Associations Between Wildfire Events and Health

Keita Ebisu (OEHHA)
Office of Environmental Health Hazard Assessment
keita.ebisu@oehha.ca.gov

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HAQAST6 MEETING
High PM$_{2.5}$ Level due to Wildfire in Bay Area

Clear Day

During wildfire
For 2004-2009, on days exceeding PM$_{2.5}$ standards, wildfires contributed an average of 71.3 % of total PM$_{2.5}$

Affected area by wildfire is expanding. West Coast and the Great Plains are likely to suffer the highest exposure to wildfire smoke in the future

More than 82 million people will expose to wildfire smoke
A 7.2% (95% CI: 0.25–15) increase in risk of respiratory hospitalizations during smoke wave days (≥ 2 consecutive days with daily wildfire-specific PM$_{2.5}$ >37 µg/m$^3$)
PM$_{2.5}$ Trends at Napa in October by year (2013 – 2017)

- Highest PM$_{2.5}$ value was over 150 µg/m$^3$
Data We Are Interested in

In addition to PM$_{2.5}$ total mass during wildfire,
- PM$_{2.5}$ chemical constituents
- PM$_{10}$ and PM$_{10-2.5}$ total mass
- Exposure levels during non-wildfire period

PM$_{2.5}$ sulfate

Winter

Summer

PM$_{2.5}$ nitrate

Winter

Summer

Bell et al. (EHP, 2007)
