

## **Time Series Spatial Analysis of the Change in Land Cover and Human Well-being in the Black-belt Counties of Alabama**

Buddhi Gyawali and Rory Fraser, Center for Forestry and Ecology, Alabama A&M University, Normal, AL 35716

John Schelhas, Southern Research Station, USDA Forest Service, Tuskegee, AL 36088

Spatial studies at county level have found an increase in forest cover, urbanization, and water structures in the black-belt region of Alabama in the last four decades, and have documented connection between such increase and socioeconomic development of the region. However, such findings have limited inferences as the studies were not able to address the variations in demographic, socio-economic, and bio-physical attributes within the counties. A better understanding of such linkage is integrating socio-economic, bio-physical, and land cover information available at finer geographic scale and use them in developing spatial predictive models. In this study, using satellite images and U.S. census data, we will develop land cover and socioeconomic change matrices for corresponding geographic scales such as census block-groups for 1980, 1990, and 2000 and develop spatial models relating human well-being index to the changes in major land cover classes. Preliminary results suggest that land cover change have differential impacts on the human well-being indices at sub-county level.

*Keywords:* Census block-group, remote sensing, well-being

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