Econ 638
Fall 2003
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Office hrs: Wed 11-11:50, Th 1:20-2:10 and by appt

ENVIRONMENTAL RESOURCE ECONOMICS: SYLLABUS AND TOPICS THRU 11/13

Texts
Hanley et. al. *Environmental Economics in Theory and Practice* (req)
Oates (ed.), *The Economics of the Environment* (req)
Stavins, *Economics of the Environment* (rec)
Beckerman, *Poverty of Reason: Sustainable Development and Economic Growth* (rec)

Other references
Baumol and Oates, *Environmental Economics*
Dasgupta and Maler, *The Environment and Emerging Development Issues*
Weitzman's sustainability manuscript (his website)
J Environmental Economics and Mngmnt http://www.academicpress.com/www/journal/ee.htm
Environmental and Resource Economics http://www.kluweronline.com/issn/0924-6460
Resource and Energy Economics http://www.elsevier.nl/locate/reseneeco/
Land Economics http://www.wisc.edu/wisconsinpress/journals/landecon.html
Energy Journal http://www.iaee.org/en/publications/journal.asp
Marine Resource Economics http://www.uri.edu/cels/enre/mre/mre.htm

Course requirements & Grading

Midterm	24%
Final	36%
Paper	24%
Homework and citizenship[1]	16%

Preliminary Course Outline Readings may be added according to student interests. Others will be downgraded to optional status. Students are encouraged to indicate their preferences for topics (especially areas not already reflected below) and for readings to be added or downgraded.

I. Environmental Welfare Economics

A. Intro and "market failure"
A. Externalities (Pigouvian, Coasian, and market solutions)
B. Public goods
C. Hybrids
D. Environmental justice
E. Readings
1. Stavins, ch 1
2. Hanley, chs. 1&2
3. Cropper and Oates (JEL 6/92), ch 4 in Stavins (and Jstor). Note references in n2, e.g. to Burrows
4. Baumol, ch 2 in Oates
5. Coase, "The Problem of Social Cost," JLE, 10/60 and in both Oates and Stavins
6. Roumasset, Welfare Economics and the Minimal Role of Government
7. Johansson and Roumasset, "Apples, Bees, and Contracts: A Coase-Cheung Theorem for Positive Spillover Effects"
8. Spulber, ch. 3 in Oates

[1] Contributions to the learning community (including class participation, additional presentations, facilitating availability of course materials, bringing pertinent current articles, websites etc. to class's attention).

9. Turvey, ch. 6 in Oates

II. Pollution solutions

A. Command and control vs. emission trading
B. Emission-trading vs. exposure trading
C. Readings
1. Hanley, chs. 3-6
2. Baumol and Oates, ch. 10 in Oates
3. Roumasset and Smith, JEEM 1990
4. Montgomery (1972), *JET*, 5, 395-418, and ch. 12 in Oates
5. Weitzman, "Prices and Quantities," RESTUD, 10/74 and in Oates
6. Roberts and Spence, JPubEcon, 4/76 and in Oates
5. Adar and Griffen, 8 in Oates
6. Shotle and Abler, "Nonpoint Pollution," ch. 5 in Folmer and Tietenberg*
7. Griffen, Environmental Policy for Spatial and Persistent Pollutants, JEEM, 14, 41-53(1987)*
8. Stavins, Part VI and 17

III. Environmental resource economics, property rights, and institutional design

A. Renewable and non-renewables
A. Open access vs. common property
B. Evolution of common and private property
C. Property rights failures
D. Readings
1. Hanley, chs. 7-11
2. Hardin, Tragedy of the Commons, in Stavins
3. Tietenberg, ch. 12*
4. Ostrom, E., (1990), Governing the Commons, chs. 1, 3 (pp. 69-101)*
5. Weitzman, M., (1974), Free Access vs. Private Ownership as Alternative Systems for Managing Common Property, *Journal of Economic Theory*, 8: 225-234*
6. Roumasset, The Coevolution of Markets and Governance (see also ch 9 in B&O)
7. Roumasset, (1989), Decentralization and Local Public Goods, Getting Incentives Right. *The Philippine Review of Economics and Business*, Vol. 26(1) June, pp. 1-13*
8. Roumasset, "Designing Institutions for Water Quality and Quality Management," in Parker and Tsur, *Decentralization and Coordination of Water Resource Management**
9. Krulce, D. T. Wilson and R'set, "Optimal Management of a Renewable and Replaceable Resource: The Case of Coastal Groundwater," *AJAE*, 11/97.
10. Chakravorty, U. and Roumasset, J. (1991), Efficient Spatial Allocation of Irrigation Water, *American Journal of Agricultural Economics*, February 1991: pp. 165-173
9. Harrington, ch. 32 in Oates
10. R'set, Designing Inst for Effective Forestry Mngmt (electronic)

