



NEWS IN PHOTOS

Chameleon Wishes Environment Would Occasionally Adapt To Him

Yesterday 8:00am •

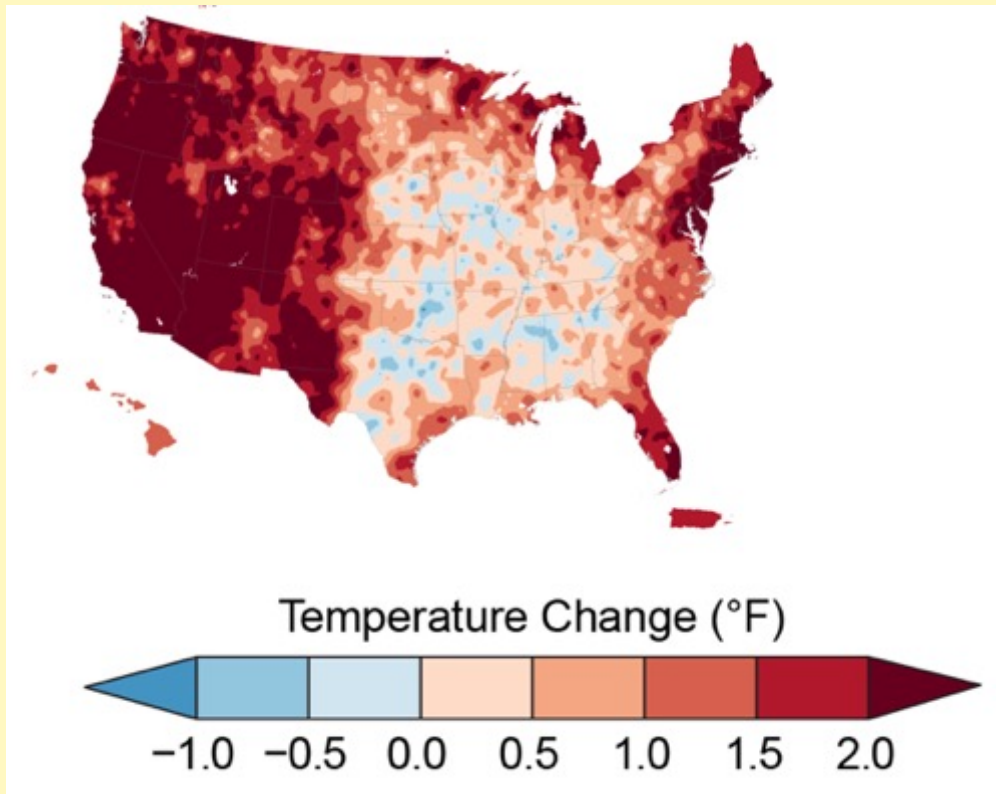


Aridity enables wildfires

- Living and dead plants ignite, burn, carry fire more readily as they dry
- Measures of vegetation dryness were correlated with area burned in western forests from 1984–2014 (Abatzoglou and Williams 2016)



