THE ECONOMIC IMPACTS OF LARGE WILDFIRES: A MIXED METHODS PERSPECTIVE FROM TRINITY COUNTY, CA

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Wildfire Suppression Costs

- **Suppression costs**
  - LT $400M/yr (1970-2000)
  - GT $1B/yr (since 2000)
- **Fire Management**
  - 1991: 13% USFS Budget
  - 2009: 48% USFS Budget
- **Large Wildfires (GT 300 acres)**
  - 1.4% of all wildfires
  - 93.8% of suppression costs
- **Cost containment motivates**
  - Policy, forest management, and suppression strategy

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…Lots of research…

Impacts of Wildfires to Communities

- Multiple and complex
  - Homes, forest resources, behavior, community relations
  - Work stoppages and slowdowns
    - Natural resource sectors
    - Recreation and tourism
    - Service sectors
  - Suppression spending
    - contracting
    - procurement

- Suppression spending decisions matters

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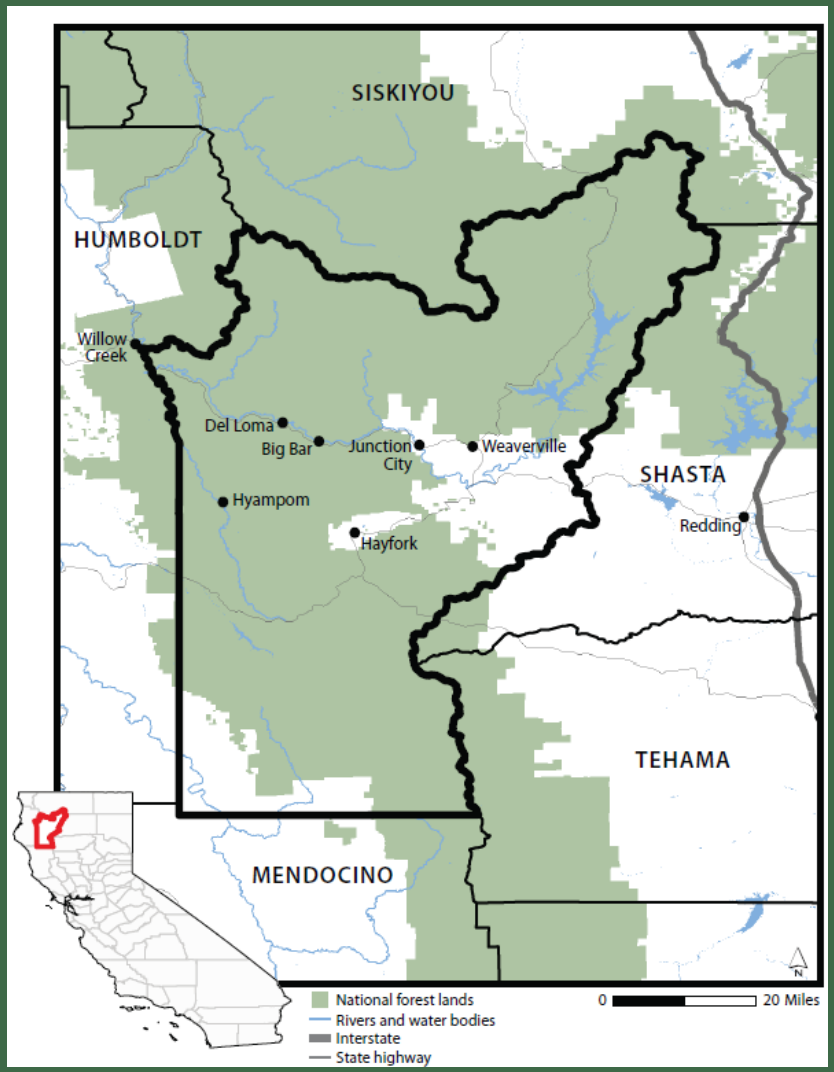
Research Questions

- What are the effects of large wildfires on local economies and labor markets?

- How does fire suppression contracting mediate the effect of large wildfires on local economies and labor markets?

