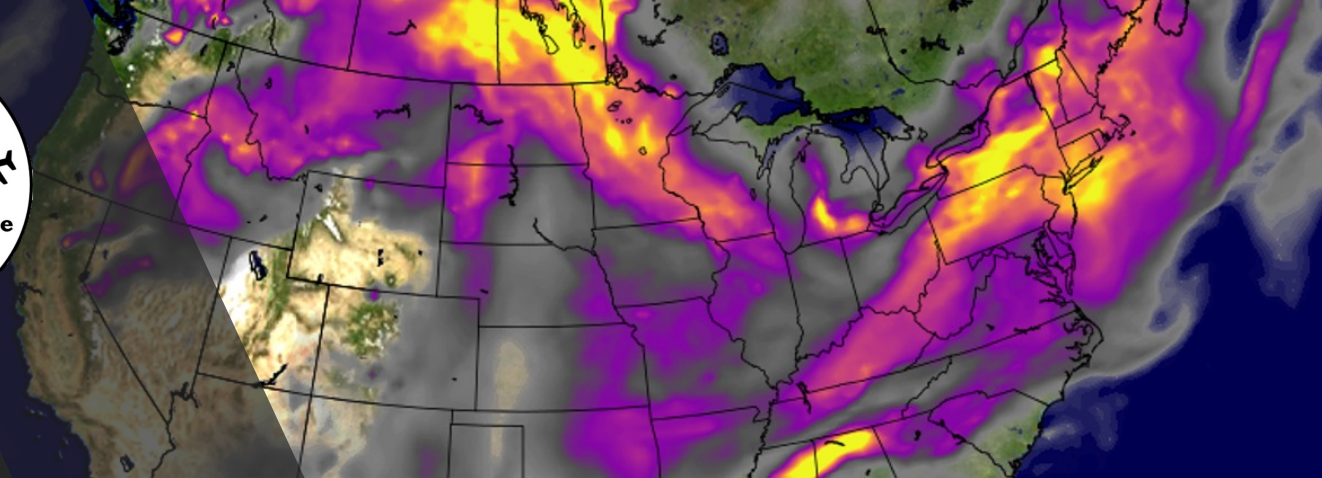
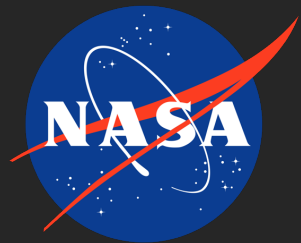


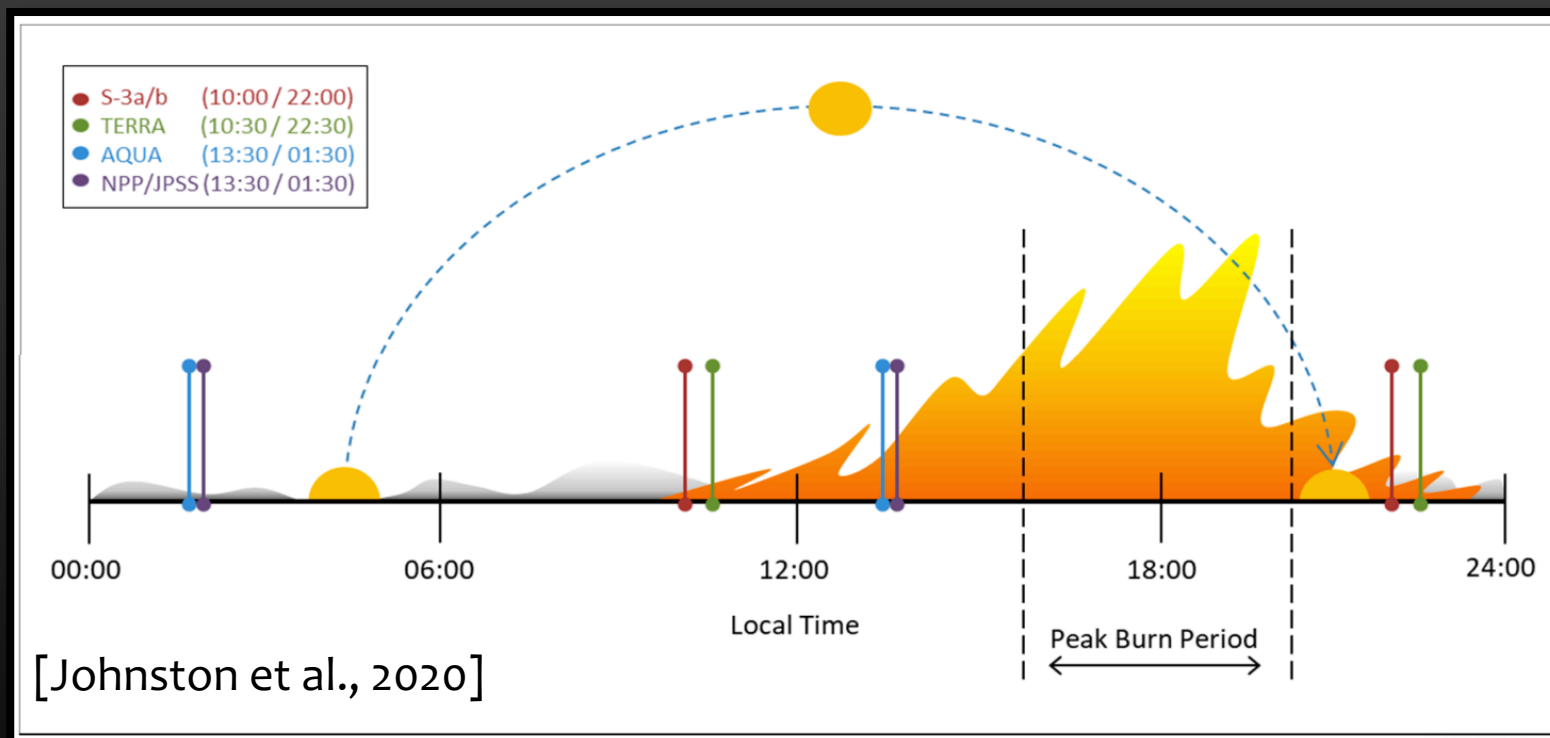
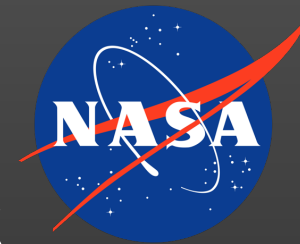


