

Selected Papers

SESSION: *Land Valuation and Reclamation*. Chair: Gregory M. Perry (Oregon State Univ.).

"The Contribution of Environmental Amenities to Agricultural Land Values: Hedonic Modeling Using Geographic Information Systems Data." Donald M. McLeod, Chris T. Bastian; Matthew J. Germino, William A. Reiners, and Benedict J. Blasko (Univ. of Wyoming).

Geographic Information Systems (GIS) data are used in a hedonic model to measure the impact of recreational and scenic amenities on agricultural land values. Results indicate agricultural land values are determined by environmental amenities as well as production attributes. Significant amenity variables included scenic view, elk habitat, and fishery productivity.

"Personal Relationships: Do They Influence the Sale Price of Land?" Gregory M. Perry (Oregon State Univ.) and Lindon J. Robison (Michigan State Univ.).

Although many hedonic models of land value have been estimated over the last two decades, none have considered the impact of personal relationships and information flows on land value. A hedonic model estimated for Linn County, Oregon, farm land revealed that sales between parent and child, tenant and landlord, and neighbor to neighbor were priced at significantly different levels than sales between other individuals. Sales that came about because of open-market advertising also brought higher prices.

"Predicting Land Purchase Behavior in a Fast Growth, Intensely Agricultural County." Rhonda K. Skaggs and Wilmer M. Harper (New Mexico State Univ.).

Attitudes toward farmland preservation, agriculture, development, and open space are used to predict land purchases in a

rapidly developing, agricultural area. Using data from New Mexico land buyers, a qualitative choice model gives probabilities of individuals purchasing irrigated valley farmland or desert mesa land based on their attitudes and socioeconomic characteristics.

"A Sustainable Herbicide and Grass Establishment Approach for Land Reclamation: A Case of Russian Knapweed." Bridger Feuz, Larry J. Held, James J. Jacobs, and Thomas D. Whitson (Univ. of Wyoming).

Controlling Russian knapweed with an integrated system of herbicide followed by seeding perennial grass is profitable in yielding an 8.7% average rate of return, and repaying the establishment costs in approximately six years. Moreover, the system is sustainable by exploiting plant competition and eliminating herbicide usage in later years.

SESSION: *Livestock Pricing and Analysis*. Chair: Dillon M. Feuz (Univ. of Nebraska).

"Grid Pricing: Valuing Cattle Quality Information." Ted C. Schroeder and Jennifer L. Graff (Kansas State Univ.).

Grid pricing is increasingly prominent in cattle markets. This study compares selling 11,703 head of fed cattle using grid, live, and dressed weight pricing. Results show that cattle sold on a grid had price variability twice that of live or dressed cattle. Average pricing inefficiency by not selling cattle on a grid exceeded \$30/head.

"Grid Pricing versus Average Pricing for Slaughter Cattle: An Empirical Analysis." Scott W. Fausti and Bashir A. Qasmi (South Dakota State Univ.).

This study compares weekly producer revenue under grid pricing and average dressed

weight pricing methods for 2,560 cattle over a period of 102 weeks. Regression analysis is applied to identify factors affecting the revenue differential.

"Comparative Analysis of Slaughter Lamb Prices." Clement E. Ward (Oklahoma State Univ.).

Data on weekly summaries of slaughter lamb sales in 1996 were analyzed to determine price differences for factors affecting lamb prices. Models were compared with a 1991 study and across regions. Demand and supply variables were found important as well as marketing methods, sale lot sizes, and seasonal and regional variables.

"Market Signals in Value-Based Pricing Premiums and Discounts." Dillon M. Feuz (Univ. of Nebraska).

Present beef marketing practices may be impeding the transmission of economic signals from consumers to producers. Three grid pricing systems are evaluated over six marketing dates. Each grid sends the anticipated pricing signals in that marbling and leanness are rewarded. Magnitudes of price signals vary over time and across grids.

SESSION: *Issues in Risk Management.* Chair: Michael R. Langemeier (Kansas State Univ.).

"Economic and Environmental Risk Efficiency Analysis of Land Application of Cattle Feedlot Manure: Generalized Stochastic Dominance Analysis." Weratilak Dias, Glenn A. Helmers, and Bahman Eghball (Univ. of Nebraska).

