

MARTIN D. SMITH

Associate Professor of Environmental Economics
Nicholas School of the Environment
Duke University
Box 90328, Durham, NC 27708
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Education

UNIVERSITY OF CALIFORNIA, DAVIS

Ph.D. in Agricultural and Resource Economics, 2001

Fields: Environmental and Resource Economics, Econometrics

Dissertation: "Spatial Behavior, Marine Reserves, and the California Red Sea Urchin Fishery"

Committee: James E. Wilen (chair), Douglas M. Larson, David F. Layton, Jeffrey C. Williams

STANFORD UNIVERSITY

B.A. in Public Policy with a concentration in Environmental Policy, 1992

Honors and Awards

- 2008 Dr. S.-Y. Hong Award for Outstanding Article in *Marine Resource Economics* (w/ J. Zhang and F.C. Coleman)
- 2004 Quality of Research Discovery, American Agricultural Economics Association (AAEA) (w/ J.E. Wilen)
- 2002 AAEA Outstanding Dissertation
- 2001 AAEA Outstanding Essay for the 21st Century Honorable Mention (w/ J.E. Wilen)
- 2001 Gordon A. King Outstanding Dissertation Award in Agricultural and Resource Economics, U.C. Davis
- 2000 Best Student Paper, International Institute for Fisheries Economics and Trade
- 1999 Jastro Shields Research Fellowship
- 1998 California Sea Grant College Traineeship
- 1996 Giannini Foundation Fellowship
- 1991 Krupp Foundation Fellowship

Professional Positions and Appointments

- 2008 – present Associate Professor of Environmental Economics
- 2001 – 2008 Assistant Professor of Environmental Economics
Division of Environmental Science and Policy
Nicholas School of the Environment
Duke University
- 2007 – present Co-Editor, *Journal of Environmental Economics and Management*
- 2008 – present Science and Statistical Committee, Mid-Atlantic Fishery Management Council
- 2008 – present Editorial Board, *The Open Fish Science Journal*
- 2006 – 2007 Editorial Council, *Journal of Environmental Economics and Management*
- 2004 – 2007 Associate Editor, *Marine Resource Economics*

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|--------------------------------|--|
| 2003 – present | Assistant/Associate Professor of Economics (Secondary Appointment) Department of Economics Duke University |
| 2005 – present | Assistant/Associate Professor (Secondary Appointment) Division of Marine Science and Conservation (formerly Coastal Systems Science and Policy) Nicholas School of the Environment Duke University |
| 1996 – 2001 | Post Graduate Researcher; Instructor; Research Assistant; Teaching Assistant University of California, Davis |
| 1993 – 1996 | Associate; Research Analyst Law and Economics Consulting Group, Inc. (LECG), Emeryville, CA |
| 1986 – 1990, 1992 (summers) | Data Analyst Del Mar Thoroughbred Club, Del Mar, CA |
| 1991 (summer) | Intern United Nations Environment Programme, Washington, D.C. |

PROFESSIONAL WRITING

Journal Articles

In Review

Smith, M.D., “Towards an Econometric Foundation for Marine Ecosystem-based Management,” In Review.

J. Zhang and **Smith, M.D.**, “Bias Correction in an Empirical Fishery Model: A Two-Stage Approach,”
Revise-and-Resubmit (resubmitted December 2008), *The Review of Economics and Statistics*, 2007

Published or In Press

Smith, M.D., J.N. Sanchirico, and J.E. Wilen, “The Economics of Spatial-Dynamic Processes: Applications to Renewable Resources,” forthcoming, *Journal of Environmental Economics and Management*, 2009

Smith, M.D., J.M. Slott, and A.B. Murray, “Beach Nourishment as a Dynamic Capital Accumulation Problem,” forthcoming, *Journal of Environmental Economics and Management*, 2009

Smith, M.D., J. Zhang, and F.C. Coleman, “Econometric Modeling of Fisheries with Complex Life Histories: Avoiding Biological Management Failures,” *Journal of Environmental Economics and Management*, 55:265-280, 2008

J.M. Slott, **Smith, M.D.**, and A.B. Murray, “Synergies Between Adjacent Beach-Nourishing Communities in a Morpho-economic Coupled Coastline Model,” *Coastal Management* 36:374-91, 2008.

Smith, M.D., “Bioeconometrics: Empirical Modeling of Bioeconomic Systems,” *Marine Resource Economics*, 23:1-23, 2008

Sanchirico, J.N. and **M.D. Smith**, and D.W. Lipton, “An empirical approach to ecosystem-based fishery management,” (Sanchirico and Smith co-lead authors), *Ecological Economics* 64(3):586-96, 2008

Smith, M.D., J. Zhang, and F.C. Coleman, “Structural Modeling of Marine Reserves with Bayesian Estimation,” *Marine Resource Economics*, 22:131-46, 2007

Smith, M.D., “Generating Value in Habitat-dependent Fisheries: The Importance of Fishery Management Institutions,” *Land Economics* 83(1): 59-73, February 2007

Liese, C., **M.D. Smith**, and R.A. Kramer, “Open Access in a Spatially Delineated Artisanal Fishery: The Case of Minahasa, Indonesia,” *Environment and Development Economics* 12(1): 123-143, February 2007

Smith, M.D., J. Zhang, and F.C. Coleman, “Effectiveness of Marine Reserves for Large-Scale Fisheries Management,” *Canadian Journal of Fisheries and Aquatic Sciences* 63:153-164, 2006

Smith, M.D., “State Dependence and Heterogeneity in Fishing Location Choice,” *Journal of Environmental Economics and Management* 50(2):319-340, 2005

