

LANDFIRE Product Application Summary

Projected Effects of Climate and Development on California Wildfire Emissions through 2100

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Objectives

Increase knowledge about how climate and development-driven wildfire can impact human populations through regional air quality and pollutant levels.

Project description

Combined U.S. EPA Integrated Climate and Land Use Scenarios (ICLUS), spatially explicit models of population and vegetation cover, simulated hydrology in a spatially explicit statistical model of monthly wildfire frequency and burned area on a 1/8° latitude/longitude grid. The authors also utilized the spatially explicit wildfire patterns with scenarios for biomass loading in the Fire Inventory from NCAR (FINN) modeling framework.

LANDFIRE Products Used and Modification Process

- Fuel Loading Models from LANDFIRE (version not specified)
- Existing Vegetation Cover values (version not specified) from LANDFIRE were categorized into five general vegetation categories:
 - grasslands,
 - shrublands,
 - forests at elevations less than 5500',
 - forests located at elevations between 5500' and 7500, and
 - forests located at elevations above 7500'.

Value of the work to the natural resource management/conservation community

Because large human populations will be exposed to emissions from wildfires in the future, it is important that those involved in climate change adaptation and mitigation planning understand how climate change, population growth, and development patterns will impact the area burned by, and emissions from, wildfires.

Online resources

- <http://pubs.acs.org>: Vegetation information, emissions factors, and emission scenario descriptions.
- <http://www.ncbi.nlm.nih.gov/pubmed/24443984> [online publication]