

The Impact of Changing Wildfire Risk on the California Residential Insurance Market

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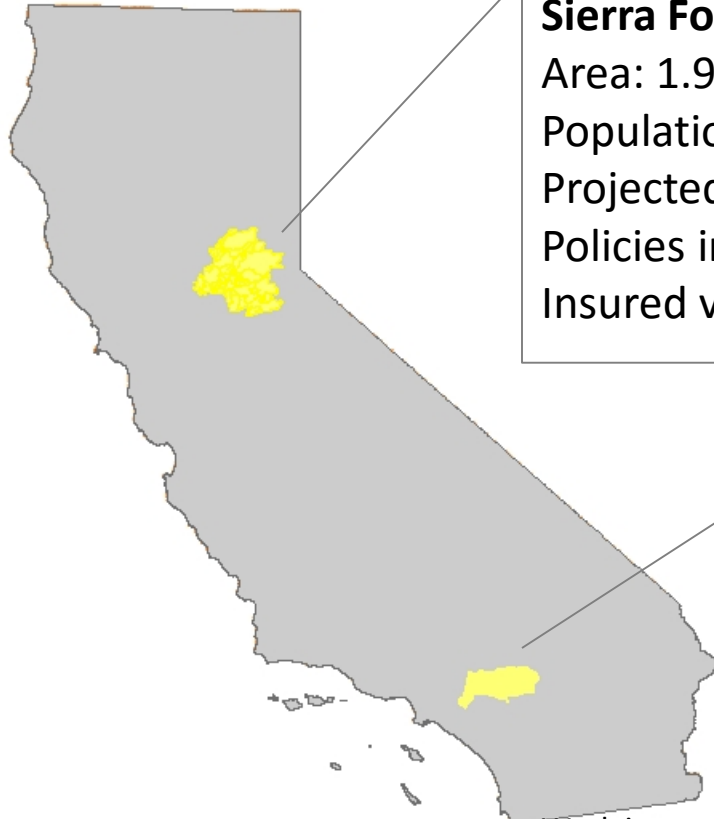


Center for Catastrophic Risk
Management and Compensation

Research Questions

- What is the current wildfire risk in the study areas and how might climate change affect it through the end of the century?
- How well is the residential insurance market currently working in the higher-risk fire areas?
- How might the climate-induced changes in wildfire risk affect the residential insurance market?
- What factors can affect how the residential insurance market will be affected by climate change?

