Community Business Capacity to Participate in Wildland Fire Operations

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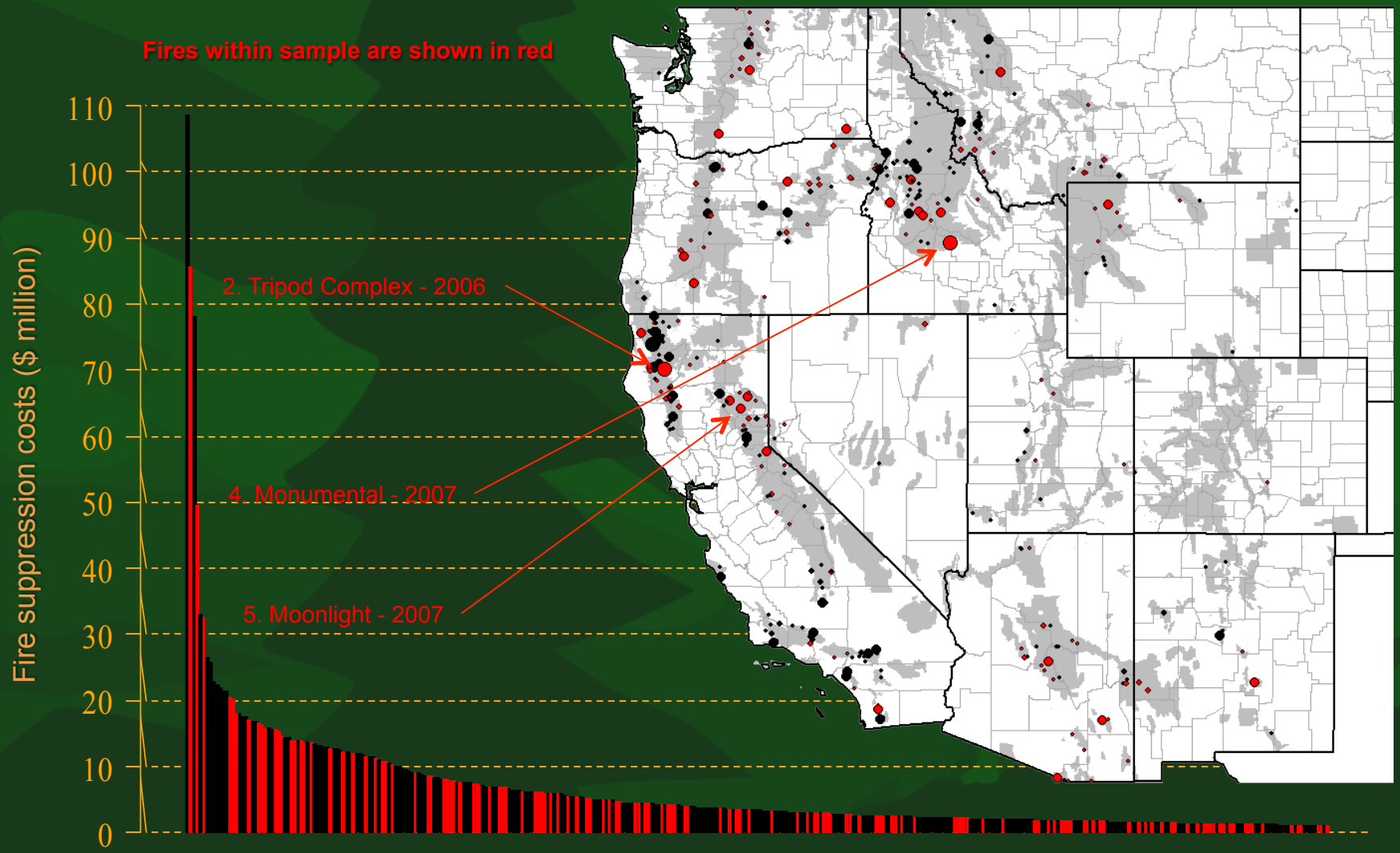
Research Supporting Sound Decisions

