Economics 653  
Seminar in Natural Resource Economics  
Professors Howe and Lee  
Fall 1979

Note: this seminar is offered every second year. Prerequisites include intermediate micro theory and a working knowledge of topics covered in Economics 480, especially calculus. It is strongly suggested that participants have a prior course in natural resource economics such as Economics 453/553.

Purposes of the Seminar: this is not a survey of the field. The purpose is to study in some depth the major contemporary theoretical issues in the field, and to develop a working capability with the models and methods used in theoretical and empirical investigations.

Major Reference Works: The journal literature is adequately surveyed in the Peterson and Fisher (EJ 1977) survey noted below, plus the bibliographies of the various articles below. The books listed below are considered classics or major contributions. R indicates on 2-hour reserve at Norlin.


Arrow, Kenneth J. and Mordecai Kurz, Public Investment, The Rate of Return, and Optimal Fiscal Policy, Baltimore: The Johns Hopkins Press, 1975 (Chapter II, Secs. 3-6 provide a nice introduction to control theory). R.

Outline of the Seminar:
Note: K indicates can be bought at Kinkos.

I. Overview.
Howe, Charles W., Natural Resource Economics, New York: John Wiley and Sons, 1979, Chapters 1-4, 7, 12, and 16.

II. Optimum Resource Use Over Time.
A. Non-renewable resources.
Howe, Chapter 5, "Optimal Resource Use Over Time and Likely Market Behavior"
Stiglitz, Joseph E., "A Neoclassical Analysis of the Economics of Natural Resources," in Smith, Scarcity and Growth Reconsidered. R.

B. Non-renewable resources with exploration.
Howe, Chapter 10, Section 10.2.
Fisher, "Measures ...," in Smith, Scarcity and Growth Reconsidered. R.

C. Renewable resource systems.
Howe, Chapter 13, "The Management of Fisheries"
Howe, Chapter 14, Section 14.4, "Economic Aspects of Groundwater Management"
Clark, Colin, Mathematical Bioeconomics, Chaps. 1,2.

*(Reading can be delayed until Section II. Excellent bibliography.) K.
III. Indicators of Scarcity.
   Howe, Chapter 6, "Empirical Indicators of Evolving Natural Resources Scarcity"
   Fisher, "Measures ..." in Smith, SGR. R.
   Brown and Field, "The Adequacy of Measures for Signaling the Scarcity of Natural Resources," in Smith SGR. R.

IV. Resources and the Environment in Economic Growth.

V. Intergenerational Equity and Exhaustible Resources.