

LAND COVER CLASSIFICATION AND DIGITAL IMAGE PROCESSING AT STEPHEN F. AUSTIN STATE UNIVERSITY

Daniel Unger
Arthur Temple College of Forestry and Agriculture
Stephen F. Austin State University
P.O. Box 6109 SFA
Nacogdoches, TX 75962
E-mail: unger@sfasu.edu

Abstract

Graduate course work concentrating on land cover classification and digital image processing within the Arthur Temple College of Forestry and Agriculture at Stephen F. Austin State University is presented. Product produced from a graduate level two course sequence concentrating on understanding how to create a land cover map followed by an understanding of multidisciplinary digital image processing techniques applied to mapping, monitoring and managing natural resources is presented. Specific map product displayed includes; three land cover maps derived for three distinct geographic regions, an example of contrast and filter enhancement techniques applied to moderate and high spatial resolution digital imagery, map product portraying the application of thermal infrared imagery to delineate thermal characteristics of lakes and forest ecosystem temperature zones, a map displaying the results from a change detection analysis using historical Landsat MSS data with current ETM+ imagery, a map showing high spatial resolution QuickBird Imagery merged with Landsat ETM+ data, maps displaying various topographic map layers derived from DEMs and a map showing the utility of using a DEM to visually analyze topographic map layers in conjunction with viewsheds and flight path imagery.

[Abstract Only]

In Proceedings of the 6th Southern Forestry and Natural Resources GIS Conference (2008), P. Bettinger, K. Merry, S. Fei, J. Drake, N. Nibbelink, and J. Hepinstall, eds. Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA.