AERE Sessions at AAEA Annual Meetings – July, 2009, Milwaukee, WI

(presenters shown in bold lettering)

Session 1: Pollution Control

Session Chair: Hayri Önal (University of Illinois)

Session Description: The three papers in this session examine pollution control in the United States and India regarding both point and nonpoint pollution sources using theoretical, empirical, and experimental analysis. The first paper employs theoretical and experimental investigations to explore a variety of ambient-based tax mechanisms in a framework with both point and nonpoint sources. The second paper considers compliance with performance-based effluent limits imposed on US point sources; it highlights the importance of recidivism in environmental compliance, the regulatory response to repeat offenses, and firms' reactions to enforcement activities directed toward recidivists. The third paper tests two assumptions implicitly invoked by previous empirical studies of pollution control: (1) output, pollution, and abatement are separable, and (2) different pollutants can be abated separately.

1.a. **Luke Jones** (University of Tennessee). "Comparing Ambient Taxes in a Point-Nonpoint Pollution Framework"
Discussant: Kathleen Segerson (University of Connecticut)

1.b. **Jay Shimshack** (Tulane University) and Michael Ward (Australian National University). "Recidivism, Enforcement, and Environmental Compliance"
Discussant: Sumeet Gulati (University of British Columbia)

1.c. **Surender Kumar** (TERI University) and Shunsuke Managi (Yokohama National University). "Non-Separability and Substitutability among Water Pollutants: Evidence from India"
Discussant: Scott R. Templeton (Clemson University)

Session 2: Renewable Resources

Session Chair: Peter Berck (University of California – Berkeley)

Session Description: The three papers in this session examine renewable resource extraction under different ownership structures with applications to ground water, fisheries, and forests. The first paper explores the common-pool characteristics of ground water and contrasts ground water pumping from collectively owned wells with pumping from privately owned wells. The second paper explores the incentives to join voluntary fishing cooperatives and the potential gains from sharing information about a highly uncertain common-pool resource. The third paper models the option value of harvesting a stand of timber under sole ownership and derives implications for the price of lumber derivatives and long-run investment decisions in forestry.
2.a. **Qiuqiong Huang** (University of Minnesota), Yang Liu (University of Minnesota), Stephen

Polasky (University of Minnesota), Scott Rozelle (Stanford University), and Jinxia Wang (Chinese Academy of Sciences). "Impacts of Well Ownership and Nature of Aquifers on Water Resources"
Discussant: Jay Shimshack (Tulane University)

2.b. **Keith S. Evans** (Iowa State University) and Quinn Weninger (Iowa State University). "Cooperation or Conflict: Voluntary Membership in a Fishing Cooperative"
Discussant: Michael Springborn (University of California – Davis)

2.c. **Shan Chen** (University of Waterloo), Margaret Insley (University of Waterloo), and Tony Wirjanto (University of Waterloo). "The Impact of Stochastic Convenience Yield on Long-Term Forestry Investment Decisions"
Discussant: Jerome Dumortier (Iowa State University)

Session 3: Open Space, Urban Sprawl, and the Patterns of Land Use Change

Session Chair: Antonio Bento (Cornell University) [confirmed]

Session Description: This session incorporates four state-of-the-art papers on issues relating to open space conservation, urban sprawl, and the effects of alternative policies on the patterns of land use changes. The two theoretical studies use locational equilibrium models (1) to evaluate how open space conservation affects the socioeconomic characteristics of urban and suburban communities in a metropolitan area and (2) to measure the costs of alternative anti-sprawl policies in a second best setting. The two empirical studies use discrete choice and matching estimation methods (1) to predict land conversion into various land uses [single-family residential, multi-family residential, retail, industrial, open space] and (2) to examine the examine the effect of local zoning policies on land use changes.