Utilizing Geostationary Satellite Observations of Fires to Mitigate Risk

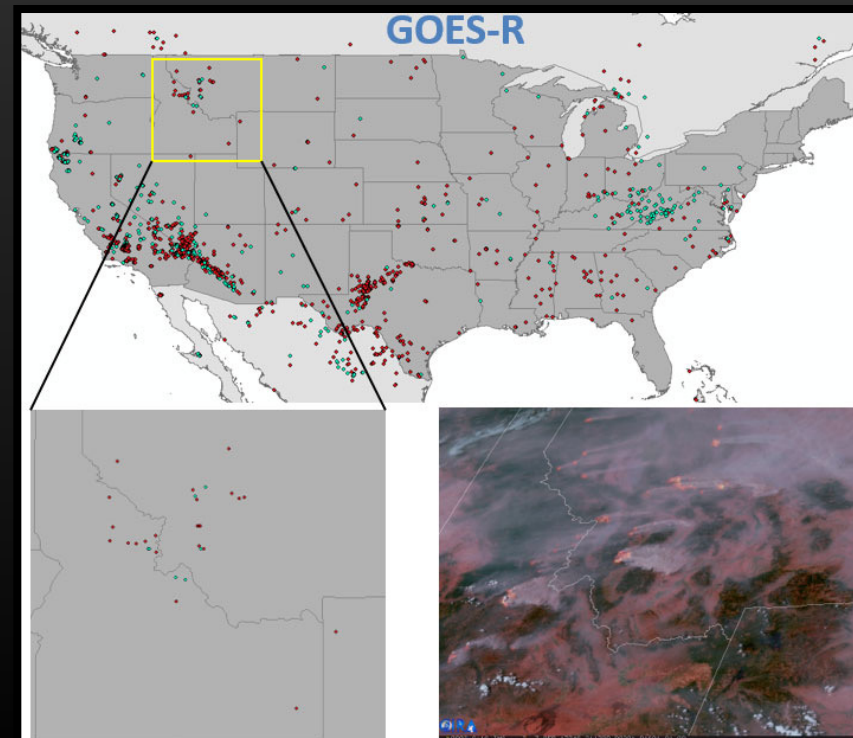
Liz Wiggins, Amber Soja, Emily Gargulinski, Chris Schmidt, Doug Morton, Melanie Follette-Cook, Lesley Ott, Robert Field, and Pam Wales



