

California Wildfires

Measuring economic impact



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California

| | Amount | US Rank |
|-----------------------|-------------|---------|
| Population | 39,512,223 | # 1 |
| National Forests | 20 | # 1 |
| Total Land (sq mi) | 155,779,000 | # 3 |
| Forest Acreage | 33,000,000 | # 4 |

California Burn

Home to the 10 costliest wildfires in U.S. history

Since 2012, not a month without a wildfire burning

YTD:

~90MM MTs of CO₂ released

Over 200,000 people displaced

4MM acres burned and counting

Causes & Impacts

- Climate change
- Fire suppression
- Lack of forest restoration
- Air quality (AQI)
- Water Quality
- Insurance costs
- Home sales/values
- Jobs lost
- Tax revenues lost
- Carbon emissions
- Recreation

Forecasting Economic Impact

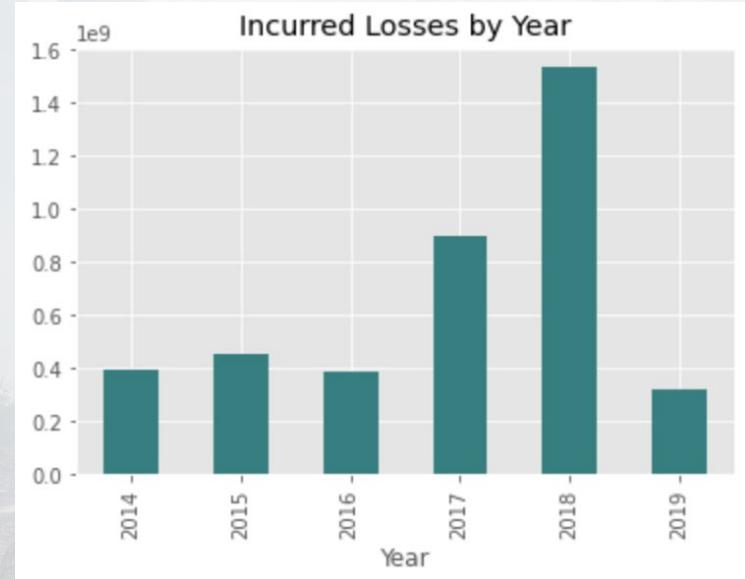
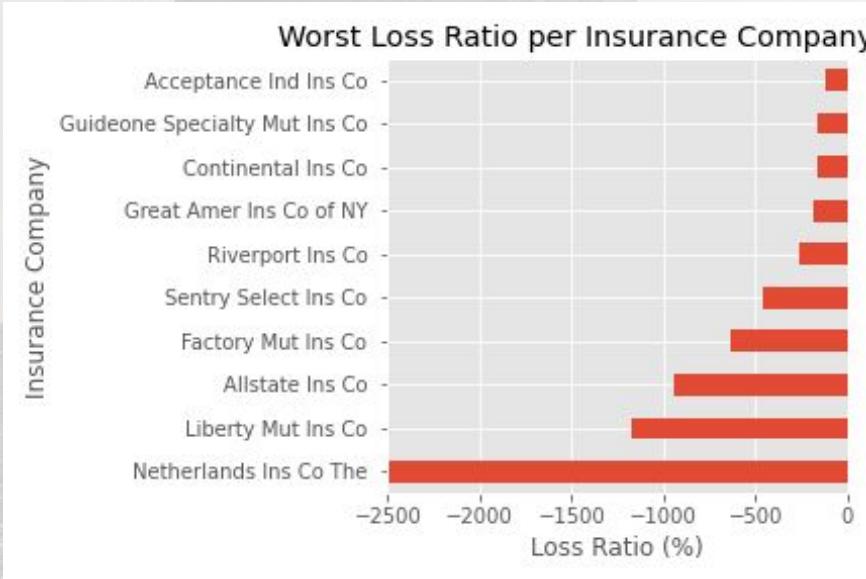


The Problem: Can we predict acres burned, fire suppression costs, and structures destroyed over the next 10 years?