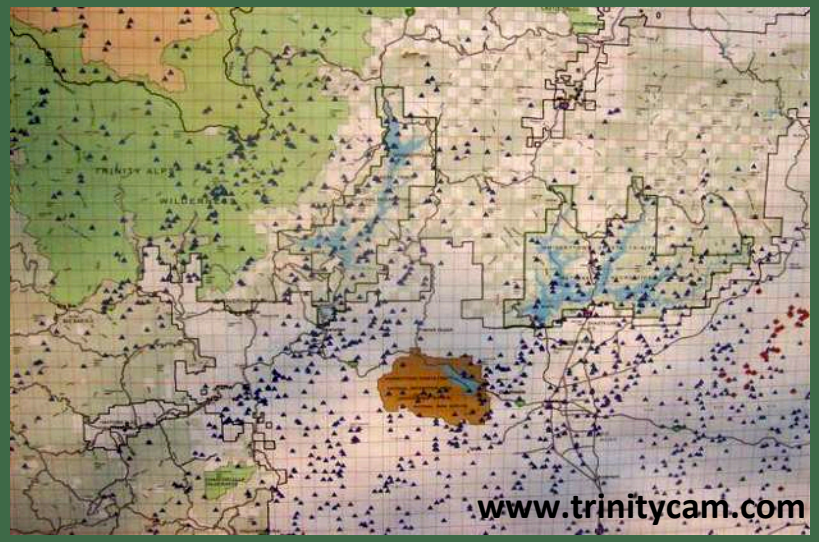
Trinity County, CA – Pilot Case Study

- Population: 13,000
- USFS and BLM: 89%
- FRCC III: > 50% forests
- Poverty: ~ 20%
  - "Chronically depressed" since 1980s