3.a. **JunJie Wu** (Oregon State University), Wenchao Xu (Oregon State University), and Ralph Alig (Oregon State University). "Open Space Conservation and Urban Socioeconomic Landscapes"
Discussant: Nicolai Kuminof (Virginia Tech University)

3.b. **Antonio Bento** (Cornell University) and Daniel Kaffine (Colorado School of Mines). "The Choice of Anti-Sprawl Instruments in a Second Best Setting"
Discussant: Luke Jones (University of Tennessee)

3.c. Nikhil Kaza (University of Maryland), **Charles Towe** (University of Maryland), and Xin Ye (University of Maryland). "An Economic Model of Land Conversion Incorporating Multiple End Uses"
Discussant: David Newburn (Texas A&M)

3.d. **Van Butsic** (University of Wisconsin – Madison), Lindsay Ludwig (Industrial Economics Inc.), David J. Lewis (University of Wisconsin – Madison). "A Parcel-Level Econometric Analysis of

Land-Use Change with Endogenous Zoning"
Discussant: Dana Marie Bauer (Boston University)

Session 4: Land Use – Data, Conservation, and Climate Change

Session Chair: JunJie Wu (Oregon State University)

Session Description: This session addresses issues in land conversion and agriculture. The first paper addresses land use changes (both urban and rural) in a sparse data environment. While some areas in the US have detailed mirco-level data sets (parcel level), others have much coarser observations. The paper examines whether results from the former can be applied to the latter and establishes best practices. The second paper addresses agricultural land use changes in response to biofuel mandates and extends the carbon accounting from earlier models by not only incorporating land use change but also agricultural production such as livestock and fertilizer. What are the net effects of biofuel mandates on CO2 emissions? The third paper includes climate variables (temperature and precipitation) in a factor productivity model of the US economy 1970-1999. Climate change is found to have a dampening effect on research investment returns. The fourth paper evaluates the potential for land use change in exurban communities, while simultaneously maintaining a sustainable level of ecosystem health; towards this goal, the study develops a spatially realistic model that integrates economic and ecological principles to determine a socially desirable allocation of land between development and preservation.

4.a. **Kathleen Bell** (University of Maine). "Economic Modeling of Land-Use Change in a Sparse Data Environment"
Discussant: Charles Towe (University of Maryland)

4.b. **Jerome Dumortier** (Iowa State University) and Dermot Hayes (Iowa State University). "Towards an Integrated Global Agricultural Greenhouse Gas Model"
Discussant: B.A. McCarl (Texas A&M University)

4.c. **B.A. McCarl** (Texas A&M University), X. Villavicencio (Texas A&M University), and W.M. Wu (Texas A&M University). "Estimating the Effect of Climate Change over Agricultural Factor Productivity"
Discussant: Wallace Huffman (Iowa State University)

4.d. **Dana Marie Bauer** (Boston University). "Where, When, and How Much? A Spatially-Realistic, Dynamic Model of Species Conservation Applied to Exurban Communities"
Discussant: Sahan Dissanayake (University of Illinois) [invited]

Session 5: Advances in Recreation Demand Models

Session Chair: Joseph Herriges (Iowa State University)

Session Description: This session presents three empirical studies of revealed preference for

recreation using micro-econometric methods. The first paper focuses on preference heterogeneity over different recreational sites and the effects of ignoring heterogeneity on welfare estimates. It uses a latent class model to characterize different groups of outdoor recreationists. The second paper examines the importance the error term in a corner solution model of recreational site choice. With an unusual panel data set, the authors can explore how different sources of error affect welfare estimates. The third paper combines a sorting model with a Bayesian estimation framework to explore recreational choices when there is a large choice set with unobserved site characteristics.

5.a. **Kenneth A. Baerenklau** (University of California – Riverside). "A Latent Class Approach to Modeling Endogenous Spatial Sorting in Zonal Recreation Demand Models"
Discussant: Babatunde O. Abidoye (Iowa State University)

5.b. **Subhra Bhattacharjee** (Iowa State University) and Catherine L. Kling (Iowa State University). "Effect of the Error term in Welfare Estimation – A Kuhn-Tucker Model of Recreation Demand with Panel Data"
Discussant: Kenneth A. Baerenklau (University of California – Riverside)