Smith, M.D. and J.E. Wilen, “Heterogeneous and Correlated Risk Preferences and Behavior of Commercial Fishermen: *The Perfect Storm* Dilemma,” *The Journal of Risk and Uncertainty* 31(1):53-71, 2005

Smith, M.D., “Fishing Yield, Curvature, and Spatial Behavior: Implications for Modeling Marine Reserves,” *Natural Resource Modeling* 17(3):273-298, 2004

Smith, M.D., “Limited Entry Licensing: Insights from a Duration Model,” *American Journal of Agricultural Economics* 86(3):605-618, 2004

Smith, M.D. and J.E. Wilen, “Marine Reserves with Endogenous Ports: Empirical Bioeconomics of the California Sea Urchin Fishery,” *Marine Resource Economics* 19(1):85-112, 2004

Smith, M.D. and J.E. Wilen, “Economic Impacts of Marine Reserves: The Importance of Spatial Behavior,” *Journal of Environmental Economics and Management* 46(2), 183-206, 2003

Reprinted in J. Geoghegan and W. Gray (eds.) *Spatial Aspects of Environmental Policy*,
The International Library of Environmental Economics and Policy, Ashgate, 2006

Smith, M.D., “Two Econometric Approaches for Predicting the Spatial Behavior of Renewable Resource Harvesters,” *Land Economics*, 78(4), 522-538, 2002

Wilen, J.E., **M.D. Smith**, D. Lockwood, and L. Botsford, “Avoiding Surprises: Incorporating Fishermen Behavior into Management Models,” *Bulletin of Marine Science* 70(2), 553-575, 2002

Smith, M.D. and J.E. Wilen, “The Marine Environment: Fencing the Last Frontier,” *Review of Agricultural Economics* 24(1), 31-42, 2002

Smith, M.D., “Breeding Incentives and the Demand for California Thoroughbred Racing: Is there a Quality/Quantity Tradeoff?” *Applied Economics* 33, 1755-1762, 2001

Smith, M.D., “Spatial Search and Fishing Location Choice: Methodological Challenges of Empirical Modeling,” *American Journal of Agricultural Economics* 82(5), 1198-1206, 2000, proceedings issue – not peer-reviewed, published prior to joining Duke

Peer-reviewed Book Chapters

In Review

Smith, M.D. and L.B. Crowder, “Valuing Ecosystem Services with Fishery Rents: A Lumped-Parameter Approach to Hypoxia in the Neuse River Estuary,” submitted as a book chapter in *Linking Economics and Ecology*, edited by V.K. Smith, (Working Paper Version: Fondazione Eni Enrico Mattei, Nota Di Lavoro 115.2005, September 2005)

Smith, M.D., “Rapporteur Report on Natural Resource Scarcity: From Non-renewable to Renewable Resource Scarcity” submitted as a book chapter in a special collection of essays in honor of the 50th anniversary of Resources for the Future, edited by R.T. Carson, W.M. Hanemann, and V.K. Smith, 2002

Published

Klonsky, K. and **M.D. Smith**, “Entry and Exit in California’s Organic Farming Sector,” in D.C. Hall and L.J. Moffitt, editors, *Economics of Pesticides, Sustainable Food Production and Organic Food Markets*, Advances in the Economics of Environmental Resources Volume 4, New York: Elsevier Science, 2002

Other Published Articles, Editorials, and Reviews (not peer-reviewed in entirety)

Smith, M.D., Review of *Climate Change and the Economics of the World’s Fisheries: Examples of Small Pelagic Stocks* (Edited by Rögnvaldur Hannesson, Manuael Barange, and Samuel F. Herrick Jr., Northhampton, MA: Edward Elgar, 2006), *International Journal of Maritime History* 19:476-78, 2007

Sanchirico, J.N. and **M.D. Smith**, and D.W. Lipton, “Managing Fish Portfolios,” *Resources* Winter 2007

Saterson, K.A., N.L. Christensen, R.B. Jackson, R.A. Kramer, S.L. Pimm, **M.D. Smith**, and J.B. Wiener, “Disconnects in Evaluating the Relative Effectiveness of Conservation Strategies,” Editorial, *Conservation Biology* 18(3):1-3, June 2004.

Smith, M.D. and J.E. Wilen, “State Dependence in Modeling the Spatial Behavior of Renewable Resource Users,” *CD ROM Proceedings of the 11th Biennial Conference of the International Institute for Fisheries Economics and Trade*, 2003

Smith, M.D., Review of *The Economics of Conserving Wildlife and Natural Areas* (by C. Tisdell), *Australian Journal of Agricultural and Resource Economics* 47 (3), 418-420, 2003

Kaplan, J.D. and **M.D. Smith**, “Optimal Fisheries Management in the Presence of an Endangered Predator and Harvestable Prey,” *CD ROM Proceedings of the 10th Biennial Conference of the International Institute for Fisheries Economics and Trade*, 2001

Smith, M.D., “Two Econometric Approaches for Spatial Fisheries Management,” *CD ROM Proceedings of the 10th Biennial Conference of the International Institute for Fisheries Economics and Trade*, 2001

Unpublished Working Papers and Technical Reports

Huang, L., **Smith, M.D.** and J.K. Craig, “Effects of Hypoxia on Fishery Productivity: An Application to North Carolina Brown Shrimp,” working paper, 2008

Smith, M.D., “Combining Property Rights and Landings Taxes to Mitigate the Ecological Impacts of Fishing,” working paper, 2008

Smith, M.D., “Endogenous Fishing Mortality in Fish Life History Models: Relaxing Some Implicit Assumptions,” working paper available at <http://agecon.lib.umn.edu/>, 2007

