

# *A Preview of the 2050 Wildfire Environment & Beyond*



In collaboration with:



#WUI2024



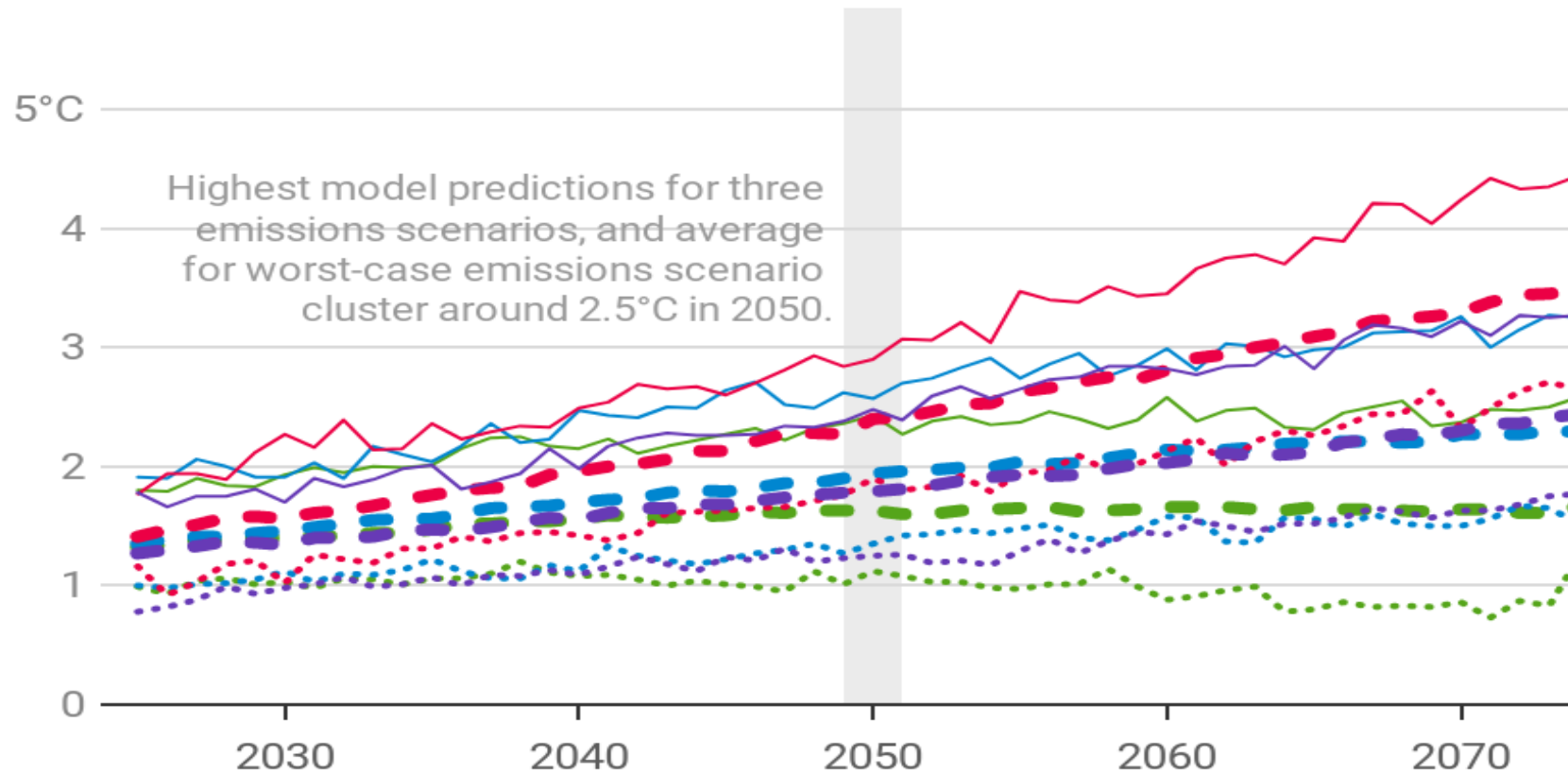
***The  
Past***



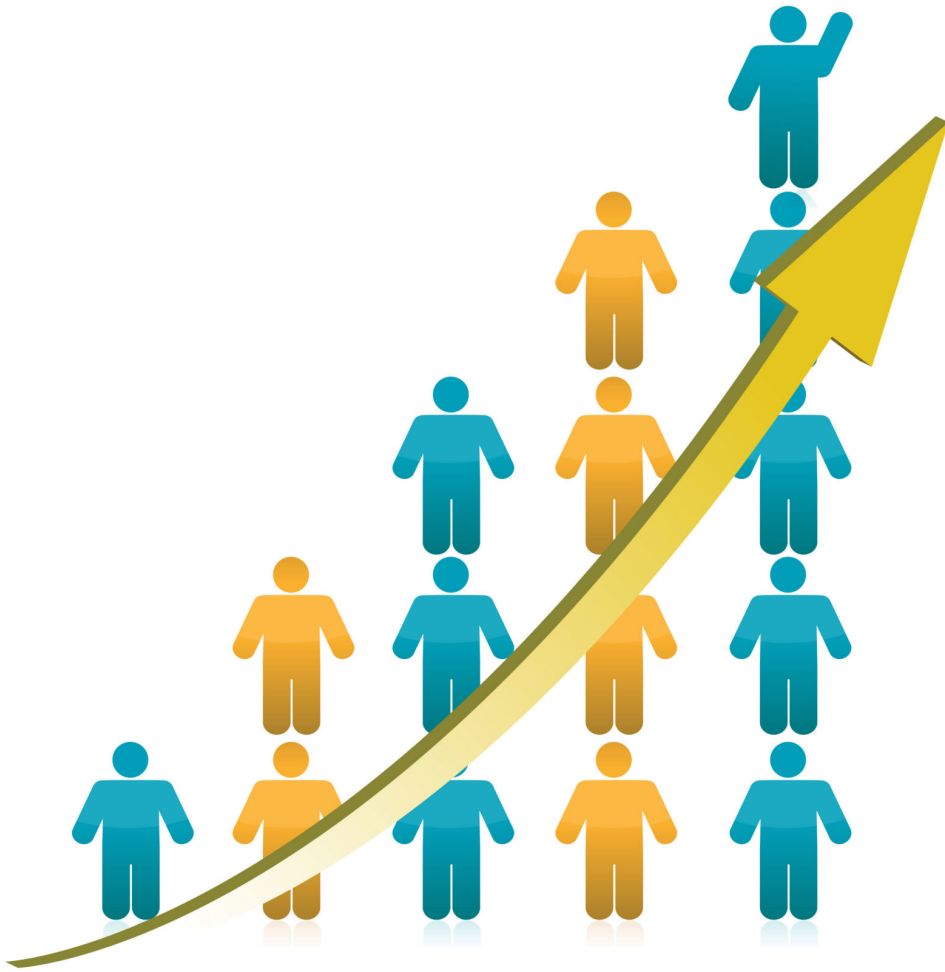
***The  
Future?***

# Predicted Global Temperature Increases

Average global temperature increases above 1850-1900 baseline predicted by climate models for four emissions scenarios.



1 degree C = 32 degrees F



## Population Increase Pressures:

- Housing / Evacuations
- Water
- Food
- Economy
- Infrastructure
- Environment
- Point Protection vs.

