

Clifford S. Russell

Curriculum Vitae

Home Address:

15 Head Tide Church Rd
Alna, ME 04535
207-586 6788

email: cliff.russell@vanderbilt.edu

EDUCATIONAL BACKGROUND

College/ University	Dates	Fields	Degree	Honors
Dartmouth	9-'56 to 6-'60	Mathematics (Minor in economics)	B.A. 1960	Summa cum laude (High honors in mathematics)
Harvard	9-'64 to 6-'68	Economics	Ph.D. 1968	NSF Graduate Fellow; Woodrow Wilson Honorary Fellow; Harvard Graduate Prize Fellow in Economics

MILITARY SERVICE

U.S. Navy, commissioned officer, June 1960 - December 1963. Served as Executive Officer, USS NIPMUC, ATF-157, July 1962 - December 1963.

RELEVANT WORK EXPERIENCE

September 2003 - present, Visiting Professor of Environmental Economics, AKF, (Local Government Research Institute), Copenhagen, Denmark

August 2003 present, Research Associate in Economics and Environmental Studies, Bowdoin College, Brunswick, ME.

January 2003 - April 2003: Thomas Sowell Distinguished Visiting Professor of Economics, Bates College, Lewiston, ME.

January 1986-December 2002: Director, Vanderbilt Institute for Public Policy Studies, and Professor of Economics, Vanderbilt University, Nashville, Tennessee. Director, undergraduate public policy major, College of Arts and Sciences, 1999-2002. 1990-1992 Acting Director, Graduate Program in Public Policy.

1996/1997 (*on leave: Dec.-Aug.*): Valfrid Paulson Visiting Professor of Environmental Economics, Beijer Institute of the Swedish Royal Academy of Sciences, Stockholm, Sweden.

1968 - Dec. 1985: Professional Staff Member, Resources for the Future, Washington DC; Director, Regional and Urban Studies Program, 1974-1975; Director, Institutions and Public Decisions

Division, 1975-1977; Director, Quality of the Environment Division, 1981-1985.

1985: Adjunct Professor, Vermont Law School, South Royalton, Vermont. Summer session.

1977 - 1979: Professorial Lecturer in Economics, Johns Hopkins School of Advanced International Studies, fall terms.

1978: Adjunct Professor of Economics, University of Maryland, College Park, Maryland. Spring term.

1976: Guest Researcher, Institute of Sociology, University of Bergen, Bergen, Norway. Grant from the Norwegian Research Council (NAVF).

1967 - 1968: Teaching Fellow in Economics, Harvard University, Cambridge, Massachusetts.

1966: Instructor in Economics, Wayne State University, Detroit, Michigan.

1965: Economic Statistician (GS-6), Social Security Administration, Office of Research and Statistics, Baltimore, Maryland.

1964: Assistant Lecturer in Economics, Makerere University College, Kampala, Uganda.

PUBLICATIONS

Books-Written

- 1) With David Arey and Robert Kates, Drought and Water Supply: Implications of the Massachusetts Experience for Municipal Planning. (Baltimore: Johns Hopkins University Press for Resources for the Future, 1970).
- 2) Residuals Management in Industry: A Case Study of Petroleum Refining. (Baltimore: Johns Hopkins University Press for Resources for the Future, 1973). (Translated into Chinese, 1998.)
- 3) With William J. Vaughan, Steel Production: Processes, Products and Residuals (Baltimore: Johns Hopkins University Press for Resources for the Future, 1976). (Translated into Chinese, 1998.)
- 4) With Walter O. Spofford, Jr. and Robert A. Kelly, Environmental Quality Management: An Application to the Lower Delaware Valley, (Washington, DC: Resources for the Future, 1976).
- 5) With William J. Vaughan, Freshwater Recreational Fishing: The National Benefits of Water Pollution Control, (Washington, DC: Resources for the Future, 1982).
- 6) With William J. Vaughan and Winston Harrington, Enforcing Pollution Control Laws, (Washington, DC: Resources for the Future, 1986).
- 7) Applying Economics to the Environment, (Oxford University Press, New York, 2001).
- 8) With William J. Vaughan, Christopher Clark, Diego Rodriguez, and Arthur Darling, Investing in Water Quality: Benefits, Costs and Risks, (Inter-American Development Bank, Washington, D.C., 2001).

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Books-Edited

- 1) Ecological Modeling in a Resource Management Framework, (Washington, DC: Resources for the Future, 1975).
- 2) Safe Drinking Water: Current and Future Policy Problems, (Washington, DC: Resources for the Future, 1978).
- 3) Collective Decision Making: Applications from Public Choice Theory, (Baltimore: Johns Hopkins University Press for Resources for the Future, 1979).
- 4) Public Choice in Rural Development, ed. with Norman Nicholson (Washington, DC: Resources for the Future, 1981).
- 5) Incentives in Water Quality Management: France and the Ruhr Area, ed. with Blair Bower, Remi Barre and Jochen Kuhner (Washington, DC: Resources for the Future, 1981).
- 6) Modeling Water Demands, ed. with Janusz Kindler (New York: Academic Press; 1984).
- 7) Theory, Modeling and Experience in the Management of Nonpoint-Source Pollution, ed. with Jason F. Shogren (Norwell, MA: Kluwer Academic Publishers, 1993).
- 9) Economics of Environmental Monitoring and Enforcement, (Aldershot, UK, Ashgate Publishing Company, 2003).
- 10) Environment, Information and Consumer Behaviour, ed. with Signe Krarup and Christopher Clark, (Cheltenham, UK, Edward Elgar, 2005)

