

Economics of the Environment
ApEc 8602

Spring 2001
MW 12:30 - 1:45
COB B36

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503 Ecology
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Course Outline/objective: The course is designed to apply the tools of economic analysis to environmental policy issues. In the first part of the course, we will study externalities and methods to regulate externalities under both complete and asymmetric information. In the second part of the course, we will study methods to measure non-market benefits from environmental amenities.

Prerequisites: This course will use both economic theory and econometrics. The prerequisite for the course is a Ph.D. level sequence in microeconomic theory. Students should have also had a graduate level econometrics class.

Course Requirements:

Problem Sets	15%
Paper	25%
Midterm I	30%
Midterm II	30%

Texts: Most of the readings in the course will come from journal articles. These articles will be available in Waite Library. We will also use three texts.

1. Hanley, N., J.F. Shogren and B. White. 1996. *Environmental Economics in Theory and Practice*. New York: Oxford University Press.
2. Baumol, W.J. and W.E. Oates. 1988. *The Theory of Environmental Policy*, 2nd Edition. Cambridge: Cambridge University Press.
3. Freeman, A.M. 1993. *The Measurement of Environmental and Resource Values: Theory and Methods*. Washington, DC: Resources for the Future.

In addition, there are a number of good books that you might want to consider having if you intend to do environmental economics as a field. Some recommended books are:

1. Braden, J. and C. Kolstad (eds.) 1991. *Measuring the Demand for Environmental Quality*. Amsterdam: North Holland.
2. Bromley, D. (ed.) 1995. *The Handbook of Environmental Economics*. Cambridge, MA: Blackwell Publishers.
3. Cornes, R. and T. Sandler. 1986. *The Theory of Externalities, Public Goods and Clubs*. Cambridge: Cambridge University Press.
4. Cummings, R., D. Brookshire and W. Schulze. 1986. *Valuing Environmental Goods*. Totowa, NJ: Rowman and Littlefield.
5. Dorfman, R. and N.S. Dorfman (eds.). 1993. *Economics of the Environment: Selected Readings* 3rd Edition. New York: Norton.
6. Hausman, J.A. (ed.) 1993. *Contingent Valuation: A Critical Assessment*. Amsterdam: North-Holland Press.
7. Johannsson, P.-O. 1987. *The Economic Theory and Measurement of Environmental Benefits*. Cambridge: Cambridge University Press.
8. Just, R., D. Hueth, and A. Schmitz. 1982. *Applied Welfare Economics and Public Policy*. Englewood Cliffs, NJ: Prentice Hall.
9. Kopp, R. and V.K. Smith (eds.) 1993. *Valuing Natural Assets: The Economics of Natural Resource Damage Assessments*. Washington, DC: Resources for the Future.
10. Laffont, J. 1988. *Fundamentals of Public Economics*. Cambridge: MIT Press.
11. Laffont, J.-J. and J. Tirole. 1993. *A Theory of Incentives in Procurement and Regulation*. Cambridge: MIT Press.
12. Maler, K.-G. 1974. *Environmental Economics: A Theoretical Inquiry*. Baltimore: Johns Hopkins University Press.
13. Mitchell, R. and R. Carson. 1989. *Using Surveys to Value Public Goods: The Contingent Valuation Method*. Washington, DC: Resources for the Future.
14. Oates, W. 1992. *The Economics of the Environment*. Brookfield, VT: Edward Elgar.
15. Portney, P.R. and R.N. Stavins (eds.) 2000. *Public Policies for Environmental Protection*, 2nd Edition. Washington, DC: Resources for the Future.
16. Xepapadeas, A. 1998. *Advanced Principles in Environmental Economics*. Cheltenham, UK: Edward Elgar.

Reading List

(* indicates required readings)

I. Introduction and Overview

1. * Hanley, N., J.F. Shogren and B. White. 1996. *Environmental Economics in Theory and Practice*. Ch. 1.

2. *The Economist*. Costing the earth: a survey of the environment. Sept. 2, 1989.
3. Cropper, M. and W. Oates. 1992. Environmental economics: a survey. *Journal of Economic Literature* 30: 675-740.

II. Externalities and Environmental Policy 1: Complete Information

A. Efficiency and the Welfare Theorems

1. * Varian, H. 1992. *Microeconomic Analysis*, 3rd Edition. New York: Norton. Ch. 17-18.
2. Dorfman, R. 1993. Some concepts from welfare economics. In *Economics of the Environment: Selected Readings*, R. Dorfman and N.S. Dorfman (eds.). New York: Norton.