Analysis Workflow

- Research cost contributors
 - Gathered data
 - Explored data for insights
 - Time Series Model
- Predict future costs and losses

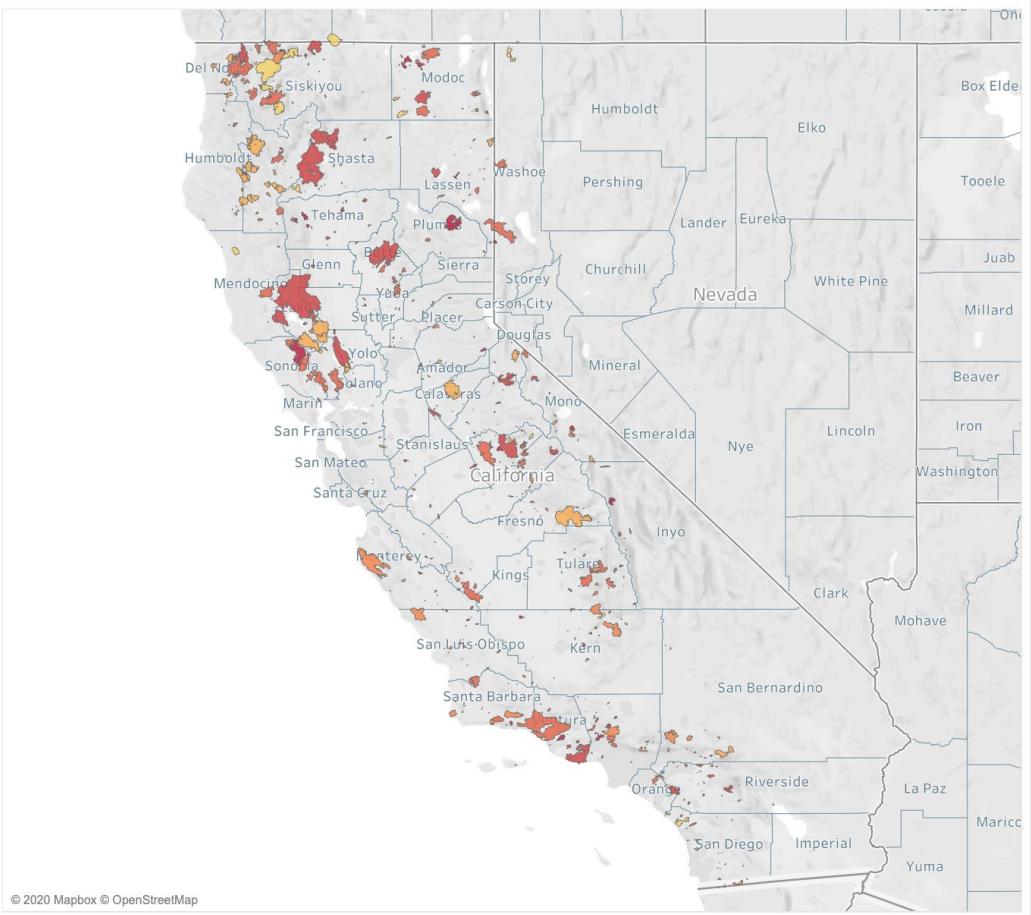
Insurance Companies are Hurting



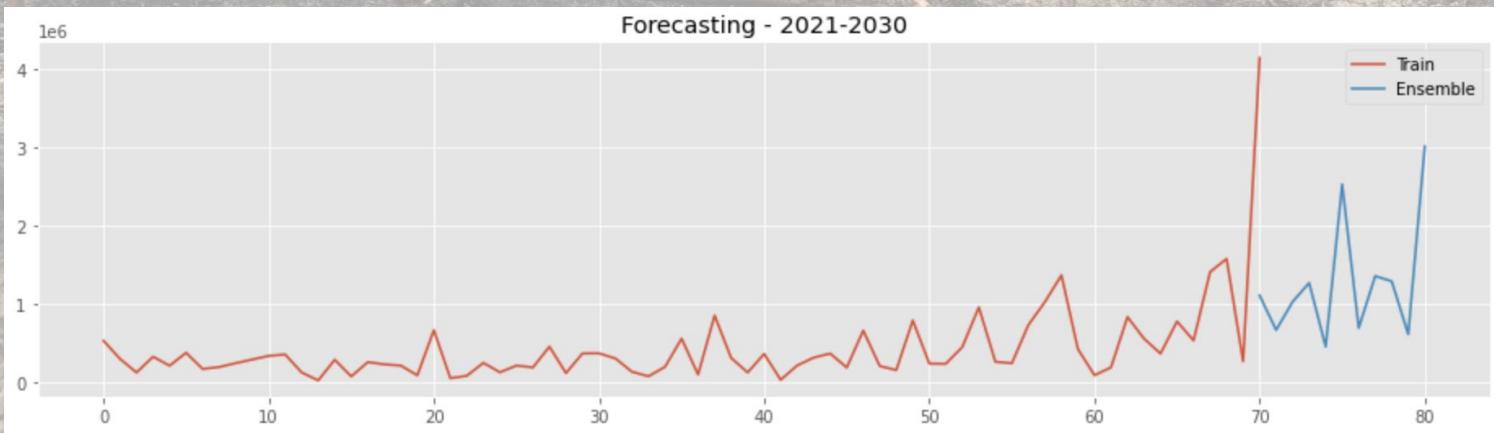
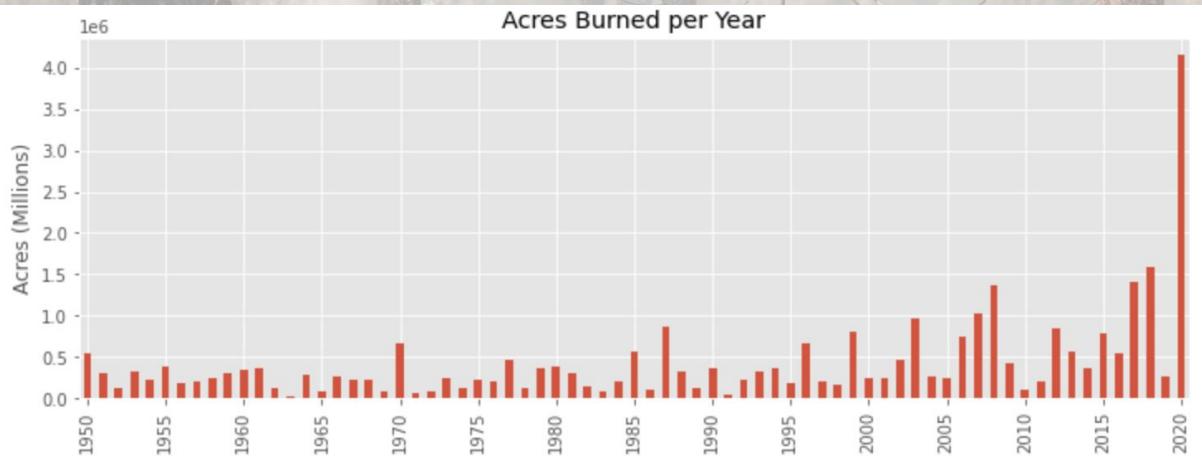
Visualizing California's Wildfires

[Demo here!](#)

California Wildfires, 2014-2019



Time Series Model



Predictions

Insurance Losses + Fire Suppression Costs

- Acres: **12,987,884**
- Suppression Costs: **\$39,909,952,208**
 - Structures Destroyed: **61,043**

Forest Restoration Cost Prediction:

\$23,500,000,000

What Is Needed

- Identify the stakeholders
 - Quantify the benefit
- Upfront payment structure

2021 USDA EXPLANATORY NOTES – FOREST SERVICE

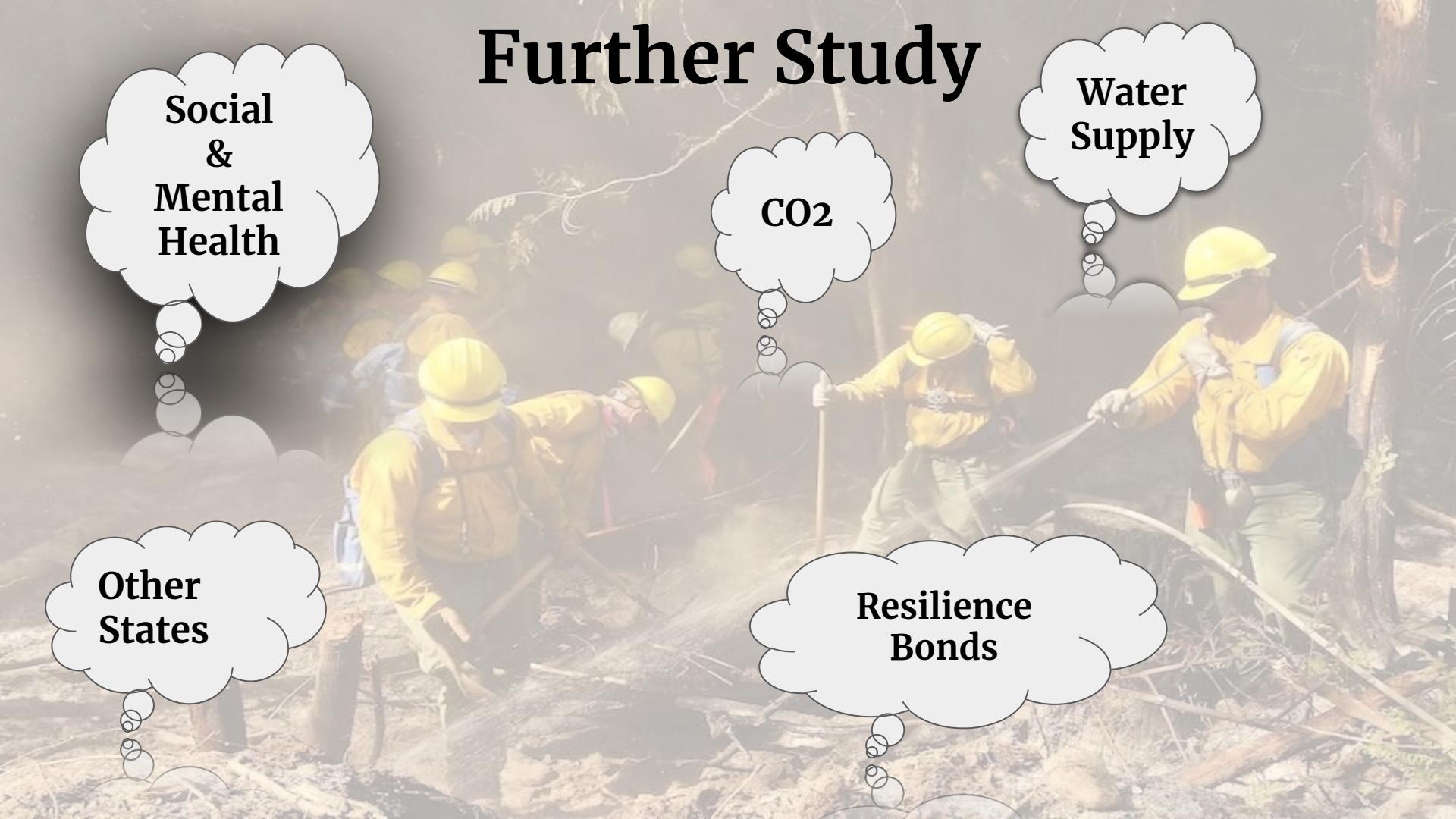
WILDFIRE SUPPRESSION OPERATIONS RESERVE FUND

LEAD-OFF TABULAR STATEMENT

Lead-Off Tabular Statement

| Item | Amount |
|------------------------------|----------------------|
| 2020 Enacted..... | \$1,950,000,000 |
| Change in Appropriation..... | +90,000,000 |
| Budget Estimate, 2021 | <u>2,040,000,000</u> |

Further Study



Social
&
Mental
Health

Other
States

CO₂

Water
Supply

Resilience
Bonds

References



CAL FIRE



ECONOMIC DATA | ST. LOUIS FED



Legislative Analyst's Office

The California Legislature's Nonpartisan Fiscal and Policy Advisor



Congressional Budget Office

Nonpartisan Analysis for the U.S. Congress



Team



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