Project Motivation

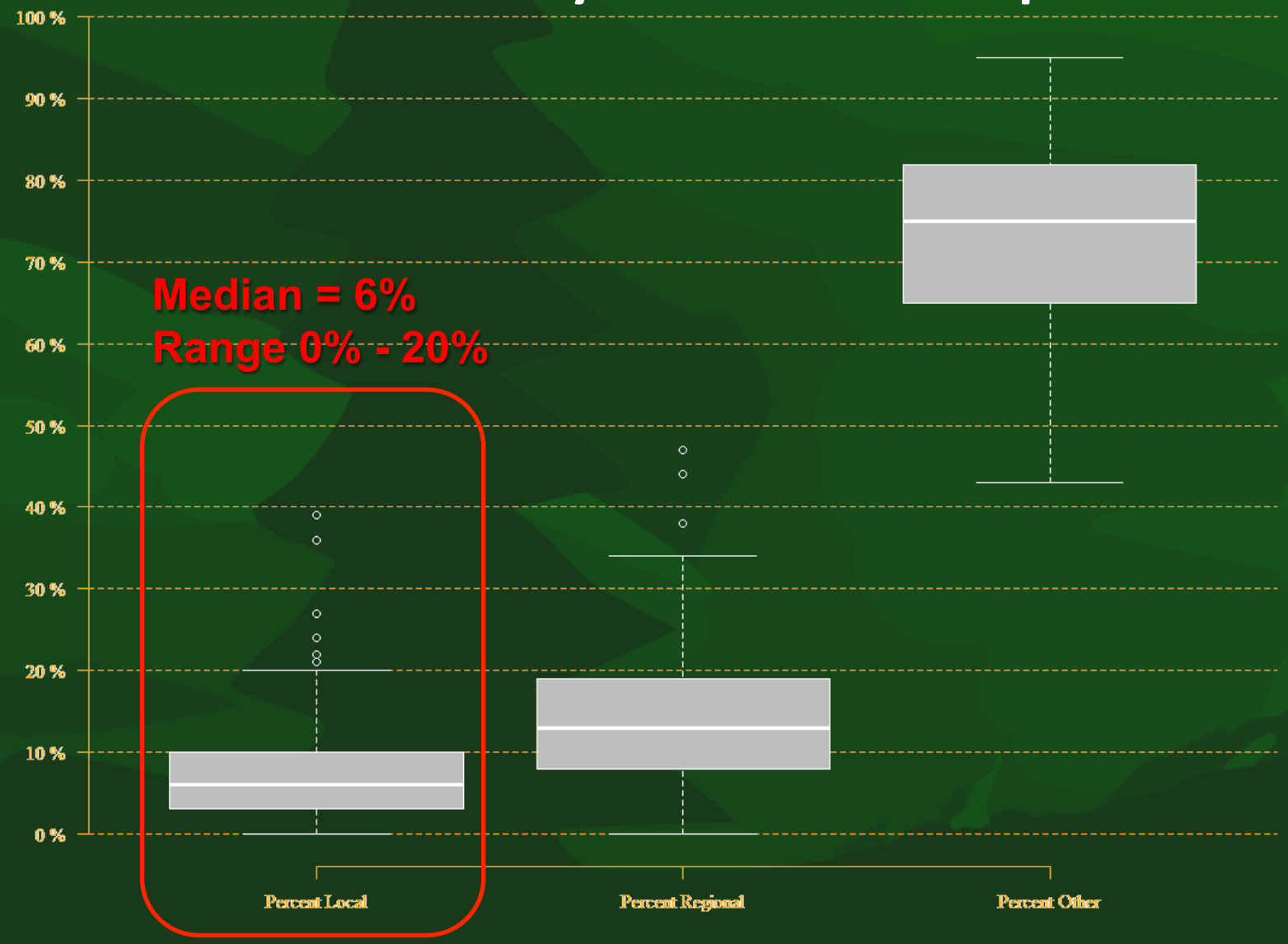
- What are the economic impacts of large fires in rural communities?
- 2008 Trinity County, CA
  - $155 million
  - 7% of spending went to local firms
- Is 7% a lot or a little?
- To what extent does lack of local contracting capacity limit local capture of fire suppression $?

