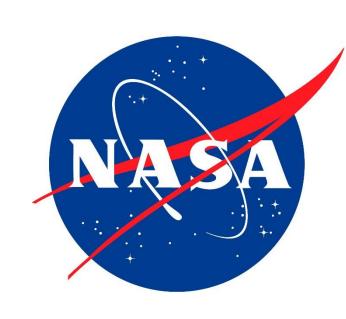


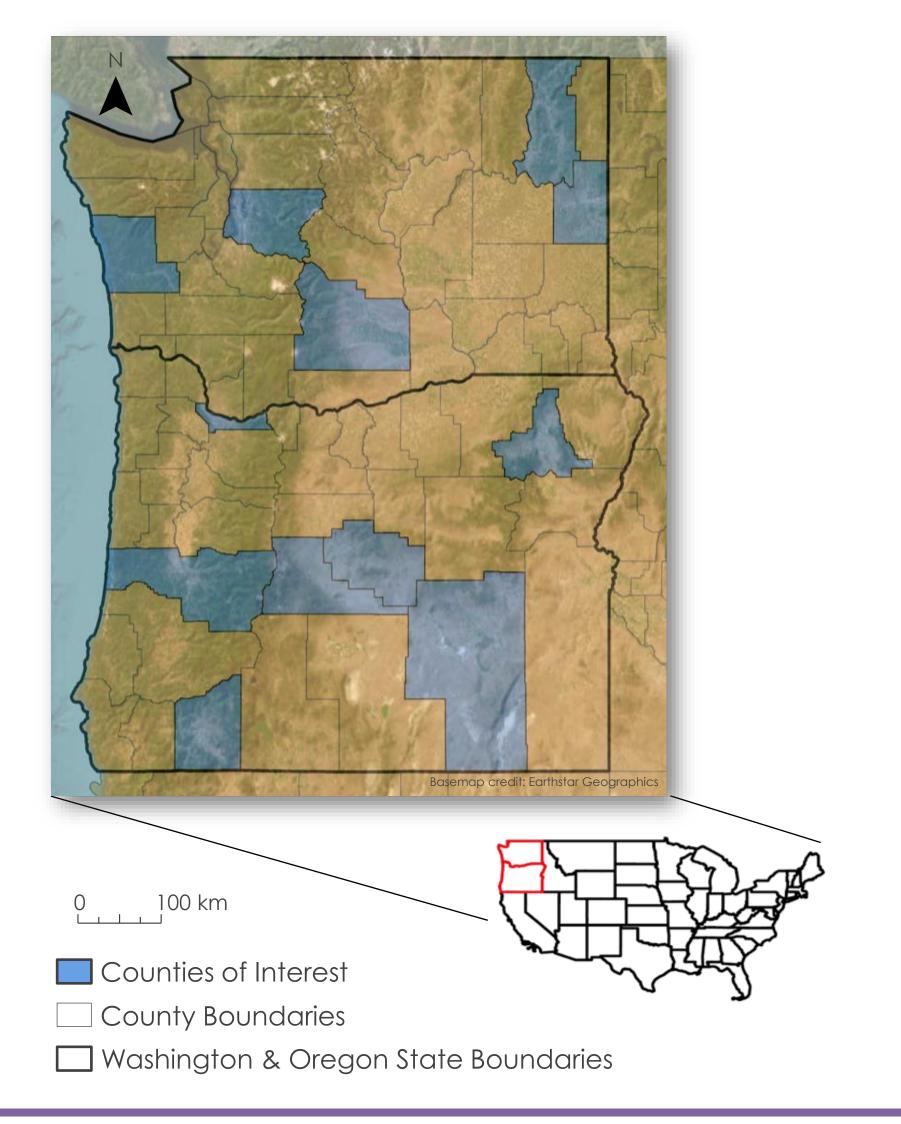
# 

# Monitoring Trends in Air Quality During a Drought Case Study to Improve Public Health Response to Drought Threats

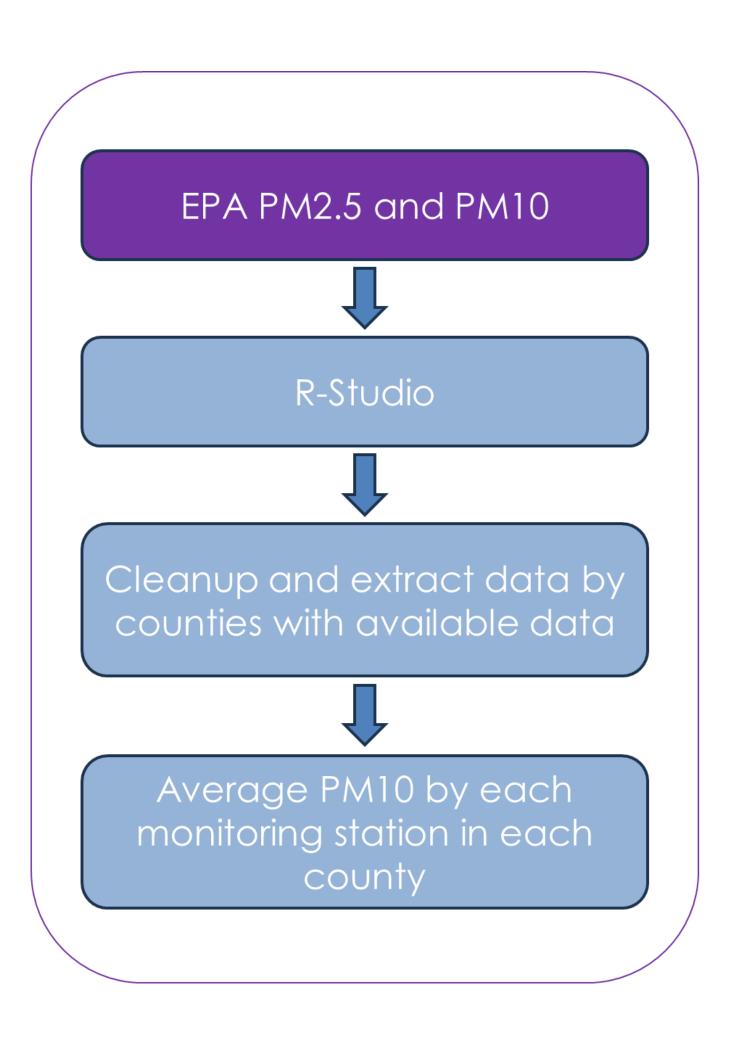