Smith, M.D. and J. Zhang, “Sorting Models in Discrete Choice Fisheries Analysis,” working paper available at <http://agecon.lib.umn.edu/>, 2007

J. Zhang and **Smith, M.D.**, “Evaluating the Effectiveness of Marine Reserves with a Simplified Biological Process,” Working Paper, 2006

Wilens, J.E., J.N. Sanchirico, and **M.D. Smith**, “Marine Reserves: The Importance of Economic and Biological Spatial Processes,” Working Paper, 2005

Smith, M.D. and B. Provencher, “Spatial Search in Marine Fisheries: A Discrete Choice Dynamic Programming Approach,” Proceedings of the AERE 2003 Summer Workshop: Spatial Theory, Modeling, and Econometrics in Environmental and Resource Economics, 2003

Sanchirico, J.N. and **M.D. Smith**, “Trophic Portfolios in Marine Fisheries: A Step Towards Ecosystem Management,” working paper available at <http://agecon.lib.umn.edu/>, 2003

Smith, M.D., J. Zhang, and F.C. Coleman, “Empirical Approaches to Evaluate the Effectiveness of Marine Reserves for Fisheries Management,” Working Paper, Duke University, 2005

Smith, M.D. and J.E. Wilens, “Analysis of a Spatial Rotation Plan for the Tule Lake National Wildlife Refuge,” working paper available at <http://agecon.lib.umn.edu/>, 2000

Smith, M.D., “Statistical Models of Catch Per Unit Effort: Localized Depletions of Pacific Cod in the Eastern Bering Sea,” Report to the Alaskan Fisheries Science Center, NOAA, 2000

Smith, M.D., “Statistical Models of Catch Per Unit Effort: Assessing Localized Depletions of Alaskan Atka Mackerel,” Report to the Alaskan Fisheries Science Center, NOAA, 1999

Smith, M.D., “Report on Leslie Regressions of Alaskan Atka Mackerel Populations,” Report to the Alaskan Fisheries Science Center, NOAA, 1998

Papers in Preparation

Nichols, L.A.B., Huang, L., **Smith, M.D.**, “An empirical market-level model of the effects of hypoxia on shrimp supply.”

Smith, M.D., “Fisherman Behavior 101: What to fish for, with what, where, when, and how hard.”

Smith, M.D., “Numerical Experiments in Empirical Spatial Fisheries Modeling.”

Smith, M.D. and Z. Brown, “A Two-state Two-control Model of Bycatch Avoidance when Compensatory Mitigation is Possible.”

Smith, M.D. and L. Huang, “Linking Hypoxia, Population Dynamics, and Spatial Fishing Choices”

Working Paper Versions of Subsequently Published Articles

Sanchirico, J.N. and **M.D. Smith**, and D.W. Lipton, “An Approach to Ecosystem-Based Fisheries Management,” (Sanchirico and Smith share lead authorship), Resources for the Future Discussion Paper 06-40, 2006

Smith, M.D., “Generating Value in Habitat-dependent Fisheries: The Importance of Fishery Management Institutions,” Duke University, Department of Economics, Working Paper 05-12, 2005

Liese, C., **M.D. Smith**, and R.A. Kramer, “Open Access with Product and Labor Market Failure: The Case of Artisanal Fishing in Indonesia,” Duke University, Department of Economics, Working Paper 03-11, 2003

RESEARCH FUNDING

Grants, Contracts, and Funded Working Groups

Crowder, L.B. and **M.D. Smith**, “Sustainable Global Seafood Markets,” Working Group, National Center for Ecological Analysis and Synthesis, **FUNDED**, 2009-10

Smith, M.D., “Dynamic Search Behavior and the Alaskan Crab Rationalization Program,” Pacific States Marine Fisheries Commission, **FUNDED**, 2008-09

Murray, A.B., T. Crowley, M. Orbach, J. Ramus, and **M.D. Smith**, "Coupling Human and Natural Influences on Coastline Evolution as Climate Changes," NSF Biocomplexity – Coupled Human Natural Systems Program, **FUNDED**, 2005-2010

Craig, K., L.B. Crowder, and **M.D. Smith**, “Linking hypoxia-induced habitat degradation to fishery outcomes: a bioeconomic approach based on brown shrimp,” NOAA Coastal Oceans Program, **FUNDED**, 2005-2008

Smith, M.D., “A Pilot Analysis of Size-based High-grading and the Potential for Individualized Landings Taxes to Embed Size-based Incentives: A Case Study of the U.S. West Coast Sablefish Fishery,” Subcontract from UC Santa Barbara, **FUNDED**, 2007-2008.

Smith, M.D., J.N. Sanchirico, and D.W. Lipton, “Trophic Portfolios in Commercial Fishing: A Finance-based Approach to Ecosystem Management with and Application to the Chesapeake Bay,” Chesapeake Bay Fisheries Research Program, National Marine Fisheries Service, NOAA, **FUNDED**, July 2004 – October 2006

Smith, M.D. and F.C. Coleman “Incorporating Fisher Behavior Into Management Models: A Case Study of the Reef Fish Fishery of the Eastern Gulf of Mexico,” Saltonstall-Kennedy (National Marine Fisheries Service), NOAA, **FUNDED**, 2003-2007

Smith, M.D., “Renewable Resource Production Surfaces, Bioeconomic Steady States, and Space,” Fishery Statistics and Economics Division, National Marine Fisheries Service, NOAA, 2002, **FUNDED**

Smith, M.D., “Statistical Models of Catch Per Unit Effort: Localized Depletions of Pacific Cod in the Eastern Bering Sea,” Alaska Fisheries Science Center, National Marine Fisheries Service, NOAA, 2000, **FUNDED**