Generalized stochastic dominance (GSD) is used to determine the risk efficiency of nine different technologies of land application. The analysis shows that organic applications for crop phosphorus needs are the most environmentally efficient. Under producer risk aversion, inorganic fertilizer application is the most economically desirable. Organic applications can be both envi-

ronmentally amenable and economically viable alternatives in the long run.

"Supply and Demand Risks in Forward and Spot Markets: Implications for Agriculture." Dale J. Menkhous, Chris T. Bastian, Owen R. Phillips, and Patrick D. O'Neill (Univ. of Wyoming).

Laboratory methods are used to investigate the impacts of supply and/or demand risks on prices, quantities traded, and earnings within forward and spot market institutions. Results suggest that the spot or forward trading institution itself has a greater influence on market outcomes than supply and demand risks within the institution.

"Fuzzy Logic and Compromise Programming in Portfolio Management." Yann Duval and Allen M. Featherstone (Kansas State Univ.).

The objective of this paper was to develop a portfolio optimization technique that is simple enough for an individual with little knowledge of economic theory to systematically determine his/her own optimized portfolio. A compromise programming approach and a fuzzy logic approach are developed as alternatives to the traditional EV model.

"Target MOTAD for Risk Lovers." Francis McCamley and Richard K. Rudel (Univ. of Missouri).

Although risk analyses of discrete alternatives often identify at least one efficient set for persons who prefer risk, preference for risk is usually ignored when the decision variables are continuous. This paper presents a version of Target MOTAD which can be used when there is a preference for risk.

SESSION: *Water Management.* Chair: E. Bruce Godfrey (Utah State Univ.).

"Determining Socially Optimal Nitrogen Application Using a Delayed Response

Model: The Case of Irrigated Corn in Western Kansas. Ephraim M. Nkonya and Allen M. Featherstone (Kansas State Univ.).

A delayed response model was used to examine the optimal nitrogen application for irrigated corn in western Kansas. Results show that taking into account the effect of leached nitrate on groundwater pollution reduces the profit-based nitrogen recommendation by 12.5% with a consequent reduction in the static profit of 6.7%.

"Economic and Environmental Benefits of Soil/Water Nitrogen Testing: The Case of Central Nebraska." C. S. Kim, Harold H. Taylor, and Carmen L. Sandretto (USDA/ERS).

This research presents a competitive dynamic model to evaluate the economic and groundwater quality benefits resulting from the adoption of soil/water nitrogen testing. The model is applied to an irrigated corn production county in the Nebraska mid-state area where the groundwater contamination level from nitrates is reported to be, on average, 18.7 parts per million (ppm). Adoption of nutrient management practices would result in increased economic benefits to farmers and reduced nitrate stocks in groundwater.

"Operational Costs of Canal Companies and Irrigation Districts in the Intermountain Region." John Wilkins-Wells, Hubert J. Lagae, Raymond L. Anderson, and Muhammad S. Anwer (Colorado State Univ.).

This study reports on the trends of operational costs of farmer owned and operated irrigation enterprises (irrigation districts and canal companies) in five intermountain states. Administrative costs have risen faster than operation and maintenance costs. While salaries of employees have not risen significantly over time, legal costs have greatly escalated.

"Defining the 'Savings' in Agricultural Water When Irrigation Technology Is a

Choice Variable: The Case of the Klamath Basin." Susan M. Burke and Richard M. Adams (Oregon State Univ.).

Increasing demand for water in the environment has increased the cost of irrigation water in agriculture leading to the adoption of water-saving irrigation technologies, reducing agricultural return flows. However, when agricultural return flows are a source of environmental supply, "savings" soon disappear because of the reduced agricultural return flows.

SESSION: Policy and Trade Analysis. Chair: Bashir A. Qasmi (South Dakota State Univ.).

"NAFTA Intra-Industry Trade in Agricultural Food Products." Bashir A. Qasmi and Scott W. Fausti (South Dakota State Univ.).

This study focuses on NAFTA's impact on intra-industry and inter-industry trade in agricultural food products. Bilateral trade among the U.S., Canada, and Mexico, as well as their trade with the rest of the world during 1990 and 1995, is investigated. Findings show that U.S. trade patterns for agricultural food products are slowly changing.