B. Public Goods, Externalities and Pigouvian Taxes

1. * Hanley, N., J.F. Shogren and B. White. 1996. *Environmental Economics in Theory and Practice*. Ch.2 – 4.
2. * Mas-Colell, A., M. Whinston and J. Green. 1995. *Microeconomic Theory*, Chapter 11. Oxford University Press.
3. * Baumol, W. and W. Oates. *The Theory of Environmental Policy*, Ch. 2-4.
4. Cornes, R. and T. Sandler. 1986. *The Theory of Externalities, Public Goods, and Club Goods*. Cambridge: Cambridge University Press. Ch. 5-6.
5. Bator, F. 1958. The anatomy of market failure. *Quarterly Journal of Economics* 47: 351-379.
6. Samuelson, P.A. 1955. Diagrammatic exposition of the pure theory of public expenditure. *Review of Economics and Statistics* 37: 350-356.

C. Nonconvexities

1. * Baumol, W. and W. Oates. *The Theory of Environmental Policy*, Ch. 7 - 8.
2. * Hurwicz, L. 1999. Revisiting externalities. *Journal of Public Economic Theory* 2: 225-245.
3. Starrett, D.A. 1972. Fundamental nonconvexities in the theory of externalities. *Journal of Economic Theory* 4: 180-199.
4. Baumol, W.J. and D. F. Bradford. 1972. Detrimental externalities and non-convexities of the production set. *Economica* 39: 160-176.
5. * Helfand, G. and J. Rubin. 1994. Spreading versus concentrating damages: environmental policy in the presence of nonconvexities. *Journal of Environmental Economics and Management* 27: 84-91.

D. Entry and Exit

1. Rose-Ackerman, S. 1973. Effluent charges: a critique. *Canadian Journal of Economics* 6: 512-527.
2. *Spulber, D. 1985. Effluent regulation and long-run optimality. *Journal of Environmental Economics and Management* 12: 103-116.
3. Kohn, R.E. 1994. Do we need the entry-exit condition on polluting firms? *Journal of Environmental Economics and Management* 27: 92-97.
4. McKittrick, R. and R.A. Collinge. 2000. Linear Pigouvian taxes and the optimal size of a polluting industry. *Canadian Journal of Economics* 33: 1106-1119.

E. Averting Behavior

1. * Bird, P. 1987. The transferability and depletability of externalities. *Journal of Environmental Economics and Management* 14: 54-57.
2. * Shibuta, H. and Winrich, J. 1983. Control of pollution when the offended defend themselves. *Economica* 50: 425-437.
3. Smith, V.K. and W.Desvougues. 1986. Averting behavior: does it exist? *Economics Letters* 29: 291-296.

F. Property Rights and Bargaining

1. * Coase, R. 1960. The problem of social cost. *Journal of Law and Economics* 3: 1-44.
2. Demsetz, A. 1967. Toward a theory of property rights. *American Economic Review* 57: 347-359.
3. Libecap, G. 1989. *Contracting for Property Rights*. Cambridge University Press.

G. Liability Rules

1. * Segerson, K. 1995. Liability and penalty structures in policy design. In *The Handbook of Environmental Economics*, D. Bromley (ed.). Oxford: Basil Blackwell.
2. Menell, P. 1991. The limitations of legal institutions for addressing environmental risks. *Journal of Economic Perspectives* 5: 93-113.

H. Tradeable Permits

1. * Hanley, N., J.F. Shogren and B. White. 1996. *Environmental Economics in Theory and Practice*. Ch. 5.
2. * Baumol, W. and W. Oates. *The Theory of Environmental Policy*. Ch. 12.
3. Dales, J.H. 1968. Land, water, and ownership. *Canadian Journal of Economics* 1: 791-804.
4. * Montgomery, D. 1972. Markets in licenses and efficient pollution control programs. *Journal of Economic Theory* 5: 395-418.

5. * Oates, W., P. Portney and A. McGartland. 1989. The net benefits of incentive-based regulation: a case study of environmental standard setting. *American Economic Review* 79: 1233-1242.
6. * Carlson, C., D. Burtraw, M. Cropper and K. Palmer. 2000. Sulfur dioxide control by electric utilities: what are the gains from trade? *Journal of Political Economy* 108: 1292-1326.
7. Hahn, R. 1984. Market power and transferable property rights. *Quarterly Journal of Economics* 99: 29-46.
8. *C. Kling and J. Rubin. 1997. Bankable permits for the control of environmental pollution. *Journal of Public Economics* 64: 101-115.
9. Rubin, J. 1996. A model of intertemporal emission trading, banking, and borrowing. *Journal of Environmental Economics and Management* 31: 269-286.
10. Ellerman, A.D. et al. 2000. *Markets for Clean Air: The U.S. Acid Rain Program*. New York: Cambridge University Press.

