

Revealed Preference Approaches to Environmental Valuation Volume I

Edited by

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7 Joseph A. Herriges, Catherine L. Kling and Daniel J. Phaneuf (2004), 'What's the Use? Welfare Estimates from Revealed Preference Models when Weak Complementarity does not Hold', <i>Journal of Environmental Economics and Management</i> , 47 , pp. 55–70.	77

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- 12 Edward R. Morey, William S. Breffle and Pamela A. Greene (2001), 'Two Nested Constant-Elasticity-of-Substitution Models of Recreational Participation and Site Choice: An "Alternatives" Model and an "Expenditures" Model', *American Journal of Agricultural Economics*, **83**, pp. 414–27. 135

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- 13 Edward R. Morey, Robert D. Rowe and Michael Watson (1993), 'A Repeated Nested-logit Model of Atlantic Salmon Fishing', *American Journal of Agricultural Economics*, **75**, pp. 578–92. 151
- 14 Catherine L. Kling and Cynthia J. Thomson (1996), 'The Implications of Model Specification for Welfare Estimation in Nested Logit Models', *American Journal of Agricultural Economics*, **78**, pp. 103–14. 167
- 15 Kenneth E. Train (1998), 'Recreation Demand Models with Taste Differences over People', *Land Economics*, **74**, pp. 230–39. 179
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- 17 Joseph A. Herriges and Daniel J. Phaneuf (2002), 'Inducing Patterns of Correlation and Substitution in Repeated Logit Models of Recreation Demand', *American Journal of Agricultural Economics*, **84**, pp. 1076–90. 201
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- 19 Jennifer Murdock (2006), 'Handling Unobserved Site Characteristics in Random Utility Models of Recreation Demand', *Journal of Environmental Economics and Management*, **51**, pp. 1–25. 237

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- 20 W. Michael Hanemann (1984), 'Discrete/Continuous Models of Consumer Demand', *Econometrica*, **52**, pp. 541–61. 265
- 21 Edward R. Morey, Donald Waldman, Djeto Assane and Douglass Shaw (1995), 'Searching for a Model of Multiple-site Recreation Demand that Admits Interior and Boundary Solutions', *American Journal of Agricultural Economics*, **77**, pp. 129–40. 287
- 22 Daniel J. Phaneuf (1999), 'A Dual Approach to Modeling Corner Solutions in Recreation Demand', *Journal of Environmental Economics and Management*, **37**, pp. 85–105. 299
- 23 Daniel J. Phaneuf, Catherine L. Kling and Joseph A. Herriges (2000), 'Estimation and Welfare Calculations in a Generalized Corner Solution Model with an Application to Recreation Demand', *Review of Economics and Statistics*, **82**, pp. 83–92. 321

- 24 Roger H. von Haefen, Daniel J. Phaneuf and George R. Parsons (2004), 'Estimation and Welfare Analyses with Large Demand Systems', *Journal of Business and Economic Statistics*, **22**, pp. 194–205. 331
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- 27 Robert Mendelsohn, John Hof, George Peterson and Reed Johnson (1992), 'Measuring Recreation Values with Multiple Destination Trips', *American Journal of Agricultural Economics*, **74**, pp. 926–33. 381
- 28 Peter M. Feather (1994), 'Sampling and Aggregation Issues in Random Utility Model Estimation', *American Journal of Agricultural Economics*, **76**, pp. 772–80. 389
- 29 Yoshiaki Kaoru, V. Kerry Smith and Jin Long Liu (1995), 'Using Random Utility Models to Estimate the Recreational Value of Estuarine Resources', *American Journal of Agricultural Economics*, **77**, pp. 141–51. 399
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- 35 K.E. McConnell (1992), 'On-site Time in the Demand for Recreation', *American Journal of Agricultural Economics*, **74**, pp. 918–25. 485
- 36 W.L. Adamowicz (1994), 'Habit Formation and Variety Seeking in a Discrete Choice Model of Recreation Demand', *Journal of Agricultural and Resource Economics*, **19**, pp. 19–31. 493
- 37 Bill Provencher and Richard C. Bishop (1997), 'An Estimable Dynamic Model of Recreation Behavior with an Application to Great Lakes Angling', *Journal of Environmental Economics and Management*, **33**, pp. 107–27. 507

- 38 Peter Feather and W. Douglass Shaw (1999), 'Estimating the Cost of Leisure Time for Recreation Demand Models', *Journal of Environmental Economics and Management*, **38**, pp. 49–65. 529
- 39 K.E. McConnell (1999), 'Household Labor Market Choices and the Demand for Recreation', *Land Economics*, **75**, pp. 466–77. 547
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- 42 James N. Brown and Harvey S. Rosen (1982), 'On the Estimation of Structural Hedonic Price Models', *Econometrica*, **50**, pp. 765–68. 27
- 43 Dennis Epple (1987), 'Hedonic Prices and Implicit Markets: Estimating Demand and Supply Functions for Differentiated Products', *Journal of Political Economy*, **95**, pp. 59–80. 31
- 44 Timothy J. Bartik (1988), 'Measuring the Benefits of Amenity Improvements in Hedonic Price Models', *Land Economics*, **64**, pp. 172–83. 53
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- 49 Robert Halvorsen and Henry O. Pollakowski (1981), 'Choice of Functional Form for Hedonic Price Equations', *Journal of Urban Economics*, **10**, pp. 37–49. 121
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- 53 James C. Murdoch and Mark A. Thayer (1988), 'Hedonic Price Estimation of Variable Urban Air Quality', *Journal of Environmental Economics and Management*, **15**, pp. 143–6. 173
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- 60 John M. Quigley (1986), 'The Evaluation of Complex Urban Policies: Simulating the Willingness to Pay for the Benefits of Subsidy Programs', *Regional Science and Urban Economics*, **16**, pp. 31–42. 257
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- 62 Sudip Chattopadhyay (1998), 'An Empirical Investigation into the Performance of Ellickson's Random Bidding Model, with an Application to Air Quality Valuation', *Journal of Urban Economics*, **43**, pp. 292–314. 277
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- 66 Dennis Epple, Thomas Romer and Holger Sieg (2001), 'Interjurisdictional Sorting and Majority Rule: An Empirical Analysis', *Econometrica*, **69**, pp. 1437–65. 369
- 67 Holger Sieg, V. Kerry Smith, H. Spencer Banzhaf and Randy Walsh (2004), 'Estimating the General Equilibrium Benefits of Large Changes in Spatially Delineated Public Goods', *International Economic Review*, **45**, pp. 1047–77. 399
- 68 V. Kerry Smith, Holger Sieg, H. Spencer Banzhaf and Randall P. Walsh (2004), 'General Equilibrium Benefits for Environmental Improvements: Projected Ozone Reduction Under EPA's Prospective Analysis for the Los Angeles Air Basin', *Journal of Environmental Economics and Management*, **47**, pp. 559–84. 431

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