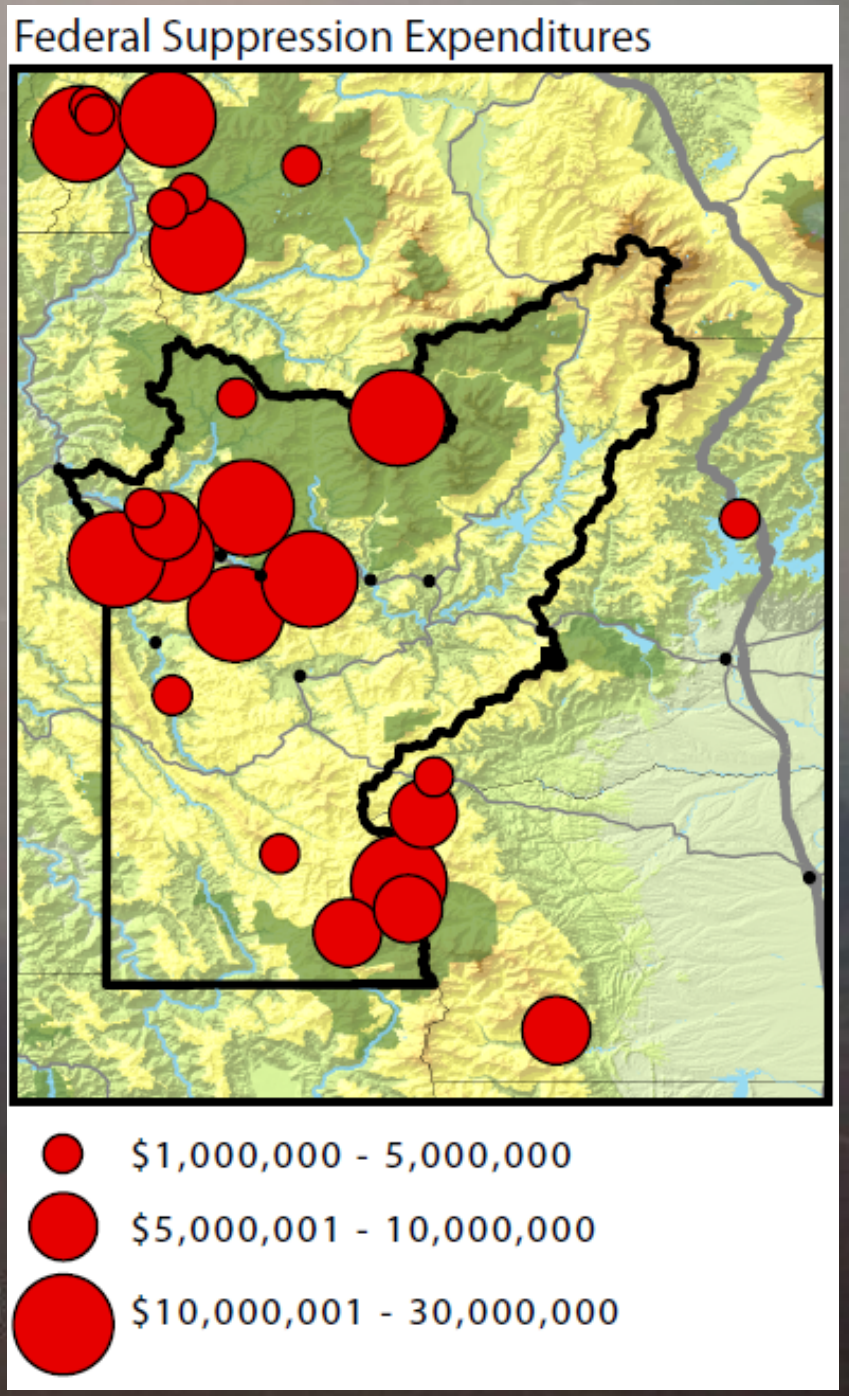
Trinity County, CA – Pilot Case Study

- June 20th 2008: **3000 lightning strikes**



- **13 Large Fires** (<$1M)
- Duration: **June to October**
- Extent: **250,000 acres**
- USFS Suppression Costs: **$155M**