High temperatures enable aridity

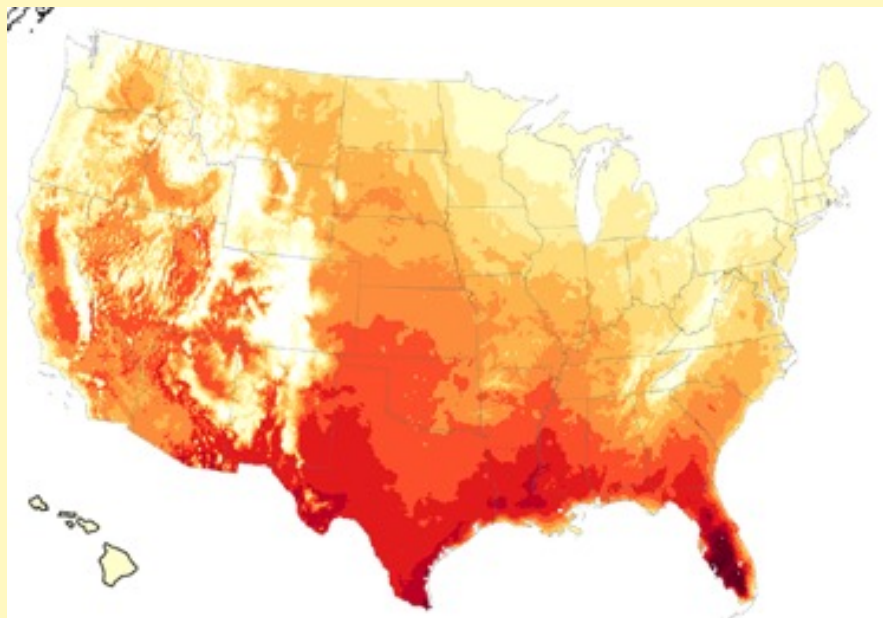


Observed summer temperature 2002–2021
compared to 1901–1960

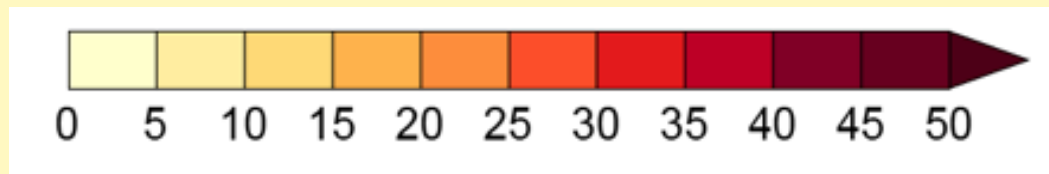
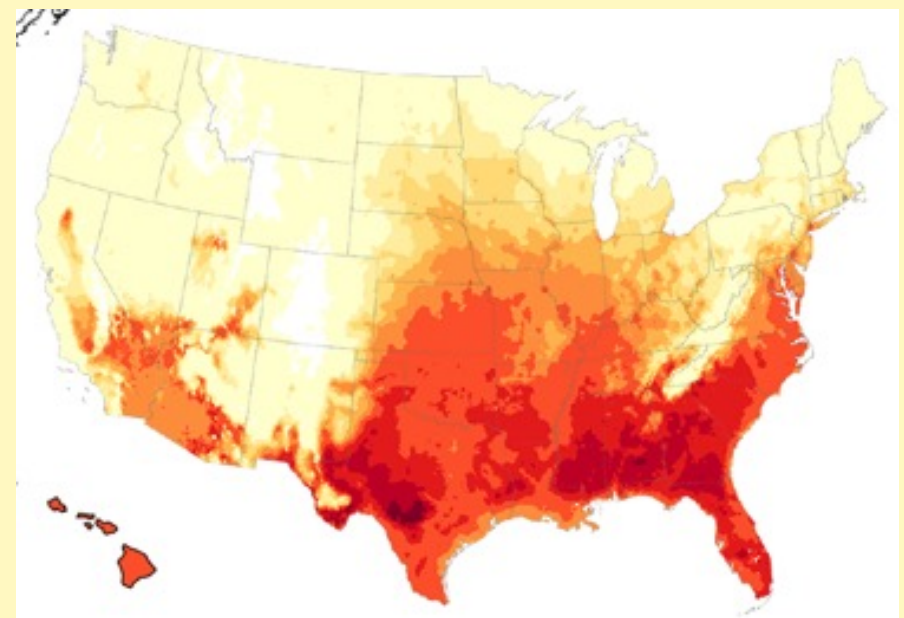
- Averages and extremes increasing
- Greatest seasonal increase during summer

Extreme temperatures with 2°C warming

Days $\geq 95^\circ\text{F}$

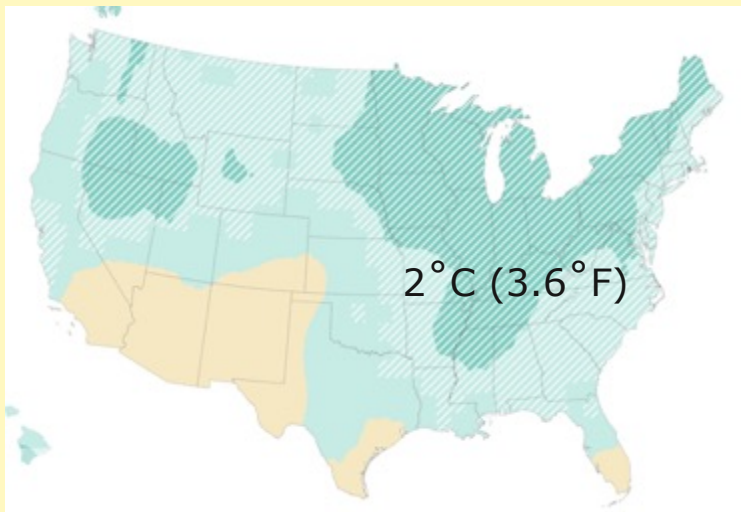
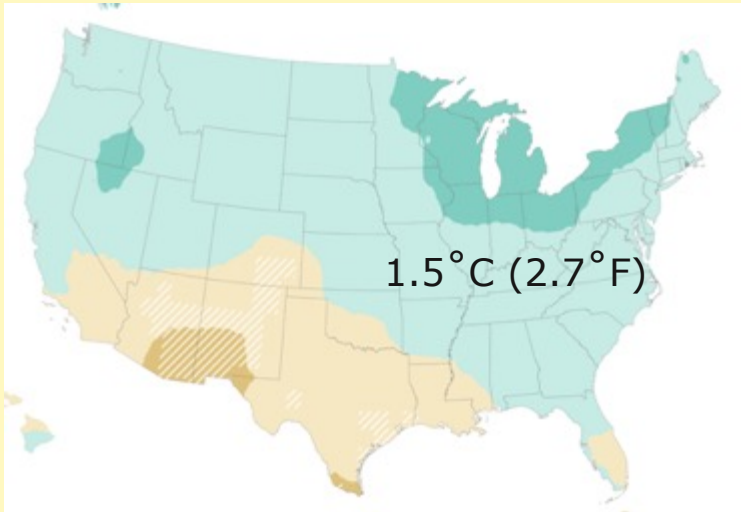


