

STEPHEN C. NEWBOLD

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Assistant professor in the Department of Economics at the University of Wyoming. Research and teaching interests include environmental and natural resource economics, bio-economic modeling, and applied econometrics. Previously an economist at the U.S. Environmental Protection Agency's National Center for Environmental Economics, where duties included benefit-cost analysis and human health and ecological risk assessments of environmental regulations.

EDUCATION:

- 2002 PhD, Ecology, emphasis in Environmental Policy Analysis, University of California, Davis CA
- 2002 MS, Agricultural and Resource Economics, University of California, Davis CA
- 1995 BS, Environmental Engineering, University of Florida, Gainesville FL

WORK EXPERIENCE:

- 2018- Assistant professor, Department of Economics, University of Wyoming
- 2015-2018 Adjunct professor, Department of Economics, Georgetown University
- 2002-2018 Economist, National Center for Environmental Economics,
U.S. Environmental Protection Agency

RESEARCH INTERESTS:

- Analytical and numerical simulation modeling of bio-economic and ecological systems, including commercial and recreational fisheries and other combined human and natural systems
- Non-market valuation, including econometric and other statistical and machine learning methods applied to recreation demand models, stated preference surveys, meta-analysis, and benefit transfer
- Climate change policy evaluation, especially the development and use of economic integrated assessment models to estimate the social cost of carbon
- Systematic conservation planning using mathematical programming techniques applied to terrestrial and marine reserve site selection problems
- Benefit-cost analysis theory and applications to environmental issues including air pollution, water pollution, and climate change
- Value of information theory and methods to inform research priorities in areas of environmental science and policy evaluation

TEACHING:

- ECON 4410 — Natural resource economics
- ECON 5410 — Advanced environmental economics
- ECON 5370 — Advanced econometrics III
- ECON 5310 — Economic research methods

PUBLICATIONS:

Newbold SC, Johnston RJ. 2020. Valuing non-market valuation studies using meta-analysis: a demonstration using estimates of willingness-to-pay for water quality improvements. *Journal of Environmental Economics and Management*. <https://doi.org/10.1016/j.jeem.2020.102379>

Newbold SC, Finnoff D, Thunström L, Ashworth M, Shogren JF. 2020. Effects of physical distancing to control COVID-19 on public health, the economy, and the environment. *Environmental and Resource Economics*. 76:705-729.

Thunström L, Ashworth M, Shogren JF, **Newbold SC**, Finnoff D. 2020. Testing for COVID-19: willful ignorance or selfless behavior? *Behavioral Public Policy*. doi:10.1017/bpp.2020.15

Thunström L, **Newbold SC**, Finnoff D, Ashworth M, Shogren JF. 2020. The benefits and costs of using social distancing to flatten the curve for COVID-19. *Journal of Benefit-Cost Analysis*. doi:10.1017/bca.2020.12

Simon NB, Dockins C, Maguire KB, **Newbold SC**, Krupnick AJ, Taylor LO. 2019. What's in a Name? A Search for Alternatives to "VSL." *Review of Environmental Economics and Policy*. 13(1):155-161.

Newbold SC, Walsh PJ, Massey DM, Hewitt J. 2018. Using structural restrictions to achieve theoretical consistency in benefit transfers. *Environmental and Resource Economics* 69:529-553.

Newbold SC, Simpson RD, Massey DM, Heberling MT, Wheeler W, Corona J, Hewitt J. 2018. Benefit transfer challenges: a U.S. Environmental Protection Agency perspective. *Environmental and Resource Economics* 69:467-481.

Newbold SC, Siikamäki J. 2015. Conservation prioritization using reserve site selection methods. In Halvorsen R, Layton DF, eds. *Handbook on the Economics of Natural Resources*. Northampton, MA: Edward Elgar.

Marten AL, Kopits EA, Griffiths CW, **Newbold SC**, Wolverton A. 2015. Corrigendum to: Incremental CH₄ and N₂O mitigation benefits consistent with the U.S. Governments SC-CO₂ estimates. *Climate Policy* 15(5):678-679.

Newbold SC, Marten AL. 2014. The value of information for integrated assessment models of climate change. *Journal of Environmental Economics and Management* 68:111-123.