Articles

- 1) "An Application of Non-Linear Programming to the Planning of Municipal Water Supply Systems: Some Results," in Deininger et al., Proceedings of the 1968 AWRA National Symposium, The Analysis of Water-Resource Systems. (Urbana: AWRA, 1968).
- 2) "Applications of Mathematical Economics in Marine Resources Research," in The Proceedings of the Fourth Annual Conference of the Law of the Sea Institute. (Kingston, R.I.: June 23-26, 1968).
- 3) "The Definition Measurement of Drought Losses: The Northeast Drought of 1962-66," in Papers and Proceedings of the 1968 AWRA Conference. (New York City: AWRA, November, 1968).
- 4) "Losses from Natural Hazards," in Land Economics, Vol. 46, No. 4 (November 1970) pp. 383-393.
- 5) "Models for the Investigation of Industrial Response to Residuals Management Actions," in Swedish Journal of Economics, Vol. 73, No. 1 (March 1971) pp. 134-156.
- 6) with Hans Landsberg, "International Environmental Problems, A Taxonomy," in Science (June 25, 1971) pp. 1307-1314.

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- 7) with W.O. Spofford, Jr., "A Quantitative Framework for Residuals Management Decisions," in Allen V. Kneese and Blair T. Bower, eds. Environmental Quality Analysis: Theory and Method in the Social Sciences. (Baltimore: Johns Hopkins University Press, 1972).
- 8) with J.V. Krutilla, C.J. Cicchetti, and A.M. Freeman, III, "Observations on the Economics of Irreplaceable Assets," in Kneese and Bower, eds., op. cit.
- 9) "The Municipal Evaluation of Regional Water Quality Management Proposals," Chapter 4 in R. Dorfman, H. Jacoby, and H.A. Thomas, eds., Models for Managing Regional Water Quality (Harvard University Press, 1973).
- 10) with Allen V. Kneese, "Establishing the Scientific, Technical and Economic Basis for Coastal Zone Management," in Coastal Zone Management Journal, Vol. 1, No. 1 (1973) pp. 47-63.
- 11) "Application of Micro Economic Models to Regional Environmental Quality Management," in American Economic Review Papers and Proceedings, Vol. 63, No. 2 (May 1973) pp. 236-243.
- 12) with William J. Vaughan, "A Linear Programming Model of Residuals Management for Integrated Iron and Steel Production," in Journal of Environmental Economics and Management, Vol. 1, No. 1 (1974).
- 13) "Restraining Demand by Pricing Water Withdrawals and Waste Disposal," in The Management of Water Resources in England and Wales (London: Saxon House, 1974).
- 14) with W.O. Spofford, Jr. and E.T. Haefele, "Environmental Quality Management in Metropolitan Areas," in J. Rothenberg and I.G. Heggie, eds., The Management of Water Quality and the Environment. Proceedings of a Conference held by the International Economics Associations Lynby, Denmark (London: MacMillan, 1974).
- 15) with V. Kerry Smith, "Generalized Inverses and the Timing of Policy Instruments," in Swedish Journal of Economics, Vol. 76 (1974) pp. 351-357.
- 16) with V. Kerry Smith, "Targets, Instruments, and Generalized Inverses," in European Economic Review, Vol. 6 (1975) pp. 143-153.
- 17) "Environment and Development," in Biological Conservation, Vol. 7, No. 3 (April 1975) pp. 227-234.
- 18) with V. Kerry Smith, "The Selection of Macro-Policy Instruments over time," in The Australian Economic Papers (June 1975).
- 19) with W.O. Spofford, Jr. and R.A. Kelly, "Operational Problems in Large Scale Residuals Management Models," in Edwin Mills, ed., Economic Analysis of Environmental Problems. (New York: NBER, 1975) pp. 171-234.
- 20) with W.O. Spofford, Jr. and R.A. Kelly, "Interdependencies Among Gaseous, Liquid and Solid Residuals: The Case of the Lower Delaware Valley," in Gerald J. Karaska and Craig L. Moore, eds., Northeast Regional Science Review, Vol. 5 (1975) pp. 23-25.
- 21) with W.O. Spofford, Jr., "A Regional Environmental Quality Management Model: An

