

UTILIZING GEOGRAPHIC INFORMATION SYSTEM-BASED
CROP COVERAGES AND DIGITAL SOIL SURVEYS TO IMPROVE
AGRICULTURAL LAND VALUE MODELS IN NORTH DAKOTA

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By

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ABSTRACT

Kermes, Kevin Eugene, M.S., Department of Agribusiness and Applied Economics, College of Agriculture, North Dakota State University, July 2002. Utilizing Geographic Information System-Based Crop Coverages and Digital Soil Surveys to Improve Agricultural Land Value Models in North Dakota. Major Professor: Dr. Steven D. Shultz.

This research evaluates whether site-specific, geographic information system-managed digital soil survey and land cover data could improve the accuracy of agricultural land valuation models in North Dakota. Two sets of hedonic valuation method multiple regression models were estimated at the section and hybrid (section/farm) level to quantify agricultural land values for Ransom, Sargent, and Dickey counties in southeastern North Dakota. Land sales data collected between 1995 and 2001 were regressed against site-specific soil, crop, and physical characteristics of the land data. Model performance was compared between model specification and between levels of analysis. Digital soils and crop data were found to be effective in modeling agricultural land values. The hybrid section/farm models explained more of the variation in agricultural land values in the study area than the section-level models. A larger sample size (more sales) and additional sale-specific information would likely improve the models.