I. Political Economy and Environmental Policy

1. * Buchanan, J. and G. Tullock. 1975. Polluters' profits and political response: direct control versus taxes. *American Economic Review* 65: 139-147.
2. Cropper, M.L. 2000. Has economic research answered the needs of environmental policy? *Journal of Environmental Economics and Management* 39(3): 328-350.
3. Hahn, R. 2000. The impacts of economics on environmental policy. *Journal of Environmental Economics and Management* 39(3): 375-399.
4. * Cropper, M. W. Evans, S. Berardi, M. Ducla-Soares and P. Portney. 1992. The Determinants of Pesticide Regulation: A Statistical Analysis of EPA Decision-making. *Journal of Political Economy* 100: 175-197.
5. * Metrick, A. and M. L. Weitzman. 1994. Patterns of behavior in endangered species preservation. *Land Economics* 72(1): 1-16.
6. Hamilton, J. 1993. Politics and social costs: estimating the impact of collective action on hazardous waste facilities. *Rand Journal of Economics*: 101-125.

III. Externalities and Environmental Policy 2: Asymmetric Information

A. Optimal Regulation with Asymmetric Information

1. * Baumol and Oates. 1988. *The Theory of Environmental Policy*. Ch 5, 13.
2. * Mas-Colell, A., M. Whinston and J. Green. 1995. *Microeconomic Theory*. Ch. 14.
3. Laffont, J.-J. and J. Tirole. 1993. *A Theory of Incentives in Procurement and Regulation*. Cambridge: MIT Press. Ch. 1.
4. * Weitzman, M. 1974. Prices vs. quantities. *Review of Economic Studies* 41: 477-491.

5. * Kwerel, E. 1977. To tell the truth: imperfect information and optimal pollution control. *Review of Economic Studies* 44: 595-601.
6. * Lewis, T. 1996. Protecting the environment when costs and benefits are privately known. *Rand Journal of Economics* 27: 819-847.
7. Roberts, M. and M. Spence. 1976. Effluent charges and licenses under uncertainty. *Journal of Public Economics* 5: 193-208.
8. Spulber, D. 1988. Optimal environmental regulation under asymmetric information. *Journal of Public Economics* 35: 163-181.
9. Farrell, J. 1987. Information and the Coase Theorem. *Journal of Economic Perspectives* 1: 113-129.
10. * Shavell, S. 1984. A model of the optimal use of liability and safety regulations. *Rand Journal of Economics* 15: 271-280.
11. Xepapadeas, A. Environmental policy under imperfect information: incentives and moral hazard. *Journal of Environmental Economics and Management* 20: 113-126.

B. Non-point Source Pollution

1. * Segerson, K. 1988. Uncertainty and incentives for non-point pollution control. *Journal of Environmental Economics and Management* 15: 87-98.
2. Holmstrom, B. 1982. Moral hazard in teams. *Bell Journal of Economics* 13: 324-340.
3. Cabe, R. and J. Herriges. 1992. The regulation of non-point source pollution under imperfect and asymmetric information. *Journal of Environmental Economics and Management* 22: 134-146.
4. Shortle, J.S., R.D. Horan, and D.G. Abler. 1997. Research issues in nonpoint source water pollution control. *American Journal of Agricultural Economics*: 571-585.

C. Monitoring and Enforcement

1. Becker, G. 1968. Crime and punishment: an economic approach. *Journal of Political Economy* 76: 169-217.
2. * Kaplow, L. and S. Shavell. 1994. Optimal law enforcement with self-reporting of behavior. *Journal of Political Economy* 102: 583-606.
3. * Mookherjee, D. and I.P.L. Png. 1994. Marginal deterrence in enforcement of law. *Journal of Political Economy* 102: 1039-1066.
4. Harrington, W. 1988. Enforcement leverage when penalties are restricted. *Journal of Public Economics* 37: 29-53.
5. * Swierzbinski, J.E. 1994. Guilty until proven innocent - regulation with costly and limited enforcement. *Journal of Environmental Economics and Management* 27: 127-146.
6. Malik, A. 1993. Self-reporting and the design of policies for regulating stochastic pollution. *Journal of Environmental Economics and Management* 24: 241-257.

