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Wildland Fuels Reduction Priorities in Santa Barbara, CA

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Priority Areas for Wildland Fuels Reduction in the Santa Barbara, CA Area

Introduction

The areas where urban areas meet with unmanaged vegetation is what is known as the Wildland Urban Interface (WUI). These areas are a huge swath of the country, accounting for 9 percent of all land area in the contiguous United States (Radeloff et al., 2005). This area is especially susceptible to wildfire. This is illustrated by the Camp Fire of 2018 which caused 88 fatalities and burned over 18,000 structures (Syifa et al., 2020). Fuels reduction treatments in the WUI can be very effective to slow and stop fire spread (Cohen, 2000). Fuels treatments can also reduce fire behavior and can allow firefighters to safely light backfires around threatened properties (Fuels and Fire Behavior in Chipped and Unchipped Plots: Implications for Land Management near the Wildland/Urban Interface - ScienceDirect, n.d.) (Safford et al., 2009). However, knowing where these areas are and delegating resources effectively can be a daunting challenge. This examination seeks to uncover the WUI areas in the greater Santa Barbara area in Southern California that would need fuels treatment.

Methods

Geographical Information Systems (GIS) data was obtained from the California Department of Forestry's (CALFIRE) online portal. A fire severity dataset was obtained that ranked the potential fire severity from low to extreme. A WUI dataset was obtained that contained areas that were WUI, intermix (rural property developments not in city limits), influence zones (wildland areas surrounding city limits), and not WUI. A county layer for Santa Barbara county was also obtained as well as a California roads layer from the California Department of Transportation. The fire severity data was selected for areas that contained fire severity indices of High, Very High, or Extreme. This was then converted to vector data using the convert to polygon tool. The WUI dataset was selected for areas that are WUI and intermix. This was also converted to vector data using the convert to polygon tool. Newly created vector data was converted into the NAD 83 California Teale's datum using the project tool. The intersect tool was then used on the newly created polygons to find the WUI areas that have the highest potential for fire severity.

Results

The results of this examination show the outlying areas of the greater Santa Barbara area that abut the Los Padres National Forest. These areas are dominated by chamise chaparral generally and tend to have extreme fire behavior especially during Santa Ana wind events (Preisler & Ager, 2014). This country is rough, rugged, and difficult to suppress fire in. These areas would be the prime candidates for fuels reduction monies regardless of source.

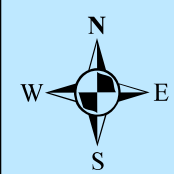
Discussion

These WUI areas of the greater Santa Barbara area are prime areas for fuels reduction. This area is prone to extreme wildfire events and having a survivable property would be useful to residents. Access to these areas is often via winding one-lane roads that can be useless for egress in an emergency situation. Given the rising cost of suppressing wildfires, it would seem to be an obvious move to support a rigorous program of fuels reduction in this area. It would also be worth an examination of the zoning codes of these areas. These extreme fire risk areas should not be expanded into further. The fire risk is already great and the economical benefit does not outweigh the hazards to residents as well as firefighters.



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 Fuels Reduction Priority Zone



Cartography by Brian Anderson 2021
GIS Data obtained from California Dept. of Forestry, California Dept. of Transportation