Brooks WR, **Newbold SC**. 2014. An updated biodiversity nonuse value function for use in climate change integrated assessment models. *Ecological Economics* 105:342-349.

Marten AL, Kopits EA, Griffiths CW, **Newbold SC**, Wolverton A. 2014. Incremental CH₄ and N₂O mitigation benefits consistent with the US governments SC-CO₂ estimates. *Climate Policy* DOI:10.1080/14693062.2014.912981.

Newbold SC, Griffiths C, Moore C, Wolverton A, Kopits E. 2014. Further comment on “A rapid assessment model for understanding the social cost of carbon.” *Climate Change Economics* 5(2):1450005.

Marten AL, **Newbold SC**. 2013. Temporal resolution and DICE. *Nature Climate Change* 3:526-527.

Newbold SC, Griffiths C, Moore C, Wolverton A, Kopits E. 2013. A rapid assessment model for understanding the social cost of carbon. *Climate Change Economics* 4(1):1-40.

Marten AL, Kopp RE, Shouse KC, Griffiths CW, Hodson EL, Kopits E, Mignone BK, Moore C, **Newbold S**, Waldhoff S, Wolverton A. 2012. Improving the assessment and valuation of climate change impacts for policy and regulatory analysis. *Climatic Change*. DOI 10.1007/s10584-012-0608-0.

Griffiths C, Kopits E, Marten A, Moore C, **Newbold S**, Wolverton A. 2012. The social cost of carbon: valuing carbon reductions in policy analysis. In *Fiscal Policy to Mitigate Climate Change: A Guide for Policymakers*, I.W.H. Parry, R. de Mooij, and M. Keen, eds. International Monetary Fund.

Marten AL, **Newbold SC**. 2012. Estimating the social cost of non-CO₂ GHG emissions: methane and nitrous oxide. *Energy Policy* 51:957-972.

Newbold SC. 2012. Examining the health-risk tradeoffs of mandatory bicycle helmet laws. *Risk Analysis* 32(5):791-798.

Siikamäki J, **Newbold SC**. 2012. Potential biodiversity benefits from international programs to reduce carbon emissions from deforestation. *Ambio: A Journal of the Human Environment* 41(1) Supplement 1:78-89.

Griffiths C, Klemick H, Massey M, Moore C, **Newbold S**, Simpson D, Walsh P, Wheeler W. 2012. U.S. Environmental Protection Agency valuation of surface water quality improvements. *Review of Environmental Economics and Policy* 6(1):130-146.

Newbold SC, Massey DM. 2010. Recreation demand estimation and valuation in spatially connected systems. *Resource and Energy Economics* 32:222-240.

Newbold SC, Daigneault A. 2009. Climate response uncertainty and the benefits of climate change policies. *Environmental and Resource Economics* 44:351-377.

Newbold SC, Siikamäki J. 2009. Prioritizing conservation activities using reserve site selection and population viability analysis. *Ecological Applications* 19(7):1774-1790.

Pongsiri MJ, Roman J, Ezenwa VO, Goldberg TL, Koren HS, **Newbold SC**, Ostfeld RS, Pattanayak SK, Salkeld DJ. 2009. Biodiversity loss affects global disease ecology. *BioScience* 59(11):945-954.

Iovanna R, **Newbold SC**. 2007. Ecological sustainability in policy assessments: a wide-angle view and a close watch. *Ecological Economics* 63:639-648.

Newbold SC, Iovanna R. 2007. Impacts of cooling water withdrawals on harvested fish stocks. *Environmental Science & Technology* 41:2108-2114.

Newbold SC, Iovanna R. 2007. Effects of density-independent mortality on populations and ecosystems: application to cooling water withdrawals. *Ecological Applications* 17(2):390-406.

Massey M, **Newbold SC**, Gentner B. 2006. Valuing water quality changes using a bio-economic model of a coastal recreational fishery. *Journal of Environmental Economics and Management* 52:482-500.

Blackman A, Shih J-S, Evans D, Batz M, **Newbold SC**, Cook J. 2006. The benefits and costs of informal sector pollution control: Mexican Brick kilns. *Environment and Development Economics* 11:603-627.