Perimeter Control





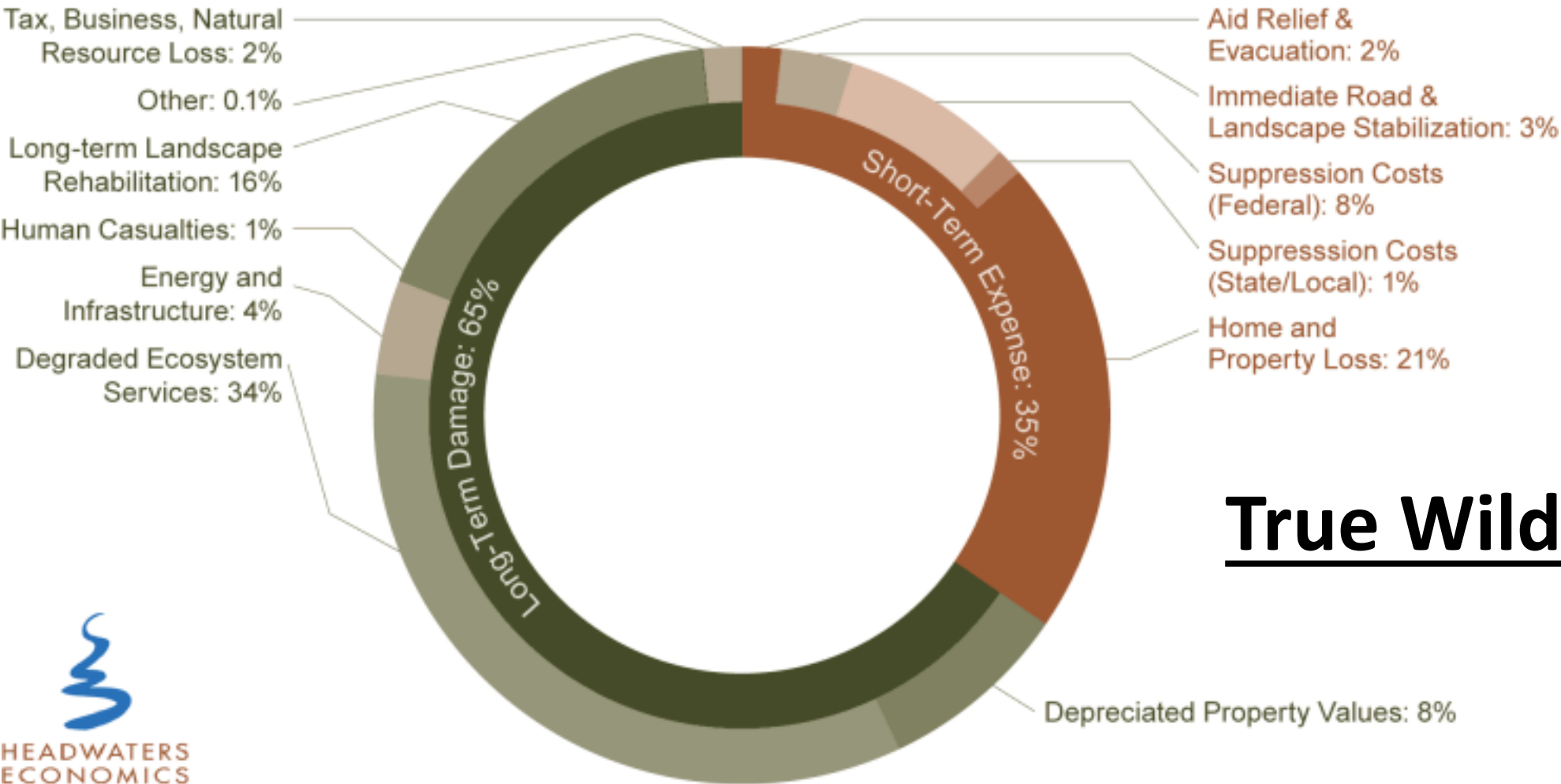
# WILDFIRE CLAIMS & *Insurance*



## Unintended Consequences:

- Underinsured
- Increase rates
- Available coverage
- Mortgage industry
- Rebuild costs

Proportional costs of wildfire impacts, as short-term expenses and long-term damages



True Wildfire Costs



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# Tax Dollar Competing Interests

- Housing / Social Welfare
- Public Health / Education
- Environmental
- Economy & Infrastructure
- National security
- Recovery costs
- Wildfire tax initiatives
- Public Safety
- Loss of Sales & Property Tax revenues