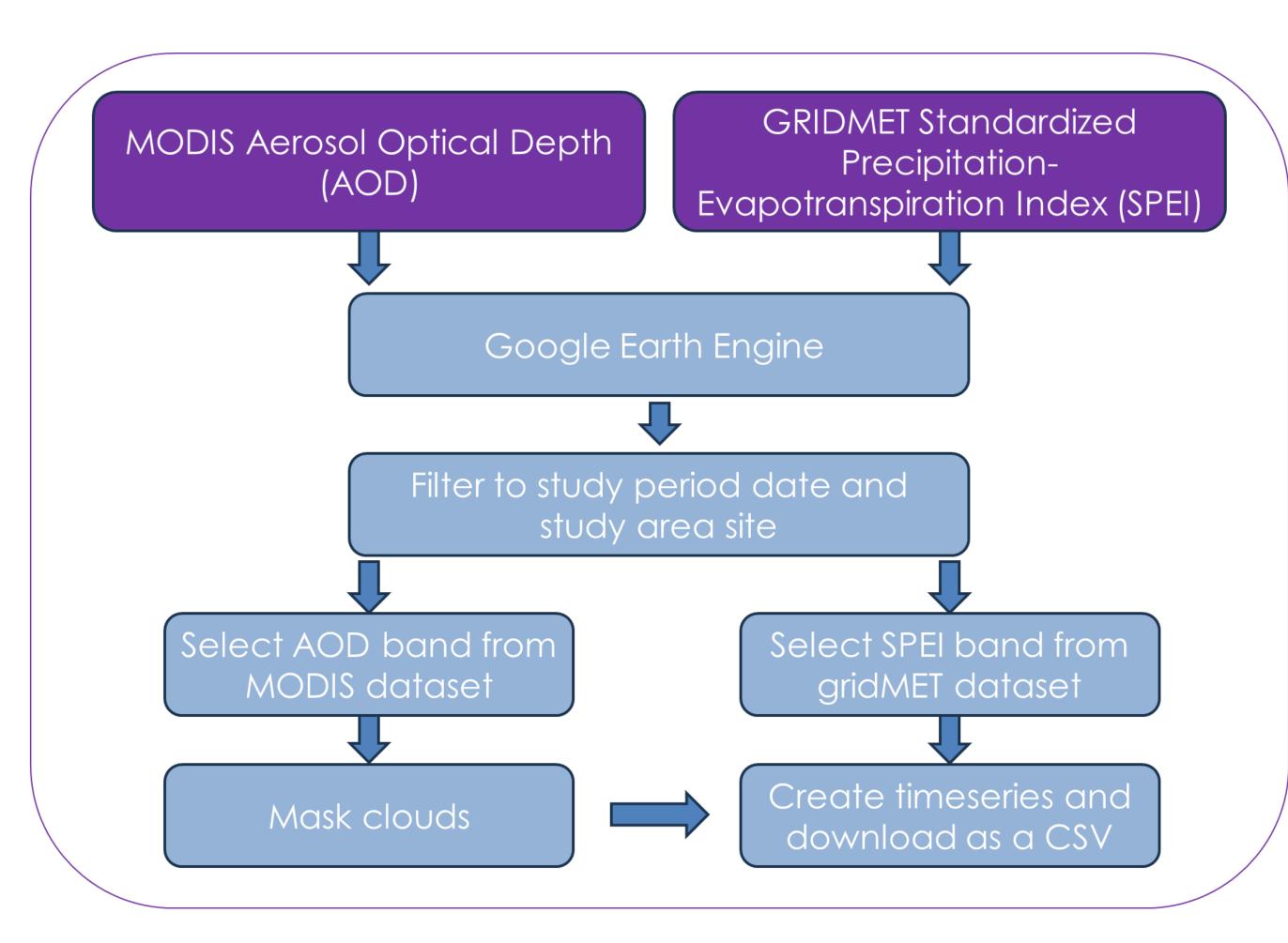
Taylor West<sup>1</sup>, Greta Bolinger<sup>1</sup>, Tallis Monteiro<sup>1</sup>, Cristina Villalobos-Heredia<sup>1</sup>, Abby Sgan<sup>1</sup> <sup>1</sup>NASA DEVELOP National Program, NOAA NCEI – Asheville, NC