5.c. **Babatunde O. Abidoye** (Iowa State University) and Joseph A. Herriges (Iowa State University). "A Unified Approach to Modeling Unobserved and Observed Site Characteristics in Random Utility Maximization Models"
Discussant: Subhra Bhattacharjee (Iowa State University)

Session 6: Conservation and Ecosystem Restoration

Session Chair: Jinhua Zhao (Michigan State University)

Session Description: The four papers in this session explore conservation and ecosystem restoration including the selection of conservation reserve sites. The first paper empirically analyzes the effects of the recent federal listing of endangered salmonid species on individual landowner behavior in coastal California watersheds regarding the landowners' use of surface water. Primarily, the paper tests the hypothesis that increased appropriate water right permitting costs cause landowners to be more likely either to construct reservoirs illegally or to shift from surface water to groundwater pumping. The second paper discusses current methods for conservation reserve site selection, constructs a multiple land use theoretical model that includes spatial and ecological criteria, and exploits large-scale data on land characteristics near Fort Benning in Georgia as a demonstration of selecting optimally conservation reserve areas and military areas. The third paper describes the development, testing, and application of a novel variant of stated preference valuation: bioindicator-based stated preference valuation. This approach allows the use of easily understandable indicators within survey scenarios, yet provides unambiguous linkages among these indicators and the assessment endpoints that determine values. The fourth paper examines North Carolina's Ecosystem Enhancement Program, which manages stream mitigation projects on the behalf of land developers whose actions disrupt aquatic ecosytems. This paper seeks to account for all Program expenses of projects and to analyze the determinants of contractual expenses associated with project

management.

6.a. **David Newburn** (Texas A&M University) and Nicholas Brozovic (University of Illinois – Urbana-Champaign). "Environmental Compliance, Endangered Species, and Instream Flows"
Discussant: Qiuqiong Huang (University of Minnesota)

6.b. **Sahan Dissanayake** (University of Illinois), Hayri Önal (University of Illinois), and James D. Westervelt (ERDC-CERL). "Optimal Selection of Conservation Reserves: Extensions to Multiple Land Use and A Mechanism Design Approach"
Discussant: Keith S. Evans (Iowa State University)

6.c. **Robert J. Johnston** (Clark University), Eric T. Schultz (University of Connecticut), and Kathleen Segerson (University of Connecticut). "Improving the Ecological Validity of Non-Market Valuation: Development and Application of Bioindicator-Based Stated Preference Valuation for Aquatic Restoration"
Discussant: Bill Provencher (University of Wisconsin – Madison)

6.d. **Scott R. Templeton** (Clemson University), Chris Dumas (University of North Carolina at Wilmington), William T. Sessions III (Washington State University), and Melanie Victoria (Clemson University). "Estimation and Analysis of Expenses of In-Lieu-Fee Projects that Mitigate Damage to Streams from Land Disturbance in North Carolina"
Discussant: Surender Kumar (TERI University)

Session 7: Invasive Species

Session Chair: Jason Shogren (University of Wyoming)

Session Description: Invasive weed species are costly to agriculture. This session examines management strategies for invasive weeds. The first paper explores the public goods dimension of controlling invasives by modeling adjacent ranchers playing a differential game in which invasive weeds diffuse over space. The second paper empirically studies New Mexico rancher preferences for controlling invasive weeds using a choice experiment and a RUM estimation framework. Results suggest that ranchers are more willing to treat a particular weed when other ranchers treat it as well. The third paper reconciles the need to estimate risks empirically with the asymmetric management consequences of false negatives and false positives from detecting invasives in trade flows. In contrast to the conventional approach, using a Bayesian framework the authors integrate risk estimation and decision making under uncertainty into a single step with an application to the Australian import screening program for weeds.