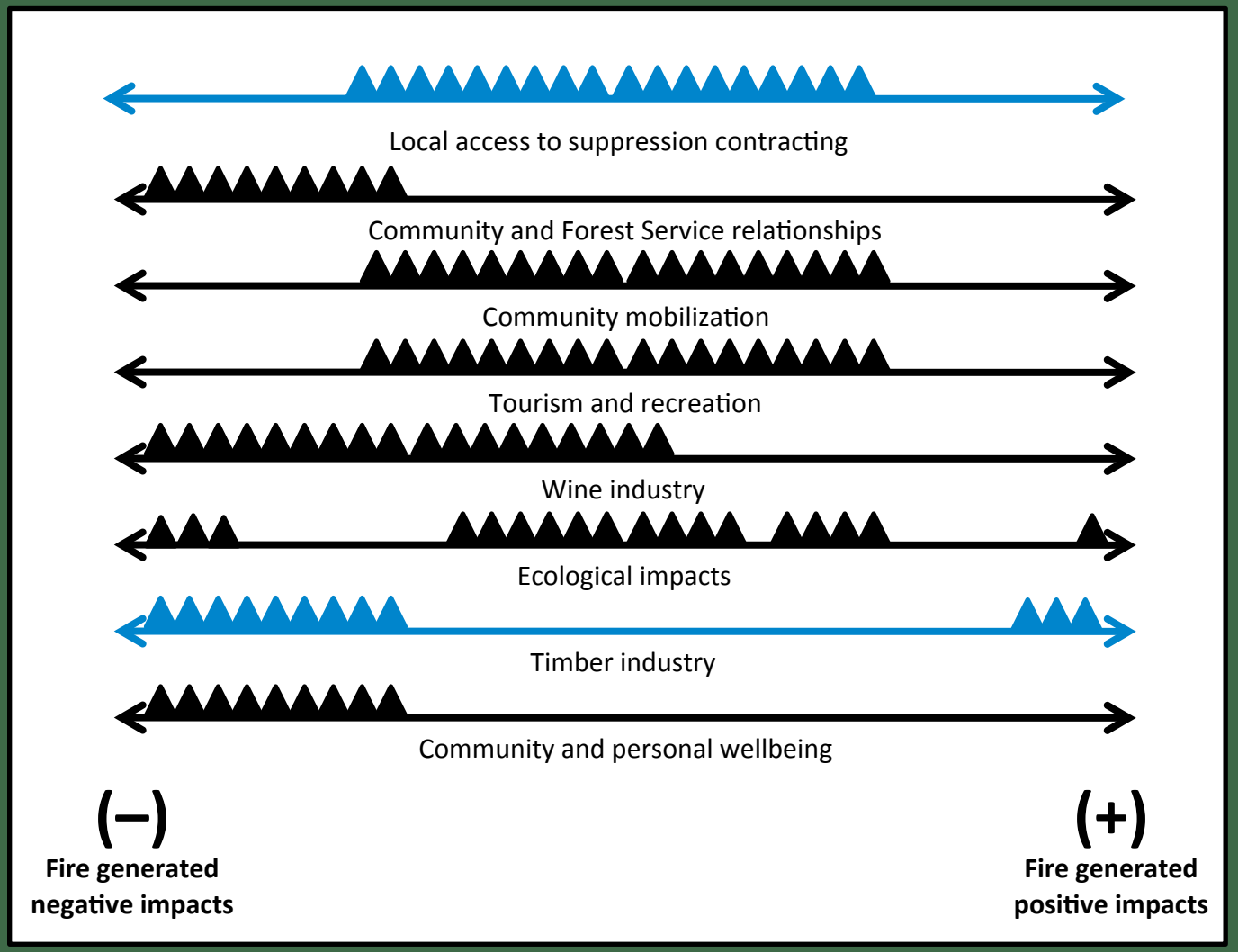
Weaverville, CA June 25,2008



Data Collection

- Community Experience
  - Key informant interviews (n=23)
    - Community economic impacts
    - Opportunities and challenges
- Suppression Spending
  - Fire Attributes
    - Location, Size, Duration… (NIFMID)
  - Fire Expenditure Records
    - BOC by Zip Code (FFIS)
- Labor Market Indicators
  - Employment and Wages (BLS QCEW)

Community Experience – Impacts to socioeconomic sectors



Local Access to Suppression Contracting

- Generally negative perception
  - Procurement practice
  - Technical hurdles
- Recognition that small isolated counties like Trinity have limited capacity to fulfill major suppression contracting needs

Suppression Contracting & Policy

"So historically, what would happen is the locals would make all the sandwiches and stuff like that… [in 2008] there was a state-wide list … and there wasn't any preference give to locals… the Forest Service management were new, and … didn't have any feeling for who wasn't local."

"An awful lot of our locals still don't know how to get on that BizOpps…"

"However, in their defense, we're a small county, and to gear up to feed, to have our grocery stores be able to gear up to provide, that's a catch-22 in a small rural county."

Incident Command Teams

- Type I and II – *"Self-contained" fire camps*

- Type III – State and local teams
  - Mop up in last several weeks of fires
  - Stayed in local hotels, purchased local provisions
  - Generally more positive perception

Timber Industry
"…if we could have timed the market…"

- Poor timing
- Loss of resource management contracts
- Limited salvage

"It was at a time when our market was in just this huge freefall, and price in selling those burned logs to the mills at that time was about less than half the price that could have been gotten for those logs."

"It shut down projects. We had [fuels reduction projects] that were downriver, that we couldn't get to 'cause of the fire."

"They were afraid of any other fires starting, so they shut down all the logging. So if you weren't able to get on the fire, which you of course weren't…"

Restoration Opportunities

- Trinity RCD & The Watershed Center
  - $700,000 in restoration and rehabilitation funding

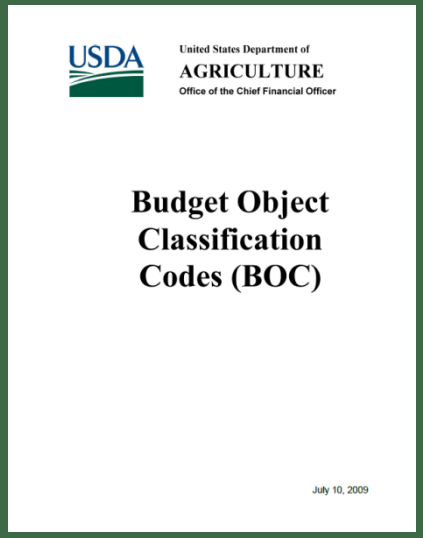
"Many displaced loggers were on the verge of losing everything they had, had their houses mortgaged up to the hilt, and it pulled 'em out. It was actually a saving grace for those small businesses. Some of my friends who I know, it got 'em out of debt for about a year or so"

- USFS stewardship and fuels projects

"Their scale is too big! They could break it up into four contracts. They had a masticating project that stretched out from Burnt Ranch to the Yolla Bollys. I mean, a huge area…I mean, it's 15,000 acres under one contract…forget it."

