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A Dynamic Economic Analysis of the Mountain Pine Beetle Epidemic

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Valentin, Bruce Erickson, and Michael Boehlje (Purdue Univ.).

This paper presents the results of statistical analysis on a survey of crop farmers predominantly from the Midwest. Ordered probit and descriptive statistics are used to explore the relationships between farm profitability and adoption of skill sets. Due to several recent changes in the farm industry, such as decoupled payments and trade liberalization, certain skill sets have become more important for both small and large farms. These crop farmers are particularly susceptible to change, and failure to adjust could lead to disastrous results. Changes in the agriculture industry are expected to only increase in number over the next 20 years.

“Alfalfa Harvesting Costs: Implications for the Hay Market.” Steven C. Blank, Karen Klonsky, and Kate Fuller (Univ. of Calif.-Davis).

A survey of custom harvesters of alfalfa hay identifies both the rates being charged and the rate-setting methods being used in two geographic regions of California. Also identified is information about the ongoing shift from production of small hay bales to the production of very large bales. This shift is driven by production considerations, but it has significant implications for the hay market and its many consumer segments.

SESSION: *Resource and Environmental Economics*. Moderator: Craig A. Bond (Colo. State Univ.).

“The Economic Value of Novel Mechanized Means of Ascending High Mountain Peaks: A Travel Cost Demand Model of Pikes Peak Automobile Users, Cog Railway Riders, and Hikers.” John Loomis and Catherine Keske (Colo. State Univ.).

Some peaks have alternative transportation routes such as cog railways, trams, or roads to the summit. We use a travel cost model to estimate the demand for hiking and novel means of ascending Pikes Peak in Colorado. Our analysis shows significant differences in the demand curve slopes and in the consumer surplus for these three types of visitors ascending the mountain. The more exotic or unique the means of ascent, the higher the visitor benefits are. Cog railway and automobile users, and those ascending by hiking, receive consumer surpluses of \$98, \$54, and \$3, respectively, per day trip.

“A Benefit Transfer Approach to the Estimation of Agro-Ecosystems Services Values.” Jay E. Noel, Eivis Qenani-Petrela, and Thomas Mastin (Cal Poly State Univ.).

Agro-ecosystem functions support not only the production of food and fiber, but a variety of socially valuable nonmarket goods and services, such as aesthetic experiences, wildlife habitat, carbon sequestration, and recreation. This paper illustrates the use of benefit transfer as a methodology for measuring baseline and marginal benefit (loss) estimates of agro-ecosystem non-market goods and services in Kern County, California. We conclude by suggesting that some estimate of the benefits provided by agro-ecosystem functions is important to the determination of either public policy prescriptions or market-based incentive programs that have as their objective maintaining or increasing those agro-ecosystem function nonmarket goods and services.

“A Dynamic Economic Analysis of the Mountain Pine Beetle Epidemic.” Charles Sims, David Aadland, and David Finnoff (Univ. of Wyo.).

Mountain pine beetle outbreaks are occurring at greater intensity, and in locations where they have not previously occurred. An overlooked explanation for these abnormal outbreaks involves economic factors that lead to overstocked, monoculture forests. In order to analyze the economic effects on mountain pine beetle outbreaks, we propose to develop an integrated model where mountain pine beetle risk is partially endogenous to forest management. Faced with these forest and beetle dynamics as well as household demand for timber-nontimber forest products, a single forest manager chooses a stream of forest management actions to maximize social welfare. Through this framework, we hope to evaluate how various forest management objectives mitigate or exacerbate mountain pine beetle dynamics.

SESSION: *Alternative Crops and Cropping Systems*. Moderator: Brian H. Hurd (N. Mex. State Univ.).

“Economic Comparison of Rotational Effects Between Two Break Crops: Mustard or Peas in Rotation with Spring and Winter Wheat.” J. Wesley McClintick and Larry D. Makus (Univ. of Idaho).

Data from experimental plots located in the Palouse region of northern Idaho from 2005 to 2008 are used to assess rotation impacts of peas