Nights $\geq 70^\circ\text{F}$



Relative to 1851–1900

Precipitation versus aridity



- Changes are relative to 1851–1900
- Hatching indicates $\geq 80\%$ of models project change in the same direction
- Modest increases and high uncertainty
- Precipitation \neq water availability

Average Annual Precipitation Change (%)

-20 -15 -10 -5 0 5 10 15 20





Associated Press



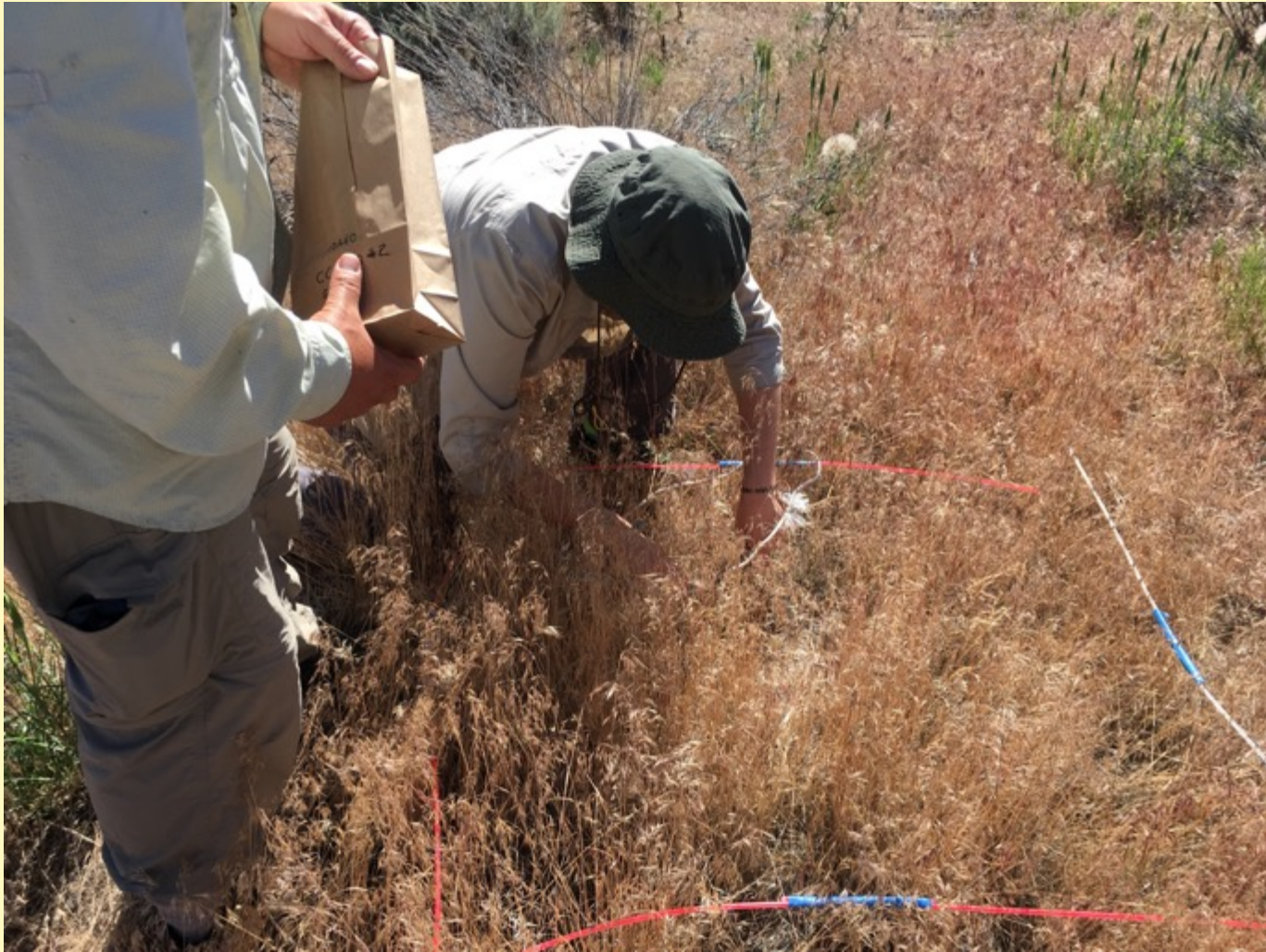
Maxar

Vegetation removal

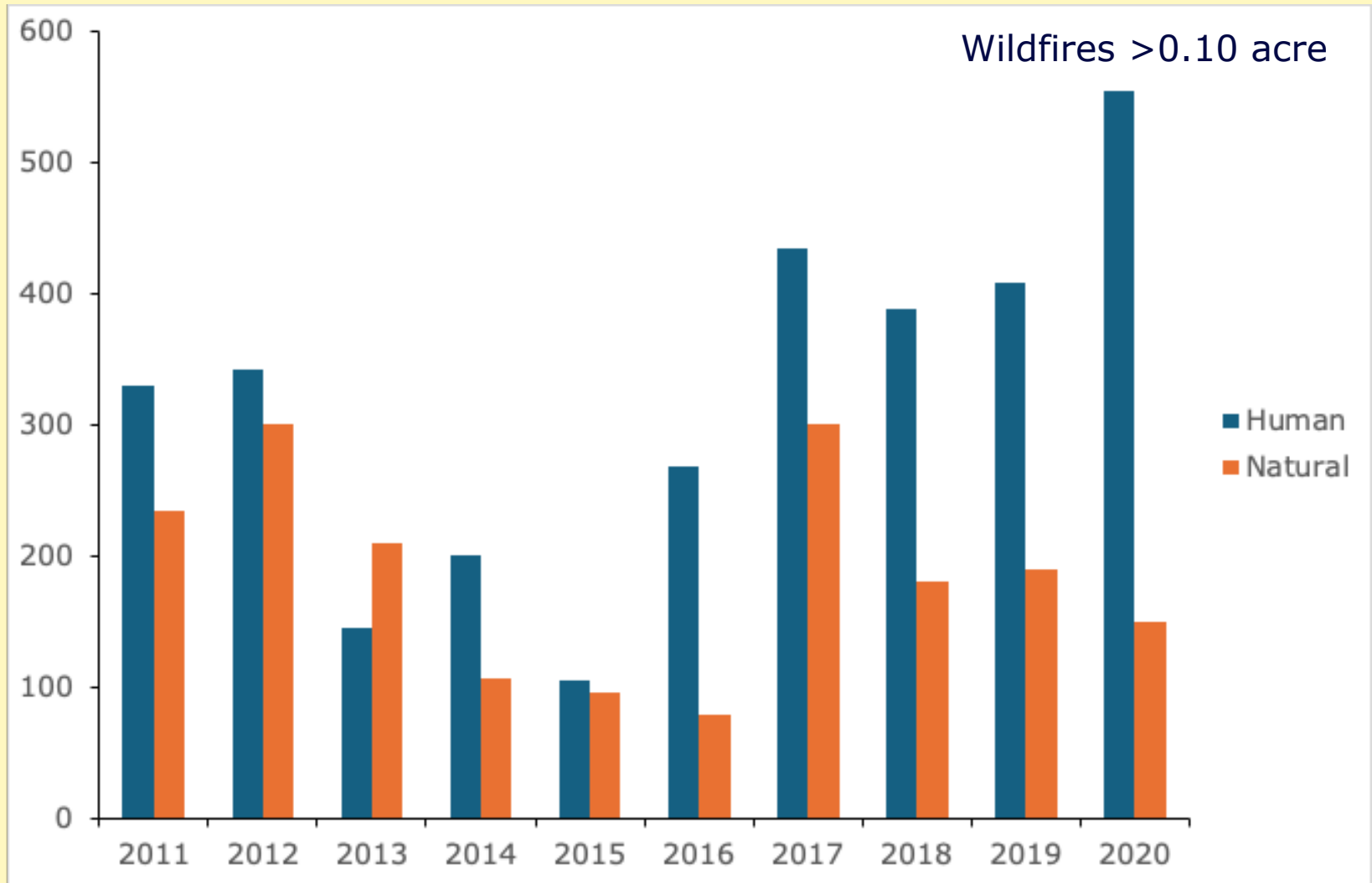
- Not effective for wind-driven wildfires
- Can be effective in some ecosystems . . . with considerable, regular maintenance
- Prescribed fire has some promise, although there are obstacles