***The  
Past***

***The  
Future?***



# *Wildfire Intent*

*Encourage as much beneficial wildfire as possible to happen.\**

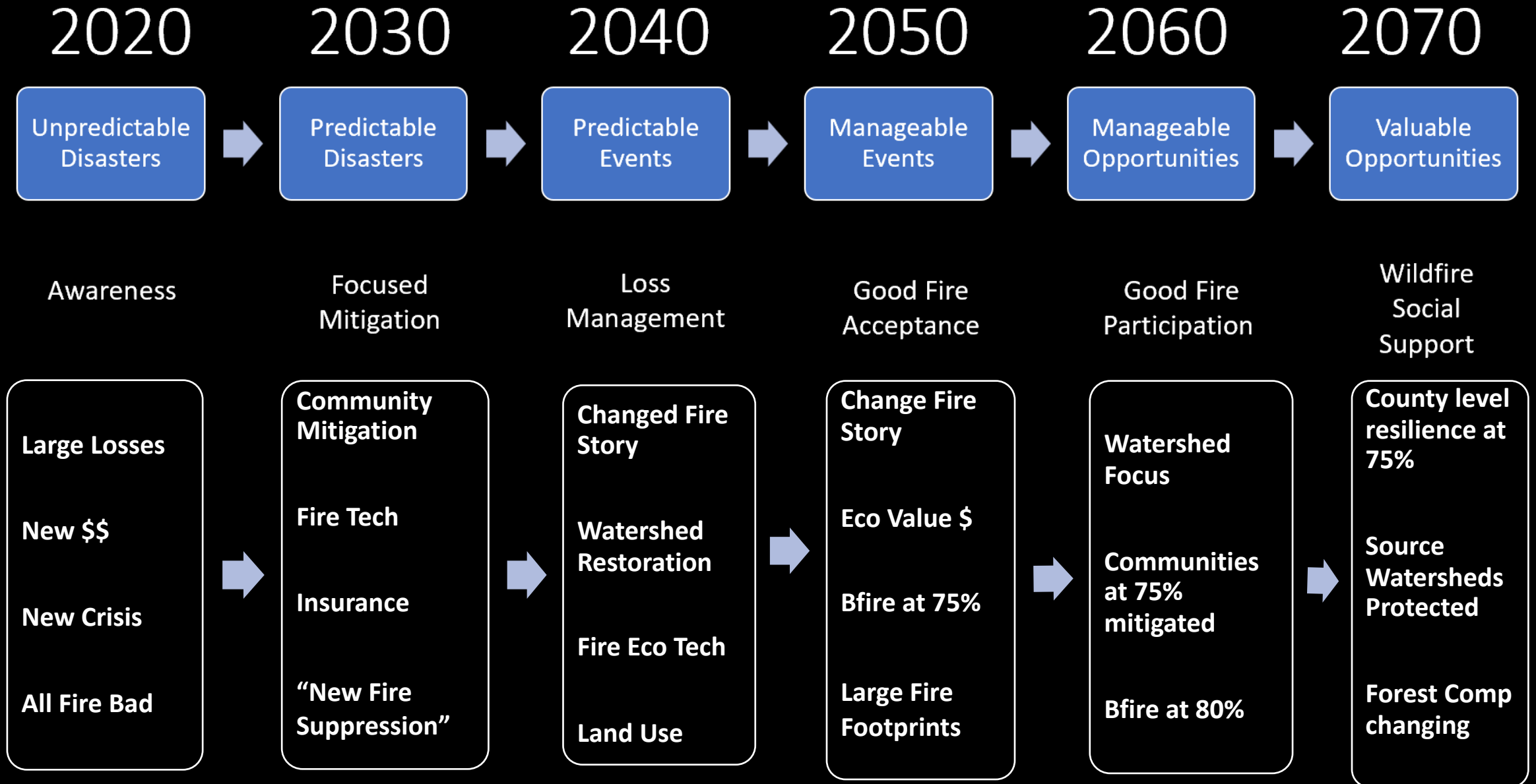
- ✓ Appropriate for place and time
- ✓ Communities thrive
- ✓ Cost is reasonable