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- Assessment," Journal of Environmental Economics and Management, Vol. 4, No. 2 (1977).
- 22) with William J. Vaughan, "An Analysis of the Historical Choice Among Technologies in the U.S. Steel Industry: Contributions from a Linear Programming Model," in The Engineering Economist, Vol. 22, No. 1 (1977).
- 23) "What Can We Get from Effluent Charges?" Policy Analysis. Vol. 5, No. 2 (Spring 1979).
- 24) "Vote Trading: An Attempt at Clarification," Political Studies. Vol. 27, No. 1 (March 1979).
- 25) "Lessons from the Drinking Water Conference," in Safe Drinking Water: Current and Future Policy Problems (Washington, DC: Resources for the Future, 1978).
- 26) "Drinking Water Policy Problems: The Safe Drinking Water and Pure Food, Drug and Cosmetic Acts," Industrial Water Engineering, Vol. 15, No. 6 (October/November 1978), 21-23.
- 27) "Water Deficit Planning," in Conservation and Alternative Water Supplies, ed. James R. Wallace and Bernd Kahn (Atlanta: Environment Research Center, Georgia Institute of Technology, 1979).
- 28) "Applications of Public Choice Theory: An Introduction," in C.S. Russell, ed., Collective Decision Making: Applications from Public Choice Theory (Washington, DC: Resources for the Future, 1979).
- 29) "Controlled Trading of Pollution Permits," Environmental Science and Technology, Vol. 15, No. 1, pp. 24-28, (1982).
- 30) with William J. Vaughan, "The National Recreational Fishing Benefits of Water Pollution Control," Journal of Environmental Economics and Management, Vol. 9, No. 4 (1982) pp. 328-354.
- 31) with William J. Vaughan, "Valuing a Fishing Day: An Application of a Systematic Varying Parameter Model," Land Economics, Vol. 58, No. 4 (1982) pp. 450-463.
- 32) with William J. Vaughan, L.A. Nielsen and L.P. Gianessi, "Measuring and Predicting Water Quality in Recreation-Related Terms," Journal of Environmental Management, Vol. 15, (1982) pp. 363-380.
- 33) "Environmental Management," in Gardner M. Brown and James A. Crutchfield, eds., Economics of Ocean Resources (Seattle, Washington: University of Washington Press, 1983).
- 34) with William J. Vaughan and Therese Feng, "Marine Ecosystem Modeling: The Potential for Application in Benefit Measurement," K. Turgeon (ed.), in Marine Ecosystem Modeling, (Washington, DC: The National Oceanic and Atmospheric Agency, 1983).
- 35) with William J. Vaughan, "Monitoring Point Sources of Pollution: Answers and More Questions from Quality Control," The American Statistician, Vol. 37, No. 4, (1983).
- 36) with Joe A. Oppenheimer, "A Tempest in a Teapot: The Analysis and Evaluation of Environmental Groups Trading in Markets for Pollution Permits," in Erhard P. Joeres and Martin H. David, ed., Buying A Better Environment (Madison: The University of Wisconsin Press, 1983).

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- 37) with William J. Vaughan, "The Role of Recreation Resource Availability Variables in Recreation Participation Analysis," Journal of Environmental Management, Vol. 19, (December 1984).
- 38) "Modeling Regional Water Demand," in Kindler and Russell (eds) Modeling of Water Demands (New York: Academic Press, 1984).
- 39) with Peter Bohm, "Comparative Analysis of Alternative Policy Instruments," in A.V. Kneese and J. Sweeney (eds) Handbook of Natural Resource and Energy Economics, (New York: North-Holland, 1985).
- 40) "Achieving Air Pollution Goals in Three Different Settings," in Mary Gibson (ed) To Breathe Freely: Risk, Consent, and Air, (Totowa, NJ: Rowman and Allanheld, 1985).
- 41) with Allen V. Kneese, "Environmental Economics," in The New Palgrave: A Dictionary of Economic Theory and Doctrine, (London: The MacMillan Press Ltd., 1987).
- 42) "Choosing Among Instruments in Environmental Policy," in Frederick Stocker (ed.) Tax Policy Round Table Proceedings. Lincoln Land Institute, Cambridge, M., 1987.
- 43) "Economic Incentives in the Management of Hazardous Wastes," Columbia Journal of Environmental Law, May 1988.
- 44) "Monitoring and Enforcement," in Portney (ed.) Environmental Regulation in the U.S.: Public Policies and Their Consequences. (Washington, DC: Resources for the Future), 1990.
- 45) "Game Models for Structuring Monitoring and Enforcement Systems," in Natural Resource Modeling. Spring 1990, Vol. 4, No. 2.
- 46) with V. Kerry Smith, "Demands for Data and Analysis Induced by Environmental Policy," in Fifty Years of Economic Measurement: The Jubilee of the Conference on Research in Income and Wealth. Berndt and Triplett, eds., (Chicago: University of Chicago Press), 1990.
- 47) with Kathryn Anderson, Richard V. Burkhauser, and Jennie Raymond, "Mixed Signals in the Job Training Partnership Act," in Growth & Change. Summer, 1991.
- 48) "Environmental Enforcement," in T.H. Tietenberg, ed. Innovation in Environmental Policy. (Aldershot, Hants, England: Edward Elgar Publishing Ltd., 1992).
- 49) "Monitoring and Enforcement of Pollution Control Laws in Europe and the United States," in Rüdiger Pethig (ed.), Conflicts and Cooperation in Managing Environmental Resources. New York: Springer-Verlag, 1992.
- 50) with S. J. Kwak, "Contingent Valuation in Korean Environmental Planning: A Pilot Application to the Protection of Drinking Water Quality in Seoul," Environmental and Resource Economics, Vol. 4, 511-526, 1994.
- 51) "Old Lessons and New Contexts in Economic-Ecological Modeling," in Milon and Shogren (eds.), Integrating Economic and Ecological Modeling: Practical Methods for Environmental Policy Analysis, Westport, CT: Praeger, 1995.

