Climate Change Impacts on Western Forest Wildfire

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EESI Briefing:

Effects of Climate Change on Forest Resources

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California Energy Commission
Forest Fires up ~300%

Area Burned up > 550%

Season up 78 days (64%)

Burn time up 400%
Consequences? Fuel accumulation reduces effectiveness of suppression

1867 American River
1993 American River
The biggest increase in wildfires risks least affected by suppression.
Western U.S. Population, 1900 - 2020

Census

Projection
... but total ignitions have not.
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& 3/4 of the increase occurred among lightning-caused fires
Grass/Shrub fires follow WET years.

Forests burn when they are DRY.

Preceding years Year of Fire
Forest Fires & Temperature

Correlation: 0.70
Westerling et al, 2006 Science

Western US Forest Wildfires and Spring–Summer Temperature

Wildfires

Temperature

wildfire frequency

Temperature


13 14 15 (°C)
Forest Fires & Timing of Spring

Correlation: 0.56
Late Snowmelt Years

Early Snowmelt Years

1972 - 2003, NPS, USFS & BIA Fires over 1000 acres
Projected Climate Change Impact on California Wildfire by 2070-99

[Map showing projected changes in wildfire probability]
Forest Fires & Temperature

Correlation: 0.70