Two study areas



Sierra Foothills study area

Area: 1.9 M acres

Population in 2016: 650,000

Projected population in 2095: 1.3M

Policies in force: 197,000

Insured value: \$134 billion

San Bernardino study area

Area: 0.86 M acres

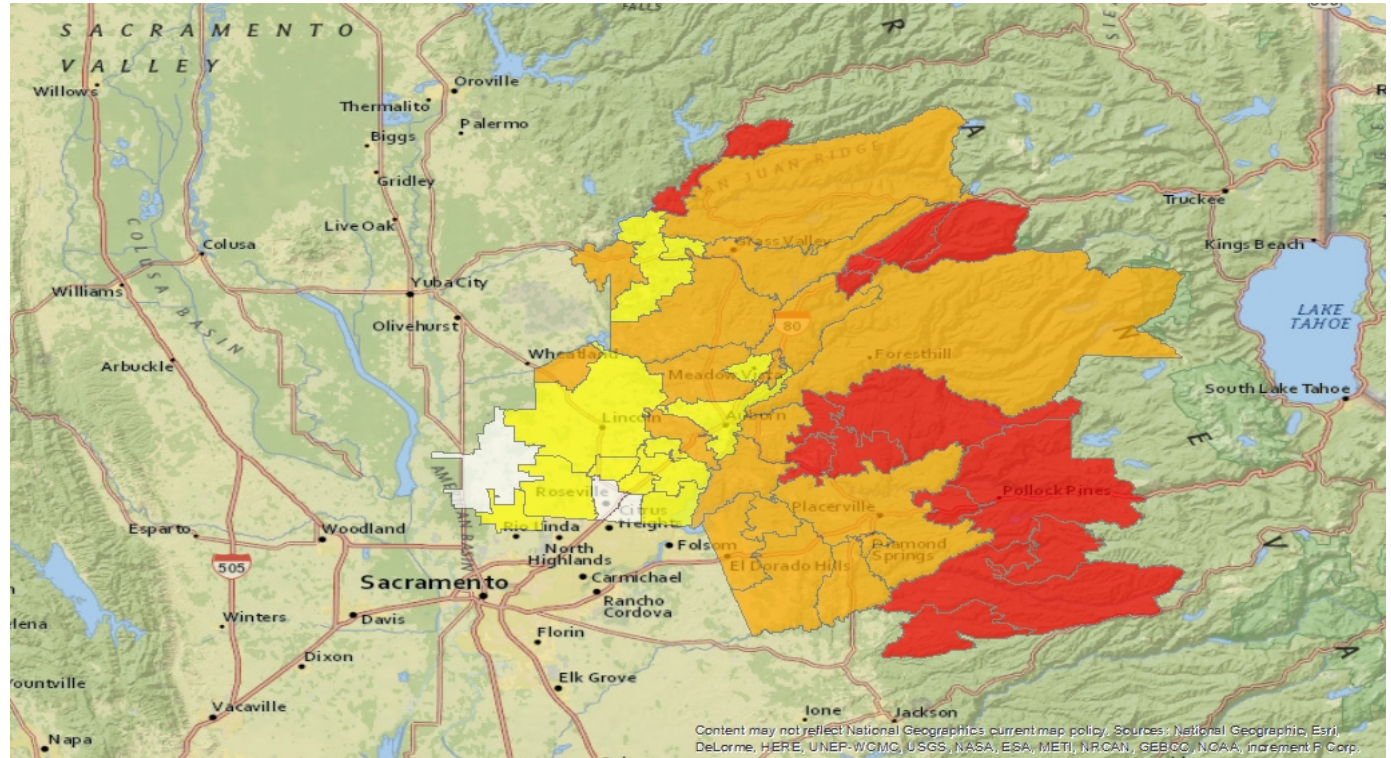
Population in 2016: 1.46 M

Projected population in 2095: 1.97 M

Policies in force: 375,000

Insured value: \$201 billion

Structure risk by zip code in the Sierra Foothills Study Area



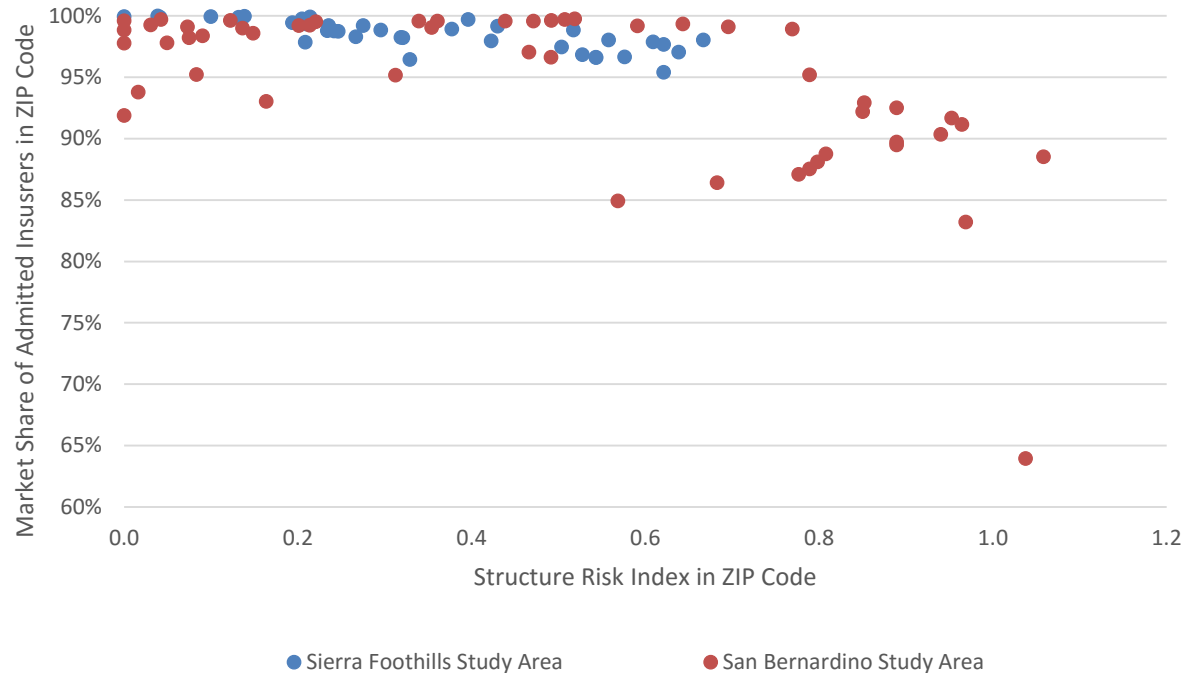