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- 52) "Are We Lost on the Mountain of Principle or in the Valley of Ignorance," in Ecological Economics, Vol. 14, 91-99, 1995.
- 53) With S. J. Kwak, "Exploring the Value of Drinking Water Protection in Seoul, Korea," in R. Mendelsohn and D. Shaw (eds.), The Economics of Pollution Control in the Asia Pacific. London: Edward Elgar, 1996.
- 54) With Boo-Shig Shin, "Public Utility Pricing: Theory and Practical Limitations," in Advances in the Economics of Environmental Resources, Darwin C. Hall (ed.), Greenwich, CT: JAI Press, Vol. 1, 1996.
- 55) With Boo-Shig Shin, "An Application and Evaluation of Competing Marginal Cost Pricing Approximations," in Advances in the Economics of Environmental Resources, Darwin C. Hall (ed.), Greenwich, CT: JAI Press, Vol. 1, 1996.
- 56) "Integrating Ecology and Economics via Regional Modeling," in Ecological Applications, Vol. 6, No. 4, 1996.
- 57) With S.J. Kwak and Junsoo Lee, "Dealing with Censored Data from Contingent Valuation Surveys: Symmetrically-Trimmed Least Squares Estimation," in Southern Economic Journal, Vol. 63, No. 3, January 1997.
- 58) With Robert V. O'Neill and James R. Kahn, "Economics and Ecology: The Need for Detente in Conservation Ecology," in Conservation Ecology. Vol. 2, No. 1, Article 4 (online), 1998.
- 59) "Complex Regulation and the Environment: An Economist's View," in Research in Public Policy Analysis and Management. Vol. 9, 95-109, 1998.
- 60) With Philip T. Powell, "Practical Considerations and Comparison of Instruments of Environmental Policy," in Handbook of Environmental and Resource Economics, Jeroen C.J.M. van den Bergh (ed.), Edward Elgar Publishing Ltd., 307-328 October, 1999.
- 61) With William J. Vaughan, Diego J. Rodriguez, and Arthur C. Darling, "The Impact of Alternative Methods on Outcomes from Dichotomous Contingent Valuation Efforts in Environmental Cost-Benefit Analysis," in Impact Assessment and Project Appraisal, Vol 18, No. 2, 125-137, 2000.
- 62) with William J. Vaughan, Diego J. Rodriguez, and Arthur C. Darling. "Cost-Benefit Analysis Based on Referendum CV: Dealing with Uncertainty," in the Journal of Water Resources Planning and Management, Nov/Dec, 351-357, 2000.
- 63) With Virginia Dale, Junsoo Lee, Molly Hadley Jensen, Michael Kane, and Robin Gregory. "Experimenting with Multi-Attribute Utility Survey Methods in a Multi-Dimensional Valuation Problem," in Ecological Economics, 36, 87-108, 2001.
- 64) With Andrew Schiller, Carolyn Hunsaker, Michael Kane, Virginia Dale, Glen Suter, Georgine Pion, Molly Jensen, and Victoria Konar. "Communicating Ecological Indicators to Decision Makers and the Public," in Conservation Ecology, 5:1, 2001.

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- 65) With Ruth Greenspan Bell, "Environmental Policy for Developing Countries", Issues in Science and Technology, 63-70, Spring 2002.
- 66) with Thomas Bue Bjørner and Christopher Clark, 2003. "Searching for Evidence of Alternative Preferences, Public as Opposed to Private", Journal of Economic Behavior and Organization, 51(1): 1-27.
- 67) With William J. Vaughan, 2003. "The Choice of Pollution Control Policy Instruments in Developing Countries: Arguments, Evidence and Suggestions", Vol. VII, International Yearbook of Environmental and Resource Economics, Edward Elgar, Cheltenham, U.K.
- 68) With Thomas Bue Bjørner and Lars Gårn Hansen, 2004. "Environmental Labeling and Consumers' Choice: An Empirical Analysis of the Effect of the Nordic Swan", Journal of Environmental Economics and Management, 47(3): 411-34.
- 69) With Christopher Clark, 2005. "Public Information as a Tool of Environmental Policy", in Krarup and Russell (eds), Environment, Information and Consumer Behaviour, Edward Elgar, Cheltenham, UK.
- 70) With Lars Gårn Hansen and Signe Krarup, forthcoming, "Enforcement and Information Strategies", Journal of Regulatory Economics, (2006).
- 71) With Christopher Clark, 2006. "Economic Instruments and Nonpoint Source Water Pollution", in Water Quality Management in the Americas, A. K. Biswas, C. Totajada, B Braga, and D. J. Rodriguez, (eds), New York, Springer.

Notes, Comments, Reviews

- 1) "Perception of Choice and Factors Affecting Industrial Water Supply Decisions: A Note on the Study of Shue Tuck Wong," in The Geographical Review, Vol. 60, No. 1 (1970) pp. 124-125.
- 2) Review of "Industrial Demand for Water: A Study of South East England," by Judith Rees, in Urban Studies, Vol. 8, No. 2 (June 1971) pp. 160- 161.
- 3) "Uncertainty and Choice of Plant Capacity," in Journal of the American Water Works Association, Vol. 63 (June 1971) pp. 390-391.
- 4) "Additional Comment on Conservation and Development," in Biological Conservation, Vol. 3, No. 4 (July 1971).
- 5) Comment on Robert Dorfman, "The Technical Basis for Decision Making," in Edwin T. Haefele, ed., The Governance of Common Property Resources (Baltimore: Johns Hopkins University Press for Resources for the Future, 1974).
- 6) with William J. Vaughan, "On Taxation as a Pollution Control Policy: A Comment," in Swedish Journal of Economics, Vol. 77, No. 2 (1975) pp. 245-251.