7.a. **Kristine M. Grimsrud** (University of New Mexico), Janie Chermak (University of New Mexico), Kate Krause (University of New Mexico), and Jennifer Thacher (University of New Mexico). "A Game Theoretic Model of Rancher Responses to Diffusing Weed Infections"

Discussant: Sathya Gopalakrishnan (Duke University)

7.b. **Jennifer Thacher** (University of New Mexico), Janie Chermak (University of New Mexico), Kristine M. Grimsrud (University of New Mexico), and Kate Krause (University of New Mexico). "The Decision to Manage Invasive Weeds: Which Factors Matter?"
Discussant: Kent Kovacs (University of Nevada – Reno)

7.c. Robert P. Lieli (University of Texas – Austin) and **Michael Springborn** (University of California – Davis). "Closing the Gap between Risk Estimation and Decision Making: Efficient Management of Trade-Related Invasive Species Risk"
Discussant: Linda Fernandez (University of California, Riverside)

Session 8: Trade, Health, and Environment

Session Chair: Nicholas Brozovic (University of Illinois)

Session Description: This session examines issues in trade, health and the environment. The first paper uses a panel data set of province-level Canadian car sales to address two questions: First, rebates for hybrid vehicles that are currently offered by foreign car makers primarily crowd out non-hybrid foreign cars and hence have no effect on the trade balance. Second, higher gasoline prices shift the vehicle fleet towards more fuel efficient foreign cars. The second paper examines optimal invasive species policies under asymmetric information. The paper examines the case where an exporting country has better information about the risks than the importing country, and the exporter can engage in effort to abate this risk that is unobservable to the importer. The third paper presents a theoretical growth model that incorporates linkages between pollution and growth through the channel of health.

8.a. **Sumeet Gulati** (University of British Columbia). "The Trade Bias of Environmental Policies in the Automotive Sector"
Discussant: Sabina Shaikh (University of Chicago)

8.b. **Min Wang** (Iowa State University), Joydeep Bhattacharya (Iowa State University), and Jinhua Zhao (Michigan State University). "Pollution, Health and Economic Growth"
Discussant: Shan Chen (University of Waterloo)

8.c. **Linda Fernandez** (University of California, Riverside) and Glenn Sheriff (Columbia University). "Optimal Invasive Species Policy under Asymmetric Information"
Discussant: Jennifer Thacher (University of New Mexico)

Session 9: Valuing Environmental Amenities

Session Chair: Amy Ando (University of Illinois)

Session Description: The four papers in this session explore various methods for valuing environmental amenities. The first paper empirically investigates the factors that influence people's willingness to support the provision of public open space by using a unique dataset collected from a survey that asked respondents to rate the importance of several different types of open space and state their willingness to support certain open space preservation policy options. The second paper explores identification of two temporal paths of environmental quality within the context of amenity valuation studies: one path when the intervention occurs and the counterfactual path. In particular, the paper explains an approach for addressing temporal paths in contingent valuation analyses. The third paper explores the influence of beach width on the value of coastal property; it contributes to the literature by incorporating the endogeneity of beach width in a first-stage hedonic property value model. The fourth paper employs a difference-in-difference hedonic property price model to examine the property value damage from sudden oak death, which is caused by the pathogen P. Ramorum, in Marin County, California.

9.a. **Chunhua Wang** (University of North Carolina at Charlotte). "Who Wants More Open Space?"
Discussant: Van Butsic (Univerity of Wisconsin – Madison)

9.b. **Bill Provencher** (University of Wisconsin – Madison), David Lewis (University of Wisconsin – Madison), Michael Papenfus (University of Wisconsin – Madison). "Disentangling Expectations and Preferences in Welfare Analysis using Contingent Valuation
Discussant: Robert J. Johnston (Clark University)

9.c. **Kent Kovacs** (University of Nevada – Reno), Thomas Holmes (USDA Forest Service, Southern Research Station), and Jeffrey Englin (University of Nevada – Reno). "Response of Housing Values to the Advance of an Invasive Species: Sudden Oak Death in Marin County, CA"
Discussant: Kristine M. Grimsrud (University of New Mexico)

9.d. **Sathya Gopalakrishnan** (Duke University), Jordan Slott (Sun Microsystems Inc.), and Martin Smith (Duke University). "The Value of Disappearing Beaches in North Carolina"
Discussant: Kathleen Bell (University of Maine)