"Investment and Economic Growth." Muhammad S. Anwer and Rajan K. Sampath (Colorado State Univ.).

Unit root and cointegration techniques were used to determine the long-run relationship between GDP and investment for 90 countries using data from the World Bank for the period 1960-92. Based on Granger causality test results, causality from GDP to investment was positive for 11 countries, and from investment to GDP for six countries. Bi-directional causality was mostly positive between the two variables.

"Single-Desk Selling of Canadian Barley." D. Demcey Johnson (North Dakota State University).

An optimization model is used to evaluate the implications of single-desk selling of

Canadian barley for trade flows and producer welfare. Effects on U.S. imports and barley prices are also considered.

“Revealed Comparative Advantage and the Measurement of International Competitiveness for Agricultural Commodities: An Empirical Analysis of Wool Exporters.” David Leishman, Dale J. Menkhaus, and Glen D. Whipple (Univ. of Wyoming).

Trade liberalization and laissez-faire economics are altering the structure of agricultural production and trade. The principle of comparative advantage, a classic tenet of economics, is a useful tool for understanding the future of world agriculture. This study employs a “revealed comparative advantage” approach to investigate patterns of comparative advantage among six major wool exporting countries.

SESSION: *Fertility and Insect Management.* Chair: Elwin G. Smith (Agriculture and Agri-Food Canada).

“Trap Crop Radish: A Sustainable Alternative for Nematicide in Sugar Beets.” Larry J. Held, James W. Jennings, David W. Koch, and Fred A. Grey (Univ. of Wyoming).

Chemical treatment of nematodes in sugar beets can be very costly (\$190 per acre), and hazardous, representing significant environmental risks to air, water, and human health. Substituting trap crop radish for chemicals represents a win-win case of sustainable pest control, yielding environmental benefits, higher profit, and reduced risk.

“Optimum Soil Quality Attribute Levels and Values.” Elwin G. Smith, Mel Lerohl, and Teklay Messele (Agriculture and Agri-Food Canada).

We develop a dynamic optimal cropping systems model for the northern Great Plains, taking into account the impact of the system on soil quality attributes, organic and inorganic carbon. Continuous wheat and direct planting is the most profitable

system under most economic conditions. This system has low soil erosion and results in high soil quality.

“Modeling Farm and Off-Farm Economic Linkages to Analyze the Impacts of an Areawide Insect Management Program on a Regional Economy.” Otto P. Suarez, James A. Larson, and Burton C. English (Univ. of Tennessee).

This study evaluates the impacts of the boll weevil eradication program at the farm level and on the west Tennessee region. Budgets, an acreage response model, and an input-output model were used to evaluate direct and indirect program impacts. The program generates small but positive economic benefits for the region.

“Estimated Risk-Return Compensations Required Under Reduced Nitrogen Use.” Glenn A. Helmers (Univ. of Nebraska) and Joseph A. Atwood (Montana State Univ.).

An analysis was made of the reduced return and increased risk of reduced nitrogen use. The data source was an 11-year set of yields for continuous and rotational cropping of corn, soybeans, and grain sorghum—each fertilized at three nitrogen levels. Risk was measured as returns below a target.

SESSION: *Community Economics and Education.* Chair: Bruce A. Weber (Oregon State Univ.).

“The Extent and Value of Informal Economic Activities in Non-Metropolitan Wisconsin.” John Larrivee (Univ. of Wisconsin).

This paper examines economic activities (denoted *informal* because they are typically unrecorded) carried out by 1,611 households in rural Wisconsin to make money, to save money, or to barter. Time devoted to this labor is 5–7% of that spent in formal market work, and exceeds time devoted to second jobs by about 30%. Findings show nearly 100 million hours (valued at \$1 billion) are

spent on such activities in rural Wisconsin annually.

"Do Gender, Class Standing, and High School Economics Influence Students' Economic Learning?" Deborah Bridges and Kenneth L. Casavant (Washington State Univ.).

This paper investigates how gender, maturity of the student, and previous economics study in high school contribute to economic learning. Economic learning is measured using the difference between pre- and post-test scores. OLS results suggest that high school economics plays a larger role in economic learning than either gender or maturity.