IV. Ecological Economics, Cost-Benefit Analysis and Measurement problems

A. Simpson, R. David. 1998. "Economic Analysis and Ecosystems: Some Concepts and Issues." Ecological Applications, 8 (2):342-349.*
B. Hanley, chs. 12 and 13
C. Kaiser and Roumasset, "Valuation of Nature's Intermediate Products: the Koolau Forest's Contribution to the Pearl Harbor Aquifer," 1999. http://www.uhero.hawaii.edu/ and "Valuing Indirect Ecosystem Services: the Case of Tropical Watersheds," forthcoming in *Environmental Economics and Development*
D. Symposium on Contingent Valuation in *Economic Perspectives,* Fall 1994*
1. Portney, P., The CV Debate: Why Economists Should Care
2. Hanemann, W.M., Valuing the Environmental Through Contingent Valuation
3. Diamond & Hausman, Contingent Valuation: Is Some Number Better than No Number?
E. Selections from Oates, Part IV.
F. Smith in Folmer and Tietenberg, ch. 6.
G. Pearce and Warford in Opschoor, *Environmental Economics and Development*
H. McFadden's CV (http://emlab.berkeley.edu/users/mcfadden/dlmcv10.html) *

I. David Chapman and Paul Portney, "Ten Years' Later: Contingent Valuation after the Report to NOAA": http://www.rff.org/seminar/history.htm#11-20-02 *
J. Kaiser& R'set, Optimal Control of Exotic Species
K. Shogren,
L. Endress, Terrorism and the Economics of Biological Invasions, esp. section II
M. Vincent, Jeffrey, "Economic Depreciation of Timber Resources: Direct and Indirect Estimation Methods", Harvard Institute for International Development, June 1997, 13pp. http://www.hiid.harvard.edu/pub/pdfs/585.pdf
N. Stavins, 13 and 14.

V. Sustainable Growth and win-win environmentalism

A. Hanley, ch. 14
B. Land Economics, 11/97*
C. Endress and Roumasset, "The Yin and Yang of Sustainable Development: The Case for Win-Win Environmentalism," in Asia-Pacific Economy, v. 1, n. 2.
D. Endress and Roumasset, (1994), Golden Rules for Sustainable Resource Management: *The Economic Record*, vol 70(120), pp. 267-277*
E. Endress, Roumasset, and Zhou, A Ramsey-Koopmans Approach to Optimal and Sustainable Growth (WP 02-4; see also 00-9 and "Is Sustainability Necessary," in tray)
F. Hartwick, J.M. (1990), Natural Resources, National Accounting and Economic Depreciation, *Journal of Public Economics*, 43:291-304*
D. Dasgupta, P. &Maler, K. (1993), Poverty, Institutions, and the Environmental-Resource Base, for Behrman & Srinivasan (eds), *Handbook of Development Economics*, Vol 3*
E. Krautkraemer, J., (1994), "Population growth, soil fertility, and agricultural intensification," J. Dev. Econ., 44, 403-428; and ReStud '85 on Optimal Growth and Preservation.
F. Roumasset, Review of Opschoor et. al., *Environmental Economics and Development*, Edward Elgar, 1999.
G. M. Bhattarai, M. Hammig , "Institutions and the Environmental Kuznets Curve for Deforestation: A Crosscountry Analysis for Latin America, Africa and Asia," *World Development*, June, 2001, pp 995-1010*
H. Pender, John, Pop growth, ag intensification, induced innovation, and resource sustainability," Ag Econ, 19, (1998), 99-112 (e-mailed by Tad).
I. Van Kooten, G. C. "Land Resource Economics and Sustainable Development: Economic Policies and the Common Good." UBC Press. 1993 (also provided by Tad).
J. Dasgupta, Sustainable Economic Development in the World of Today's Poor, Population, Resources, and Welfare: An Exploration into Reproductive and Environmental Externalities,* and Evaluating Projects and Assessing Sustainable Development in Imperfect Economies,* all at www.econ.cam.ac.uk/faculty/dasgupta
K. Sen
L. Stavins 5 (Solow)