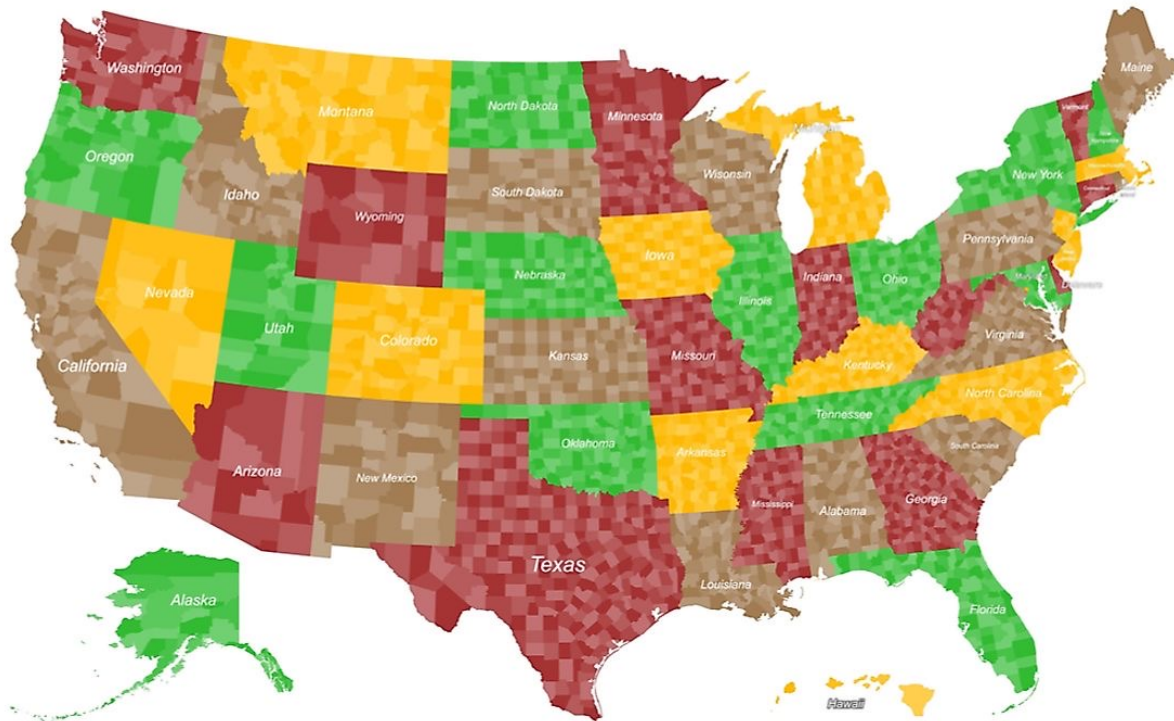
# Bad Fire

# Good Fire



# Create a National Wildfire 50-year Strategy





3,244  
Counties

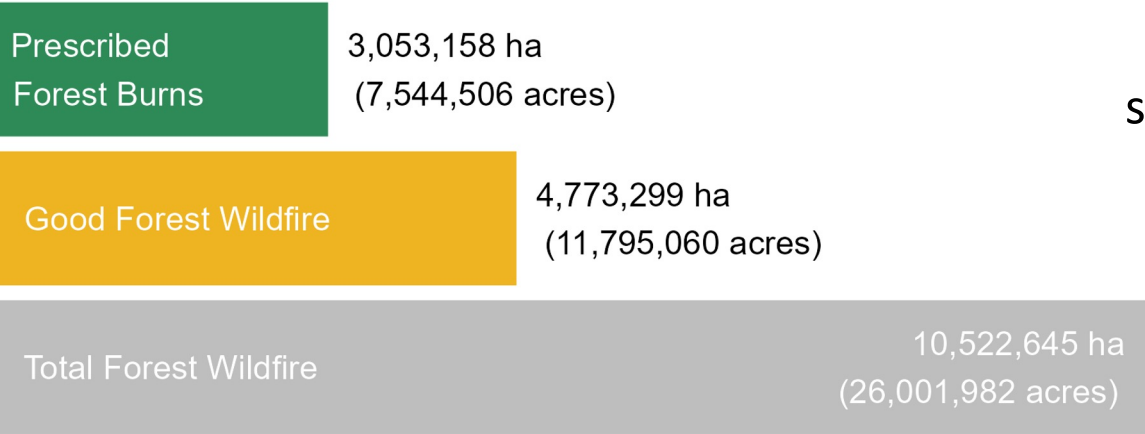


2,200  
Watersheds



# Good fire: Putting a number on beneficial ecosystem work in western forests

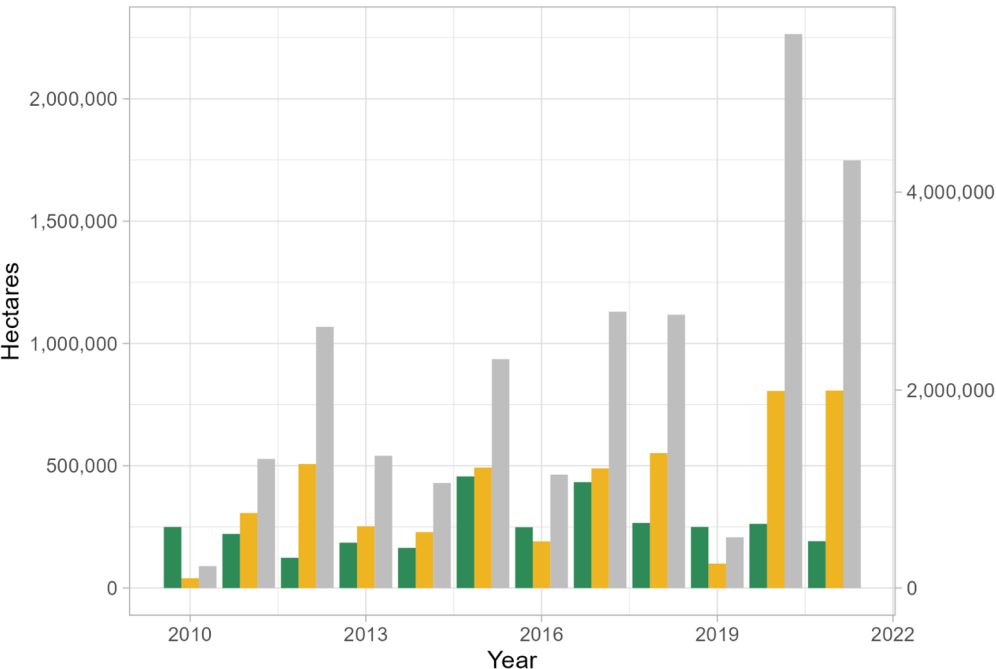
## 2010-2021 Good Fire in Western U.S. Forests



