

## **Ecological Observations**

### *8. An object-oriented knowledge-based approach to mapping crop types in South Dakota from Landsat satellite imagery*

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**ABSTRACT:** Knowing the spatial distribution of crop types is essential for many environmental and human health applications. Deriving crop specific information from satellite imagery can be time consuming and costly using traditional classification methods. We developed a knowledge-based methodology to classify crops in South Dakota using a combination of Landsat satellite imagery, object-oriented technology, agricultural statistics, and the US Geological Survey (USGS) National Land Cover digital map. The USGS Earth Resources Observation Systems Data Center is collaborating with the South Dakota Department of Environment and Natural Resources and the East Dakota Water Development District to develop crop maps for the years 2000, 2001, and 2002 for use in understanding the relationship between land use and water quality. The crop maps are scheduled for completion by September 2004 and are expected to provide a valuable data set for use in a variety of environmental studies in South Dakota.