"Relationship of Non-Basic Sector Income Growth and the Gaming Sector." Thomas R. Harris and Rangesan Narayanan (Univ. of Nevada-Reno).

Nevada disaggregated export-base multipliers were derived to determine if and to what extent non-basic sector income growth was impacted by income growth of selected basic sectors. Results indicate that growth in the Hotel and Gaming Sector is statistically significant and substantially higher than growth in the Other Basic Industries Sector.

"Employment and Earnings of the Working Poor in Rural and Urban Labor Markets." Elizabeth E. Davis and Bruce A. Weber (Oregon State Univ.).

Working poor adults in Oregon experienced relative modest gains in employment and earnings between 1994 and 1996, primarily because of frequent job changes and periods of nonemployment. Employment growth helped increase their average quarterly earnings. High regional unemployment rates and living in a non-metro commuting zone significantly lowered their earnings.

SESSION: Environmental Economics.
Chair: Roger H. Coupal (Univ. of Wyoming).

"The Economic Benefits of Snowmobiling in Wyoming: A Travel Cost Approach with Market Segmentation." Roger H. Coupal, Chris T. Bastian, Juliet May, and David T. Taylor (Univ. of Wyoming).

Little research has been done on the economic benefits of snowmobiling. This study used a cluster analysis and the travel cost method to identify different snowmobiler segments and estimate their respective consumer surplus values. Consumer surplus estimates ranged from \$12 to \$49 per day for the different segments.

"A Comparison of Conjoint Ratings and Rankings: An Application for Passive Use Values of Forest Health." Michelle A. Haeefele and John B. Loomis (Colorado State Univ.).

This study tests the equivalence of conjoint ratings and rankings to estimate the values of prevention of forest pest infestations. It was found that rankings constructed from ratings were not statistically different from actual rankings. This implies that the easier ratings format can be used in conjoint analysis.

"The Importance of Using Farm-Level Risk Estimates in CRP Enrollment Decisions." Amos I. Bechtel and Douglas L. Young (Washington State Univ.).

Easily accessible county data produced frontiers which substantially underestimated the reduction in risk by enrolling in the CRP. Furthermore, the county yield data portrayed an unattainable level of utility for a moderately risk-averse farmer. Farm-level data predicted CRP enrollment similar to actual enrollment in the study region.

"Panel Stratification in Meta-Analysis of Environmental and Natural Resource Economics Studies." Randall S. Rosenberger, John B. Loomis, and Ram Shrestha (Colorado State Univ.).

Meta-analyses of past research outcomes are becoming more popular. However, the

issue of the panel nature of data has not been empirically investigated. We test various forms of data stratifications into panels for outdoor recreation economic studies, but do not find any significant effects—possibly because of inherent data complexity.

SESSION: *Farm and Ranch Management.*
Chair: Larry W. Van Tassell (Univ. of Wyoming).

“The Profitability of Establishing Basin Wildrye for Winter Grazing.” Gary J. May, Larry W. Van Tassell, Michael A. Smith, and James W. Waggoner (Univ. of Wyoming).

This study examines the economic viability of establishing basin wildrye for winter grazing. Mixed integer-programming models were developed that minimized cow feed costs. Estimated basin wildrye establishment costs were \$154 per acre. Breakeven basin wildrye yields were approximately 2.6 and 2.3 AUMs/acre for March and May calving scenarios, respectively.

“An Efficiency Analysis of Cattle Backgrounding in Kansas.” Laura R. Gow and Michael R. Langemeier (Kansas State Univ.).

Efficiency measures can be used to generate inferences about the future direction of the industry and determine factors that may influence the structure. This study evaluated relative efficiencies of Kansas backgrounding operations. Farms that engaged in the backgrounding of cattle were very inefficient. Significant improvement is needed in technology adoption and input usage.

“Equitable Cropshare Arrangements for Intensive Dryland Cropping Systems.” Paul A. Burgener and Dillon M. Feuz (Univ. of Nebraska).

