ICS-209-PLUS: An All-hazards dataset mined from the US National Incident Management System 1999-2020

Lise St. Denis, Karen C. Short, Kathryn McConnell, Maxwell Cook, Phil Higuera, Nathan P. Mietkiewicz, Mollie Buckland, and Jennifer K. Balch

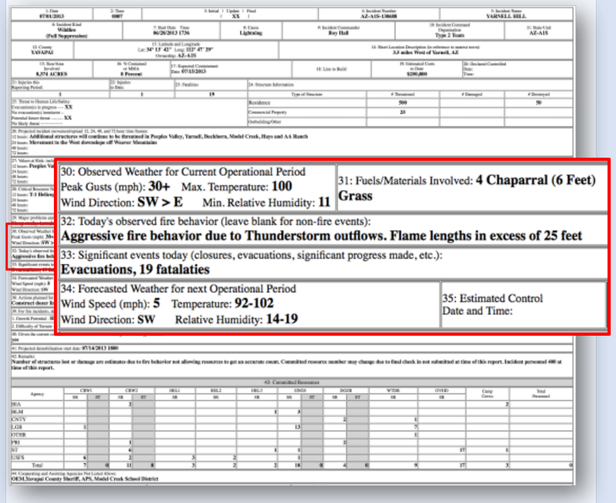
CIRES Earth Lab, USDA Forest Service, Yale School of the Environment, University Montana, & CU Geography Department

ABSTRACT

The dataset mined from the public archive (1999 to 2020)[1] of the U.S. National Incident Management System/Incident Command System (NIMS/ICS) Incident Status Summary Forms contains a total of 185,956 reports for 35,174 incidents, including 34,418 wildfires. This system captures detailed information on incident management costs, personnel, hazard characteristics, values at risk, fatalities, and structural damage. Most (98.4%) are fire-related, followed in decreasing order by Hurricane, hazardous materials, flood, tornado, search and rescue, civil unrest, and winter storms. The dataset is linked with multiple wildfire products including the Fire Occurrence Database (FOD)[2], Manufacturing Trends in Burn Severity (MTBS)[3], and the FIre Events Delimited database (FIRED)[4]. Key variables are aggregated spatially at the county, tract, and block group levels for spatial analysis.

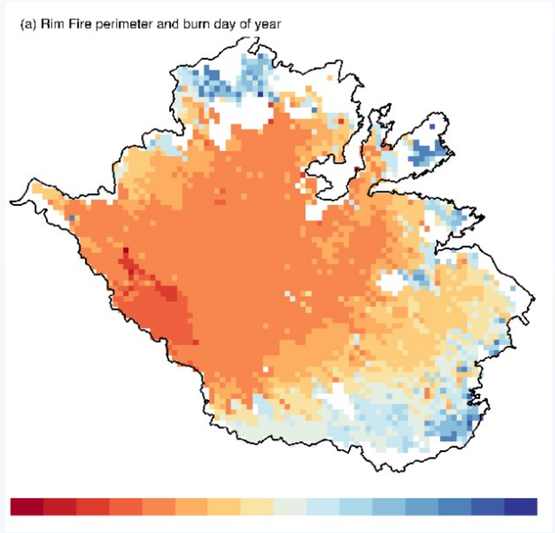
What is an ICS-209 Incident Status Report?

The ICS-209 Form is used for reporting and supports decision-making at all levels above the incident. It captures detailed information for each operational period or when information becomes outdated.

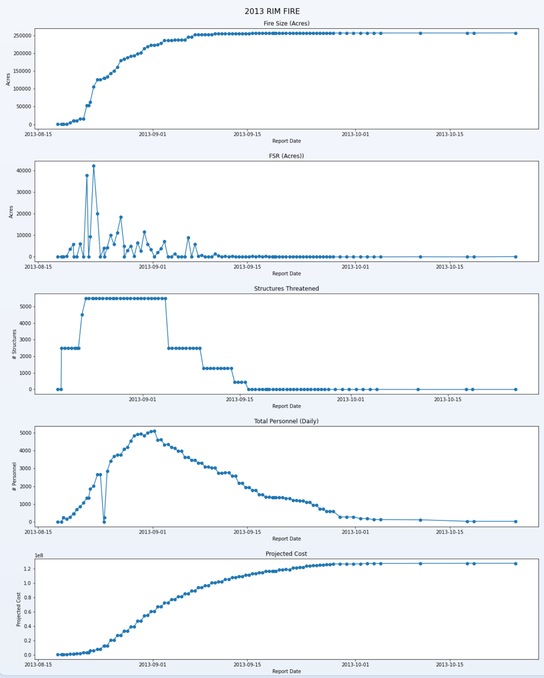


Why Does this Dataset Matter?