7. * Polasky, S. and H. Doremus. 1998. When the truth hurts: endangered species policy on private land with incomplete information. *Journal of Environmental Economics and Management* 35: 22-47.

D. R&D and Environmental Regulation

1. Jaffe, A.B., R.G. Newell and R.N. Stavins. 2001. Technological change and the environment. In *The Handbook of Environmental Economics*, K-G Maler and J. Vincent (eds.). Amsterdam: North Holland/Elsevier Science.
2. * Milliman, S.R. and R. Prince. 1989. Firm incentives to promote technological change in pollution control. *Journal of Environmental Economics and Management* 16: 52-57.
3. * Laffont, J.-J. and J. Tirole. 1996. Pollution permits and compliance strategies. *Journal of Public Economics* 62: 85-125.
4. * Laffont, J.-J. and J. Tirole. 1996. Pollution permits and environmental innovation. *Journal of Public Economics* 62: 127-140.
5. * Jaffe, A.B. and R.N. Stavins. 1995. Dynamic incentives of environmental regulations: the effect of alternative policy instruments of technological diffusion. *Journal of Environmental Economics and Management* 29: S43-S63.

IV. Measuring Benefits and Costs of Environmental Improvement

A. Issues in Non-Market Valuation

1. * Hanley, N., J.F. Shogren and B. White. 1996. *Environmental Economics in Theory and Practice*. Ch. 12.
2. Krutilla, J.V. 1967. Conservation reconsidered. *American Economic Review* 57: 777-786.
3. Smith, V.K. 1997. Pricing what is priceless: a status report on pricing non-market valuation of environmental resources. In *International Yearbook of Environmental and Resource Economics 1997/1998*, H. Folmer and T. Tietenberg (eds.). Cheltenham, UK: Edward Elgar.
4. Bockstael, N.B. and K.E. McConnell. 1993. Public goods as characteristics of nonmarket commodities. *Economic Journal* 103: 1244-1257.

B. Benefit-Cost Analysis

1. * Dorfman, R. 1993. An introduction to benefit-cost analysis. In *Economics of the Environment: Selected Readings*, R. Dorfman and N.S. Dorfman (eds.). New York: Norton.
2. * Arrow, K.J. et al. 1996. Is there a role for benefit-cost analysis in environmental, health, and safety regulation? *Science* 272: 221-222.
3. * Graham, D. 1981. Cost-benefit analysis under uncertainty. *American Economic Review* 71: 715-725.
4. Graham, D. 1992. Public expenditure under uncertainty: the net-benefits criteria. *American Economic Review* 82: 822-846.

C. Cost of Environmental Regulation

1. * Jaffe, A.B., S.R. Peterson, P.R. Portney and R. Stavins. 1995. Environmental regulation and the competitiveness of U.S. manufacturing. *Journal of Economic Literature* 33: 132-163.
2. * Hazilla, M. and R.J. Kopp. 1990. The social cost of environmental quality regulations: a general equilibrium analysis. *Journal of Political Economy*: 853-873.
3. * Porter, M.E. and C. van der Linde. 1995. Toward a new conception of the environment-competitiveness relationship. *Journal of Economic Perspectives* 9: 97-118.
4. * Palmer, K., W.E. Oates and P.R. Portney. 1995. Tightening environmental standards: the benefit-cost or the no-cost paradigm? *Journal of Economic Perspectives* 9: 119-132.

D. Principles of Welfare Change Measurement

1. * Johansson, P.-O. 1987. *The Economic Theory and Measurement of Environmental Benefits*. New York: Cambridge University Press. Ch. 3-5.
2. * Freeman, A.M. 1993. *The Measurement of Environmental and Resource Values*. Ch. 3-4.
3. Willig, R. 1976. Consumer's surplus without apology. *American Economic Review* 66: 589-597.
4. Hausman, J. 1981. Exact consumer's surplus and deadweight loss. *American Economic Review* 71: 662-676.
5. Morey, E. 1984. Confuser surplus. *American Economic Review* 74: 163-173.
6. * Randall, A. and J.R. Stoll. 1980. Consumer's surplus in commodity space. *American Economic Review* 70: 449-455.
7. * Hanemann, M. 1991. Willingness to pay and willingness to accept: how much can they differ? *American Economic Review* 81: 635-648.