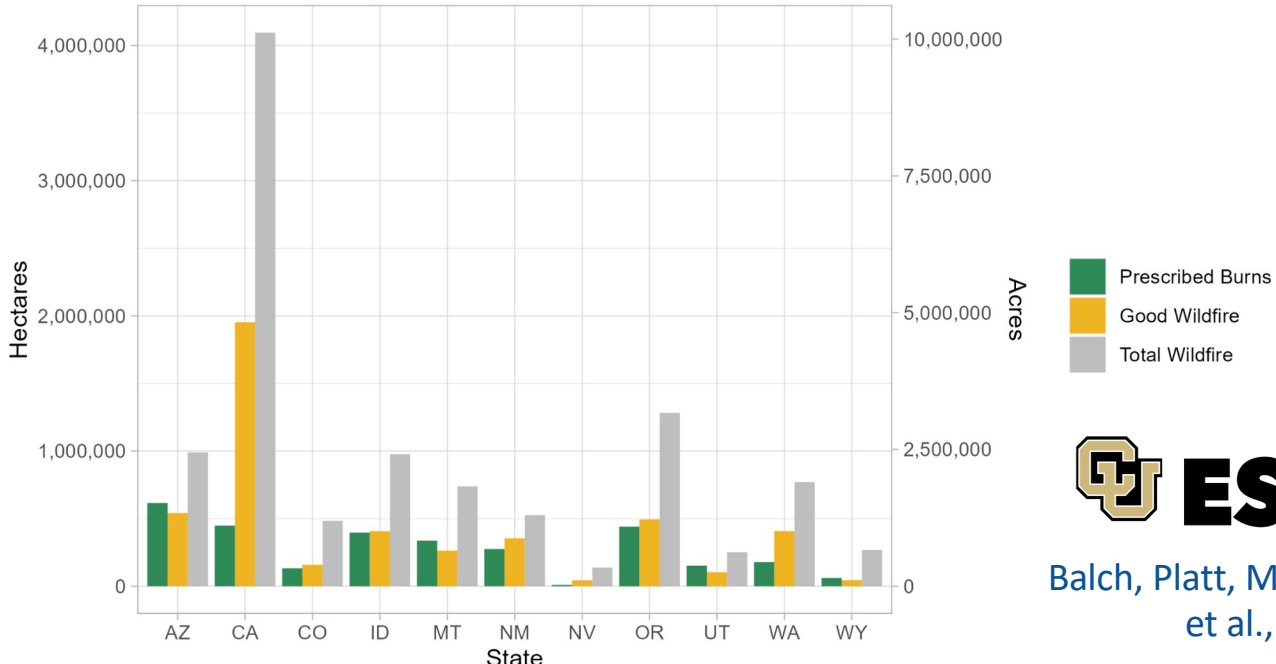
‘Good wildfire’ defined as low/moderate severity fire in western forests with historical low/moderate severity fire regimes.

*Data from 3,441 MTBS wildfire events and 30,462 prescribed burn treatments in western forests*

Good fire in Western U.S. forests over time



Good fire in Western U.S. forests by state



Balch, Platt, McIntosh  
et al., in prep

## Percentages

Good fire in the western U.S. as a percentage of total forest wildfire (2010-2021)

Good forest wildfire  
45%

Good fire in the western U.S. by state, as a percentage of total forest wildfire (2010-2021)

State	Good forest wildfire
AZ	55%
CA	48%
CO	33%
ID	42%
MT	36%
NM	67%
NV	32%
OR	39%
UT	41%
WA	53%
WY	17%

Good fire in the western U.S. by year, as a percentage of total forest wildfire (2010-2021)

Year	Good forest wildfire
2010	45%
2011	58%
2012	48%
2013	47%
2014	53%
2015	53%
2016	41%
2017	43%
2018	49%
2019	48%
2020	36%
2021	46%



Balch, Platt, McIntosh  
et al., in prep

One  
Way to  
look at  
it....