### Study Area



## Methodology





## Takeaways

Earth observations help decision makers understand and visualize spatiotemporal trends in air quality



- Drought did not appear to be the cause of poor air quality in the Pacific Northwest during this study period
- ▶ AOD & PM10 were correlated in all SPEI conditions



- Dataset trend comparisons
- SPEI inconsistently or weakly correlated



- Statistical analysis can show further correlation
- Positive correlation between many datasets

#### Community Concerns

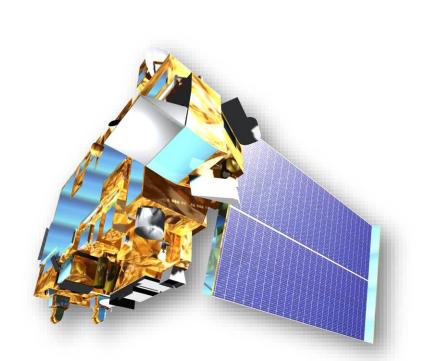


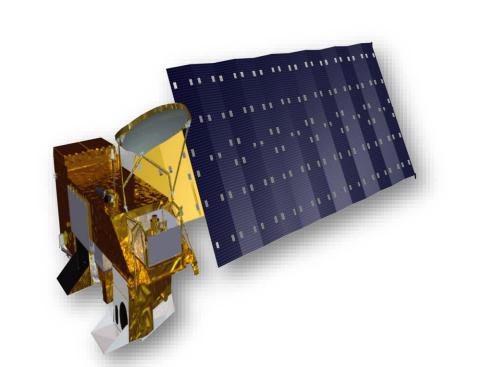
Certain populations (i.e. communities of color, individuals with pre-existing health conditions, the elderly, and children) are more vulnerable to poor air quality