Smith, M.D., “Statistical Models of Catch Per Unit Effort: Assessing Localized Depletions of Alaskan Atka Mackerel,” Alaska Fisheries Science Center, National Marine Fisheries Service, 1999, **FUNDED**

Smith, M.D., "Report on Leslie Regressions of Alaskan Atka Mackerel Populations," Alaska Fisheries Science Center, National Marine Fisheries Service, NOAA, 1998, **FUNDED**

Travel Awards and Honoraria

Honorarium for Keynote Address, Workshop on Choice Modeling, Centre for Fisheries & Aquaculture Management & Economics, University of Southern Denmark, June 2008
Honorarium for Contributed Paper to *The Frontiers in Environmental Economics*, Resources for the Future, Washington, D.C., 2007
Honorarium for Contributed Paper to *Linking Economic and Ecological Models for Environmental Policy Analysis: Challenges and Research Strategies*, NSF-EPA Biocomplexity Workshop, 2005
University of Maryland Department of Agricultural and Resource Economics Seminar Honorarium, 2003
Honorarium for Natural Resource Scarcity Session, 2nd World Congress of Env. and Resource Econ., 2002
International Travel Award for Junior Faculty, Duke University International Affairs Committee, 2002
Duke Marine Lab Speaker Series Honorarium, 2001
American Agricultural Economics Association Student Travel Award, Summer 1999
U.C. Davis Graduate Student Association Travel Award, Summer 1999

TEACHING and ADVISING

Courses Taught or in Progress

ENV 379 (ECON Cross-list): Natural Resource Economics (Duke, Fall 2005, 2008, Spring 2007)
ENV 252 (formerly 298.32): Sustainability and Renewable Resource Economics (Duke, Spring 2002, 2003, 2004, 2007, 2008 Fall 2005)
ENV 270 (ECON/PPS Cross-list): Resource and Environmental Economics (Duke, Fall 2001, 2002, 2003, 2007, 2008)
ENV 395.05S: Masters Project Seminar for Resource Economics and Policy, (Duke, 2003-04)
ENV 298.22: Clean Electricity (with R. Harkrader), (Duke, Fall 2003)
ARE 100A: Intermediate Microeconomics (U.C. Davis, Fall 1999)

Planned Courses

ENV 1/2__ Economic Perspectives on Marine and Coastal Resource Policy (undergrad/masters)
ENV 0__ Should I Eat Fish? Economics, Ecology, and Health (lower division undergrad)

Mini-courses and Guest Lectures

Simulation in Renewable Resource Economics (Duke, Spring 2007)
Fishing for Chocolates (Duke, Fall 2006, 2007, 2008)
Fossil Fuel Scarcity and the Environment (Duke, Spring 2004)
Economics of Water and Water Markets (Duke, 2001, 2002, 2003)
Economics of Marine Protected Areas (Duke, Fall 2002)
Nicholas School Mathematics Review (Duke, Fall 2001, 2002, 2003, 2005, 2006, 2007, 2008)
Nicholas School Microeconomics Review (Fall 2002, 2003, 2007, 2008)
Discounting in Environmental Economics (U.C. Davis, Spring 2001)

Teaching Assistant

Intermediate Microeconomics (U.C. Davis, Fall 1997)
Linear Programming (U.C. Davis, Spring 1997)
Econometrics (U.C. Davis, Winter 1997 and Fall 1996)

Ph.D. Student Advising

Supervisor for 3 Ph.D. Students

Junjie Zhang, Nicholas School, (2003- 2008)

Dissertation Title: “Production from Natural Resources with a Latent Stock: The Case of the Fishery”

Joseph L. Fisher Doctoral Dissertation Award, Resources for the Future, 2007-08
Assistant Professor of Environmental Economics (starting August 2008), School of International Relations and Pacific Studies, University of California, San Diego

Ling Huang, NSEES, (2004-present, expected spring 2009)

Dissertation Working Title: “Essays in the Economics of Marine Ecosystem-based Management”

Sathya Gopalakrishnan (2005-present, expected spring 2010)

Dissertation Working Title: “Economics of Coastline Change”

Member of 12 Ph.D. Committees

Christopher Liese, Duke, Nicholas School, DESP (completed in 2003)

Jon Eisen-Hecht, Duke, Nicholas School, DESP (completed in 2005)

James Abbott, Duke, Nicholas School, CSSP (completed in 2005)

Katie Hansen Dickinson, Duke, Nicholas School, DESP (completed in 2008)

Jordan Slott, Duke, Nicholas School, EOS (completed in 2008)

Zachary Brown, Duke, Nicholas School, DESP (2007 – present)

Bentley Coffey, Duke, Economics Department (completed in 2004)

Kelly Bishop, Duke, Economics Department, (completed in 2008)

Chris Moore, NC State, Economics Department (completed in 2008)

Mitchell Dudley NC State, Economics Department (2006 – present)

Peter Maniloff, Duke, Nicholas School, DESP (2008 – present)

Nujin Prasertsom, Duke, Economics Department (2008 – present)

Masters Student Advising

Supervisor for 27 Masters Projects (23 completed), Duke, Nicholas School

Course Advisor for 40+ Masters of Environmental Management Students, Duke, Nicholas School

Exams Committee, 2 Master of Arts, Duke, Nicholas School, 2002, 2008

Committee Member for 1 Masters of Public Policy, Duke, Sanford Institute, 2001

Undergraduate Student Advising

Advisor for 1 Undergraduate Senior Thesis, Duke, Environmental Science and Policy

Aaron Windecker (completed in 2003)

Major Advisor for 6 Undergraduate Environmental Science and Policy Majors, Duke 2002-2005

