

ILLINOIS BIOFUEL SYSTEMS PROGRAM: AN ANALYSIS OF  
LAND USE/LAND COVER DATA SETS TO AID  
IN LOCATING MARGINAL LANDS

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## ABSTRACT

The purpose of this study was to create a set of custom land use/land cover (LULC) raster data sets and compare the predictive ability of these data sets to the United States Department of Agriculture National Agriculture Statistics Service (USDA-NASS) LULC raster data sets. The classified, analogous data sets represent land use in the following five Illinois counties: Adams, Champaign, Jackson, Jo Daviess, and McDonough. The research attempted to improve locational analysis of biofuel croplands by enhancing currently available vector data from county level organizations. The research was conducted between December, 2008 and March, 2010.

The 2007 National Agriculture Imagery Program (NAIP) forestry features were extracted through supervised classification and merged with county-level vector data sets of varying quality. Merged vector data was converted to raster data, and classified as crop, developed, grass, or forest. The 2007 NASS-LULC was similarly classified, and a random set of 300 points were evaluated across all land use surfaces by county.

The findings of this research suggest that the USDA-NASS-LULC data set more often than not accurately predicts land use in the study area. With the exception of Adams County in western Illinois, the NASS-LULC 56 x 56-meter resolution rasters outperformed the custom 1 x 1-meter and 56 x 56-meter LULC rasters. Because the NASS-LULC data set is available at no cost, this research recommends continued use for delineating land use features.