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- 7) Review of The Titantic Effect, by Kenneth E.F. Watt, in the Quarterly Review of Biology, Vol. 50 (September 1975) pp. 296-297.
- 8) Comment on Scott E. Atkinson and Donald H. Lewis, "A Cost-Effectiveness Analysis of Alternative Air Quality Control Strategies," in Journal of Environmental Economics and Management, (March 1975).
- 9) Review of An Environmental Appraisal of the Severn Barrage, by T.L. Shaw, in Marine Policy, Vol. 2, No. 1 (January 1978) pp. 72-74.
- 10) Review of Environmental Policy and Welfare Economics, by Krister Hjalte, et al., The Quarterly Review of Biology, Vol. 53, No. 3, (Sept. 1978).
- 11) Review of Economics of the Environment, by Robert Dorfman and Nancy Dorfman, eds., in The Quarterly Review of Biology, Vol. 53, No. 4 (December 1978).
- 12) Review of Regionalization of Water Management, by Daniel A. Okun, in EOS Vol. 59, No. 12 (December 1978) p. 1005.
- 13) Review of Journal of Interdisciplinary Modeling and Simulation, Vol. 1, No. 1, ed. William Vogt and Marlin Mickel, The Quarterly Review of Biology, Vol. 53, No. 4 (December 1978).
- 14) Review of Economics of Natural and Environmental Resources, ed. Vernon Smith, The Quarterly Review of Biology, Vol. 54, No. 1 (March 1979).
- 15) Review of Reconciling Man with the Environment, by Eric Ashby, The Quarterly Review of Biology, Vol. 54, No. 1 (March 1979).
- 16) Review of The State as a Firm: Economic Forces in Political Development, by Richard D. Auster and Morris Silver, in The Journal of Economic History (June 1980).
- 17) Review of The Economics of Natural Resources, by Richard Lecomber, Fisheries Vol. 5, No. 5 (September 1980).
- 18) with William J. Vaughan, "An Analysis of Participation in Nonconsumptive Wildlife Recreation: Comment," Land Economics Vol. 54, No. 2 (May 1981).
- 19) with William J. Vaughan and Richard T. Carson, "A Survey of Recreational Fee Fishing," Farm Pond Harvest, Vol. 15, No. 4 (1981).
- 20) Review of What Price Incentives, by Steven Kelman, Journal of Political Economy, (1982).
- 21) "Publicly Vested Values for Fish and Wildlife: Criteria in Economic Welfare and Interface with the Law: Comment," Land Economics, Vol. 58, No. 4 (November 1982).
- 22) with William J. Vaughan and Michael Hazilla, "A Note on the Use of Travel Cost Models with Unequal Zonal Populations: Comment," Land Economics, Vol. 58, No. 3 (August 1982).
- 23) "Economics and Marine Pollution," in Impact of Marine Pollution on Society, eds. Virginia Tippe and Dana Kester, Center for Ocean Management Studies, University of Rhode Island (1982).

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- 24) with John Mullahy, "What Price a Day Ticket," in Trout and Salmon, January (1983).
- 25) "A Note on the Efficiency Ranking of Two Second-Best Policy Instruments for Pollution Control," Journal of Environmental Economics and Management, Vol. 13, No. 1, (March 1986).
- 26) "Estimating Recreational Benefits From Soil Erosion Control," in T. Waddell, ed. The Off-Site Costs of Soil Erosion, Washington, D.C., Conservation Foundation, 1986.
- 27) with A.V. Kneese, "Revisiting the Scientific, Technical and Economic Bases for Coastal Zone Management," in R. Stokes (ed.) Natural Resource Economics. Seattle, University of Washington Press, 1987.
- 28) Review of Drought Management and Its Impact on Public Water Systems, by the Water Science and Technology Board of the National Research Council, in The American Scientist, May/June, 1988.
- 29) Review of Troubled Water: Rivers, Politics and Pollution, by David Kinnersley, in Forum, Summer, 1989.
- 30) "What Went Wrong with River Basin Management," Review of Troubled Water: Rivers, Politics, and Pollution. by David Kinnersley, London: Hilary Shipman, January 1990, in Rivers, Vol. 1, No. 1.
- 31) "Toward a Kinder, Gentler Water Development Policy," Review of Down by the River: The Impact of Federal Water Projects and Policies on Biological Diversity. by Constance Elizabeth Hunt with Verne Huser, in Forum, University of TN Energy, Environment, and Resources Center, Knoxville, TN, Winter 1989.
- 32) "Sustainable Development: Practical Lessons for Difficult Problems," Review of Sustainable Development: Economics and Environment in the Third World. by David Pearce, Edward Barbier, and Anil Markandya, in Forum, University of TN Energy, Environment, and Resources Center, Knoxville, TN, Summer 1992.
- 33) Review of "Environment & Economy: Property Rights and Public Policy," by Daniel Bromley, in Journal of Development Economics, Vol. 42, No. 2, Dec, 1993.
- 34) "Moving from 'Principle' to 'Practical' in the Valuation of Changes in Ecological Systems," in Research and Exploration. Vol. 9, No. 3, 1993, pp. 272, 273.
- 35) Review of "Taming the Future: A Revolutionary Breakthrough in Scientific Forecasting," by Kenneth E. F. Watt, in Ecological Economics. Vol. 10, No. 1, pp. 83-84, 1994.
- 36) Review of "Economics of Water Resources: From Regulation to Privatization," by Nicolas Spulber and Asghan Sabbaghi, in The Journal of Economic Literature, Vol. 33, No. 1, pp. 284, 85, 1995.
- 37) "Biodiversity: Opportunities and Obligations," in the Vanderbilt Journal of Transnational Law, Vol. 28, No. 4, October, 1995, 689-693.
- 38) with Ing-Marie Gren, "Interdisciplinary Research on the Management of Aquatic Ecosystems," AMBIO, Vol. XXVIII, No. 4 (June 1999).

- 39) with Tore Söderqvist and Ing-Marie Gren "Bridging Ecology and Economics: Reflections on Cost-benefit Analysis and the Design of Interdisciplinary Research", in a festschrift volume for Karl-Göran Mäler, Edward Elgar, Cheltenham, UK., 2002.
- 40) "Monitoring, enforcement, and the choice of environmental policy instruments," in Regional Environmental Change, Vol. 2, No. 2, November, 2001, 77-84.