Supervisor for 3 Undergraduate Independent Studies, Duke, 2002-2003

Second Reader, Duke Economics Department Undergraduate Honors Thesis, 2006

OTHER PROFESSIONAL INFORMATION

University Service

Duke University

Faculty Diversity Standing Committee (FDSC), September 2008 - present
Executive Committee, Duke Center for Marine Conservation, 2005-present
Duke Advisory Committee on Investment Responsibility, 2006-present
Ad hoc Committee on Incentives and Compensation, ESP Division, 2007-08
Seminar Coordinator, Nicholas Institute for Environmental Policy Solutions, 2005 – 2007
Search Committee for Gendell Chair in Energy and the Environment, 2005 – 2006
Graduate Admissions Committee, Nicholas School, 2002-04
Presidential Management Interns Program Selection Committee, Nicholas School, 2002
Executive Committee, Duke Center for Environmental Solutions, 2003-2005
Search Committee for Assistant Professor of Environmental Policy, 2003-04
Faculty Participant, Duke Up Close Program, Spring 2003, 2004, 2005, 2006
Duke University Greening Initiative Board of Advisors, 2003-present
Ad Hoc Statistics Teaching Committee, Nicholas School, 2003
Computer and Data Committee, Social Science Research Institute, 2004 – 2005
Energy Program Task Force, Nicholas School, 2005-present

University of California, Davis

Student Member, Search Committee for Assistant Professor of Agricultural Economics
Graduate Student Seminar Co-Chair, Ag. and Resource Economics, 1999-2001
Graduate Student Association President, Ag. and Resource Economics, 1998-1999
Teaching Assistant Retreat Organizer, Ag. and Resource Economics, 1998 and 1999
Computer Committee, Ag. and Resource Economics, 1997-1999

Professional Affiliations and Service

Member

American Economic Association
Association of Environmental and Resource Economists
American Agricultural Economics Association
International Institute for Fisheries Economics and Trade
North American Association of Fisheries Economists
American Fisheries Society (Socioeconomics Section)

Program Committee

Association of Environmental and Resource Economists, 2008 - present

Journal Reviewing

American Journal of Agricultural Economics
Applied Economics
Bulletin of Marine Science
Canadian Journal of Agricultural Economics
Canadian Journal of Fisheries and Aquatic Sciences
Conservation Biology
Conservation Ecology
Ecological Economics
Environmental and Resource Economics

Environment and Development Economics
Environmental Modeling and Assessment
European Economic Review
Fisheries Research
Frontiers in Ecology and the Environment
Journal of Agricultural and Resource Economics
Journal of Business and Economic Statistics
Journal of Environmental Economics and Management
Land Economics
Marine Resource Economics
Natural Resource Modeling
Proceedings of the National Academy of Sciences
Proceedings of the Royal Society: Biological Sciences
Resource and Energy Economics

Other Reviewing

Addison-Wesley
American Agricultural Economics Association Annual Meetings
Congressional Research Service
Island Press
Maine Sea Grant College Program
National Science Foundation
Research Council of Norway
Triangle Census Data Research Center
Virginia Marine Resources Commission

Rapporteur

Natural Resource Scarcity Session in Honor of Resources for the Future, 2nd World Congress of Environmental and Resource Economists, Monterey, June, 2002

Session Moderator

American Agricultural Economics Association Annual Meeting, Long Beach, CA, 2002
North American Association of Fisheries Economists 2005 Forum, Vancouver, BC Canada
International Institute for Fisheries Economics and Trade (2 sessions), Portsmouth, UK, 2006

Paper Discussant

Association of Environmental and Resource Economists (AERE) Sessions (2 papers) at American Agricultural Economics Association Annual Meeting, Montreal, Canada, July 2003
AERE Workshop: Natural Resources at Risk, Jackson, WY, June 2005
AERE Sessions at American Agricultural Economics Association Annual Meeting, Providence, RI, July 2005
3rd World Congress of Environmental and Resource Economists, Kyoto, Japan, 2006
AERE Sessions at Southern Economic Association Annual Meetings, Charleston, SC, November 2006
AERE Sessions at Allied Social Science Associations Annual Meeting, San Francisco, CA, January 2009

Judge

Undergraduate Student Paper Contest, American Agricultural Economics Association Annual Meetings, Portland, OR, 2007

PRESENTATIONS AND ORGANIZED SESSIONS

Organized Sessions

1. *Economics of Beach Management and Coastal Hazard Mitigation*, (with C. Landry), Organized Symposium, American Agricultural Economics Association, Portland, OR, July 2007
2. *Modeling Risk and Uncertainty in Capture Fisheries*, (with L. Pendleton), 2nd World Congress of Environmental and Resource Economists, Monterey, June 2002

Presentations at Professional Meetings (selection based on peer review of abstracts or full papers, all presented by M.D. Smith unless otherwise indicated)