Insurance Market Indicators Examined

- Market shares of admitted insurers, surplus lines market, and the FAIR Plan
- Premium per \$1000 coverage
- Nonrenewal rates for policies in the admitted market
- Ratio of coverage to insurable value
- Number of insurers writing coverage in the admitted market
- Insurance take-up rate
- Size of deductible
- Underwriting profit

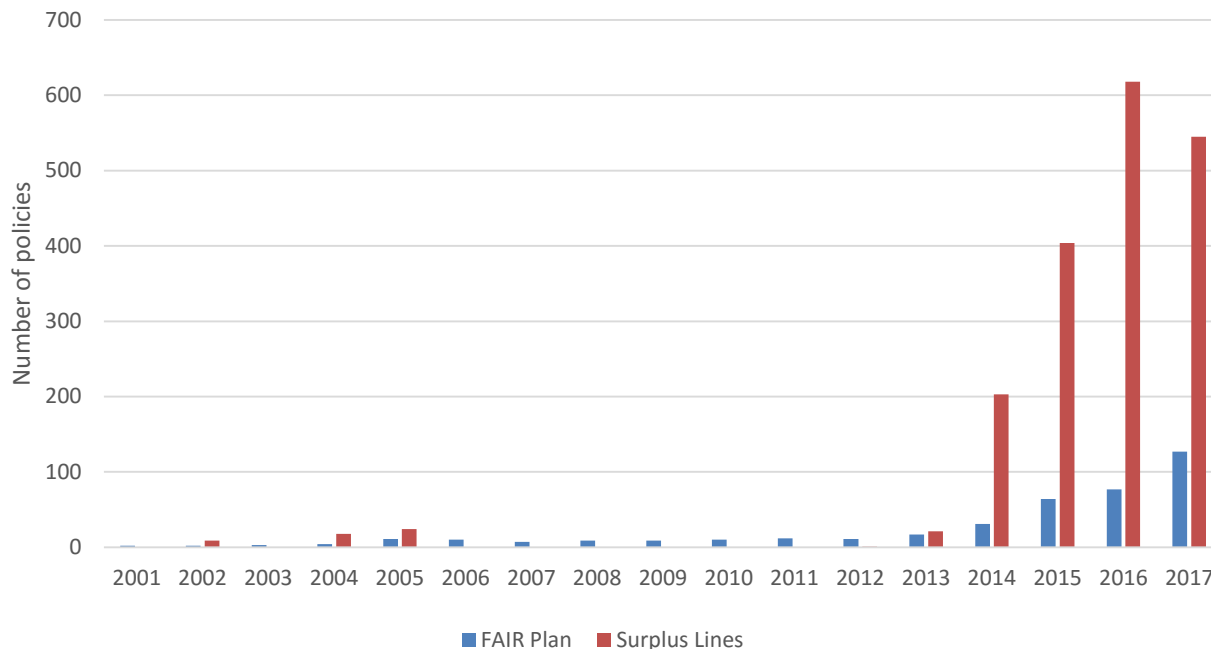
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Market share of admitted insurers is lower in high-risk areas