Large fires of the western US



Total expenditure between 2004 and 2008: $2.25 billion

Variability in local capture

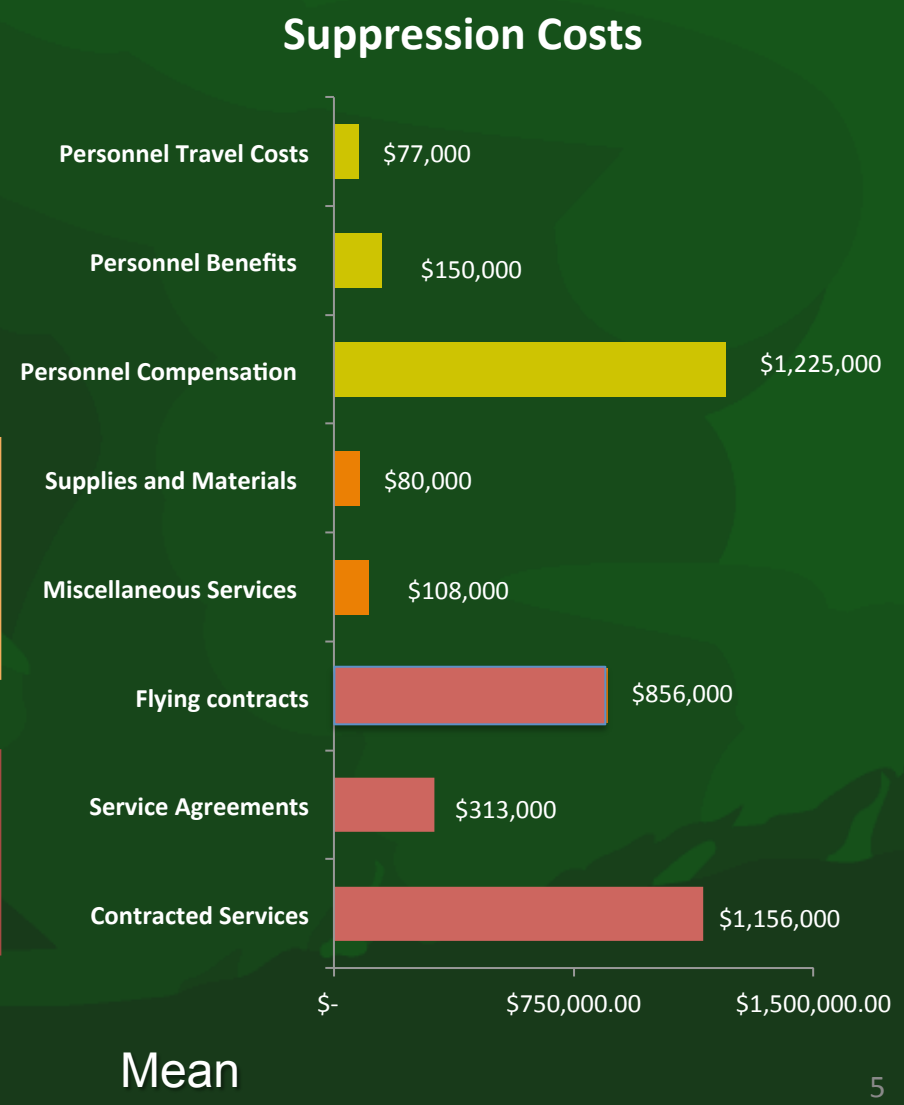


Spending during wildfires

Personnel (37%)

Equipment (5%)

Contracts and agreements (59%)



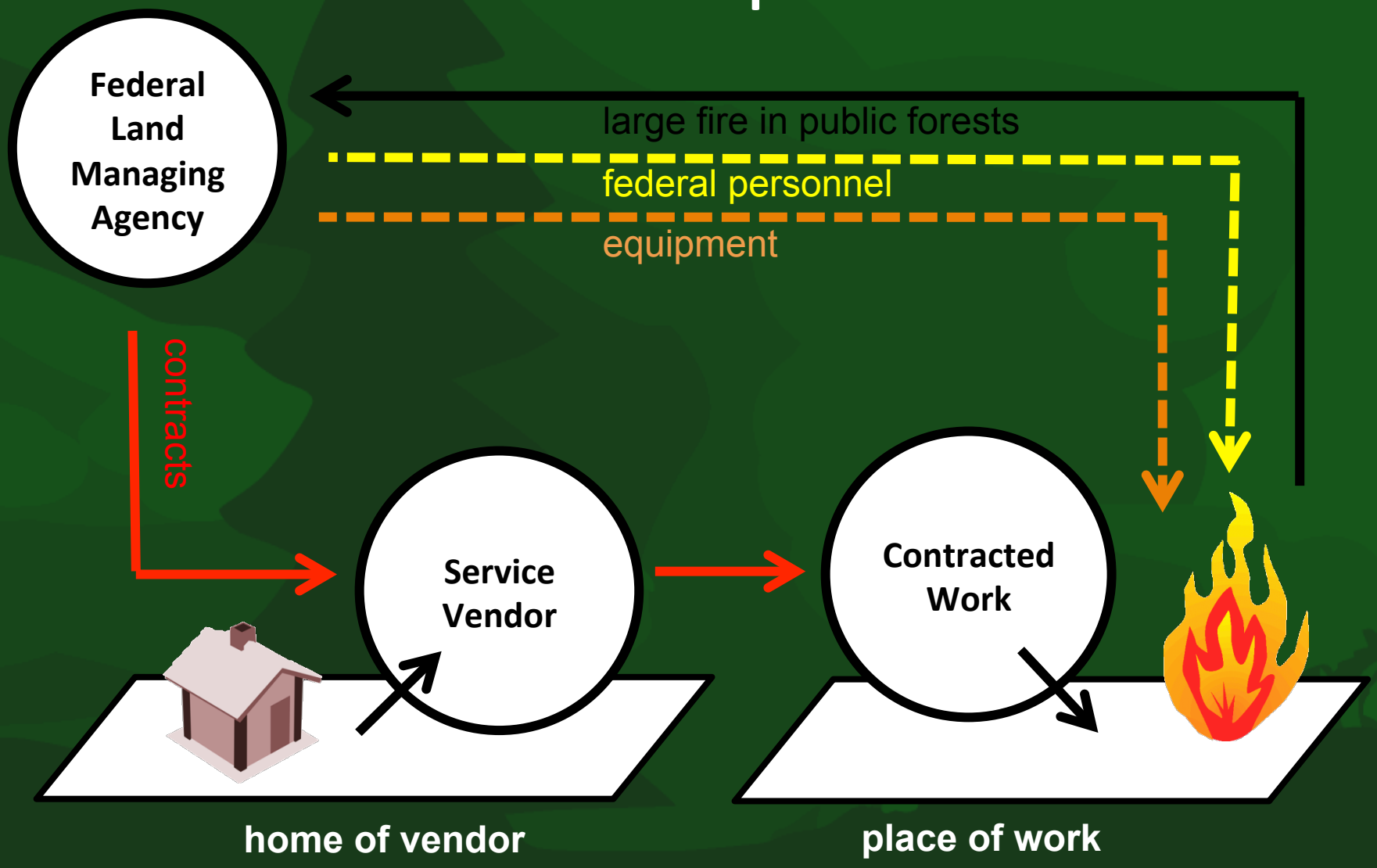
Research Questions

- Are some counties more likely to "capture" wildfire suppression dollars than other counties?