1. “Combining Property Rights and Landings Taxes to Mitigate the Ecological Impacts of Fishing,” AERE Session, Allied Social Science Associations Annual Meeting, San Francisco, CA, January 2009
2. “Towards an Econometric Foundation for Marine Ecosystem-based Management,” (Invited Lecture) Seventh William R. and Lenore Mote International Symposium, Spatial Dimensions of Fisheries: Putting it All in Place, November 2008
3. “Spatial assessment of a fish stock: a sorting method approach with commercial fishery data,” Seventh William R. and Lenore Mote International Symposium, Spatial Dimensions of Fisheries: Putting it All in Place, November 2008 (presented by L. Huang)
4. “Optimal Beach Nourishment with Strategic Interaction Between Adjacent Communities,” Camp Resources XV, Wilmington, NC, August 2008 (presented by S. Gopalakrishnan).
5. “Dynamic Modeling of Beach Management,” Triangle Resource and Environmental Economics Workshop, NCSU, September 27-28, 2007
6. “Fishermen Behavior 101: What to fish for, with what, where, when, and how hard.” in *Modeling Fisher Behavior: State of the Art*, American Fisheries Society 137th Annual Meeting, San Francisco, CA September 2007
7. “Sorting Models in Discrete Choice Fisheries Analysis,” (with J. Zhang), in *Modeling Fisher Behavior: State of the Art*, American Fisheries Society 137th Annual Meeting, San Francisco, CA September 2007
8. “Economic Modeling and the Dynamics of Coastal Change,” (with J.M. Slott, A.B. Murray, and S. Gopalakrishnan), in *Economics of Beach Management and Coastal Hazard Mitigation*, Organized Symposium, American Agricultural Economics Association, Portland, OR, July 2007
9. “Endogenous Fishing Mortality in Life History Models: Relaxing Some Implicit Assumptions,” Selected Paper, American Agricultural Economics Association, Portland, OR, July 2007
10. “Sorting Models in Discrete Choice Fisheries Analysis,” (with J. Zhang), Selected Paper, American Agricultural Economics Association, Portland, OR, July 2007
11. “Numerical Experiments in Empirical Spatial Fisheries Modeling,” *The Role of Economics in Mitigating Unsustainability of Fisheries, Dealing with Ecosystems, Environmental Fluctuations, Governance, and Trade*, Forum of the North American Association of Fisheries Economists, Mérida, Yucatán, México, March 27-30, 2007.
12. “Sorting Models in Discrete Choice Fisheries Analysis,” (with J. Zhang) *The Role of Economics in Mitigating Unsustainability of Fisheries, Dealing with Ecosystems, Environmental Fluctuations,*

Governance, and Trade, Forum of the North American Association of Fisheries Economists, Mérida, Yucatán, México, March 27-30, 2007.

13. "Effects of Hypoxia on Fishery Productivity," (with L. Huang) *The Role of Economics in Mitigating Unsustainability of Fisheries, Dealing with Ecosystems, Environmental Fluctuations, Governance, and Trade*, Forum of the North American Association of Fisheries Economists, Mérida, Yucatán, México, March 27-30, 2007.
14. "Endogenous Fishing Mortality in Life History Models: Relaxing Some Implicit Assumptions," *The Role of Economics in Mitigating Unsustainability of Fisheries, Dealing with Ecosystems, Environmental Fluctuations, Governance, and Trade*, Forum of the North American Association of Fisheries Economists, Mérida, Yucatán, México, March 27-30, 2007.
15. "The Economics of Spatial-Dynamic Processes: Applications to Renewable Resources," (with J.N. Sanchirico and J.E. Wilen), *The Frontiers of Environmental Economics*, Washington, D.C., February 26, 2007, 1 of 9 papers selected out of 175 submissions
16. "Endogenous Fishing Mortality in Life History Models: Relaxing Some Implicit Assumptions," Sixth William R. and Lenore Mote International Symposium: Life History in Fisheries Ecology and Management, Sarasota, FL, November 2006
17. "Bioeconometrics: Empirical Modeling of Bioeconomic Systems," Selected Paper, Southern Economic Association Annual Meetings, AERE Sessions, Charleston, SC, November 2006
18. "Structural Econometric Modeling of Fisheries with Complex Life Histories: Avoiding Biological Management Failures," Selected Paper, Camp Resources Conference, Wilmington, NC, August 2006
19. "Dynamic Harvest Strategies: Building a Stable Ecosystem," (with L. Huang), Selected Paper, Camp Resources Conference, Wilmington, NC, August 2006, (presented by L. Huang)
20. "Bioeconometrics: Empirical Modeling of Bioeconomic Systems," Selected Paper, 3rd World Congress of Environmental and Resource Economics, Kyoto, Japan, July 2006
21. "Ecosystem Portfolios: A Finance-based Approach to Ecosystem Management," (with J.N. Sanchirico and D.W. Lipton), Selected Paper, 3rd World Congress of Environmental and Resource Economics, Kyoto, Japan, July 2006
22. "Bioeconometrics: Empirical Modeling of Bioeconomic Systems," Selected Paper, International Institute for Fisheries Economics and Trade Conference, Portsmouth, England, July 2006
23. "Ecosystem Portfolios: A Finance-based Approach to Ecosystem Management," (with J.N. Sanchirico and D.W. Lipton), Selected Paper, International Institute for Fisheries Economics and Trade Conference, Portsmouth, England, July 2006
24. "Estimating a Generalized Gordon-Schaefer Model with Heterogeneous Fishing Data," (with J. Zhang), Selected Paper, International Institute for Fisheries Economics and Trade Conference, Portsmouth, England, July 2006 (presented by J. Zhang)
25. "Bayesian Bioeconomics of Marine Reserves," (with J. Zhang, and F.C. Coleman), Selected Paper, American Agricultural Economics Association Annual Meetings, Providence, RI, July 2005
26. "Ecosystem Portfolios: A Finance-based Approach to Ecosystem Management," (with J.N. Sanchirico and D.W. Lipton), Selected Paper, Association of Environmental and Resource Economists 2005 Workshop:

Natural Resources at Risk, Jackson, WY, June 2005

27. "A Hierarchical Bayes Approach to Discrete Choice Fisheries Modeling," (with J. Zhang, and F.C. Coleman), Selected Paper, 2005 Forum of the North American Association of Fisheries Economists, Vancouver, BC Canada, May 2005
28. "Valuing Ecosystem Services with Fishery Rents," (with L.B. Crowder), Selected Paper, 2005 Forum of the North American Association of Fisheries Economists, Vancouver, BC Canada, May 2005
29. "Empirical Approaches to Evaluate the Effectiveness of Marine Reserves for Fisheries Management" (with J. Zhang, and F.C. Coleman), AERE Sessions, Allied Social Science Associations Annual Meetings, Philadelphia, PA, January 2005
30. "Marine Reserves: The Importance of Economic and Biological Spatial Processes," presented by J.E. Wilen and with J.N. Sanchirico, AERE Sessions, Allied Social Science Associations Annual Meetings, Philadelphia, PA, January 2005
31. "Do Marine Protected Areas Enhance Fisheries in the Gulf of Mexico?" (with J. Zhang, and F.C. Coleman) Camp Resources Conference, Wilmington, NC, August 2004
32. "Trophic Portfolios in Marine Fisheries," (with J.N. Sanchirico), Selected Paper, American Agricultural Economics Association Annual Meetings, Montreal, Canada, July 2003
33. "Spatial Search in Marine Fisheries: A Discrete Choice Dynamic Programming Approach," (with B. Provencher) AERE Workshop on Spatial Modeling, Madison, WI, June 2003 and Selected Paper, American Agricultural Economics Association Annual Meetings, Montreal, Canada, July 2003
34. "Limited Entry Licensing and Adaptive Management," Selected Paper, International Institute for Fisheries Economics and Trade Conference, Wellington, New Zealand, August 2002
35. "State Dependence and Heterogeneity in Fishing Location Choice," (with J.E. Wilen), Selected Paper, International Institute for Fisheries Economics and Trade Conference, Wellington, New Zealand, August 2002 (also presented at Camp Resources X, Wilmington, NC, August 2002 and a revised version presented at North American Association of Fisheries Economists, Williamsburg, VA, April 2003)
36. "Renewable Resource Production Surfaces, Bioeconomic Steady-states, and Space," Selected Paper, American Agricultural Economics Association Annual Meeting, Long Beach, CA, July 2002
37. "Open Access and Missing Markets in Artisanal Fishing," (with C. Liese and R.A. Kramer), Selected Paper, American Agricultural Economics Association Annual Meeting, Long Beach, CA, July 2002
38. "Economic Impacts of Marine Reserves: The Importance of Spatial Behavior," (with J.E. Wilen), Long Selected Paper, 2nd World Congress of Environmental and Resource Economists, Monterey, June 2002
39. "Correlated Risk Preferences and Behavior of Commercial Fishermen: *The Perfect Storm* Dilemma," (with J.E. Wilen), Long Selected Paper, 2nd World Congress of Environmental and Resource Economists, Monterey, June 2002
40. "Imperfect Testing of *The Perfect Storm* Hypotheses," Selected Paper, Camp Resources IX, Wilmington, NC, August 2001
41. "Farming Benefits of Agro-Wildfowl Reserve Rotation in the Tule Lake Basin," (with J.E. Wilen), Selected Paper, American Agricultural Economics Association Annual Meeting, Tampa, FL, August 2000

42. "A Bioeconomic Model of Spatial Policy Options," (with J.E. Wilen), Selected Paper, American Agricultural Economics Association Annual Meeting, Tampa, FL, August 2000
43. "Spatial Search and Fishing Location Choice: Methodological Challenges of Empirical Modeling," Principal Paper, American Agricultural Economics Association Annual Meeting, Tampa, FL, August 2000
44. "Two Econometric Approaches for Spatial Fisheries Management," Selected Paper, International Institute for Fisheries Economics and Trade Conference, Corvallis, OR, July 2000
45. "Optimal Fisheries Management in the Presence of an Endangered Predator and Harvestable Prey," (with J.D. Kaplan), Selected Paper, International Institute for Fisheries Economics and Trade Conference, Corvallis, OR, July 2000
46. "A Dynamic Spatial Model of Marine Reserve Formation: The California Red Sea Urchin Fishery," (with J.E. Wilen), Fifth California Workshop on Environmental and Resource Economics, University of California, Santa Barbara, May 2000
47. "Breeding Incentives and the Demand for California Thoroughbred Racing: The Tradeoff Between Quality and Quantity," Selected Paper, American Agricultural Economics Association Annual Meeting, Nashville, TN, August 1999
48. "Spatial Patterns of Renewable Resource Exploitation: The California Sea Urchin Fishery," (with J.E. Wilen), Selected Paper, American Agricultural Economics Association Annual Meeting, Nashville, TN, August 1999
49. "Spatial Behavior of Harvesters in the California Sea Urchin Fishery," (with J.E. Wilen), Fourth California Workshop on Environmental and Resource Economics, University of California, Santa Barbara, October 1998

Invited Lectures, Workshops, and Other Scholarly Presentations (does not include job talks)

1. "Beach Capital and Dynamic Coastal Management Strategies," Cornell University, Department of Agricultural and Applied Economics, October 2008
2. Invited Keynote Speaker, Workshop on Choice modeling: Producers and consumers reaction to policy changes in natural resource policy models, Centre for Fisheries & Aquaculture Management & Economics, University of Southern Denmark, June 2008
3. "Towards an Econometric Foundation for Marine Ecosystem-based Management," Duke Marine Lab Speaker Series, April 2, 2008
4. Instructor, *Spatial Bioeconomic Analysis of Coastal Fisheries*, North American Association of Fisheries Economists 2007 Pre-forum Workshop, Mérida, Yucatán, México, March 27, 2007.
5. "Endogenous Fishing Mortality in Life History Models: Relaxing Some Implicit Assumptions," Center for Marine Sciences and Technology, NC State University, Morehead City, February 2, 2007.
6. Participant, NCEAS Working Group on Property Rights in Fisheries, Santa Barbara, CA, February 2007, presentation: Smith, M.D., "Individualized Landings Taxes in an ITQ Fishery."
7. Instructor and Participant, *Micro-econometric Modeling in Environmental and Resource Economics*, EPA-sponsored Workshop, Fall 2006, presentation: Smith, M.D., "Discrete Choice in Renewable Resource

Economics.”