Blackman A, **Newbold S**, Shih J-S, Evans DA, Cook, J, Batz M. 2006. The benefits and costs of controlling small-firm pollution: informal brickmaking in Ciudad Juarez, Mexico. In *Small Firms and the Environment in Developing Countries: Collective Impacts Collective Action*, edited by Allen Blackman. Resources for the Future: Washington, DC.

Newbold SC. 2005. A combined hydrologic simulation and landscape design model to prioritize sites for wetlands restoration. *Environmental Modeling and Assessment* 10:251-263.

Newbold SC, Eadie JM. 2004. Using species-habitat models to target conservation: a case study with breeding mallards. *Ecological Applications* 14(5):1384-1393.

Newbold SC. 2002. Integrated modeling for watershed management: multiple objectives and spatial effects. *Journal of the American Water Resources Association* 38(2):341-353.

WORKING PAPERS:

Thunström L, Ashworth M, Finnoff D, **Newbold SC**. 2020. Hesitancy towards a COVID-19 vaccine and prospects for herd immunity <https://papers.ssrn.com/sol3/papers.cfm?>

abstract_id=3593098

Newbold SC, Massey DM, Whitehead J. Combining aggregate and individual-level data to estimate a repeated choice recreation demand model. Under review.

Newbold SC, Johnston RJ. What is a non-market valuation study worth? A demonstration using a meta-analysis of water quality value. Under review.

Marten AM, **Newbold SC**. Economy-wide effects of mortality risk reductions from environmental policies. Under review.

Dockins C, Maguire KB, **Newbold S**, Simon NB, Krupnick A, Taylor LO. 2018. What's in a name? A systematic search for alternatives to "value of statistical life." Resources for the Future Working Paper, RFF WP 18-14. <http://www.rff.org/files/document/file/RFF%20WP-18-14.pdf>

Massey DM, Moore C, **Newbold SC**, Ihde T, Hownsend H. 2017. Commercial fishing and outdoor recreation benefits of water quality improvements in the Chesapeake Bay. NCEE Working Paper #17-02. <https://www.epa.gov/sites/production/files/2017-08/documents/2017-02.pdf>

Marten AL, **Newbold SC**. 2017. Economy-wide effects of mortality risk reductions from environmental policies. NCEE Working Paper #17-03. <https://www.epa.gov/sites/production/files/2017-07/documents/2017-03.pdf>

Newbold SC. 2011. Valuing health risk changes using a life-cycle consumption framework. National Center for Environmental Economics Working Paper #11-03.

Griffiths C, Kopits E, Marten A, Moore C, **Newbold S**, Wolverton A. 2010. Estimating the social cost of carbon for regulatory impact analysis. Resources for the Future Weekly Policy Commentary.

Newbold SC, Griffiths C, Moore CC, Wolverton A, Kopits E. 2010. The "social cost of carbon" made simple. NCEE Working Paper #10-07.

Newbold SC, Daigneault A. 2010. Uncertainty and the benefits of climate change policies. In *Assessing the Benefits of Avoided Climate Change: Cost-Benefit Analysis and Beyond*. Gullette J, Richardson LJ, Adkins L, Seidel S, eds. Proceedings of Workshop on Assessing the Benefits of Avoided Climate Change, March 16-17, 2009. Pew Center on Global Climate Change: Arlington, VA. p. 183-197.

U.S. Environmental Protection Agency. 2006. Ecological Benefits Assessment Strategic Plan. EPA-240-R-06-001. Office of the Administrator, Washington, DC.

Newbold SC, Siikamäki J, Clark M. 2005. Cost effective habitat protection: the case of Pacific salmon. Draft working paper, prepared for the Association of Environmental and Resource Economists summer workshop.

Lovell S, **Newbold S**, Owens N, Wyatt TJ. 2004. How academic economists can improve benefit transfers at EPA. Association of Environmental and Resource Economists (AERE) Newsletter 24(2):25-28.

Newbold SC. 2002. Targeting conservation activities: cost-effective wetlands restoration in the Central Valley of California. PhD dissertation.

Blackman A, **Newbold SC**, Shih J-S, Cook J. 2000. The benefits and costs of informal sector pollution control: Mexican brick kilns. Resources for the Future Discussion Paper. <http://www.rff.org/Documents/RFF-DP-00-46.pdf>