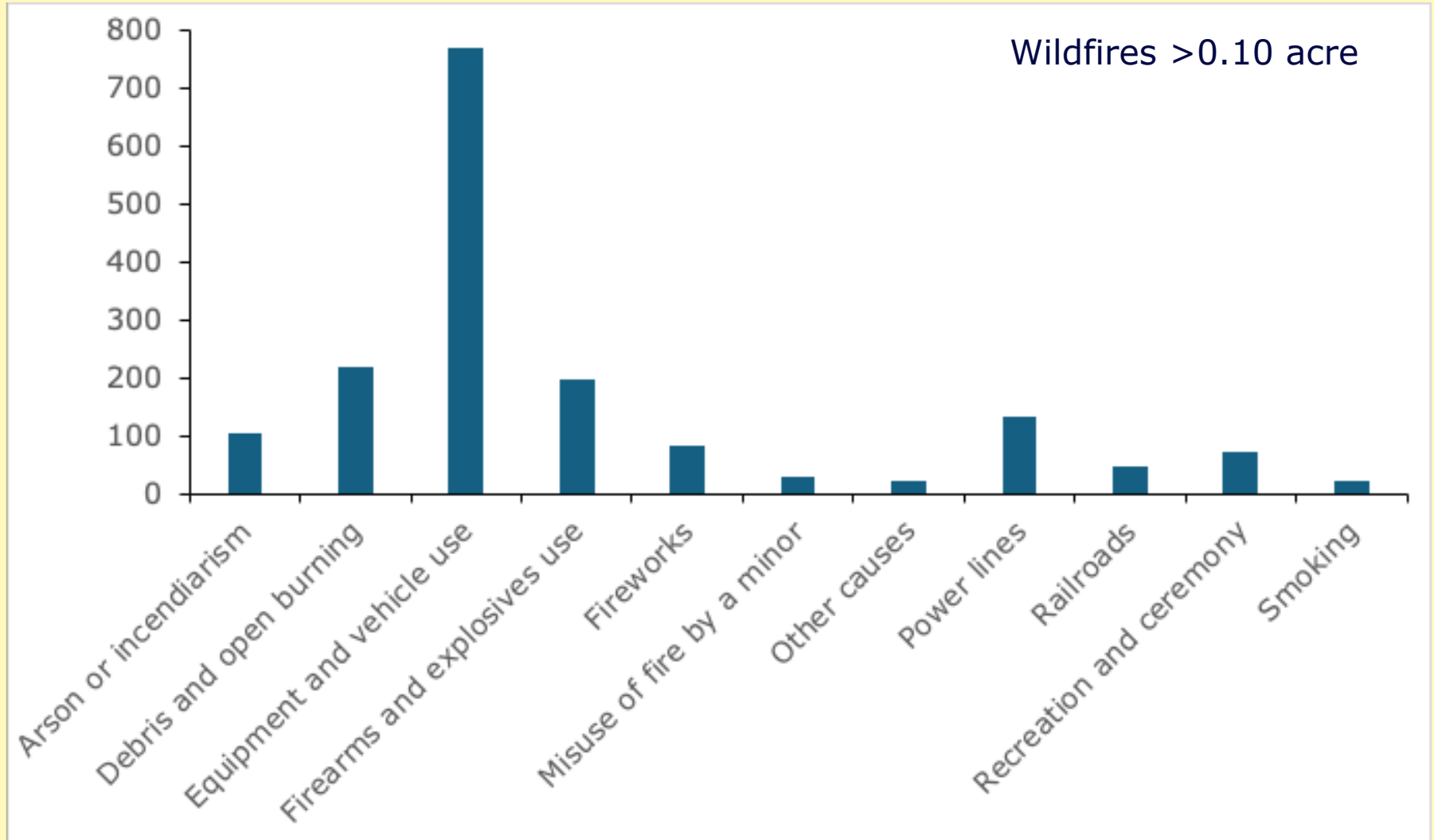
Vegetation change