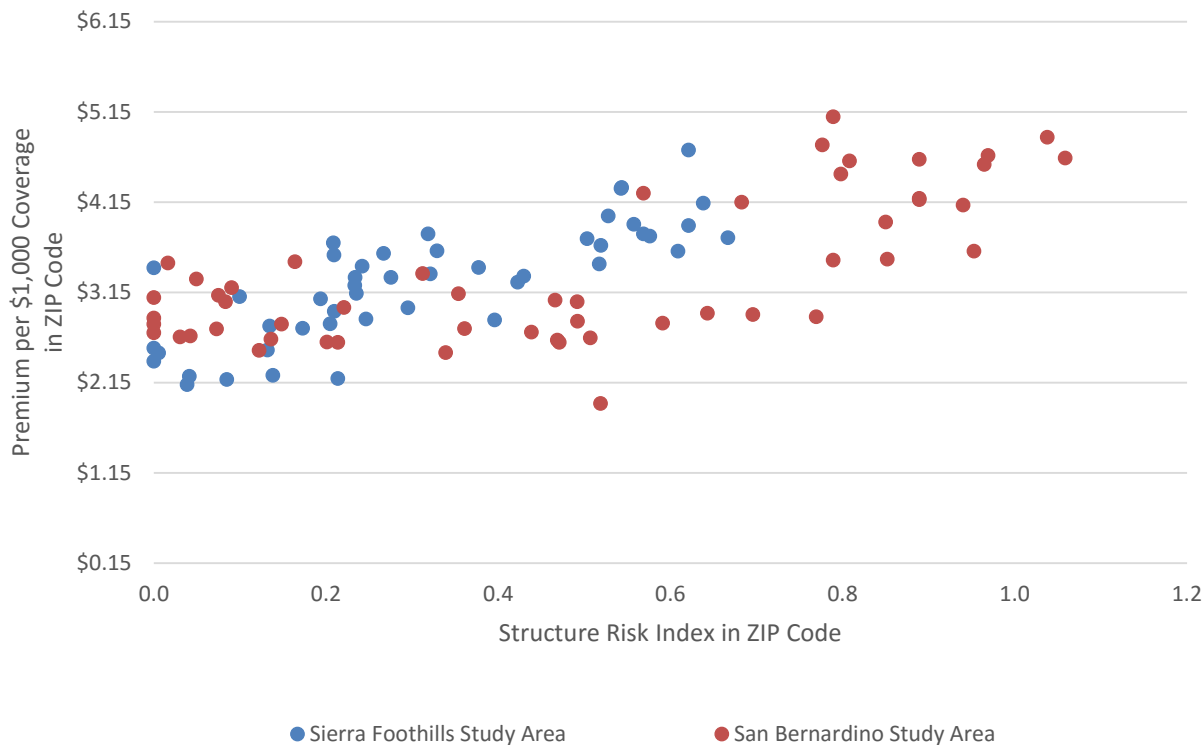


Market share of FAIR Plan and surplus lines market has been growing in recent years



