

CURRICULUM VITA
KURT STEPHENSON

Department of Agricultural & Applied Economics
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EDUCATION

Ph.D., Economics, University of Nebraska-Lincoln, August 1994.
M.S. Agricultural Economics, Virginia Polytechnic Institute and State University, July 1988.
B.S. Economics, Radford University, June 1986.

PROFESSIONAL EXPERIENCE

Professor, Environmental and Natural Resource Economics, Department of Agricultural and Applied Economics, Virginia Tech. June 2008 to present.

Responsibilities: Conduct and manage a research program in natural resource and environmental economics and policy; classroom instruction; undergraduate program coordinator, undergraduate and graduate student advising; departmental and committee work.

Associate Professor, Environmental and Natural Resource Economics, Department of Agricultural and Applied Economics, Virginia Tech. June 2001 to 2008.

Assistant Professor, Environmental and Natural Resource Economics, Department of Agricultural and Applied Economics, Virginia Tech. November 1995 to June 2001.

Senior Research Associate, Department of Agricultural and Applied Economics, Virginia Tech. October 1994 to October 1995.

PROFESSIONAL SERVICE AND AWARDS

Professional Service

Eastern Virginia Groundwater Management Advisory Committee, established by Senate Bill S 1341, March 2015. 2015-2017.

Academic Advisory Committee to Virginia Department of Environmental Quality, 2004-present.
Scientific and Technical Advisory Committee, Chesapeake Bay Program, Committee Member, 2013-present.

National Research Council, Committee on Review of EPA's Economic Analysis of Final Water Quality Standards for Nutrients for Lakes and Flowing Waters in Florida, 2011- 2012.

Chesapeake Bay Watershed Nutrient Credit Exchange Program Study. Senate Joint Resolution No. 334. Virginia Secretary of Natural Resources, 2011.

National Research Council, Evaluation of the Revisions to Federal Principles and Standards for Evaluation Water Resources Projects, 2009-10.

National Research Council, Stormwater Committee, 2006-2008.

Virginia Department of Conservation and Recreation, Regulatory Advisory Panel to revisions to state stormwater regulations, 2010.

Advisor, Environmental Defense, Nitrogen Allowance Trading for Long Island Sound, 1997-1998.

Honors and Awards

2005 Certificate of Teaching Excellence, College of Agriculture and Life Sciences, Virginia Tech
Best Theory-Oriented Paper for 2000, *Journal of Water Resources Planning and Management*. Leonard Shabman and Kurt Stephenson “Environmental Valuation and Its Economic Critics.” Selected by Environmental & Water Resources Institute Planning and Management Council, American Society of Civil Engineers.

Annual Institutionalist Essay Prize, Association for Evolutionary Economics, “Female Representation in the Corporate Planning Network.” 1992.

RESEARCH SPONSORS

Environmental Protection Agency
National Fish and Wildlife Foundation
Natural Resources Conservation Service
Powell River Project
Rappahannock River Basin Commission
National Science Foundation
United States Army Corps of Engineers
United States Department of Agriculture
Virginia Water Resources Research Center
Virginia Department of Conservation and Recreation

COURSES TAUGHT

Economics of the Food and Fiber System
Environmental Econ Analysis & Manage
Sustainable & Environment Economics
Sustainable Development Economics
Resource & Environmental Economics (graduate)

PUBLICATIONS AND PRESENTATIONS

Journal Articles

Gwen Rees, Emily Bock, Kurt Stephenson, and Zachary Easton. “Nutrient Biofilters in the Virginia Coastal Plain: Nitrogen Removal, Cost, and Potential Adoption Pathways” forthcoming, *Journal of Soil and Water Conservation*.

Kurt Stephenson and Leonard Shabman. “Nutrient Assimilation Services for Water Quality Credit Trading Programs” forthcoming *Coastal Management*.

Gwen Rees and Kurt Stephenson. “Transactions Costs of Expanding Nutrient Trading to Agricultural Working Lands: A Virginia Case Study” *Ecological Economics* 130 (Oct 2016):176-185

Jessica Boatwright, K. Stephenson, K Boyle, S. Nienow. "Subdivision Infrastructure Affecting Stormwater Runoff and Residential Property Values" *Journal of Water Resources Planning and Management*. April 2014.

Colleen Higgins, C. B., C.Tobias, M. F. Piehler, A. R Smyth, R. F. Dame, K. Stephenson, Bonnie L. Brown. 2013 "Effect of Aquacultured Oyster Biodeposition on Sediment N₂ Production in the Chesapeake Bay, *Marine Ecology Progress Series*. 473 (January 2013): 7-27

Leonard Shabman, Bob Rose, and Kurt Stephenson. "Environmental Services Programs for the Chesapeake Bay" *Choices* 26 (2011) 3: 1-5.