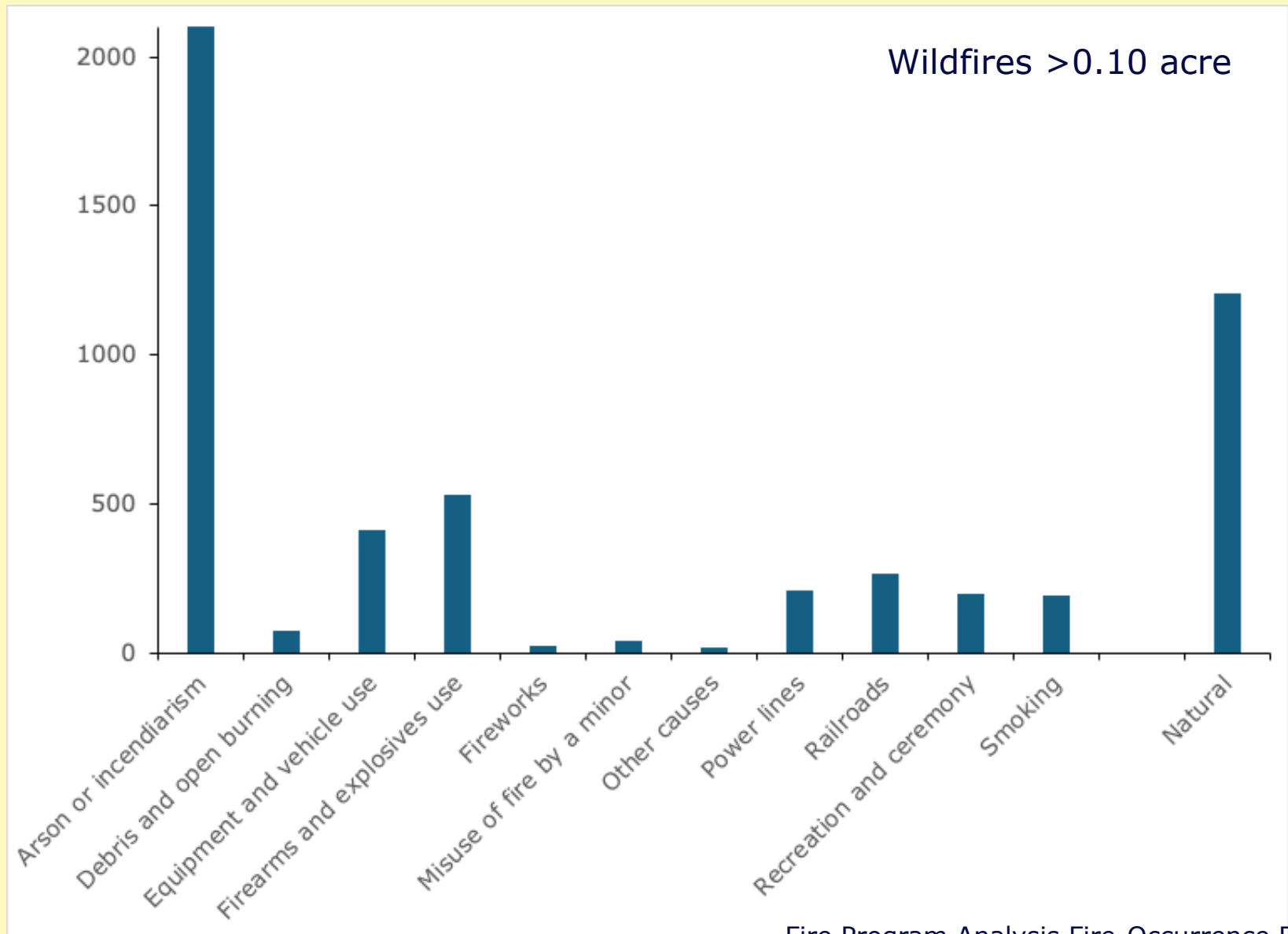
Ignition causes, 2011–2020