8. “Structural Econometric Modeling of Fisheries with Complex Life Histories: Avoiding Biological Management Failures,” Invited Seminar, University of Stravanger, Stravanger, Norway, September 4, 2006 (also presented at Department of Economics and Social Science, Norwegian University of Life Sciences, Ås, Norway, September 7, 2006; Centre for Ecological and Evolutionary Synthesis, Department of Biology, University of Oslo, Oslo, Norway, September 8, 2006)
9. “Structural Econometric Modeling of Fisheries with Complex Life Histories: Revisiting Biological Bias in Regulation,” Invited Seminar, Public Economics and Environmental Economics Workshop, Department of Economics, Stanford University, May 2, 2006 (also presented at UC Davis Department of Agricultural and Resource Economics Brown Bag Seminar, May 3, 2006)
10. Participant and Speaker, *Sustainability of Deep-Sea Fisheries*, Workshop Sponsored by the Marine Conservation Biology Institute, Miami, FL, May 2006, presentation: Smith, M.D., “Fisherman Behavior 101: What to fish for, with what, where, when, and how hard.”
11. “Bioeconometrics: Empirical Modeling of Bioeconomic Systems,” Invited Seminar, Resources for the Future, Washington D.C., March 16, 2006
12. “Using Financial Portfolio Analysis to Guide Ecosystem-Based Fishery Management,” Nicholas Institute Speaker Series, Duke University, March 2, 2006
13. “Bayesian Bioeconometrics of Marine Reserves,” J. Norman Efferson Lectures in Agricultural Economics, Louisiana State University, October 24, 2005 (also presented at Department of Economics Seminar Series, College of Business Administration, University of Central Florida, December 9, 2005).
14. “A Spatial Bioeconomic Model of Nutrient Pollution” 3rd Workshop on Spatial-Dynamic Models of Economics and Ecosystems, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, April 11-13, 2005
15. “Valuing Ecosystem Services with Fishery Rents: A Lumped-Parameter Approach to Hypoxia in the Neuse River Estuary,” (with L.B. Crowder), Linking Economic and Ecological Models for Environmental Policy Analysis: Challenges and Research Strategies, NSF-EPA Biocomplexity Workshop, Santa Fe, NM, April 17-19, 2005 (presented preliminary results at Triangle Environmental and Resource Economics Seminar, October 18, 2004)
16. “International Trade, Fisheries, and the Environment,” SIDG Annual Spring Conference, NSEES, Duke University, February 2004
17. “Fishing Behavior,” Environmental and Resource Economics Seminar Series, Department of Applied Economics, University of Minnesota, November 2003
18. Participant in “Spatial Fisheries Economic Modeling Workshop: Application to the Bering Sea Pollock Catcher Boat Fishery,” Seattle, WA, June 2003
19. “Incorporating Fisher Behavior into Management Models: A case study of the reef fish fishery of the eastern Gulf of Mexico,” NOAA Fisheries Southeast Fisheries Science Center, Miami FL, June 2003 (also presented at Florida Marine Research Institute, St. Petersburg FL, February 2004).
20. “Spatial Supply Response in Marine Fisheries,” Department of Agricultural and Resource Economics Seminar Series, University of Maryland, April 2003

21. "Correlated Risk Preferences in Commercial Fishing," Public Economics Seminar Series, Duke Economics Department, March 2003
22. "Economics of Marine Reserves: Lessons from Empirical Bioeconomics," Invited Presentation, Spatial Models in Fisheries Economics Workshop, National Marine Fisheries Service, Silver Spring, MD, October 2002
23. "Economic Impacts of Marine Reserves: The Importance of Spatial Behavior," Invited Presentation, Environmental Institutions Seminar, Duke Center for Environmental Solutions, February 2002
24. "Testing of *The Perfect Storm* Hypotheses: Behavioral Modeling of Commercial Fishing," Invited Presentation, Duke Marine Lab Speaker Series, September 2001 (also presented at Nicholas School of the Environment and Earth Sciences Graduate Afternoon Seminar, October 2001)
25. "Betting on a Long-shot: Breeding Incentives and Demand for Thoroughbred Racing in California," Department of Agricultural and Resource Economics Brown Bag Seminar Series, University of California, Davis, April 1999
26. "Spatial Behavior of Harvesters in the California Sea Urchin Fishery," (with J.E. Wilen), Department of Agricultural and Resource Economics Brown Bag Seminar Series, University of California, Davis, November 1998

Public Outreach

1. Presentation at Fisherman Stakeholder Meeting: "Economic Issues in the California Sea Urchin Fishery," (with J.E. Wilen), Sea Urchin Workshop, Santa Barbara, CA, June 1999
2. Presentation at Fisherman Stakeholder Meeting: Smith, M.D. and F.C. Coleman, "Incorporating Fisher Behavior into Management Models," Apalachicola FL, March 11, 2004
3. Prepared presentation for commercial fishermen of results from 'Incorporating Fisher Behavior into Management Models: A case study of the reef fish fishery in the Gulf of Mexico,' Apalachicola, FL, December 13, 2005 (presented by Felicia C. Coleman)
4. Public testimony before the Gulf of Mexico Fishery Management Council, Mobile, AL, March 22, 2006