Other

- 1) Assisted in writing of B. Van Arkadie and C. Frank, Economic Accounting and Development Planning, (Nairobi: Oxford, 1966). The work for this text was done during a stay in Uganda from February to September 1964.
- 2) "Industrial Water Use," Section 2 of a report to the National Water Commission, Future Water Demands: The Impacts of Technological Change, Public Policies, and Changing Market Conditions on the Water Use Patterns of Selected Sectors of the United States Economy: 1970-1990. (June 1970).
- 3) "Regional Environmental Quality Management: A Quantitative Approach." Paper presented at the California Institute of Technology's Conference on Technological Change and the Human Environment, October 19-21 1970.
- 4) "A Quantitative Approach to Environmental Quality Management. Paper given at the annual meeting of the American Society of Limnology and Oceanography, Tallahassee, Florida, March 1972.
- 5) "Neuere Entwicklungen in der Forschung zur Planung der Abfallverhinderung und -beseitigung." Paper delivered at the conference on Planung für den Schutz der Umwelt (Planning for the Health of the Environment) at the University of Munster, Munster, West Germany, September 1972.
- 6) with William J. Vaughan, "A Residuals Management Model of Integrated Iron and Steel Production." Paper presented at the AISI Seminar on steel industry economics, DeKalb, Illinois, April 1973.
- 7) with William J. Vaughan and Harold C. Cochrane, Government Policies and the Adoption of Innovations in the Integrated Iron and Steel Industry. Report prepared for the National Science Foundation, National R&D Assessment Program, under Grant No. RDA 74-18148 AO1 (1976).
- 8) "Resource Development," part of "Panel on Adequacy of Criteria for Environmental Impact Statements," held 12 November 1975, Brookhaven National Laboratory, and published in Bernard Manovitz, ed., Effects of Energy-Related Activities on the Atlantic Continental Shelf. (Upton, NY: Brookhaven National Laboratory, 1976) BNL 50484.
- 9) "Limited Case for Effluent Charges," part of a panel discussion in Paying for Pollution: Water Quality and Effluent Charges (Washington: Conservation Foundation, 1978).

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- 10) "Benefit-Cost Analysis of Individual Regulations in Water Pollution Control," part of a panel discussion on Environmental Regulation and Steel Production, Conference on Problems and Prospects for the U.S. Steel Industry, Amherst, Mass. (January 1982).
- 11) "Recreational Fisheries Management in the United States," a lecture presented to a joint seminar of the Water Resources Council and the Open Space Amenity Council, Tadley Court, England, May 1982.
- 12) with William J. Vaughan. "Finding the Value of a Fishing Day." Paper prepared for the Angling Research Working Party-Workshop, London, England, 14 June 1983.
- 13) Panelist in a Roundtable Discussion. "Examining the Roles of Science in the Regulatory Process," Environment, Vol. 25, No. 5, June 1983.
- 14) "Economic Research Needs Relevant to Improved Drinking Water Quality," Subcommittee Report. Journal of American Water Works Association. (1983).
- 15) "Monitoring Sources of Pollution: Lessons from Single and Multiple-Play Games," a paper presented at the conference on the Economics of Energy and Environment Policies" held at Yxtaholm Slott, Sweden, August 1984.
- 16) with William J. Vaughan, Charles M. Paulsen and Julie A. Hewitt. "The Estimation of Recreation-Related Water Pollution Control Benefits: Swimming, Boating, and Marine Recreational Fishing," Report prepared for the Environmental Protection Agency, under Cooperative Agreement CR 810239, August 1985.
- 17) with William J. Vaughan, John Mullahy, Julie A. Hewitt and Michael Hazilla. "Aggregation Problems in Benefit Estimation: A Simulation Approach," Report prepared for the Environmental Protection Agency, under Cooperative Agreement CR 810466-01, August 1985.
- 18) "Game Theory Lessons for Structuring Monitoring and Enforcement Systems," Prepared for the Association of Environmental and Resource Economists' Workshop on Environmental Monitoring and Enforcement: Theory and Practice. August, 1987 (Newark, DE).
- 19) "Economic Incentives in the Management of Hazardous Wastes," Prepared for the Colloquium on New Directions in Environmental Policy, Columbia University Law School. October, 1987 (New York, NY).
- 20) with V. Kerry Smith, "Demands for Data and Analysis Induced by Environmental Policy," 50th Anniversary Conference of the National Bureau of Economic Research, Washington, DC (May 1988).
- 21) "The Role of Social Sciences in the Management of Surface Water Quality in the United States," (Baumann, Haines eds.) in The Role of Social and Behavioral Sciences in Water Resources Planning and Management. American Society of Civil Engineers: New York (1988).
- 22) "Drought in the Late '80s: Predictions and Policies," Water Resources Update. Universities Council on Water Resources (November, 1988) No. 78.

