

## Abstract

Over the years researchers have examined greenspace using definitions of varying breadth and various measures to capture that breadth. This study compared three such definitions and associated measures to assess their similarities and differences. It sought to spatially examine these measures and determine whether the results they produce are statistically interchangeable or different in various ecoregions and urbanization levels, as well as observe any notable nuances between types. For definitions and measures, the study used inventory (a polygon shapefile of parks), usage-based categorical (a raster data set of classified vegetated land covers), and biophysical (satellite imagery based Normalized Difference Vegetation Index (NDVI)) data. It tested these three types within neighborhoods in four different regions in the state of California. The regions chosen represented the north and south coast, inland desert, and central valley. Within each region, the data sets were tested in urban, suburban, and rural areas. The amount of greenspace represented by parks, vegetated land use classes, and spring Landsat 8 NDVI imagery within each tract was measured and the averages within each measurement type were compared to one another. It was expected that land use and NDVI data would show statistically greater amounts of greenspace cover in rural and suburban areas, but that parks data would show more in urban areas due to sensor resolution limitations. If true, this would suggest regional variation in measurement type comparability. It was also expected that additional type-specific strengths and weaknesses would emerge. This information will be useful in determining whether new combinations of greenspace measurements might prove fruitful. After analysis, the study found NDVI provided a statistically higher measure of greenspace overall, although there was some variation in the discrepancy between measures across area types.