Kurt Stephenson and Leonard Shabman. "Rhetoric and Reality of Water Quality Trading and the Potential for Market-like Reform." *Journal of American Water Resources Association*. 47 (February 2011) 1: 15-28.

Colleen B Higgins, Kurt Stephenson, Bonnie L. Brown. Nutrient bio-assimilative Capacity of Aquacultured Oysters: Quantification of an Ecosystem Service. *Journal of Environmental Quality* 40 (2011): 271-77

Kurt Stephenson, Stephen Aultman, Todd Metcalfe, and Alex Miller. "An Evaluation of Nutrient Nonpoint Offset Trading in Virginia: A Role for Agricultural Nonpoint Sources?" *Water Resources Research*. 46 (2010): W04519, doi:10.1029/2009WR008228.

Darrell Bosch, Nicolai Kuminoff, Kurt Stephenson, Alex Miller, Jaren Pope, and Anna Harris. "Evaluation of Policy Options for Expanding Oyster Aquaculture in Virginia" *Aquaculture Economics and Management*. 14 (2010): 145-163.

Greg Halich and Kurt Stephenson. "Effectiveness of Residential Water-Use Restrictions under Varying Levels of Municipal Effort" *Land Economics* November 85 (2009) 4: 614-626.

George Santopietro, Kurt Stephenson, Vijay A. Satyal, and James Wesson. "A Bioeconomic Analysis of Management Plans for the Public Grounds of the Rappahannock River." *Journal of Shellfish Research*, 28 (April 2009) 2: 235-241

Nicolai V. Kuminoff, Darrell J. Bosch, Dan Kauffman, Jaren C. Pope, and Kurt Stephenson. "The Growing Supply of Ecolabeled Seafood: An Economic Perspective" *Sustainable Development Law & Policy* 9 (Fall 2008): 25-30.

Darrell J. Bosch, Kurt Stephenson, Gordon Groover, and Blair Hutchins. "Farm Returns to Carbon Credit Creation with Intensive Rotational Grazing" *Journal of Soil and Water Conservation*. 63 (March/April 2008) 2: 91-98.

Leonard Shabman and Kurt Stephenson. "Achieving Nutrient Water Quality Goals: Bringing Market-like Principles to Water Quality Management." *Journal of American Water Resources Association* 43 (2007) 4: 1076-1089 (senior authorship shared equally)

Julie B. Jesiek, Brian L. Benham, Darrell Bosch, and Kurt Stephenson. "Approaches to TMDL Planning and Implementation and Policy Tools for Implementation to Achieve Water Quality Standards" *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources* 2 (2007) 084: 1-11.

Charles Gowan, Kurt Stephenson, and Leonard Shabman “The Role of Ecosystem Valuation in Environmental Decision Making: Hydropower Relicensing and Dam Removal on the Elwha River.” *Ecological Economics*. 56 (April 2006): 508-523

Kurt Stephenson, Anya McGuirk, Tricia Crouse, and Dixie Watts Reaves. “Comparisons of the Educational Value of Distance versus Traditional Classroom Instruction in Introductory Agricultural Economics” *Review of Agricultural Economics* (Winter 2005): 605-620.

Darrell Bosch, Vinod K. Lohani, Randy L. Dymond, David F. Kibler, and Kurt Stephenson “Hydrologic and Fiscal Impacts of Residential Development: A Virginia Case Study.” *Journal of Water Resources Planning and Management* 129 (March/April 2003) 2: 107-114.

Leonard Shabman, Kurt Stephenson, and William Shobe “Trading Programs for Environmental Management: Reflections on the Air and Water Experiences.” *Environmental Practice* 4 (September 2002) 3: 153-162. Reprinted by the Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology, Reprint Series Number 166.

Cameron Speir and Kurt Stephenson. “Does Sprawl Cost Us All? Isolating the Effects of Residential Settlement Forms on Public Water and Sewer Costs.” *Journal of the American Planning Association* 68 (Winter 2002): 56-70.

Kurt Stephenson, Dixie Watts Reaves, Anya McGuirk, and Harold Deskins. “Assessments of the Educational Value of Web-Based Instructional Tools in Introductory Agricultural Economics.” *Review of Agricultural Economics* 23 (Fall/Winter 2001): 492-509.

Kurt Stephenson and Leonard Shabman. “Nonmarket Valuation in Hydropower Relicensing: An Application of a Pattern Modeling Approach.” *Journal of Economic Issues* 35:2 (June 2000): 497-504.

Kurt Stephenson. “Taking Nature into Account: Observations about the Changing Role of Analysis and Negotiation in Hydropower Relicensing.” *William and Mary Environmental Law and Policy Review* 25:2 (Winter 2000): 473 - 498.

Leonard Shabman and Kurt Stephenson. “Environmental Valuation and Its Economic Critics.” *Journal of Water Resources Planning and Management* 126:6 (November-December 2000): 382 - 388. (Awarded as the best theory paper published in 2000)

Kurt Stephenson, Leonard Shabman, and Leon Geyer. “Watershed-based Effluent Allowance Trading: Identifying the Statutory and Regulatory Barriers to Implementation.” *The Environmental Lawyer* 5 (June 1999) 3: 775-815.

Kurt Stephenson and M. Christine Conway. “Games Students Play: A Classroom Simulation of an Effluent Allowance Trading System” *Virginia Economic Journal*, (December 1998): 25-34.

Kurt Stephenson, Patricia Norris, and Leonard Shabman. “Effluent Allowance Trading: The Nonpoint Source Challenge.” *Contemporary Economic Policy*, 16 (October 1998) 4: 412-421.

Leonard Shabman, Kurt Stephenson, and Paul Scodari “Wetlands Credit Sales as a Strategy for Achieving No Net Loss: The Limitations of Regulatory Conditions” *Wetlands*. 13 (1998)3: 471 – 481.

Kurt Stephenson. "Groundwater Management in Nebraska: Governing the Commons through Local Resource Districts." *Natural Resources Journal* 36 (Fall 1996) 4: 761-778.

Leonard Shabman and Kurt Stephenson. "Searching for the Correct Benefit Estimate: Empirical Evidence for an Alternative Perspective." *Land Economics* 72 (November 1996) 4: 433-449.

Joachim Schleich, David White, and Kurt Stephenson. "Cost Implications in Achieving Alternative Water Quality Targets." *Water Resources Research* 32 (September 1996) 9: 2879-2884.

Leonard Shabman and Kurt Stephenson. "Environmental Policy Reform: A Taxonomy of Economists' Perspectives" *Journal of Agricultural and Applied Economics* 28 (July 1996): 117-125.

Kurt Stephenson and F. Gregory Hayden. "Comparison of Corporate Decision Networks for Nebraska and the United States." *Journal of Economic Issues* 29 (September 1995): 843-869.

Leonard Shabman and Kurt Stephenson. "A Critique of the Self-Interested Voter Model: The Case of a Local Single Issue Referendum." *Journal of Economic Issues* 28 (December 1994): 1173-1186.

Kurt Stephenson and Steve Rakow. "Female Representation in U.S. Centralized Private Sector Planning: The Case of Overlapping Directorships." *Journal of Economic Issues* 27 (June 1993): 459-470.

Leonard Shabman and Kurt Stephenson. "The Possibility of Community-Wide Flood Control Benefits: Evidence From Voting Behavior in a Bond Referendum" *Water Resources Research* 28 (April 1992): 959-64.

F. Gregory Hayden and Kurt Stephenson. "Overlap of Organizations: Corporate Transorganization and Veblen's Thesis on Higher Education." *Journal of Economic Issues* 26 (March 1992): 53-85.

Books

National Research Council Committee to Review EPA's Economic Analysis of Final Water Quality Standards for Nutrients in Florida (G. Daigger, O. Doering, L. Shabman, W. Baker, A. Davis, K. Easter, W. Graham, A. Keller, D. Mulla, K. Sherman, K. Stephenson, M. Tate, A. Vicory, L. Wilcher). *Review of EPA's Economic Analysis of Final Water Quality Standards for Nutrients for Lakes and Flowing Waters in Florida*. 116pp., National Academies, National Academy Press, Washington DC. 2012.

National Research Council Committee on Stormwater Discharge (Welty C., L. Band, R. Bannerman, D. Booth, R. Horner, C. O'Melia, R. Pitt, E. Rankin, T. Schueleler, K. Stephenson, X. Swamikannu, R. Traver, W. Wagner, W. Wenk) *Urban Stormwater Management in the United States*. 598 pp. National Academy Press, Washington DC. 2008

Book Chapters

Rose, J., S. Becker, S. Deonarine, J. Ferreira, T. Getchis, J. Grant, J. Kim, J. Krumholz, G. Kraemer, K. Stephenson, G. Wikfors, and C. Yarish. 2015. "Nutrient Bioextraction". In *Encyclopedia of Sustainability Science and Technology* Springer, New York.