# Integrated Fire Management by using Fire Intensity Management

Beneficial Fire  
is the sum of

Prescribed Fire + Cultural Fire + Emergency Fire (Low-Mod)

Every year, your agency beneficial fire acre tally is your  
**P-Fire + C-Fire + E-Fire(Im) = B-Fire**



# Let's change how we use fire intensity for fire control and management

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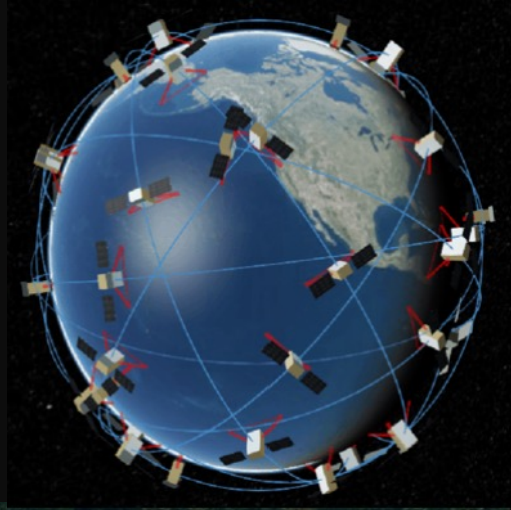
All fire is managed fire – immediate suppression, beneficial, pfire, extended suppression, monitored suppression.

Every ignition receives the same analysis, same planning, same resource access rights.

Every acre of fire is **calculated for its beneficial value** in real time and shared to all.

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## Recalibrate Fire Suppression



**FIRESAT CONSTELLATION**  
*A non-profit satellite system providing low-latency, high-resolution, broad coverage data to better inform wildfire fighting strategies, and better understand the impact wildfires have on carbon and climate.*

# A WILDFIRE-FIRST SPACE MISSION

**FireSat** is a satellite constellation that will provide the most **consistent**, **accurate**, and **comprehensive** view of fire activity - transforming detection, monitoring, and forecasting across the globe with near real time data from wildland fires, available directly to those who need it

**50+**

Satellites in full constellation

**20min**

Average revisit for any site on Earth

**99%**

Coverage of Earth's wildfires

**< 5%**

False positive detection

**1 Acre**

Average resolution of fire monitoring (80 m)