Observing Fire Behavior: Geostationary Satellite Observations



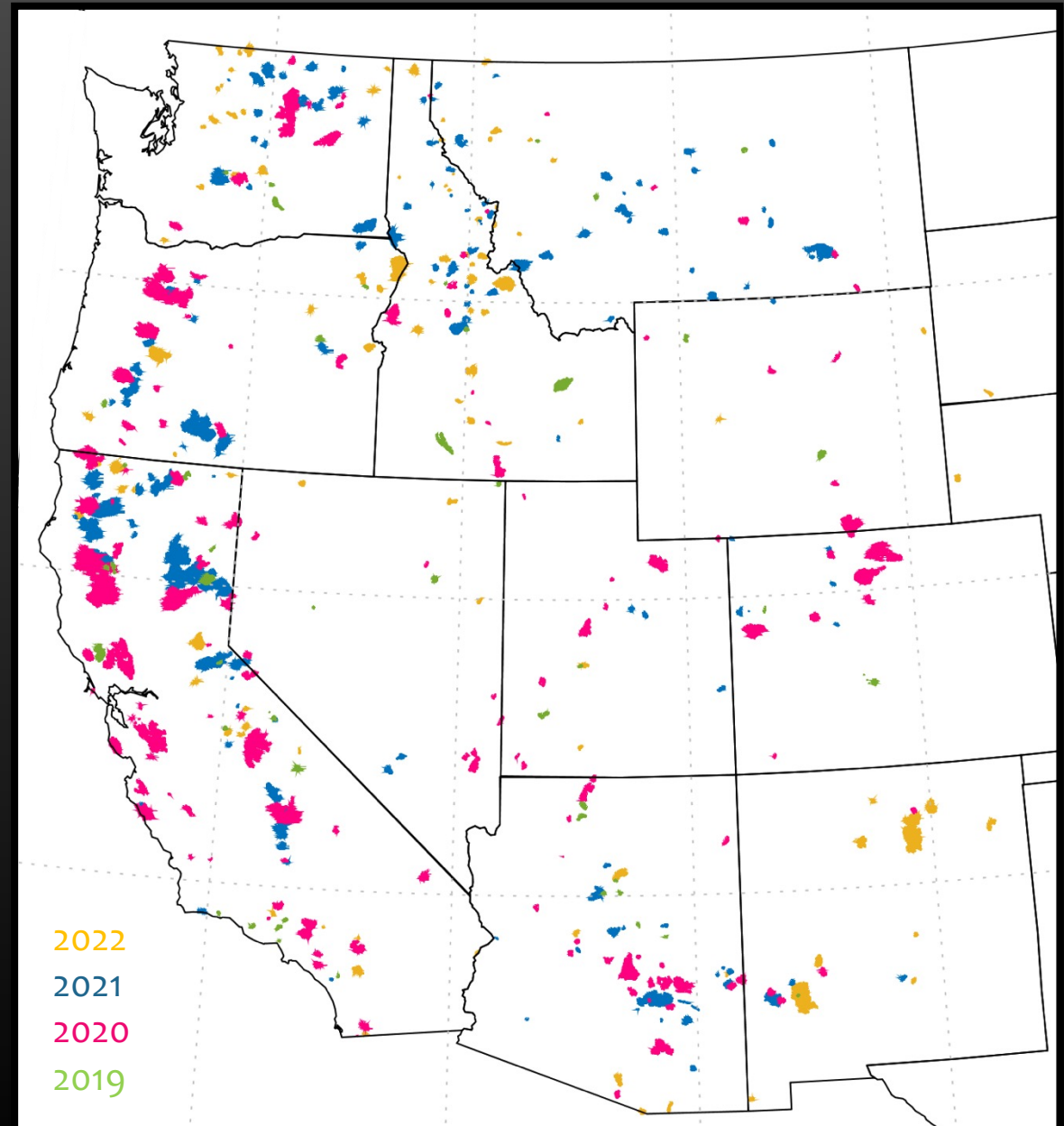
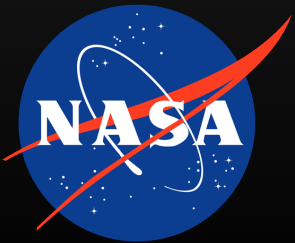
GOES-R collects fire observations every 5-15 mins



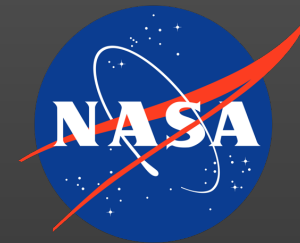
Spatial resolution GOES-R (2km) < VIIRS (0.375km), MODIS (1km)
Temporal resolution GOES-R (5-15mins) >> VIIRS, MODIS (12hrs)