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- 23) "Shifting the Burden of Proof Through the Use of Deposit-Refund-Like Systems for Hazardous Waste." presented at the Prince Bertil Symposium on Economic Instruments in Environmental Protection Policies, Hässelby Slott, Stockholm, Sweden (June 1989).
- 24) "Environmental Economics and Water Pollution Control," Lecture given at the Korean Development Institute, Seoul, Republic of Korea (October 1989).
- 25) "Taxes on Pollution as Revenue Raising Instruments," Presented at a session on Externality Taxation at the Annual Conference of the National Tax Association, Atlanta, October (1989).
- 26) Organized and chaired session at AAAS 1990 meetings in New Orleans on "The Role of Foreign Economic Assistance in the Environmental Problems of Developing Countries."
- 27) "Emission Charges in Practice," prepared for the 1990 Venice Meeting of the European Association of Environmental and Resource Economists (March, 1990).
- 28) "A Preliminary View of Monitoring and Enforcement of Pollution Control Laws in Europe," presented at the Symposium on Conflicts and Cooperation in Managing Environmental Resources, Freudenberg, Germany (November 1990).
- 29) Organized workshop on "The Management of Nonpoint-Source Pollution" for the Association of Environmental and Resource Economists, June 1991, Lexington, KY. Will edit conference proceedings for publication by Kluwer.
- 30) "Environmental Protection Policies, Economic Growth, and Some Lessons from Environmental Economics," prepared for and presented at the Seminar on Environmental Protection and Industrial Development, sponsored by the Korean Institute for Industrial Economics and Trade, Seoul, July 1991.
- 31) "Guidebook for Risk Perception and Communication in Water Resources Planning," for the Corps of Engineers, Institute for Water Resources, May 1992.
- 32) "Environmental Protection Policies, Economic Growth, and Some Lessons from Environmental Economics," keynote speech to the Conference on Research and Development in the Brave New World: Futuristic Perspectives, at Srinakharinwirot University, Bangkok, Thailand, November 1992.
- 33) "First Steps in the Development of a Method for Evaluating Environmental Restoration Projects," for the Corps of Engineers, Institute for Water Resources, Nov. 1992.
- 34) "QUADRANT: Incremental Analysis Methodology for Prioritizing O & M Projects (Locks and Dams)," for the Corps of Engineers, Institute for Water Resources, Jan. 1993. [with several others]
- 35) "Are We Lost in the Vale of Ignorance or on the Mountain of Principle?," presented at the meetings of the American Association for the Advancement of Science, Boston, February, 1993.
- 36) "Old Lessons and New Contexts in Economic-Ecological Modeling," presented at the Resource Policy Consortium's Symposium on Integrating Economic and Ecological Indicators, Washington, D.C., May, 1993.

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- 37) "Marginal Cost Pricing Rules for System Net Benefits, Demand Behavior, and Water Utility Financing: Conceptual Underpinnings and Case Study of the Phoenix Water and Wastewater Department," with Boo-Shig Shin, for the U.S. Geological Survey, Oct. 1993.
- 38) "A Cross-cultural Application of the Contingent Valuation Method: Exploring the Value of Drinking Water Protection in Seoul, Korea," with Seung-Jun Kwak. Presented at the IEAS International Conference on Economic Perspectives of Pollution Control in the Pacific Rim Countries, Taipei, Taiwan, March '94.
- 39) "Traditional Production, Land Tenure, and the Preservation of Undeveloped Land: Evidence and a Model from the South Pacific," with Philip Powell and Molly Hadley. Presented at the Annual Meeting of the European Association of Environmental and Resource Economists, Dublin, Ireland, June '94.
- 40) "Integrating Ecology & Economics Via Regional Modeling." Presented at the Symposium Paper Session on Ecological Economics at the Ecological Society of America, 1994 Annual Meeting, Knoxville, Tennessee, August 1994.
- 41) "Evaluation and Decision Making in the Context of Environmental Restoration." An Overview Paper for a Collection of Disciplinary Perspectives, Corps of Engineers, August 1994.
- 42) with Philip Powell, "Report to the Office of Technology Assessment on the Efficiency and Fairness of Candidate Approaches to Environmental Pollution Management," August, 1994.
- 43) "Complex Regulation and the Environment: An Economist's View," Prepared for the Conference on Governing Our Environment, Copenhagen, Denmark, November 17, 18, '94.
- 44) with several collaborators, "Relating Environmental Monitoring and Assessment Program Indicators to Societal Values," EPA/EMAP Scientific Conference, Raleigh, North Carolina, March 1995.
- 45) with Virginia Dale, Molly Hadley, Michael Kane, and Robin Gregory, "Applying Multi-Attribute Utility Techniques to Environmental Valuation: A Forest Ecosystem Study," Prepared for the session on Valuing Southern Appalachian Resources, at the Southern Economic Association meetings, Washington, D.C., November 1996.
- 46) with Philip Powell, "Choosing Environmental Policy Tools: Theoretical Cautions and Practical Considerations," in Environmental Policy for Economies in Transition: Lessons Learned and Future Directions, M.L. Livingston (ed.), Proceedings of the Resource Policy Consortium Symposium, Washington, D.C., May 1996.
- 47) with V. Dale, J. Lee, M.H. Jensen, M. Kane and R. Gregory, "Applying Multi-Attribute Utility Techniques to Environmental Valuation: A Forest Ecosystem Example." Report to USEPA on Grant #R824699, December 1997.
- 48) with Thomas B. Bjørner, Inger Brisson, Alex Dubgaard, Molly Hadley Jensen and Anders Larsen, "Triggering Expressions of Public as Opposed to Private Preferences in the U.S. and Denmark." A paper prepared for the 1998 World Congress of Environmental and Resource Economists in Venice, Italy, May 1998.