This dataset captures daily "snapshots" of the observed characteristics of a wildfire, response variables, societal impacts and values at risk – supporting new research for a *critical* population of wildfire in the US. These fires while only accounting for 1% of wildfire in the US, account for roughly 85% of suppression costs and 95% of acreage burned each year.



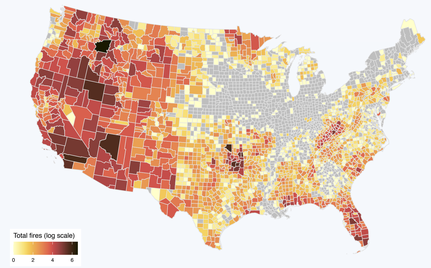
2013 Rim Fire: MTBS Perimeter (in black) and FIRED Daily Perimeters (in Color) shown above, Daily Statistics summarized below.



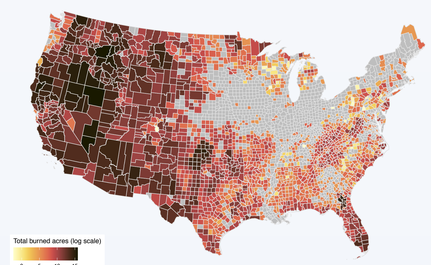
ICS-209-PLUS-SPATIAL

The ICS-209-PLUS-Spatial dataset aggregates information at the county, tract, and block group level for analysis. These maps describe distribution of wildfires and key characteristics of wildfire impacts in the US/CONUS.

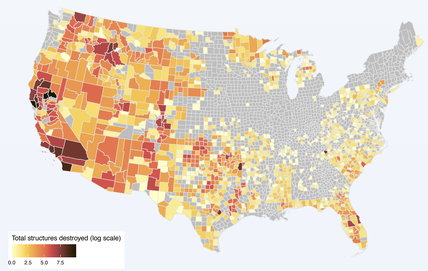
Total Fires



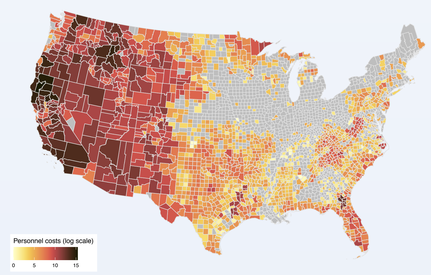
Burned Area



Structures Destroyed

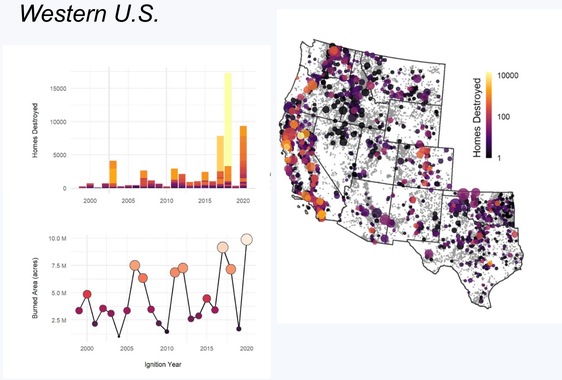


Total Personnel

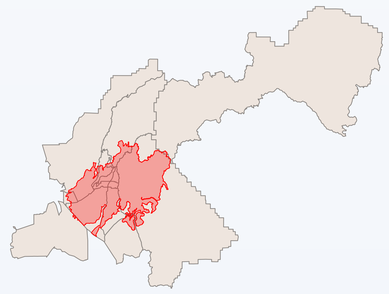


APPLICATIONS

Spatial and Temporal Distribution of Wildfire-Related Home Loss and Burned Area Across the Western U.S.



Effects of Wildfire Destruction on Migration



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Presenter:Lise St.Denis, lise.st.denis@colorado.edu

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University of Colorado Boulder