  Idea: Maybe communities with pre-existing federal contracting capacity are more likely to capture fire suppression spending during fires?

- How might we measure a county's capacity to participate in wildfire?
  - Identify federal contracted work are associated with wildfire suppression
  - Measure economic activity within types of work associated with wildfires for all western US.
  - Look for relationship between that economic activity and how money is spent during a fire.

Local capture model



What is business capacity?

Difference between capture and capacity:

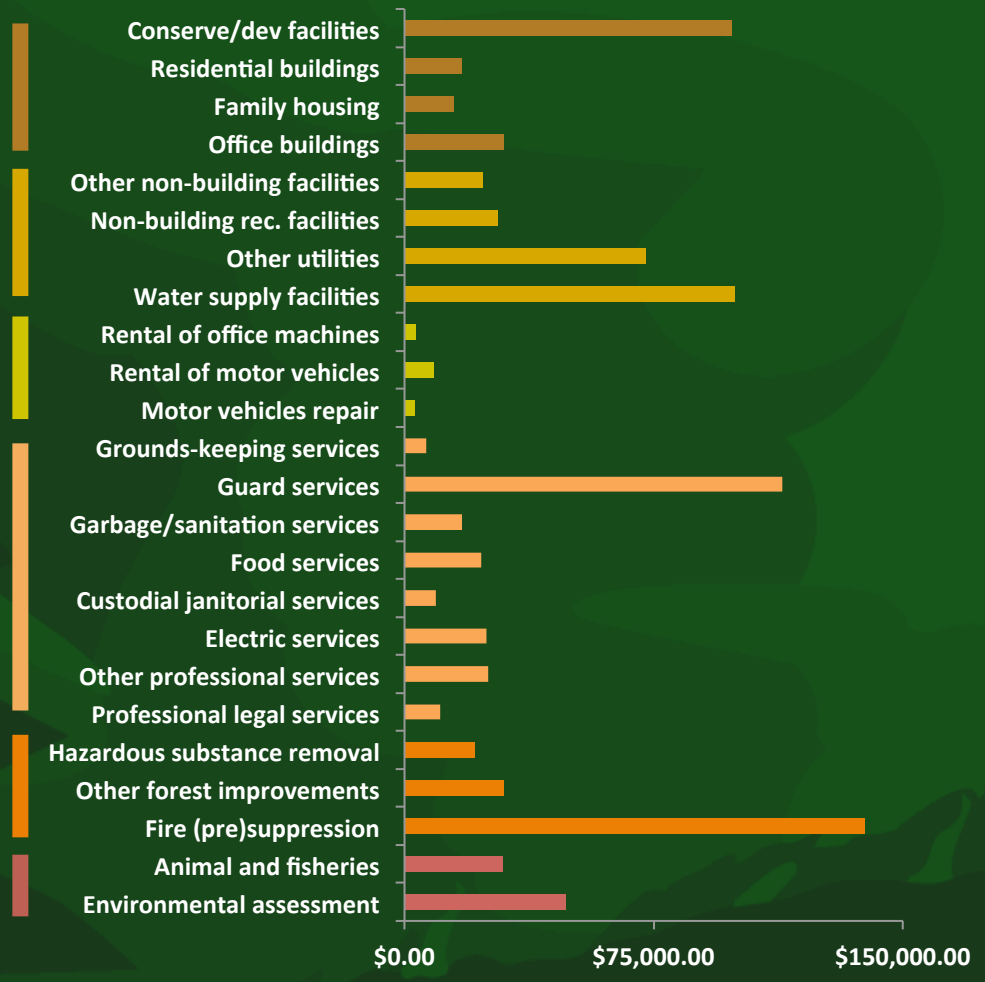
Capture: describes a discrete event

Capacity: a latent ability to capture over time

- EX: Jackson and Josephine counties of Southern Oregon have a greater capacity to assist in large fire suppression then neighboring counties.

RQ: Do counties that have a history of doing work associated with large fires will receive more contract dollars when large fires does occur than counties with less of a history.

