

Abstract

In 2012, California entered a drought period throughout the state. This condition has extended up to present day, and has precipitated water use cutbacks mandated at both the state and municipal level. Woodland, CA announced last year a mandatory 25% reduction in water use at the residential level, and even higher reductions for agriculture. Four band NAIP aerial imagery (RGB and NiR) taken during the summer months of 2009, 2012, and 2014 was used for the analysis using NDVI from the ArcMap Image Analysis toolbar. The analysis found that vegetation levels in the target subdivision have continued to increase regardless of mandatory water restrictions, and only a small percentage of residences in the area have allowed their landscaping to suffer as a result. Comparison of results from NAIP NDVI imagery to results obtained by the ESRI NDVI application within ESRI ArcMap revealed substantial differences in the amount of vegetation identified, with the ESRI application revealing substantially greater areas of vegetation.