As producers move toward intensive dryland cropping systems, the potential for inequities in cropshare lease arrangements exists. A whole-farm budget was developed to evaluate returns for landowner and ten-

ant from different cropshare lease arrangements. Results suggest that cropshare lease adjustments are necessary as cropping systems become more intensive.

“Characteristics of Highly Efficient Farms.” Michael R. Langemeier and Fred D. DeLano (Kansas State Univ.).

A sample of Kansas farms was used to examine the relationship between overall efficiency and farm characteristics. Overall efficiency was significantly related to operator age, farm size, and farm type. Approximately 26.7% of the farms were in the top one-third overall efficiency category for more than half of the sample period.

SESSION: *Marketing and Price Analysis.*
Chair: Dawn Thilmany (Colorado State Univ.).

“Factors Determining Profit for Fed Cattle Under a Value-Based Alliance.” R. Allen McDonald and Ted C. Schroeder (Kansas State Univ.).

Data from a fed cattle alliance were used to determine the factors that effect variability in profits per head for fed cattle marketed under a grid pricing system. The feeder cattle cost and the base price used in the grid had the largest impact on profits per head over time.

“Marketing Premium Food Products in Emerging Economies: The Case of Macedonian Cheese.” Jennifer Grannis, Susan Hine, and Dawn Thilmany (Colorado State Univ.).

Developing food products with higher standards or brands in newly emerging markets presents a challenge to processors. This study focuses on attributes that may increase cheese demand in Macedonia. Demand for higher quality, taste, consistency, and certified “safe” cheese at premiums is relatively high. Income, region, shopping behavior, and various other demographics all delineate potential consumers of premium cheese.

"Determinants of Feeder Cattle Price-Weight Slides." Kevin C. Dhuyvetter and Ted C. Schroeder (Kansas State Univ.).

Feeder cattle price-weight slides are analyzed using transactions data on 46,123 pens of feeder cattle over a 10-year period. Fed cattle futures prices and corn prices are important determinants of price-weight slides. Cattle producers can use this information when making sell timing decisions, purchase decisions, and managing production.

"Consumer Willingness to Pay for Pork Produced Under an Integrated Meat Safety System." Michael A. Boland, John (Sean) Fox, and Darrell R. Mark (Kansas State Univ.).

The study's objective was to estimate consumer willingness to pay (WTP) for pork chops produced under an integrated program designed to reduce the incidence of Salmonella. A double-bounded model is estimated to determine Kansas and Indiana consumers' WTP for these pork chops. The median WTP is \$4.92 per pound.

WAEA ORGANIZED SYMPOSIUM: *Who Benefits from Local Job Growth? An Examination of Labor Market Behavior and Net Fiscal Impact in Idaho, Oregon, and Washington.* Organizer: David W. Holland (Washington State Univ.).

"On the Development and Testing of a Labor Market Model for Washington State." David W. Holland and JunHo Yeo (Washington State Univ.).

In conjunction with researchers from Oregon State University (Bruce Weber) and the University of Idaho (Steve Cooke), an eco-

nomical model of labor market behavior was developed at Washington State University. The model is log linear in form. The advantages of this form over the linear specification are that economically large counties can be more easily accommodated, and the resulting simulation model does provide alternative scenarios in two counties of differing size or level of urbanization which the linear form does not. Additional work is under way examining the issue of whether changes in the labor force come from inside the region versus immigration to the region.

"The Impact of Welfare Reform on a Rural County Economy." Laurie Houston, Bruce A. Weber, and Rebecca Johnson (Oregon State Univ.).

Econometric estimates of labor force, population, in- and out-commuting, and county government revenues and spending are derived and used to simulate the impact of two welfare reform scenarios on the Jefferson County, Oregon, economy relative to a baseline "no reform" scenario in which employment grows at 2% per year. The demographic, economic, and fiscal impacts of a \$329,000 reduction in welfare payments depend on assumptions about how many of the new jobs are taken by local welfare recipients.

"Welfare Reform, Labor Market, and Fiscal Impacts in Idaho." Stephen C. Cooke (Univ. of Idaho).

County government revenues and expenditures and labor market models were developed for Idaho using U.S. Department of Commerce data for 1990. A given change in local labor force from welfare reform on counties in Idaho, Washington, and Oregon resulted in similar results on the labor market but not on local government.