Shabman, Leonard and Kurt Stephenson 2012. "Market-like Water Quality Trading: Why It Matters, and How to Make it Happen" In *Aquanomics Water Markets and the Environment*. Del Gardner ed. Independence Institute. Oakland California.

Shabman, L. and K. Stephenson. 2011. "The Purpose and Goal for CADRe" *Converging Waters: Integrating Collaborative Modeling with Participatory Processes to Make Water Resources Decisions*, pp. 9-21. ed. Lisa Bourget, Maass-White Book Series, US. Government Printing Office: Washington, DC.

Stephenson, K. and L. Shabman, L. 2011. "Executing CADRe: Integration of Models with Negotiation Processes" *Converging Waters: Integrating Collaborative Modeling with Participatory Processes to Make Water Resources Decisions*, pp. 23-34. ed. Lisa Bourget, Maass-White Book Series, US. Government Printing Office: Washington, DC.

Stephenson, K. and L. Shabman. 2011. "Bringing CADRe to Contemporary Water Policy: Some Challenges" *Converging Waters: Integrating Collaborative Modeling with Participatory Processes to Make Water Resources Decisions*, pp. 127-136. ed. Lisa Bourget, Maass-White Book Series, US. Government Printing Office: Washington, DC.

L. Leon Geyer, Joseph K. Sowers and Kurt Stephenson. "EcoTaxation" in *Oxford Companion to Climate Change*. pp. 203-205. Eds. David J. Cuff and Andrew S. Goudie. Oxford University Press: New York, 2009

James Boyd, Leonard Shabman, and Kurt Stephenson. "Trading as a Water Quality Management Tool: Prospects for a Market Alternative" in *Sustainable Watershed Management in Theory and Practice*, Frank Messner, ed., Elsevier, 2007.

Kurt Stephenson, Leonard Shabman, and James Boyd. "Taxonomy of Trading Programs: Concepts and Applications to TMDLs." In *TMDLs: Approaches and Challenges*. Ed, Tamim Younos, pp. 253-285 PennPress, Tulsa Oklahoma.

Dixie Watts Reaves, Kurt Stephenson, Mansi Grover. "Chapter 7: Perspectives from Accounting" in *Essays on Leadership in Environmental Management*, pp. 93-103. Ed. Ronald A. Erchul, Marilyn R. D. Maisano, and H. Francis Bush, Lexington: Virginia Military Institute, 2004.

Kurt Stephenson. "An Institutionalist Approach to Environmental Goal Setting" in *Institutional Analysis and Economic Policy*. Eds. Marc Tool and Paul Dale Bush, pp. 433-460. Kluwer Academic Publishers: Boston, 2003.

F. Gregory Hayden and Kurt Stephenson. "Corporate Networks: A U.S. Case Study." in *Dynamics of the Firm: Strategies of Pricing and Organization*. ed. John Groenewegen, pp. 53-95. London: Edward Elgar, 1993.

Louis E. Swanson, Kurt Stephenson, and Jerry R. Skees. "Participation in the Conservation Reserve Program in Kentucky: Implications for Policy." in *Implementing the Conservation Title of the Food Security Act of 1985*. ed. Ted Napier, pp. 251-262. Ankeny Iowa: 1990.

Papers in Conference Proceedings

William Park and Kurt Stephenson "Use of Games and Simulations for Teaching Economic Concepts and Principles in Natural Resource Management and Environmental Policy Analysis" Proceedings of the 2003 National Conference on Student Writing and Critical Thinking in Agriculture. Online at: http://wac.colostate.edu/proceedings/wyoming2003/park_stephenson.cfm, 2003.

Kurt Stephenson. "Finding the Right Tools for Implementing TMDLs in Rural Watersheds: Avoiding the Square Peg-Round Hole Dilemma." In *Making TMDLs Work in Rural Watersheds: A Workshop Report*. pp. 12-14. Edited by Laila Racevskis, Sandra Batie and Mary Schulz, Michigan State University, 2002.

William Cox and Kurt Stephenson. Water Demand Forecasting: Guidelines for Navigating the Regulatory Maze. In *Protecting Our Water Resources for the Next Generation: Where Do We Go from Here? Proceedings from the Virginia Water Research Symposium 2001*, Charlottesville, November 14-16, 2001, Judy Poff, ed. Virginia Water Resources Research Center, Publication P7-2001, 2001.pp.9-15.