VI. Energy, Global Warming, Growth, and International Cooperation

A. Nordhaus, W., "To Slow or Not to Slow: the Econ of the Greenhouse Effect," EJ, July, '91 (jstor)*
B. Stavins, part VII.
C. Chakravorty et.al., JPE Dec. 1997
D. Bovenberg and Goulder, AER, 1996
E. Barrett, "Int. Cooperation for Environmental Protection," ch. 26 in DD
G. Oates, "Green Taxes" in Southern Economic Journal (Apr 1995)
H. SOHNGEN, BRENT & MENDELSOHN, ROBERT (2003), An Optimal Control Model of Forest Carbon Sequestration, *American Journal of Agricultural Economics* **85** (2), 448-457.

VII. Trade and the Environment

A. Bhagwati, J. (1993), "The Case for Free Trade, Scientific American, November: 42-49*
B. Daly, H. (1993), The Perils of Free Trade, Scientific American, November: 50-56*

*Optional

Preliminary and Partial schedule of topics

Aug 26: Introduction (augmented circular flow) and first fundamental theorem of welfare economics (read Hanley, ch. 1)

Aug 28: Pigouvian taxes and emission markets: theorems 2a, 2b, and 3a. Critique of Baumol's argument against victim compensation (read Hanley 2, Baumol, *AER* 6/72)

Sept 2: Coase theorem (finish readings 1-5 in section I, emphasizing tax, market, and contract solutions)

Sept 4: Continue pollution solutions, Coase, blackboard economics, taxation vs. subsidy (read Spulber, parts of Hanley 3)

Sept 9: Spulber; Montgomery (abatement cost approach)

Sept 11: Starrett problems;

Sept 16: Public goods/bads; equivalency of Lindahl and CEPTLSVC

Summary of the fundamental thms of welfare economics

1a) Invisible hand thm: If M, CE is PO
1b) If C, any PO point is achievable as MEWIT
Pigouvian thms
2a) 1st mkt failure thm (externalities): If not M, CE is not PO
2b) 1st intervention thm: If not M, CEWPT is PO
Coasian equivalence thms
3a) If bilateral spillovers, CEWPTLSVC is ME_V
3b) If bilateral spillovers, CCE_V is ME_V
Lindahl thms
4a) 2nd mkt failure thm (public goods)
4b) 2nd intervention thm

Sept 23: Differentiated effluent taxes for spatial pollution and exposure vs. emission trading; Cheung-Coase Theorem (apple-bees)

Sept 25: Uncertainty (elasticity results; when tax eqvlt to market? Roberts/Spence tax schedule)
Extra credit or research problem: known distributions for both ben and costs; devise tax schedule or other hybrid to max expected net benefits.

Sept 30: Theory of non-renewable resources

Oct 2: 2x2 example of spatial pollution; theory of renewable resources

Oct 7: Groundwater as a renewable and replaceable resource

Oct 9: Spatial optimization

Oct 14: Midterm

Oct 16: Double dividend

Oct 21: Second-best dynamics: theory of property (Locke; North-Demsetz)
Andsn/Hill: ExBrdn of open access wedge (MC/MSC) increases w/ mdnization. Cost decreases w/ brbd wire

Oct 23: Forestry and environmental banking

Oct 28: Environmental banking, project evaluation

Oct 30: Krautkraemer on soils, project eval.

Nov 4: Household production, hedonic pricing, travel cost & RUM

Nov 6: CV (for non-use values); valuation of indirect ecological services

Nov 11: Beckerman

Nov 13: Win-win environmentalism for economic development

Nov 18: Sustainability and economic growth

Nov 25: Sustainability III

Nov 27: Global warming

Dec 2: Barrett

Dec 4: Trade, Environment, and the EKG

Dec 9: Review