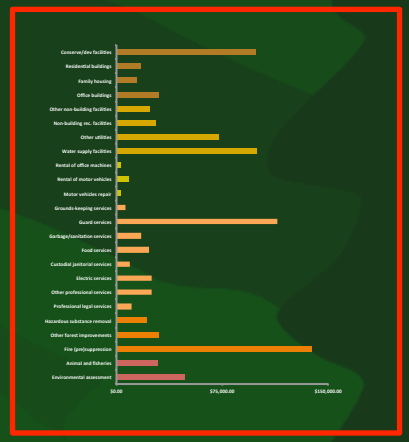
STEP 1: Services tied to wildfires

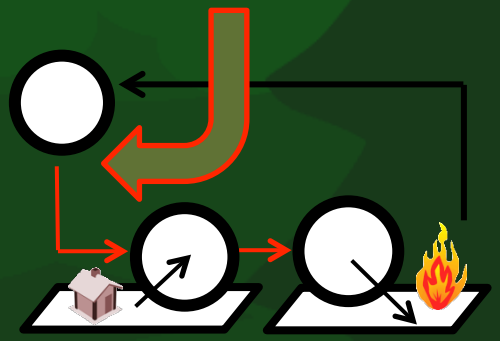


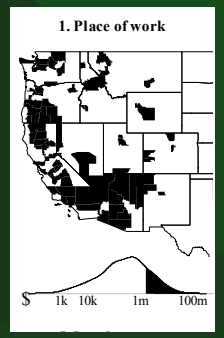
FPDS Data

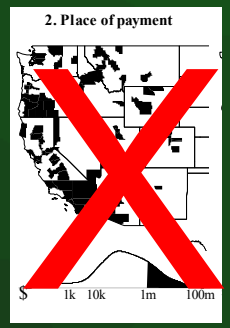
Average increase of $900,000 in contracted work in counties during or following the year of a large fire