New Database: Hourly GOES FRP for Individual Western US Fires

- Over 750 Individual Fires
- Cumulative total of 7000+ days



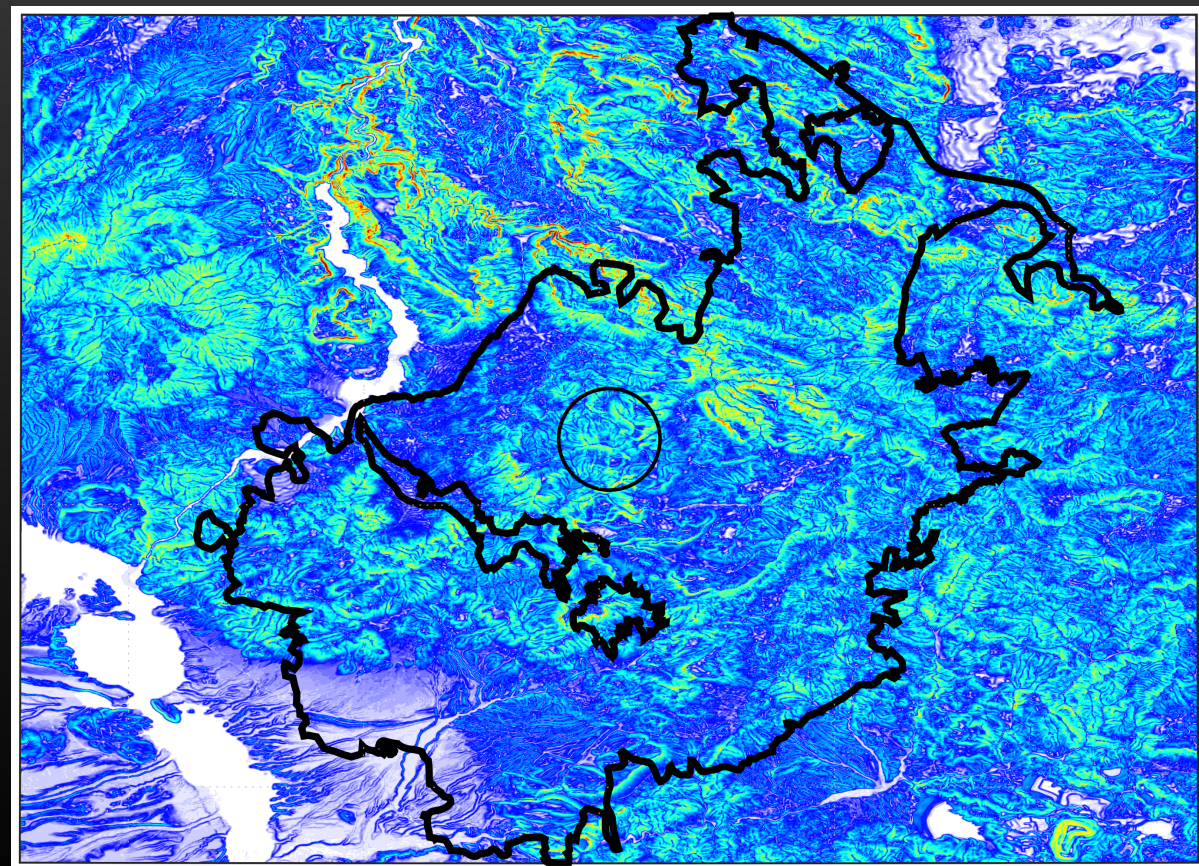
Environmental Controls on Fire Behavior

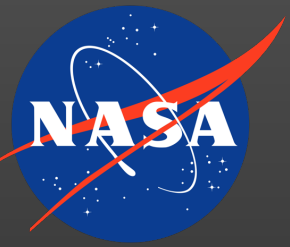


- Weather: ERA5, MERRA2, RAWS Surface Stations
- Topography: LANDFIRE Slope, Aspect, Elevation
- Fuel: FCCS Fuel type, fuel load

Available for all 750+ fires
for each day & hour the fire
was burning

Example: Elevation Hourly Extraction based on
GOES pixel location (2km buffer)





Current Analysis

- Diurnal cycles (smoke forecasting)
- Fire spread rate and direction
- Nighttime burning
- Extreme fire behavior

Results will be published soon! All data & code will be publicly available in an analysis ready format.

A satellite map of the Western United States, showing the Pacific Ocean, the Sierra Nevada mountains, and the Great Basin. The map is overlaid with a dark, semi-transparent rectangular area on the left side, which serves as a background for the text.A small, solid orange rectangle located in the top left corner of the slide.

Thanks! Questions?

Contact: Elizabeth.b.wiggins@nasa.gov