Kurt Stephenson, Cameron Speir, Darrell Bosch, and Leonard Shabman. "Fiscal Consequences of Residential Development Patterns to Local Government" *Proceedings: Integrated Decision-Making for Watershed Management Symposium: Processes and Tools*. Virginia Water Resources Research Center, P7-2001, pp. 723 - 738. Chevy Chase, Maryland, January 7 - 9.

Kurt Stephenson, Laura Zepp, and Leonard Shabman. "Landowner Compensation for Open Land Preservation: Limits and Alternatives to Transfer of Development Right Programs." in *Emerging Environmental Issues in Southern Agriculture: Case Studies and Materials for Policy Education* pp. 19-25, ed. John Robinson. Southern Rural Development Center, Mississippi State, SRDC Publication 216, June 2000.

Leonard Shabman and Kurt Stephenson. "Effluent Allowance Trading: Clarifying the Issues and Options" *Proceedings to the 1998 Water Environment Federation Conference*, Denver, May 4-6, 1998.

Leonard Shabman, Kurt Stephenson, and Paul Scodari. "Wetland Mitigation Banking: Regulatory Conditioning and Financial Aspects of Entrepreneurial Banking" *Southern Regional Information Exchange Group (SRIEG 10) proceedings*. SRIEG-10 Publication No. 33, Mississippi State University, June 7, 1997.

Leonard Shabman, Kurt Stephenson, and Paul Scodari. "Regulatory Conditioning and Financial Aspects of Entrepreneurial Banking" *New England Environmental EXPO proceedings*. Boston, May 7-9 1996.

Technical Bulletins and Reports

Bott, C., M. Brush, E. Canuel, M. Johnston, P. Kangas, S. Lane, P. May, W. Mulbry, M. Mulholland, D. Sample, K. Sellner, and K. Stephenson. 2015. "Nutrient and Sediment Reductions

from Algal Flow-way Technologies: Recommendations to the Chesapeake Bay Program's Water Quality Goal Implementation Team from the Algal Flow-way Technologies BMP Expert Panel" October 21, 2015. Chesapeake Bay Program, Annapolis MD.

Abdalla, C. S. Julius, P. Madhavan, J. Pease, M. Ribauda, and K. Stephenson. 2015. "Exploring applications of behavioral economics research to environmental policy in the Chesapeake Bay watershed." STAC Publication Number 15-004, Edgewater, MD. 31 pp.

Stephenson, K. and L. Shabman. 2015. "Nutrient Assimilation Services for Water Quality Credit Trading Programs". Resources for the Future, Discussion paper 15-33. Washington DC

Ribauda M., C. Abdalla, K. Stephenson, L. Wainger. 2014. "Critical Issues in Implementing Nutrient Trading Programs in the Chesapeake Bay Watershed" STAC Workshop Report, STAC Publication 14-002. Annapolis Maryland.

Rees G. K. Stephenson. 2014. "Transaction Cost of Nonpoint Source Water Quality Credits: Implications for Trading Programs in the Chesapeake Bay Watershed". 79pp. Report to the USDA, Office of the Chief Economist, Office of Environmental Markets, Washington DC.

Stephenson, K., M. Lorie, and L. Shabman. 2014. "An Economic Investigation of the Economic Impacts of Coastal Plain Aquifer Depletion and Actions That May Be Needed to Maintain Long-term Availability and Productivity". 122 pp. Virginia Department of Environmental Quality, Richmond Virginia.

Shabman L., K. Stephenson. 2014. "Lessons from Florida's Experience Developing Numeric Nutrient Standards for Flowing Waters". Report of the Academic Advisory Committee for Virginia Department of Environmental Quality, Virginia Water Resource Center Special Report SR54-2014, Blacksburg, VA.

Stephenson, K., A. Latane, G. Evanylo, J.A. Ogejo, D. Beegle, C. Abdalla, J. Pease, J. McGrath, J. Ignosh, T. Richard. "Technical Analysis for Nutrient Crediting of Manure Conversion Technologies" 68 pp. Mid-Atlantic Water Program Technical Report, September 2013.

Zipper C., G. Holtzman, L. Shabman, K. Stephenson, J. Walker, E. Yagow. A "Screening Approach" for Nutrient Criteria in Virginia. Report of the Academic Advisory Committee for Virginia Department of Environmental Quality. Virginia Water Resource Research Center Special Publication SR-51. July 2012.

