

ABSTRACT

Imagery and spatial data collected from different tools and satellite technologies have been used to complete land cover change studies at the scale of cities, countries and continents. Different methodologies have been used to complete these studies, dependent upon the technology and information available to complete land cover change. In this thesis, urban land cover has been analyzed by applying Landsat satellite imagery to spatial analysis as a way to examine land cover changes in Pasadena, California and Inglewood, California from 1992 to 2011. The objective for this study has been to review spatial data collected from Landsat data in order to understand urban land cover change in each city. Spatial data collected from the National Land Cover Database (NLCD) have been pre-processed with color infrared composite creation and image classification tools to show land cover. Imagery from Landsat 4 has been used to help compare land cover change from 1992 to 2001 since classifications of the NLCD were different in both years. The resulting maps display the land cover changes over time from the effective application of imagery analysis to complete a pattern of land cover change over the time of twenty years. The study's findings demonstrate that cities in the same metropolitan center can have similar urban growth patterns even when they have geographically diverse landscapes. These findings underscore the importance of understanding urban grown patterns when planning for urban.