Sierra Foothills Study Area

Premiums per \$1,000 coverage are higher in high-risk areas



Premiums have been increasing faster in high-risk areas

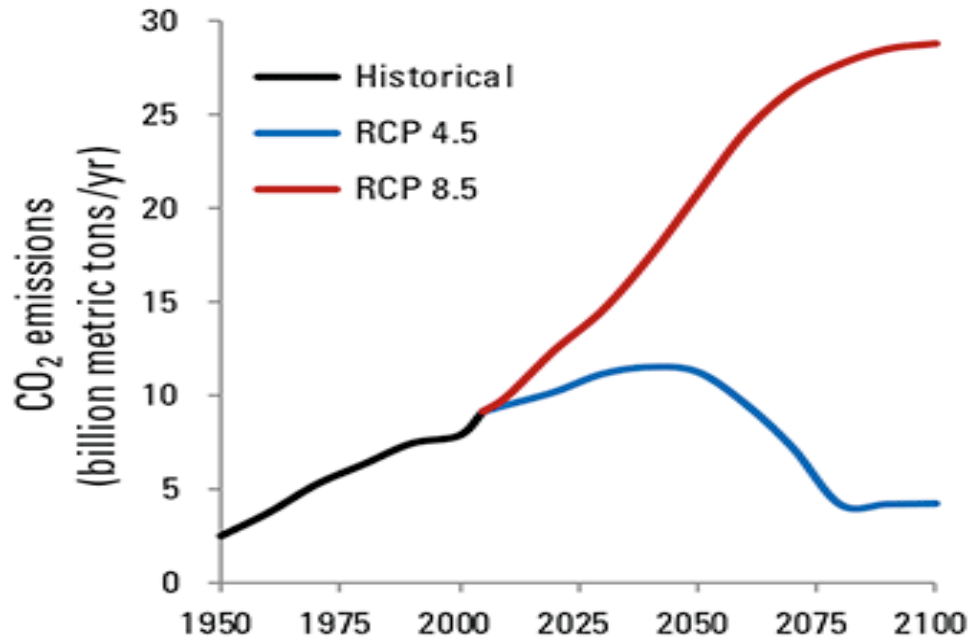
Wildfire risk affects nonrenewal rates and coverage-to-value ratio

- Renewal rates vary by wildfire risk, but the differences are not great
 - Insurer-initiated non-renewals tend to be higher in high risk areas
 - Insured-initiated non-renewals tend to be lower in high-risk areas
- There is some evidence that coverage-to-value ratios are lower in high-risk areas

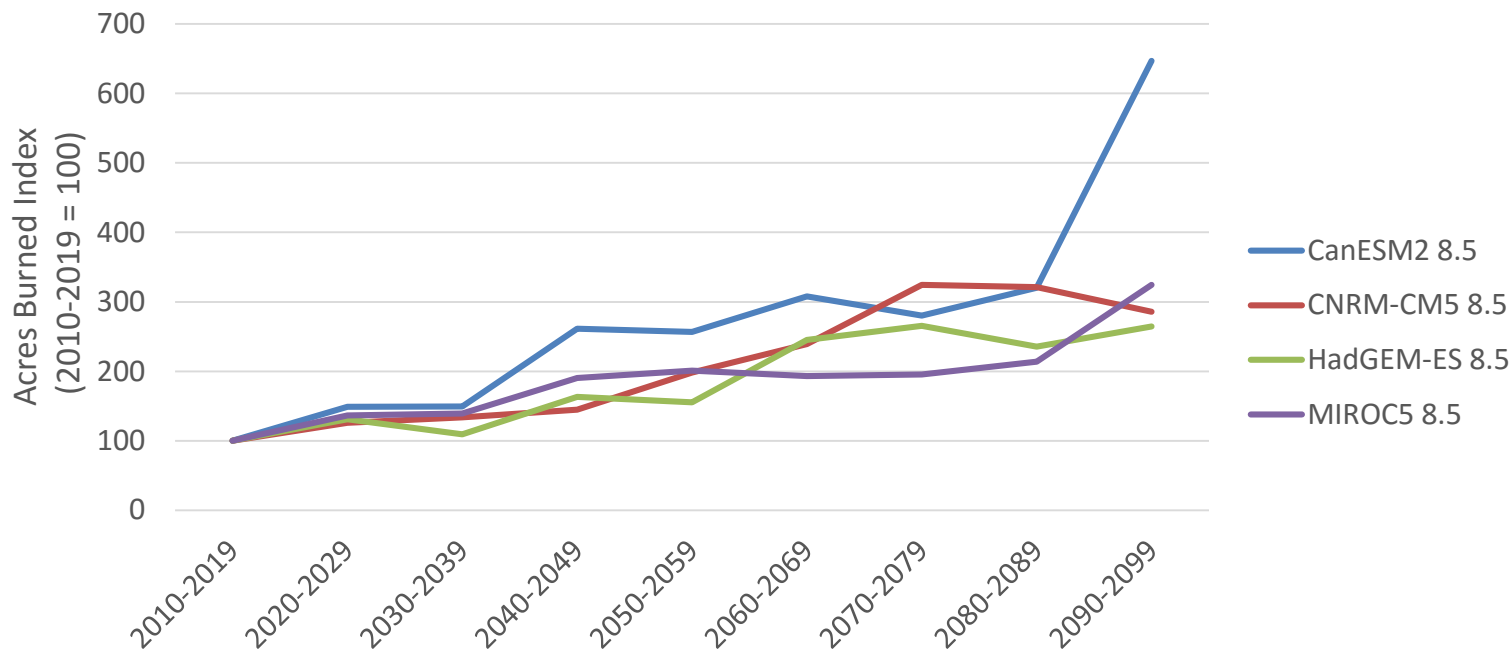
Issues that can reduce insurer willingness to write in high-risk areas