Kurt Stephenson and Leonard Shabman. "The Use of Nutrient Assimilation Services in Water Quality Credit Trading Programs" Department of Agricultural and Applied Economics Working Paper No 2011-01, May 2011. Blacksburg Virginia.

National Research Council. Committee on Improving Principles and Guidelines for Federal Water Resources Project Planning (Christian, John T., Gregory B. Baecher, D. F. Bosch, L.M. Eisel, J.F. Johnson, C.L. Kling, P. Kumar, D. Plasencia, K. Segerson, R.E. Sparks, K. Stephenson, D. Tarlock, R. G Traver). "A Review of the Proposed Revisions to the Federal Principles and Guidelines Water Resources Planning Document. National Academies Press, Washington DC, 2010.

Stephenson, K. D. Parker, C. Abdalla, L. Shabman, J. Shortle, C. Jones, B. Angstadt, R. Rose, D. King, D. Hansen. 2009. *Evaluation Framework for Water Quality Trading Programs in the*

Chesapeake Bay Watershed. 33pp. Report to the Scientific and Technical Advisory Committee, Chesapeake Bay Program, Annapolis Maryland

Cardwell, Hal, Stacy Langsdale, Kurt Stephenson. "The Shared Vision Planning Primer: How to Incorporate Computer-aided Dispute Resolution in Water Resources Planning" U.S. Army Corps of Engineers, Institute for Water, IWR Report 08-R-2. January 2009, 40pp.

Kurt Stephenson and Bobby Beamer. *Economic Impact Analysis of Revisions to the Virginia Stormwater Regulation*. 45pp. Virginia Department of Conservation and Recreation, Richmond Virginia, December 31, 2008.

Kurt Stephenson, Leonard Shabman, Stacy Langsdale, Hal Cardwell. 2008. *Computer Aided Dispute Resolution: Proceedings from the CADRe Workshop*. U.S. Army Corps of Engineers, Institute for Water Resources. IWR Report 07-R-6.

Shabman L., K. Stephenson. 2007. *Environmental Valuation and Decision Making for Water Project Investment and Operations: Lessons from the FERC Experience*. 34 pp. U.S. Army Corps of Engineers, Institute for Water Resources Publication 2007-VSP-01.

Kurt Stephenson and L. Shabman. "Options for a Compensatory Mitigation Association" Briefing paper distributed to mining industry officials, state and federal regulators, and nongovernmental organizations, 18 pp., October 2005.

C. Zipper, P. Bukaveckas, L. Shabman, K. Stephenson, E. Yagow, E. Smith, L. Smock, F. Benfield, C. Hershner, H. Kator, W. Lung, J. Walker, and T. Younos. *Report of the Academic Advisory Committee to Virginia Department of Environmental Quality: Freshwater Nutrient Criteria for Rivers and Stream*. Virginia Water Resources Research Center Special Report SR-30-2006, Blacksburg, June 2006

Greg Halich and Kurt Stephenson. "The Effectiveness of Drought Management Programs in Reducing Residential Water Use in Virginia" Virginia Water Resources Research Center Special Report SR-29, Blacksburg 2006.

John Bonham and K. Stephenson "In Lieu Free Programs Under Section 404 of the Clean Water Act for Coal Mining: Analysis of Restoration Costs and Alternatives" REAP Policy Report, Virginia Cooperative Extension publication 448 259/REAP R061, November 2005.
<http://www.reap.vt.edu/>.

Carl Zipper, John Ney, Leonard Smock, Eric Smith, John C. Little, Kurt Stephenson, Paul A. Bukaveckas, Jane L. Walker, and Tamim Younos. *Issues Related to Freshwater Nutrient Criteria for Lakes and Reservoirs in Virginia*. Virginia Water Resources Research Center Special Report SR-27, Blacksburg 2005

Leonard Shabman, Kurt Stephenson and James Tripp. "Nitrogen Allowance Trading for Point Sources in the Connecticut Region of the Long Island Sound Watershed." in *Nitrogen Credit Trading in the Long Island Sound Watershed*, pp. E1-H8, Water Environment Research Foundation, WERF Project 97-IRM-5B, 2000.

Kurt Stephenson, Cameron Speir, Leonard Shabman, and Darrell Bosch. *The Influence of Residential Settlement Patterns on Local Government Costs and Revenues*. Virginia Cooperative Extension. 448-249/REAP R051, August 2001.

Elizabeth A. Murphy and Kurt Stephenson. "Inland Recreational Fishing Rights in Virginia: Implications of the Virginia Supreme Court Case *Kraft v. Burr*." Special Report SR13-1999, Virginia Water Resources Research Center, Blacksburg, March 1999.

