Impacts of land use changes on wildfire risk in San Diego County, California

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# Abstract

During the last decade, wildfires increased dramatically globally, not only due to climate change but also because of land use changes. Wildfires cause significant financial damage and have far-reaching consequences for human health and the environment. While the scientific community agrees that the type of land use has a significant impact on wildfire risk, there is a lack of knowledge about how the change in land use is associated with the increase in wildfires. Therefore, this study tries to investigate the impacts of land use change on the occurrence, frequency and severity of wildfire damage in San Diego County, California, from 2011 to 2021. The research will utilize publicly available, historical and current land use data, historical wildfire data, and topographic data. To investigate the research question, ArcGIS Pro will serve as the main software package involving raster calculations and the development of literature-based metrics to compare the temporal changes in land use and their impact to wildfire risk. The research results will be of particular benefit to decision-makers in establishing sensible land-use policies to minimize wildfire risk. The outcomes are presented in the form of cartographic representations, tables, and graphics in the context of a scientific paper and a poster presentation.

# Keywords

fire hazard assessment, land transformation, geospatial analysis