

1106-VI-1950 **Mitra Lal Devkota*** (mdevkota@shawnee.edu), Department of Mathematical Sciences, 940
Second Street, Portsmouth, OH 45662, and **Gary D Hatfield** and **Saroj Thapa**. *Statistical
Analysis of Land Cover of South Dakota*.

This paper focused on how land cover of South Dakota had changed over the years 2001-2006. Furthermore, this study explored the relationship of population density with respect to agricultural land cover in South Dakota. Several statistical methods such as correlation analysis, ordinary least squares, conditional autoregressive models, and simultaneous autoregressive models were used for the analysis of the data. The results showed that the agricultural land cover, developed land cover, and grass land covers increased while the forest land cover decreased from 2001 to 2006. The study assessed that agricultural land cover had a positive correlation with population density. The ordinary least squares model with agricultural land cover as a response variable and population density as independent variable showed that the relationship between the two variables was statistically significant. It was found that there was a poor spatial autocorrelation in the residuals for all OLS, SAR, and CAR models for both years. (Received September 15, 2014)