A Road Map to Economic Impacts

- Albuquerque Service Center
  - Provided expenditure data
  - 105,000 records classified by BOC and attributed with vendor zip code



- $155,000,000 – 5% locally, 23% regionally

Category	% Total	% Local
Private Suppression Services	47	7
Federal Personnel and Cooperative Agreements	37	5
Flying Contracts	9	0
Other	7	<1

Next Steps

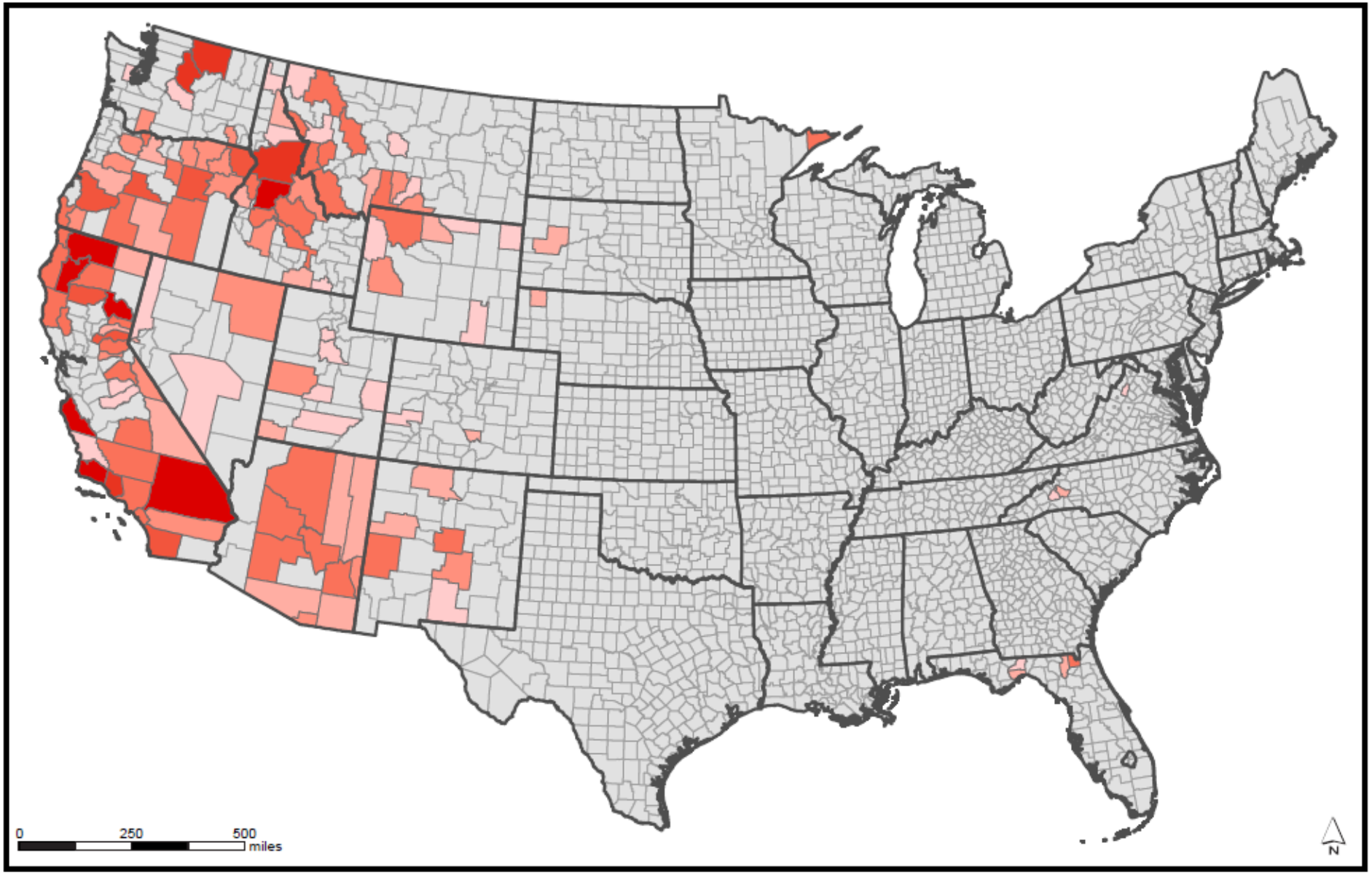
US Large Wildfire Panel 2003-2008

362 large fires in 249 counties

$2.5 Billion in suppression costs

155 sampled for BOC Data

Total Forest Service suppresion costs for large fires* in US counties between 2003 and 2008



*Large fires are defined as Forest Service suppression costs greater than $1 million dollars

Data Source: NIFMID

Total spent (in millions of dollars)

1 2.5 5 10 25 50 100 200.2

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Generalized Knowledge

Difference in Difference model

1. Is there a difference in labor market conditions before, during, and after large wildfires?
2. Is that difference different from what we'd expect?
3. How does suppression spending mediate the effect?

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