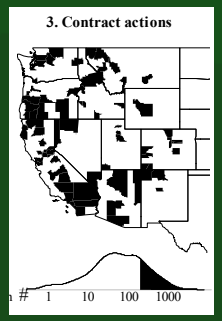
STEP 2: Build/test capacity measures*

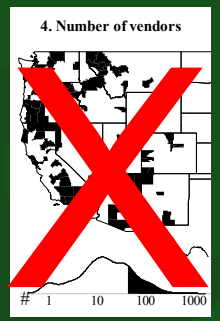


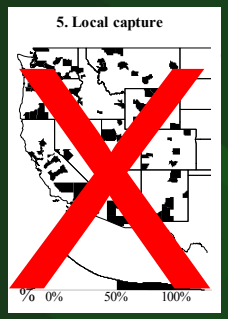


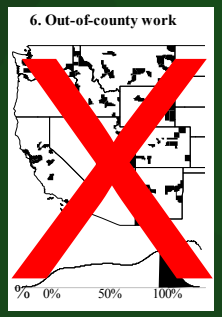


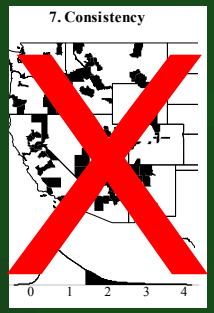


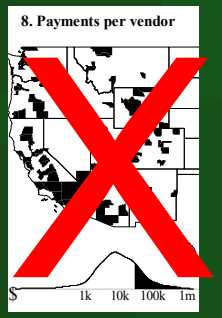






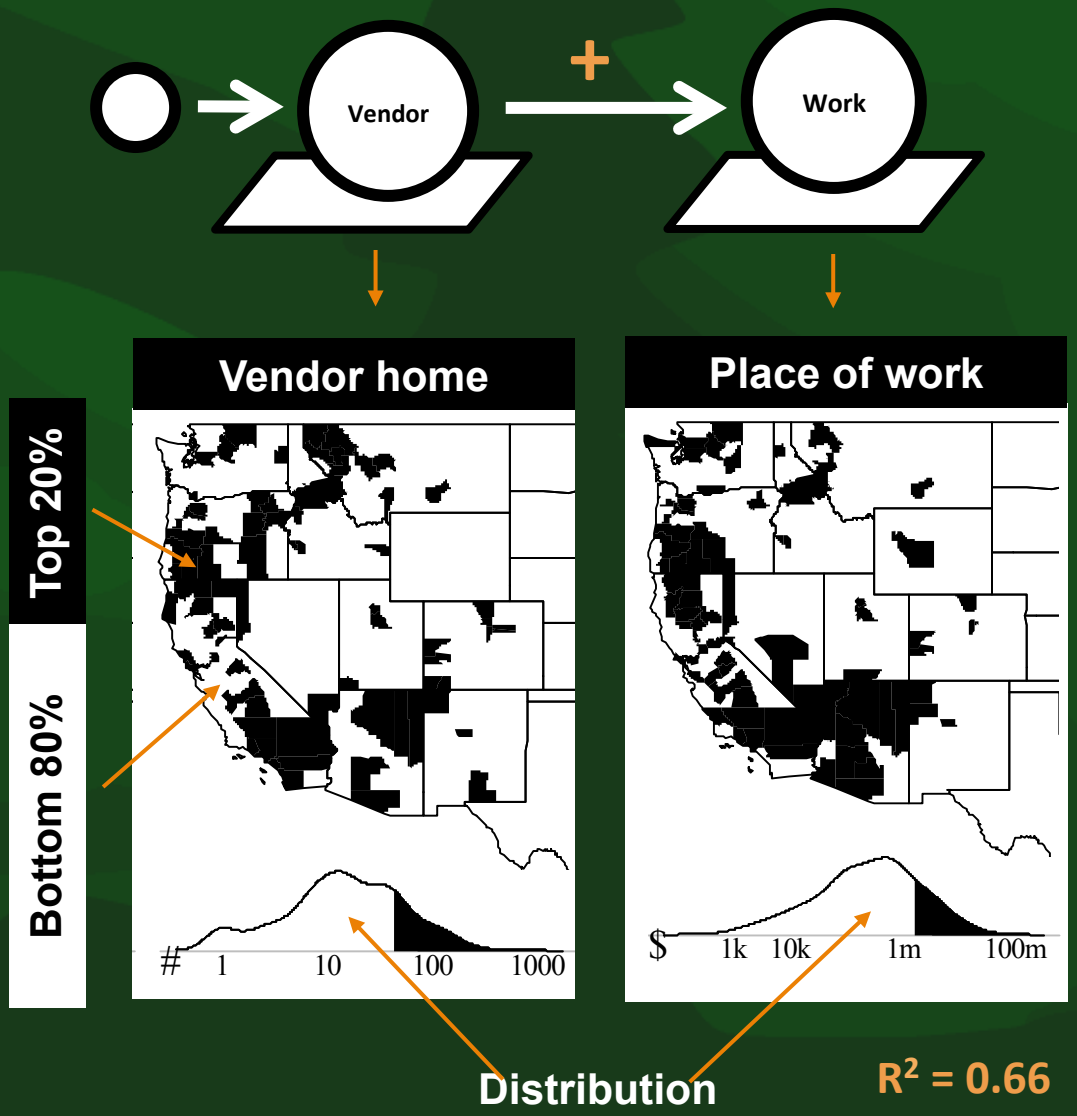






* based on fire-associated contracts and local contract capture model

Best model



Which types of counties had highest capacity measures?

Both measures:

- Expensive fires
- Large populations
- Leveraged housing
- No population loss
- Economies that are:
  - Are service-dependent
  - Aren't farming-dependent
  - Aren't mining-dependent

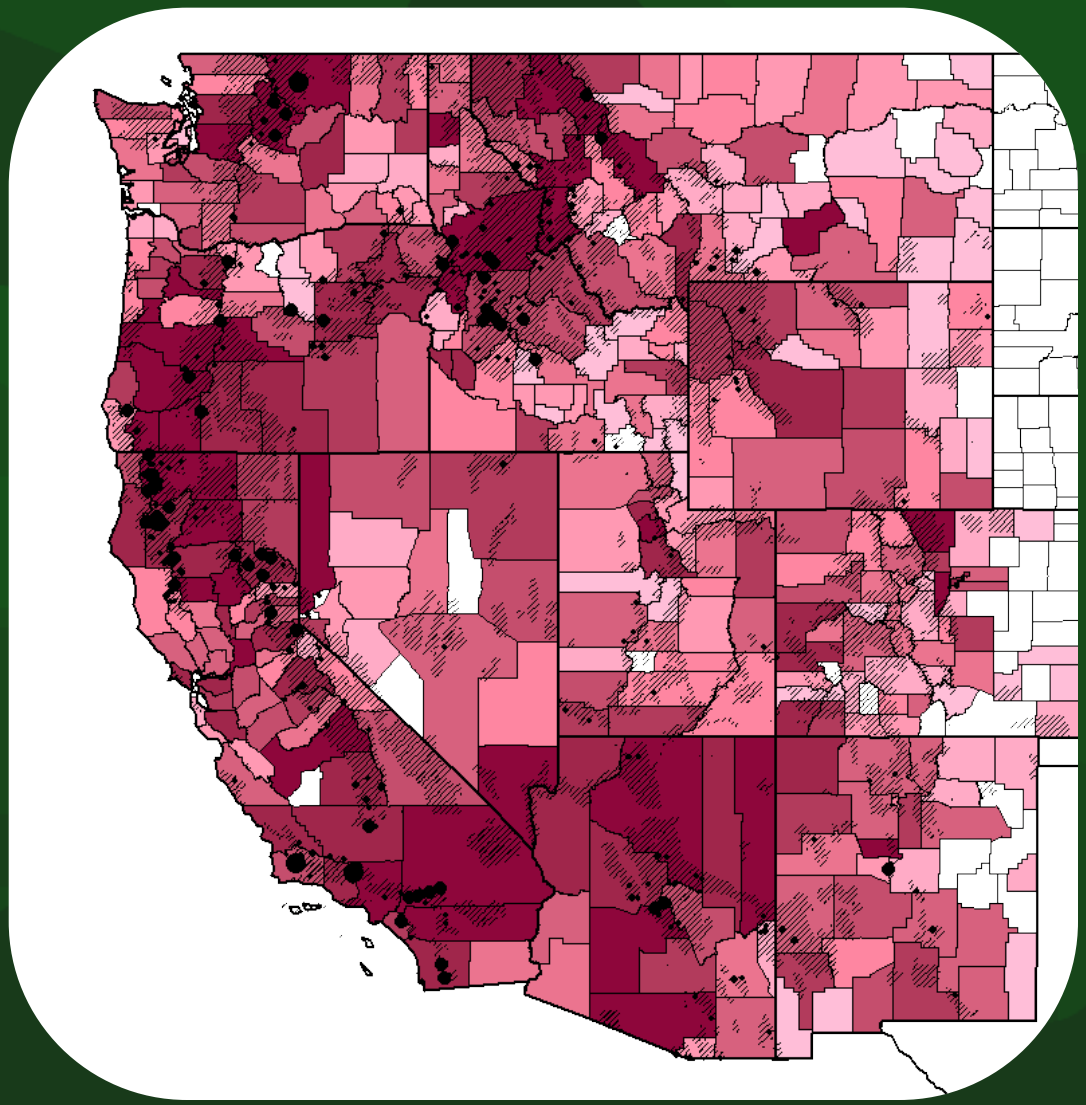
•THE NEW WEST?