V. Revealed Preference Methods

A. Hedonic Models

1. * Freeman, A.M. 1993. *The Measurement of Environmental and Resource Values: Theory and Methods*. Washington, DC: Resources for the Future. Ch.11-12.
2. Rosen, H. 1974. Hedonic prices and implicit markets: product differentiation in pure competition. *Journal of Political Economy* 82: 34-55.
3. * Harrison, D. and D. Rubinfeld. 1978. Hedonic housing prices and the demand for clean air. *Journal of Environmental Economics and Management* 5: 81-102.
4. * Smith, V.K. and J.-C. Huang. 1995. Can markets value air quality? A meta-analysis of hedonic property value models. *Journal of Political Economy* 103: 209-227.

5. Roback, J. 1982. Wages, rents, and the quality of life. *Journal of Political Economy* 90: 1257-1278.
6. * Bartik, T. 1987. The estimation of demand parameters in hedonic price models. *Journal of Political Economy* 95: 81-88.
7. Mahan, B., S. Polasky and R.M. Adams. 2000. Valuing urban wetlands: a property price approach. *Land Economics* 76: 100-113.

B. Travel Cost

1. * Freeman, A.M. 1993. *The Measurement of Environmental and Resource Values: Theory and Methods*. Washington, DC: Resources for the Future. Ch. 13.
2. * Bockstael, N., I. Strand and W. Hanemann. 1987. Time and the recreation demand model. *American Journal of Agricultural Economics* 69: 293-302.
3. * Bockstael, N., M. Hanemann and C. Kling. 1987. Modeling recreational demand in a multiple site framework. *Water Resources Research* 23: 951-960.
4. * Morey, E.R., R.D. Rowe and M. Watson. 1993. A repeated nested logit model of Atlantic salmon fishing. *American Journal of Agricultural Economics* 75: 578-593.
5. Kling, C.L. and C.J. Thompson. 1996. The implications of model specification for welfare estimation. *American Journal of Agricultural Economics* 78: 103-114.

VI. Stated Preference Methods

A. Contingent Valuation

1. * Freeman, A.M. 1993. *The Measurement of Environmental and Resource Values: Theory and Methods*. Washington, DC: Resources for the Future. Ch. 5-6.
2. Arrow, K.J., R. Solow, P. Portney, E. Leamer, R. Radner, and H. Schuman. 1993. Report of the NOAA panel on contingent valuation. *Federal Register* 58: 4601-4614.
3. * Portney, P.R. 1994. The contingent valuation debate: why economists should care. *Journal of Economic Perspectives* 8: 3-18.
4. * Hanemann, W.M. 1994. Contingent valuation and economics. *Journal of Economic Perspectives* 8: 19-44.
5. * Diamond, P. and J. Hausman. 1994. Contingent valuation: is some number better than no number? *Journal of Economic Perspectives* 8: 45-64.
6. Kahneman, D. and J.L. Knetsch. 1992. Valuing public goods: the purchase of moral satisfaction. *Journal of Environmental Economics and Management* 22: 57-70.
7. Harrison, G.W. 1992. Valuing public goods with the contingent valuation method: a critique of Kahneman and Knetsch. *Journal of Environmental Economics and Management* 23: 248-257.
8. Smith, V.K. 1992. Arbitrary values, good causes, and premature verdicts. *Journal of Environmental Economics and Management* 22: 71-89.

9. * Smith, V.K. and L.L. Osborne. 1996. Do contingent valuation estimates pass a “scope” test? A meta-analysis. *Journal of Environmental Economics and Management* 31: 287-301.

B. Comparing or Combining Stated and Revealed Preference Methods

1. * Brookshire, D. and D. Coursey. 1987. Measuring the value of a public good: an empirical comparison of elicitation methods. *American Economic Review* 77: 4554-556.
2. * Cummings, R.G., S. Elliott, G.W. Harrison and J. Murphy. 1997. Are hypothetical referenda incentive compatible? *Journal of Political Economy* 105: 609-621.
3. Cummings, R.G., G.W. Harrison and E.E. Rutstrom. 1995. Homegrown values and hypothetical surveys: is the dichotomous choice approach incentive-compatible? *American Economic Review* 85: 260-266.
4. * Cameron, T.A. 1992. Combining contingent valuation and travel cost data for the valuation of nonmarket goods. *Land Economics* 68: 302-317.
5. * Adamowicz, W., J. Louviere and M. Williams. 1994. Combining revealed and stated preference methods for valuing environmental amenities. *Journal of Environmental Economics and Management* 26: 271-292.