Increased mortality rates from higher particulate matter concentrations

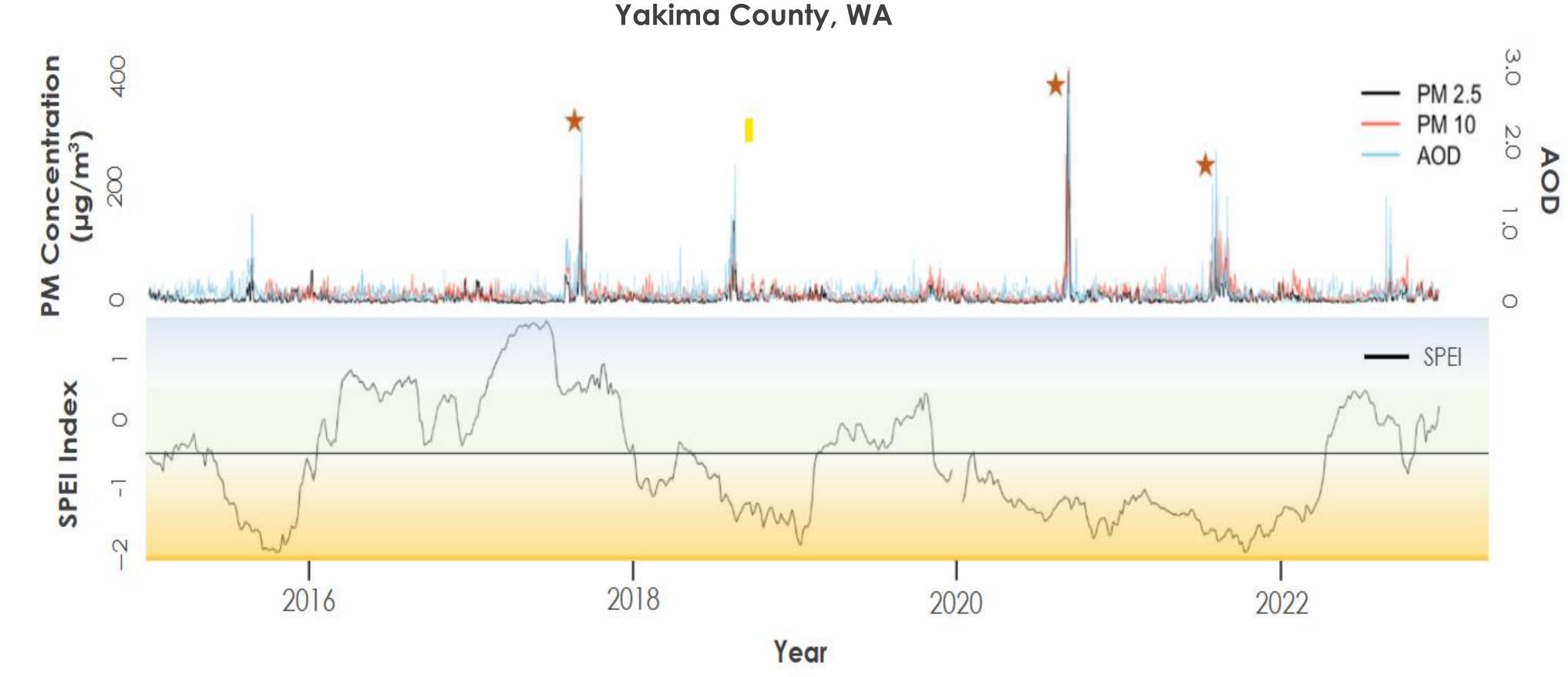
#### Earth Observations





Terra MODIS Aqua MODIS

#### Results



# Wildfire Event Wet Conditions Dry Conditions

#### Acknowledgements





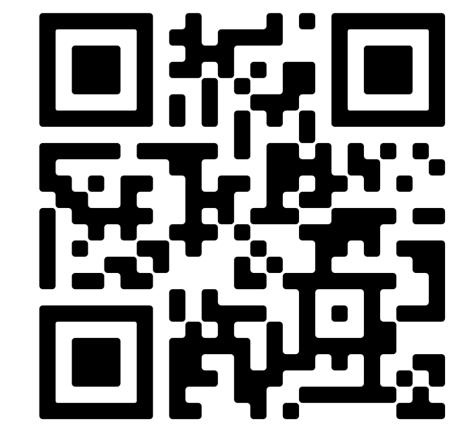
#### Project Partners

▶ Amber Blanchard, Victoria Clemons, Curtis Cude, Dr. Carol Trenga, Sarah Worthington, Marnie Boardman, Dr. Anne Doubleday, Dr. Julie Fox, Britt Parker, Dr. Jesse E. Bell, and Rachel Lookadoo.

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- ▶ Special Thanks Ryan Healey, Britnay Beaudry, Annie Britton, Kristen O'Shea, Steve Ansari, NCICS IT (Scott Wilkins and Steven Marcus), and Dr. Kenton Ross.

#### References





SPEI drought index data were used in this study as a proxy measurement for detecting,

monitoring, and analyzing drought to explore how air quality changes throughout

drought intensity and duration (Vicente-Serrano et al., 2010).