- 49) with William J. Vaughan and Philip T. Powell, "Rethinking Advice on Environmental Policy Instrument Choice in Developing Countries." A paper prepared for the World Congress of Environmental Economics, Venice, Italy, June 1998.
- 50) with Thomas B. Bjørner, Inger Brisson, Alex Dubgaard, Molly Hadley Jensen and Anders Larsen, "Triggering Expressions of Public as Opposed to Private Preferences in the U.S. and Denmark." A paper presented at the 1999 European Association of Environmental Resource Economists meeting in Oslo, June 1999.
- 51) with Tore Söderqvist and Ing-Marie Gren "Bridging Ecology and Economics: Reflections on Cost-benefit Analysis and the Design of Interdisciplinary Research", forthcoming in a festschrift volume for Karl-Göran Mäler, Edward Elgar, Cheltenham, UK.
- 52) introductory essay to Economics of Monitoring and Enforcement forthcoming in this volume from Ashgate Publishing Company, Aldershot, UK.
- 53) "The Development and Codification of Cost-Benefit Analysis for Application to Public Policy Analysis", and "Creating Markets to Reduce the Cost of Regulations", essays prepared for the Consortium of Social Science Associations, 20th Anniversary Celebration, Spring 2001.
- 54) with Thomas Bue Bjørner and Lars Gårn Hansen, "Environmental Labeling and Consumers' Choice: An Empirical Analysis of the Effect of the Nordic Swan", a paper presented at the Southern Economic Association Meetings, Tampa, FL, November 2001; and at the Second World Congress of Environmental Economists, Monterey, CA, June 2002.
- 55) With Christopher Clark, "Environmental Labeling as a Policy Tool", presented at a Symposium on Environment, Information, and Consumer Behavior, Sponsored by the Society, Economics and Environment Program, Copenhagen, Denmark, April, 2003.
- 56) With Christopher Clark, "Economic Instruments in the Management of Nonpoint Source Water Pollution", prepared for a Workshop on Water Resource Management, Brazil, April 2004.
- 57) With Mark Sagoff, "On the Collaboration of Ecologists and Economists", prepared for a volume on, *Decision Making for Water Resource Management: Intellectual Advances since Managing Water Resource Systems*, May 2004..
- 58) With Christopher Clark, "Ecolabels and Economic Efficiency: Some Preliminary Results", presented at the American Agricultural Economics Association Meetings, Denver, CO, August, 2004.
- 59) With Signe Krarup and Christopher Clark, 2005. "Environment, Information, and Consumer Behaviour: and Introduction", in Krarup and Russell (eds), Environment, Information and Consumer Behaviour, (Edward Elgar, Cheltenham, UK)
- 60) With Lars Gårn Hansen and Frank Jensen, 2006. "Prices vs. Quantities When there is Non-compliance with Fisheries Regulation", working paper from AKF, Copenhagen.

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- 61) With Frank Jensen, Jesper Munksgård, and Anders Larsen, 2006. "Ramsey Pricing Rules Under Imperfect Competition", working paper from AKF, Copenhagen.

PROFESSIONAL SERVICENational Academy/National Research Council

Environmental Research Assessment Committee, 1975-77
 Committee on Steel Research, 1978
 Environmental Studies Board, 1983-85
 Committee on Multimedia Approaches to Pollution Control, 1986-88
 Committee on Water Resources Research, 1988-90
 Panel for the Review of the DOE Environmental Restoration Priority System, Chair, 1992-93
 Committee to Review Risk Management in the DOE's Environmental Remediation Program, 1993
 Committee on Watershed Management, 1996

Other Scientific Committees

Ecosystem Valuation Forum, organized by the World Wildlife Fund/Conservation Foundation, 1991-1993
 Heinz Center panel on designing a U.S. system for carbon emissions trading, 1996-1998.

Other Advisory and Organizing Committees

American Water Works Association, Economic Research Committee, 1979-83, 1992-
 Steering Committees for 8th and 9th Symposiums on Statistics and the Environment; Chair of 8th
 Symposium, 1983-87
 Committee on the Tennessee Valley Authority of the Southern States Energy Board, 1986-87
 Advisory Panel on New Clean Air Act Issues, Office of Technology Assessment, Chair, 1989-90 State
 of Tennessee, Governor's Energy Advisory Board, 1989-1995
 U.S. EPA/Amoco Refinery Study, Peer Review Committee, Chair, 1990-91
 Advisory Panel on Environmental Considerations in Product Design, Office of Technology
 Assessment, 1990-91
 State of Nevada, Yucca Mountain Studies, Technical Review Committee 1994-1999
 So. Florida Water Management District, peer review committee for Interim Report on Saving the
 Everglades, 1998 (chair).
 Metropolitan Nashville Solid Waste Region Board, member 2000-2002.
 U.S. EPA Science Advisory Board Review Panel, Underground Storage Tanks Cleanup and Resource
 Conservation and Recovery Act Subtitle C Program, Benefits, Costs and Impacts. Member, 2002.
 U.S.EPA Science Advisory Board Review Panel, Illegal Competitive Advantage in EPA's
 Environmental Violation Penalty Policy, Member, 2004/5

Governing Boards, etc.

Board of Trustees of the Environmental Defense Fund, 1973-85; Executive Committee, 1973-1980;
 Treasurer, 1975-80; Finance Committee, 1983-85
 Board of Trustees of the Tennessee Environmental Council, 1989-1996; Executive Committee, 1990-
 1996; President, 1992-95
 Board of Trustees, Treasurer, member of the Executive Committee, Chair of the Finance and
 Investment Committee, Sheepscot Valley Conservation Association, January 2004 - present

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Member, Board of Directors and Chair, Membership Committee, 1981-83

Member, Annual Workshop Planning Committee for Workshop years '89, '90, '91; Chair for 1991 Workshop

President-elect, December 1991-December 1992

President, January 1993-December 1994

Past President, January '95-December '96

Editorial Boards

Land Economics, 1978-85

Economic Perspectives, 1978-86

Georgetown International Environmental Law Review, 1985-1999

Journal of Environmental Economics and Management, 1986-88; 1993-97

Environmental and Resource Economics, 1990-present

Population and Environment, 1990-1999

International Journal of Agricultural Resources, Governance, and Ecology, 2000-present

Journal of Developing Areas, 2001 – present

Environmental Management, 2002 -2004