Understanding the model

Assume a median fire: $6 million

# vendors from county doing federal contracted work	Annual federal contracted work occurring in county	Local capture of fire expenditures during the fire
35	$1 million	$220,000 (4%)
70	$2 million	$350,000 (6%)
145	$44 million	$1 million (17%)

Where is the capacity?



Many vendors + Lots of federally contracted work

< Higher capacity

< Lower capacity

Few vendors + Little federally contracted work

Understanding the model

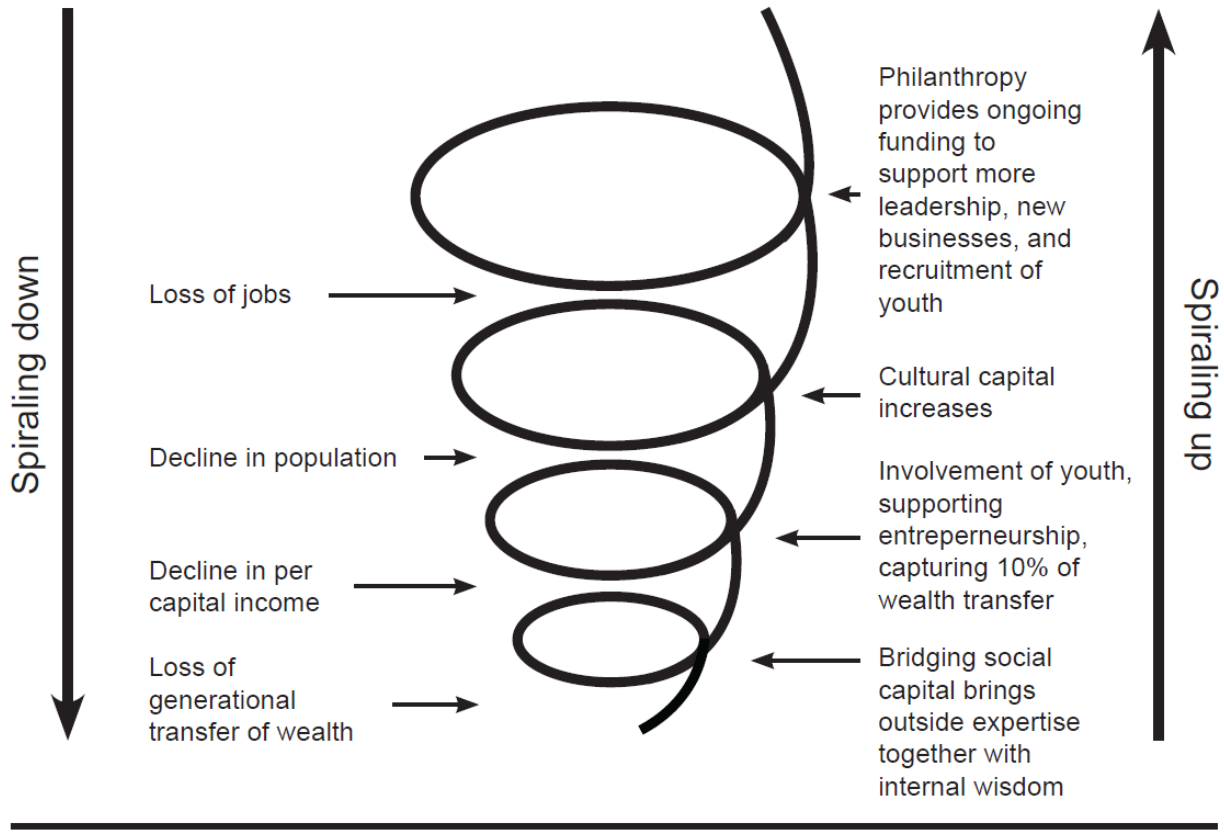
During a $6 million dollar large fire

- Typical county:
  - 35 active vendors doing & $1 million of contracted work annually

  → $220k in local spending (4% of total suppression cost) during wildfire
- Higher capacity county
  - 2x the vendors (70) and 2x work ($2M)

  →reeive $330k (5..5% of suppression cost) during wildfire
- Still higher capacity county
  - 145 vendors receiving $4M/year in contract work would receive
  - $1M locally (400% the first example)