**0 hassle**

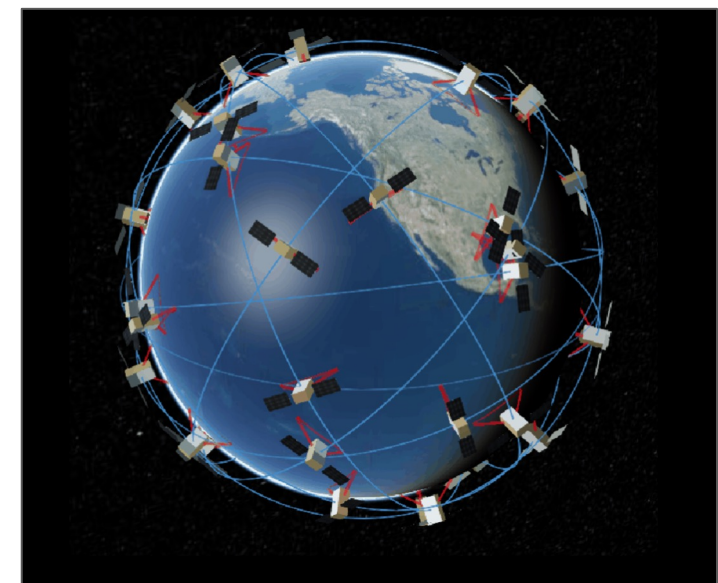
Integrates into existing systems

**5 channels**

Full coverage multi-spectral measurements

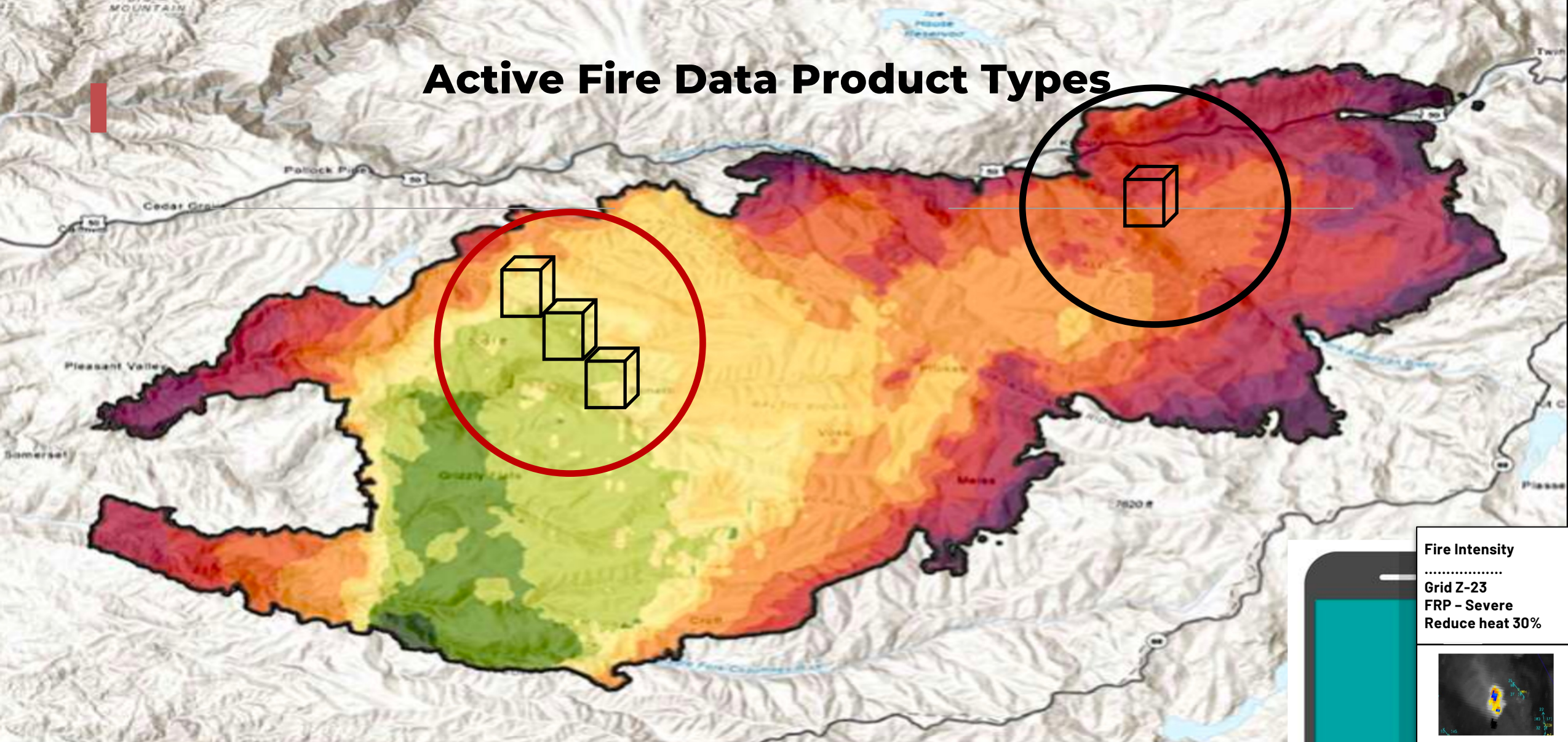
**3 years**

Timeline for full operability



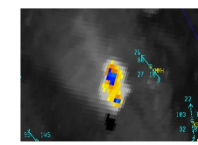


# Active Fire Data Product Types



## Fire Intensity

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Grid Z-23  
FRP - Severe  
Reduce heat 30%



In collaboration with:





# Changing our tools and tactics





**Our national  
wildfire goal is to  
have as much  
beneficial fire as  
needed with no  
severe  
consequences.**





Good fire?

Land use?

# What are the Options?

Modern codes?

More suppression?

More money?

No building in WUI?

Better intel?

Logging?

Mandatory retrofits?

Fire intensity?

Rx Burns?

UAS technology?

Watershed restoration?

Insurance partnerships?

Managed fire?