Issue	Insurer Perspective	CDI Perspective
Inability to use probabilistic wildfire models in rate setting	Past loss experience is not representative of actual risk and lags change in risk	Difficult to assess accuracy of models; models are open to manipulation and misuse
Constraints on variation of rates by wildfire risk	Approved rate “relativities” are flatter than they should be	Substantial increase in high-risk areas have been approved; insurers have not provided sufficient evidence to support requested differentials
Exclusion of net reinsurance costs in rate setting	Reinsurance is needed to reduce the risk of financial impairment and bankruptcy	CDI cannot ensure reinsurance margins are reasonable; insurers may use reinsurance to circumvent Prop 103; CDI already allows insurers to charge a catastrophe load

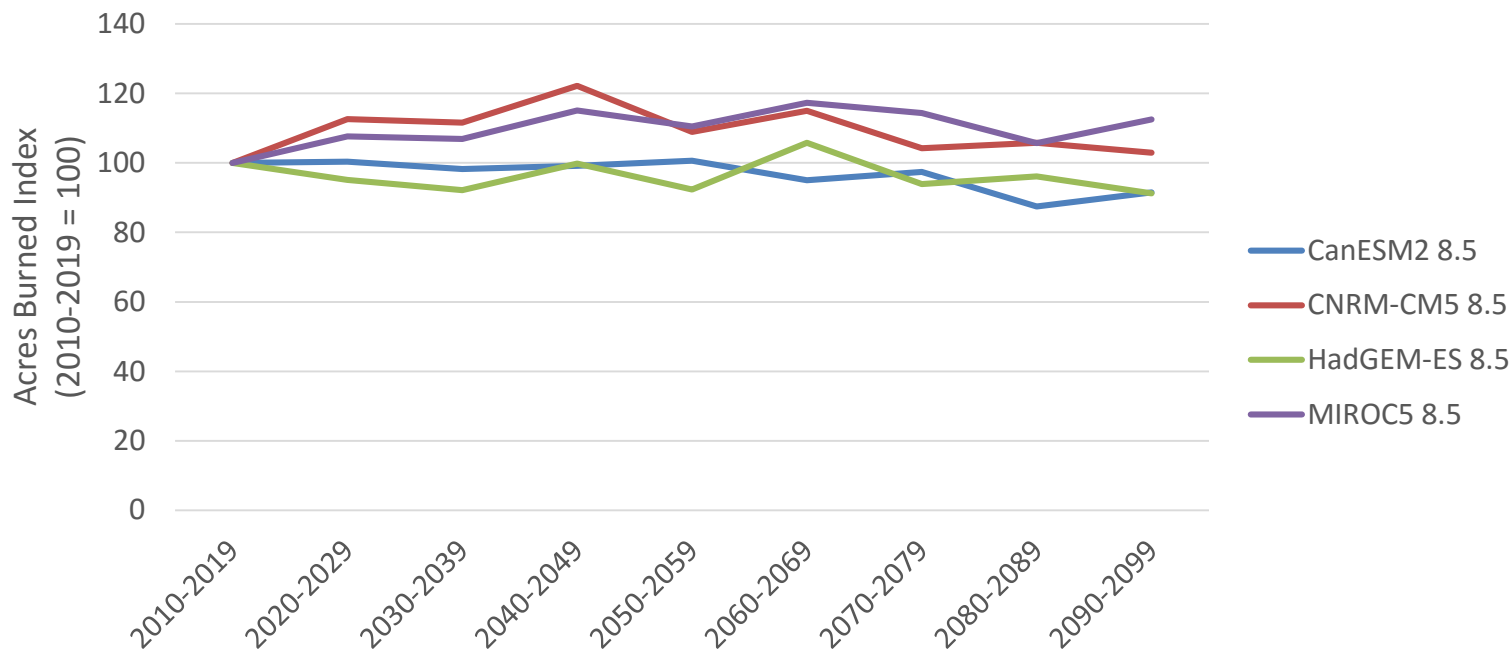
Carbon emission forecasts used to project changes in of wildfire risk



