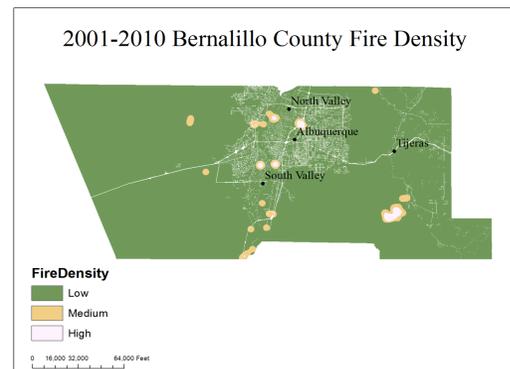
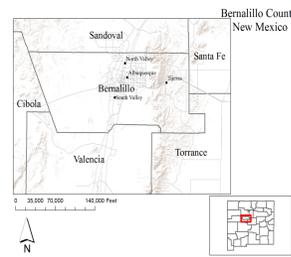


A GIS Analysis of Fire History in Albuquerque, New Mexico

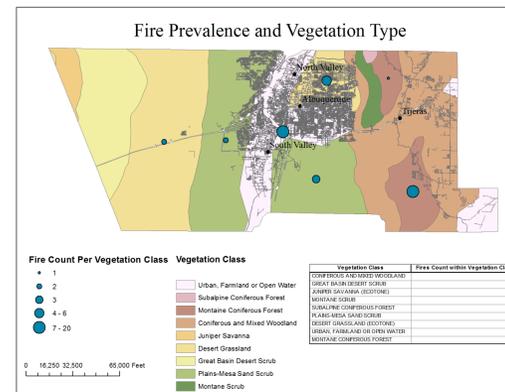
Introduction

Wildfires throughout Bernalillo County, New Mexico have occurred in a wide variety of places with differing environmental and social characteristics. The following seeks to examine the underlying physical properties of fire locations between the years of 2001 to 2010 by analyzing the vegetation, slope, aspect, and land use patterns of areas where fires occurred. Additionally, the analysis provides a brief overview of the social characteristics of where wildfires took place by considering the median household income of Census Tracts in which wildfires transpired.



Fire Density and Vegetation Type

Most fires occurred in coniferous forest lands. This type of habitat offers much fuel for wildfires, so the results are not unexpected. Interestingly, a significant amount of fires also occurred in urban or open areas suggesting many of these fires could have been started by human activity. The third most common vegetation type for wildfires was the desert grassland ecotone. This type of area is usually dry and arid, increasing risk of wildfire spread and intensity.

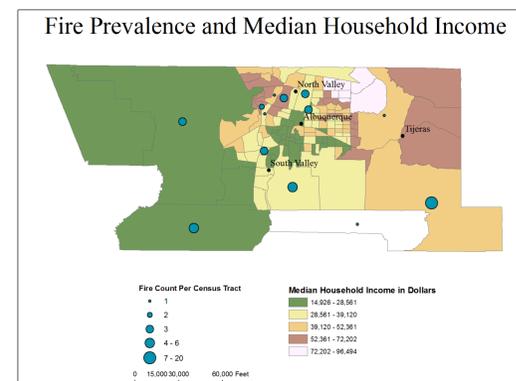


Fire Density and Land Use

Fires occurred over a wide variety of land areas in Bernalillo County. A significant amount occurred in parks or other open space areas while others occurred in commercial areas. There were also some fires in residential areas, as indicated by yellow areas on the map. The differing types of lands on which wildfires occurs show that fires can happen anywhere regardless of the land use classification of that area. Fires are not simply restricted to wooded areas, although such areas have seen many fires, for thermal anomalies shown on the map also materialized in commercial, residential, and agricultural areas as well.

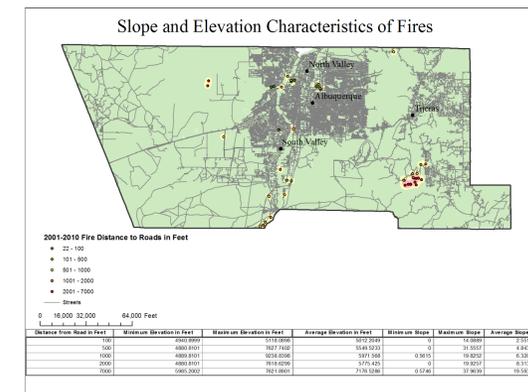
Fire Density and Median Household Income

Wildfires occurred in all ranges of median household income except the highest range. The variation in income ranges where wildfires have ensued suggests that fire density is not related to household income. Higher level income groups may be able to take precautions to defend against wildfires, but they generally happen in a range of socioeconomic areas.



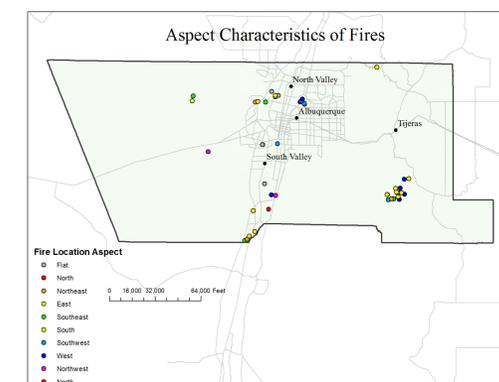
Slope and Elevation

Fires between the years of 2001 to 2010 were divided into five groups based on proximity to streets. Fires locations within these groups were then analyzed to determine the average elevation and slope of fires within their street proximity groups. Fires were divided into distances within 100 feet of streets, 101-500 feet, 501-1000 feet, 1001-2000 feet, and 2000-7000 feet and above. The characteristics of the fires within these ranges can be seen in the table. The results reveal that slope was quite varied among the fires while elevation was generally between 5,000 to 6,000 feet except for fires far from streets.



Aspect

Aspect was varied for fires Bernalillo Country compared to elevation and slope. Fires occurred on land facing in all different directions regardless of their location where elevation and slope seemed to be more uniform based on location.



Cartographer: Danielle Myers, December 2011

Projected Coordinate System: NAD 1983 State Plane New Mexico Central FIPS 3002, Feet

Sources: U.S. Census Bureau (2000), U.S. Forest Service (2001-2010), City of Albuquerque (2010), NMRGIS (2000)

Tufts