Leonard Shabman, Kurt Stephenson, Eric Thunberg and Brian Dietz with Paul Driscoll and Kevin O'Grady. *Comparing Benefit Estimation Techniques: Residential Flood Hazard Reduction Benefits in Roanoke Virginia* Alexandria, VA: U.S. Army Corps of Engineers, Institute for Water Resources, IWR Report 98-R-2, March 1998.

Fina, Mark, Leonard Shabman, and Kurt Stephenson. "Financing Virginia's Tributary Strategies: Methods for Meeting the Costs of Nutrient Reduction." Public discussion document prepared for the Virginia Department of Conservation and Recreation, August 15, 1996, 32 pp.

Kurt Stephenson and Leonard Shabman. "Effluent Allowance Trading: A New Approach to Watershed Management." *Water Science Reporter*. Virginia Water Resources Research Center, National Institutes for Water Resources, 1996.

Kurt Stephenson, Waldon Kerns, and Leonard Shabman. *Perspective on Chesapeake Bay: Market-based Strategies for Chesapeake Bay Policy and Management*. Scientific and Technical Advisory Committee, Chesapeake Bay Program: Chesapeake Research Consortium: Edgewater Maryland, CRC Publication No. 152, May 1996.

Articles in Popular Press and Specialty Newsletters

Kurt Stephenson and Leonard Shabman. "Nutrient Pollution" Letter to the Editor, *The Economist*, July 14, 2012 print edition

Leonard Shabman and Kurt Stephenson. "When are Trading Programs Really Market-like?" *Regulation*, Fall 2011 34(3): 5-6.

K. Stephenson and L. Shabman. "Plan for nutrient trading to pay for agricultural BMPs an illusion" *Bay Journal* 20 (Feb 2010): 21.

K. Stephenson and L. Shabman. "Flawed bay cleanup plan: Idea of regulated polluters buying credits from farmers is unfair, impractical" *Baltimore Sun*. Sunday, Feb 22, 2010. Featured op-ed.

Ignosh, John, Kurt Stephenson, Matthew Yancey, William, Bill Whittle and Mark, Marcus Alley. 2009. "Virginia Landowner's Guide to the Carbon Market" Virginia Cooperative Extension Service Publication 442-138, 8pp.

K. Stephenson, A. Schrecongost, and L. Shabman. "Solutions Outside the Box Shine Whole New Light on Bay Cleanup" *Bay Journal* 18 (April 2008): 23.

Kurt Stephenson. "Status of Water Quality Credit Trading in Virginia." Distributed by the Mid-Atlantic Regional Water Program. March 2007, 2pp.

Kurt Stephenson. "Drought Management Lessons from 2002" Virginia Water Resources Research Center Newsletter, *Virginia Water Central* 27 (June 2006): 18.

Kurt Stephenson and Leonard Shabman. "Mitigation Associations: A Cooperative Option to Meet Section 404 Mitigation Requirements" *Virginia Mining Journal* 17(2004) 2: 4-11

Kurt Stephenson. "The What and Why of Share Vision Planning for Water Supply" Institute for Water Resources, US Army Corps of Engineers,
<http://www.iwr.usace.army.mil/iwr/svp/svppage.htm#whatandwhy>. December 2003.

Clayton Cook, Golby Jalali, Tongil Lee, Christine Ngo, Joe Reynolds, and Patrick Robertson, Kurt Stephenson, and Karen Mundy. "Markets for Recycled Materials" *Horizons* 15 (September 2003) 5: 1-5.

Kurt Stephenson and Leonard Shabman. "Putting the Market in Market-based Trading Programs" Virginia Water Resources Research Center Newsletter, *Virginia Water Central* 27 (August 2003): 2-9.

Kurt Stephenson, William Cox, Lauren Cartwright, and Jeffrey Connor. "Sharing a Vision for Sharing the Water" *Horizons* 14 (September-October 2002) 4: 1-6.

Kurt Stephenson and Leonard Shabman. "The Trouble with Implementing TMDLs" *Regulation* 24:1 (Spring 2001): 28-32

David Faulkner and Kurt Stephenson. "Carbon Sequestration - New Opportunities for Land Owners?" Rural Economic Analysis Program. *Horizons*. Volume 13, Number 2, May/June 2001. 4 pp.

Leonard Shabman and Kurt Stephenson "Effluent Allowance Trading: Clarifying the Issues and Options" *Watershed and Wet Weather*, 4 (October 1999) 4: 1-4.