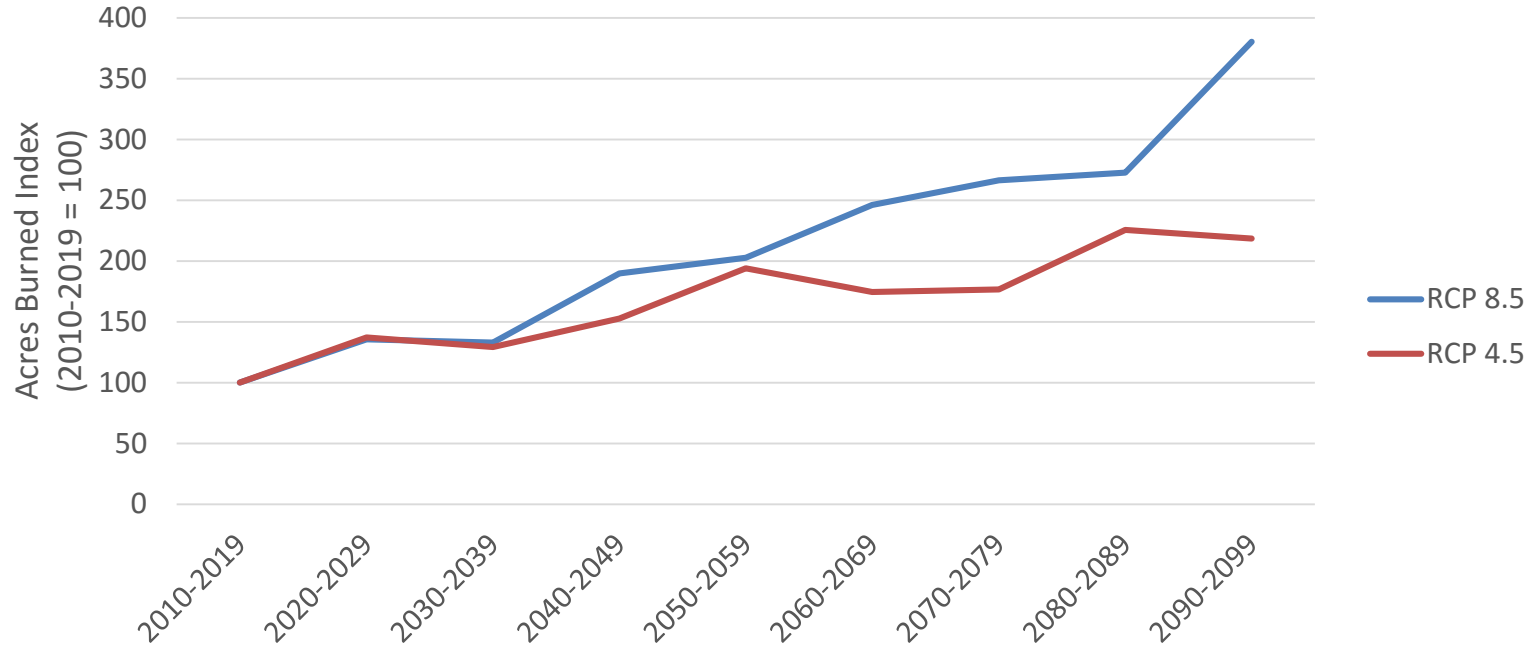
Substantial increase in acres burned is expected in Sierra Foothills study area



But little change in acres burned in San Bernardino study area



Lower carbon emissions make a difference in Sierra Foothills Study Area



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