VII. Special Topics

A. Biodiversity and Endangered Species

1. * Weitzman, M. L. 1998. The Noah’s Ark problem. *Econometrica* 66: 1279-1298.
2. * Solow, A. and S. Polasky. 1994. Measuring biological diversity. *Environmental and Ecological Statistics* 1: 95-107
3. * Ando, Amy, Jeffrey Camm, Stephen Polasky and Andrew Solow. 1998. Species distributions, land values and efficient conservation. *Science* 279: 2126-2128.
4. * Montgomery, Claire A., Robert A. Pollak, Kathryn Freemark and Denis White. 1999. Pricing biodiversity. *Journal of Environmental Economics and Management* 38: 1-19.
5. * Simpson, R. David, Roger A. Sedjo and John Reid. 1996. Valuing biodiversity for use in pharmaceutical research. *Journal of Political Economy* 104: 163-185.
6. Montgomery, Claire A., Gardner M. Brown, Jr. and Darius M. Adams. 1994. The marginal cost of species preservation: the case of the northern spotted owl. *Journal of Environmental Economics and Management* 26: 111-128.
7. Berrens, Robert P., David S. Brookshire, Michael McKee and Christian Schmidt. 1998. Implementing the safe minimum standards approach: two case studies from the U.S. Endangered Species Act. *Land Economics* 74: 147-161.

B. Climate Change

1. *Nordhaus, W.D. 1991. To slow or not to slow – the economics of the greenhouse effect. *Economic Journal* 101: 920-937.
2. Nordhaus, W.D. 1994. *Managing the Global Commons: The Economics of Climate Change*. Cambridge, MA: MIT Press.
3. Schelling, T. 1992. Some economics of global warming. *American Economic Review* 82: 1-14.
4. * Chichilnisky, G. and G. Heal. 1994. Who should abate carbon emissions: an international viewpoint. *Economics Letters* 44: 443-449.
5. *The Energy Journal*, May 1999. Special issue on the costs of the Kyoto Protocol.
6. * Goulder, L.H. and K. Mathai. 2000. Optimal CO2 abatement in the presence of induced technical change. *Journal of Environmental Economics and Management* 39: 1-38.
7. * Chakravorty, U., J. Roumasset and K. Tse. 1997. Endogenous substitution among energy resources and global warming. *Journal of Political Economy* 105: 1201-1234.

C. Trade and Environment

1. * Hanley, N., J.F. Shogren and B. White. 1996. *Environmental Economics in Theory and Practice*. Ch.6.
2. * Baumol and Oates. 1988. *The Theory of Environmental Policy*, Ch. 16.
3. * Markusen, J.R. 1975. International externalities and optimal tax structures. *Journal of International Economics* 5: 15-29.
4. * Copeland, B. and M. Taylor. 1995. Trade and transboundary pollution. *American Economic Review* 85: 716-737.
5. Copeland, B. and M. Taylor. 1994. North-South trade and the environment. *Quarterly Journal of Economics* 109: 755-87.
6. Chichilnisky, G. 1994. North-South trade and the global environment. *American Economic Review* 84: 851-874.
7. * Lopez, R. 1994. The environment as a factor of production – the effects of growth and trade liberalization. *Journal of Environmental Economics and Management* 27: 163-184.

D. Growth, Development and Environmental Quality

1. * Arrow, K.J. et al. 1995. Economic growth, carrying capacity and the environment. *Science* 269: 520-521.
2. * Grossman, G. and A. Kreuger. 1995. Economic growth and the environment. *Quarterly Journal of Economics* 110: 352-377.
3. * Selden, T. and D. Song. 1994. Environmental quality and development: is there a Kuznets Curve for air pollution emissions? *Journal of Environmental Economics and Management* 27: 147-162.

4. * Selden, T. and D. Song. 1995. Neoclassical growth, the J Curve for abatement, and the inverted U curve for Pollution. *Journal of Environmental Economics and Management* 29: 162-169.
5. Holtz-Eakin, D. and T. Selden. 1995. Stoking the Fires? CO2 emissions and economic growth. *Journal of Public Economics* 57: 85-101.
6. * Stokey, N.L. 1998. Are there limits to growth? *International Economic Review* 39: 1-31.
7. *Environment and Development Economics* 2(4), 1997. Special issue on the environmental Kuznets Curve.