Kurt Stephenson and Denise Hazlett. "Property Rights to Forests: Illustrations Using a Classroom Experiment." *Teaching Environmental Economics: The Forest as Teacher*. pp. 115-124, Virginia Council on Economic Education, Spring 1999

Timothy Collins, Kurt Stephenson, Louis Swanson, and Jerry R. Skees. "Kentucky Agricultural Survey Highlights, 1986 and 1988." *Review and Perspective: Kentucky Business and Economic Research* 14 (September 1990): 1-7.

Timothy Collins, Kurt Stephenson, Louis Swanson, and Jerry R. Skees. "The Farmer Speaks: Kentucky Farm Change, 1986-1988." Lexington, Department of Agricultural Economics and Sociology, University of Kentucky, Special Extension Publication, April 1990, 38 pp.

Kurt Stephenson, Timothy Collins, Louis E. Swanson, and Jerry R. Skees. "Kentucky Farm Change Survey: The Farmer Speaks: 1986 and 1988." *AgriBusiness News*, University of Kentucky College of Agriculture, Cooperative Extension Service, 66 (February-March 1990): 1-4.

Don Shurley and Kurt Stephenson. "An Overview of Kentucky's Small Farms" *AgriBusiness News*, University of Kentucky College of Agriculture, Cooperative Extension Service, 63 (August-September 1989): 6-8.

Book Reviews/Comments

Brown J., K. Limburg, J. Waldman, K. Stephenson, E. Glen, F. Juanes, A. Jordaan. "Fish and hydropower on the U.S. Atlantic coast: failed fisheries policies from half-way technologies" *Conservation Letters*. (January 2013). 6: 280–286. doi: 10.1111/conl.12000

Rose, Julie M., Joao G. Ferreira, Kurt Stephenson, Suzanne B. Bricker, Mark Tedesco, and Gary H. Wikfors. (2011) Comment on Stadmark and Conley (2011) "Mussel farming as a nutrient reduction measure in the Baltic Sea: consideration of nutrient biogeochemical cycles" *Marine Pollution Bulletin* 10.1016/j.marpolbul.2011.05.001

Daniel Bromley. *Sufficient Reason*. Princeton University Press, 2006. *Journal of Economic Issues*, 41 (September 2007) 3: 879-881.

John Loomis and Gloria Helfand. *Environmental Policy Analysis for Decision Making*, Dordrecht: Kluwer Academic Publishers, 2001. *Journal of the International Association of Agricultural Economists* 32 (January 2005): 105-106

David Driesen, *The Economic Dynamics of Environmental Law*, MIT Press, 2003. *Journal of Economic Issues* 38 (December 2004) 4: 1085-1087.

Peter Utting, ed. *The Greening of Business in Developing Countries: Rhetoric, Reality, and Prospects*, London: Zed Books, 2002. *Journal of Economic Issues* 37 (September 2003) 3: 818-820.

Public Education Workshops

Kurt Stephenson and Leonard Shabman. "Computer-Aided Dispute Resolution (CADRe) Workshop." Two day invited workshop of practitioners of CADRe and federal agency clients (55 individuals attended). Responsibilities included developing agenda, identification of speakers, preparing conference overview paper, making

Kurt Stephenson and Bonnie Brown. "Use of Shellfish Aquaculture as a Water Quality Management Option: American and European Perspectives." Organized a half day public seminar in Richmond, Virginia, September 8, 2006.

Leonard Shabman and K. Stephenson. "Market-Based Solutions and Water Pollutant Trading." A two and half day workshop for the Environmental Protection Agency, Region 3, Philadelphia, January 5-7, 2005. Responsibilities included developing the agenda, preparing material for a conference workbook/CD, and making eight hours worth of presentations. Over 60 state regulators, EPA staff, and river basin officials attended.

Hal Cardwell, K. Stephenson and M. Lorie. "Shared Vision Planning Workshop for Virginia". A one day invited workshop to describe how computer aided negotiation could improve water supply planning. Staff from Virginia Department of Environmental Quality, U.S. Corps of Engineers (Norfolk, Baltimore and Omaha Districts, HQ), US EPA, and US Fish and Wildlife Service attended. Fredericksburg, Virginia, October 2005.

Kurt Stephenson and Leonard Shabman. "Effluent Trading Programs: Concepts and Implementation." Developed, organized and presented a half day seminar on effluent trading for Environmental Protection Agency Region 3 staff and management. Seminar attended by 40 staff and management personnel. Philadelphia, February 25, 2004