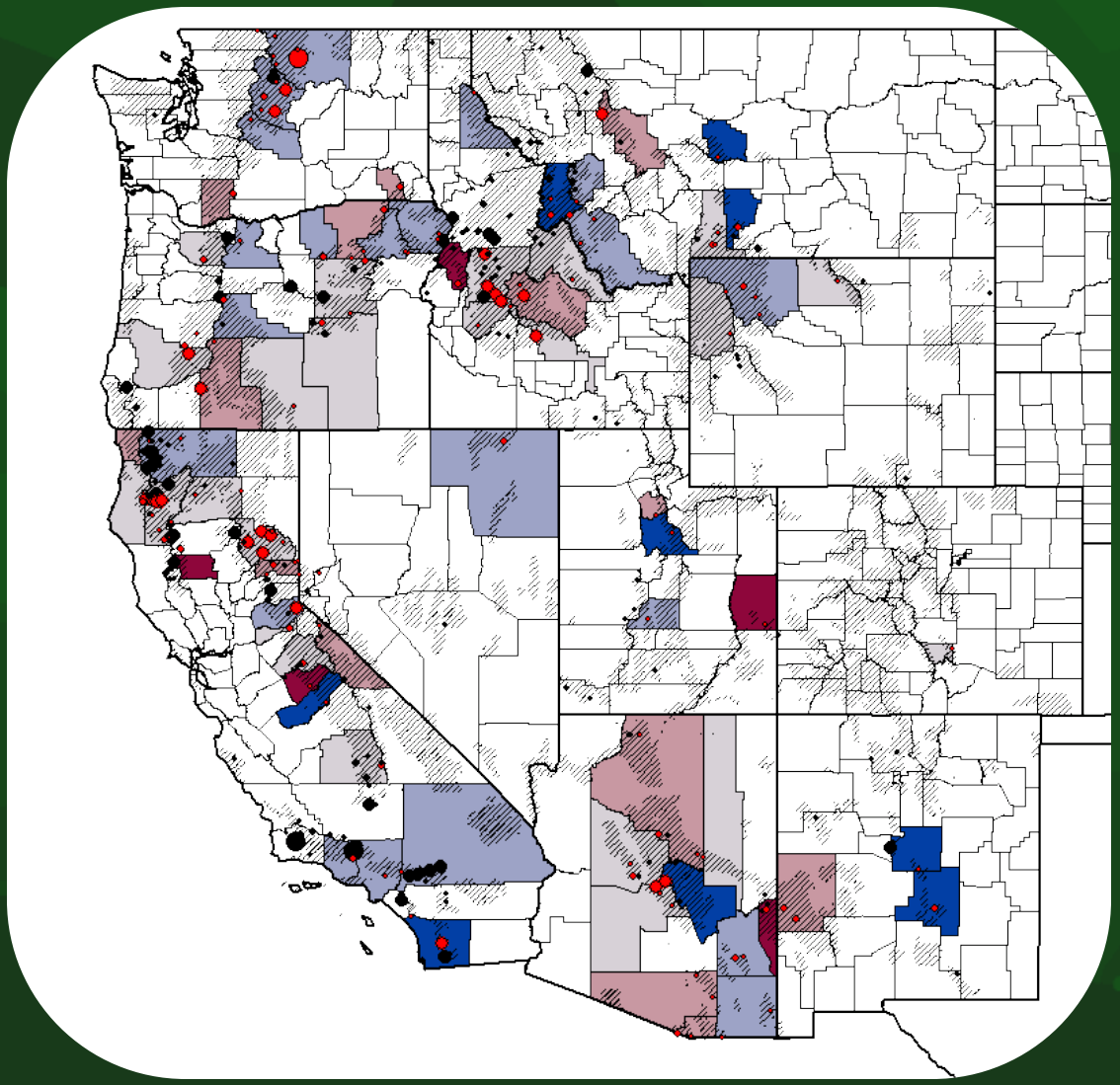
Figure 2. The Spiraling of Capital Assets



"Spiraling-up" represents a process by which assets gained increase the likelihood that other assets will also be gained (Gutierrez, 2005).

Emery and Flora (2006). Spiraling-Up: Mapping Community Transformation with Community Capitals Framework. *Journal of the Community Development Society, Vol. 37, No. 1, Spring 2006*

Mobilization of capacity?



< Spiraling up?
(observed > predicted)

< Stable

< Spiraling down?
(predicted > observed)

Conclusions

- Broad range of services required to support fire suppression
- Local capture increases with:
  - Number of active service vendors
  - Amount of contracted work previously done in the county
  - Increases with cost of fire, but larger fires have lower % capture
- Capacity is concentrated in larger population, "NEW WEST" counties.

Policy Questions/Implications

- If pre-existing capacity influences local capture:
  - What is the right amount of local capacity?
    - To mitigate the economic disruptions of wildfire?
    - To efficiently deploy suppression resources?
  - How does one create/sustain capacity?
    - Role of non-suppression contracting practices?
    - Role of suppression contracting/dispatch practices?
    - Role of direct federal employment?

Thank you

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