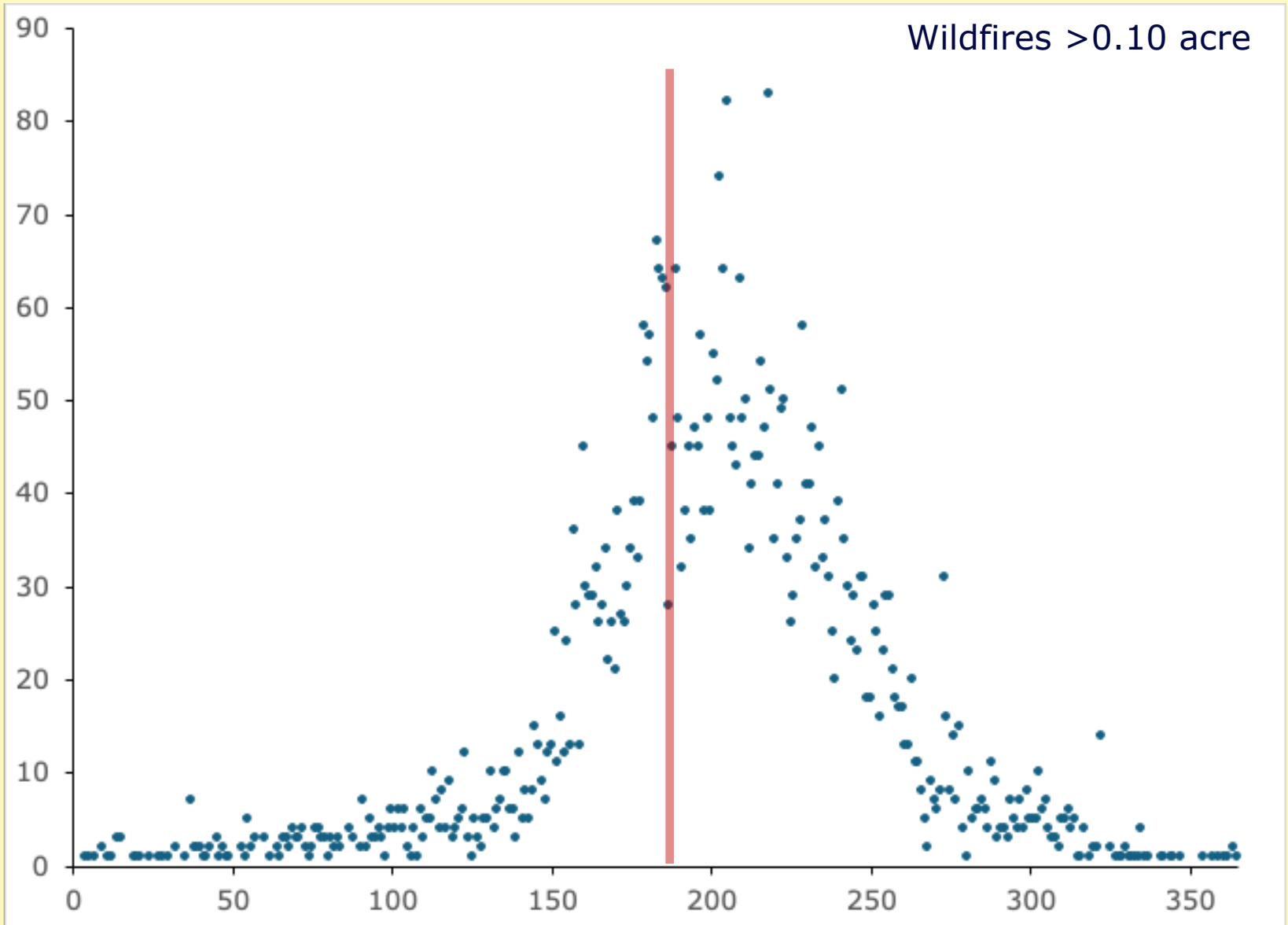
Number of human-caused ignitions, 2011–2020



