussion Topics: Case Studies

Week 6: May 1

Reading Assignments: 1. Chapter 14 of the main textbook, pp. 300-313
2. Case studies

Topic for Lecture: Contingent valuation methods.

Discussion topic: Case studies

Week 7: May 8

Reading Assignments: 1. Chapter 15 of the main textbook, pp. 315-326
2. Case studies

Topic for Lecture: The Methodological and Ethical Foundations of Cost-Benefit Analysis

Discussion topic: Case studies

Week 8: May 15

- Reading Assignments:
1. Chapter 15 from the main textbook, pp. 326-328.
 2. Thomas Thompson, "Are we Obligated to Future Others?" Spring 1978.
 3. Robert Heilbroner, "What Has Posterity Ever Done for Me?" January 19, 1975.
 4. Barry S. Gower, "What do we owe future generation?" 1992.

Topic for L and D: Discounting and intergenerational equity

Weeks 9 and 10:

Class Projects

GRADING:

The final grade for this course will be based on the following three items:

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| 1. Class attendance and discussion participation | 20% |
| 2. An Exam | 30% |
| 3. *Class Project | 30% |
| 4. **Essay: Can globalization be compatible with a sustainable use of our Planet's natural resources? | 20% |

*The class project involves a case study on a local natural ecosystem know as "Lyons Lake Preserve." This property is owned and operated by the Southwest Michigan Land Conservancy.

**The Essay will be based on a reading from a book entitled "*Vanishing Borders: Protecting the Planet in the Age of Globalization*," by Hilary French, 2000.