Mean wildfire size, 2011–2020



Wildfire discovery dates, 2011–2020

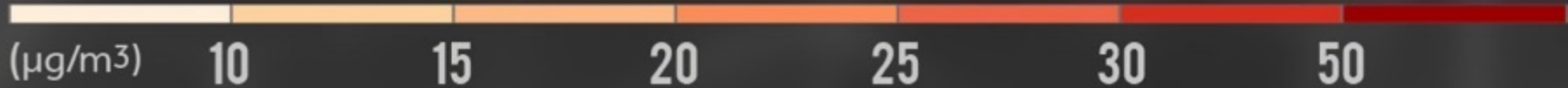


Public health

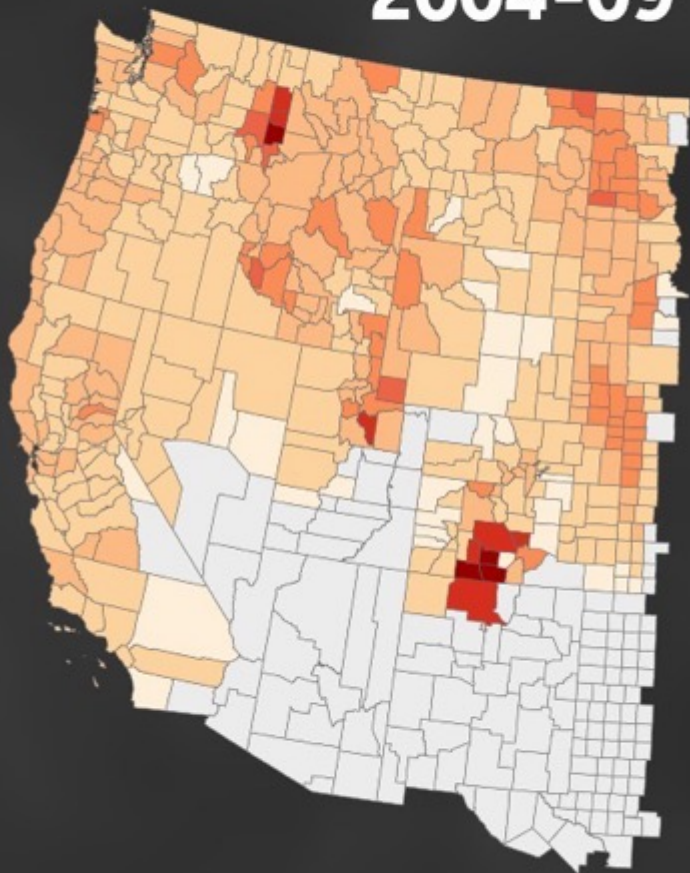


Oregon Public Broadcasting

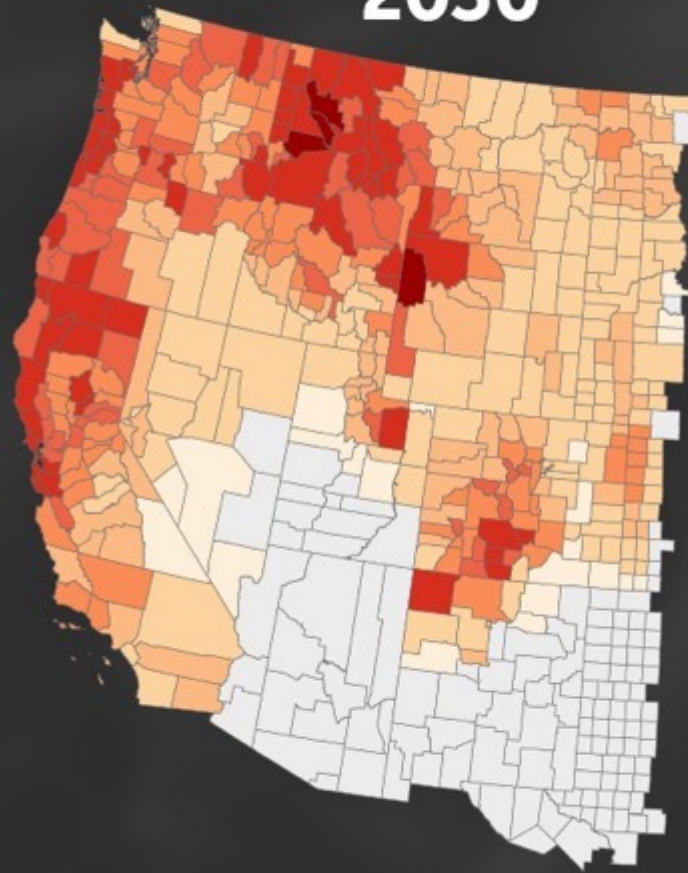
- Climate change and related hazards affect physical and mental health of adults, children
- Individual and compounded hazards: heat, smoke, ozone



2004-09



2050



Smoke wave day = a day with PM_{2.5} concentration of at least 20 $\mu\text{g}/\text{m}^3$
Average smoke wave intensity ($\mu\text{g}/\text{m}^3$)
Source: Liu et al. 2016

Temperature and recreation

- Warm nights affect health more than warm days
- Heat index: perceived temperature when relative humidity combined with air temperature
- Exposure at a given level increasing
- High temperatures are the main driver



Wildlife and recreation



- Drought, non-native invasives, intensive grazing reduce herbivores' habitat quality, nutrition
- Physical stress, high density affect disease transmission and health
- Generally negative effects on cold-water native fishes

Cyanobacterial blooms

- Affect health of humans, animals
- Facilitated by heat, nutrients, low flow
- Occur in flowing or standing water



Wyoming Department of Environmental Quality

Wildlife–human conflict



Mountain West News Bureau

- Wild animals seek water, food in areas with people
- Vehicle collisions
- Conflict with pets
- Economic losses
- Potential for disease transmission

