

# WILDFIRE RISK & FINANCING IN MONTANA

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RISKS AND COSTS TO THE STATE AND ITS PARTNERS





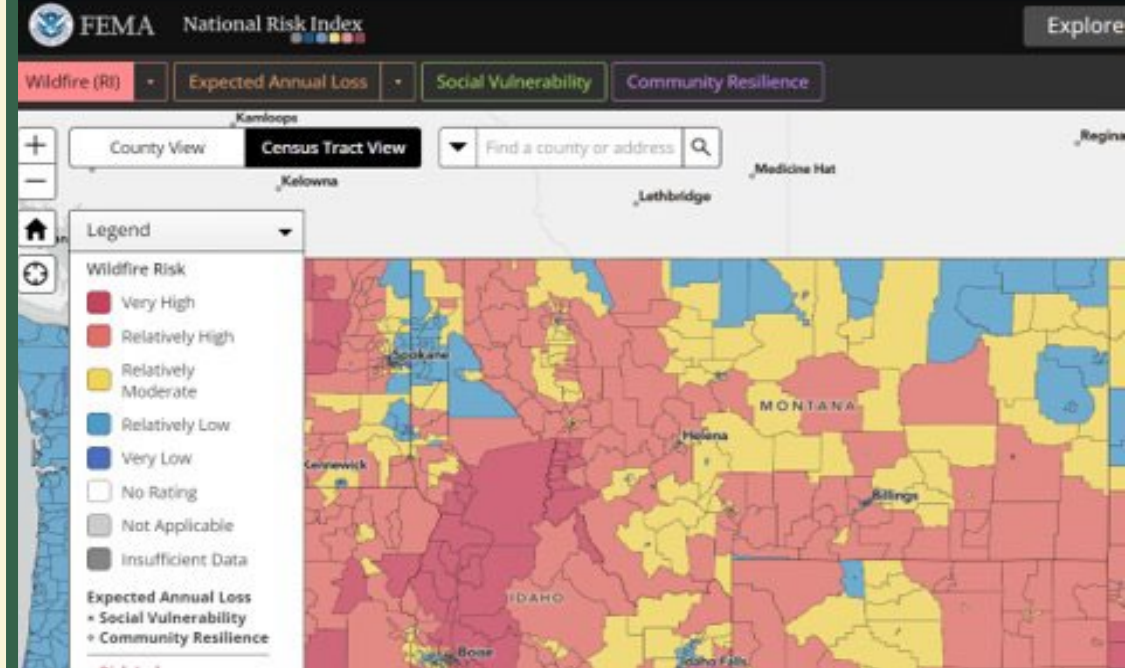
# KEY POINTS

1. History of Wildfires in Montana
  - 70% of acres burned in Montana history since 2000
2. State and Federal Suppression Costs
  - \$2.3 billion on fire suppression in the last 20 years, 75% federal, 25% state
3. State and Federal Mitigation Projects
  - The Forest Service has spent \$80 million on mitigation in the last 10 years
  - HB 883 materially increased DNRC mitigation
4. Wildland Urban Interface (WUI)
  - Acreage doubled in last 30 years while percent of homes within has remained steady
5. Residential Properties by Year Built and Wildfire Hazard Potential
  - Areas where fire may be difficult to control. The majority of homes are in low hazard areas, but in the high hazard areas the homes are on average higher value

# WHY STUDY WILDFIRE RISK?

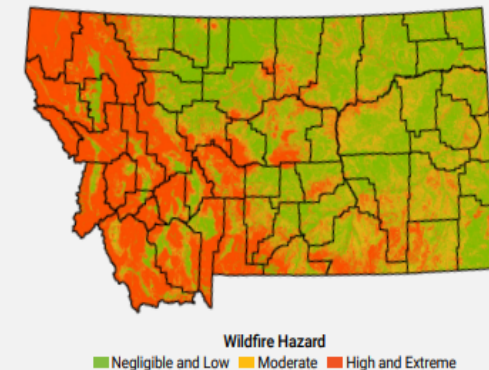
- Wildfire costs continue to be a large and unpredictable financial obligation
- Ranked as high risk in many national tools
- Identify threats to the state's finances related to wildfires
- Track costs over time as policy and technology changes
- A statewide perspective for lawmakers

## Montana's threat of catastrophic property destruction by wildfires ranks No. 2 in the nation



### Wildfire Risk at a Glance

Percentage of structures at low to moderate risk <sup>1</sup>	39%
Percentage of structures at high to extreme risk <sup>1</sup>	12%
Number of wildfires (2022) <sup>2</sup>	2,100
Acres burned (2022) <sup>2</sup>	137,500
Largest historical wildfire <sup>2</sup>	Valley Complex (2000) 292,100 acres burned



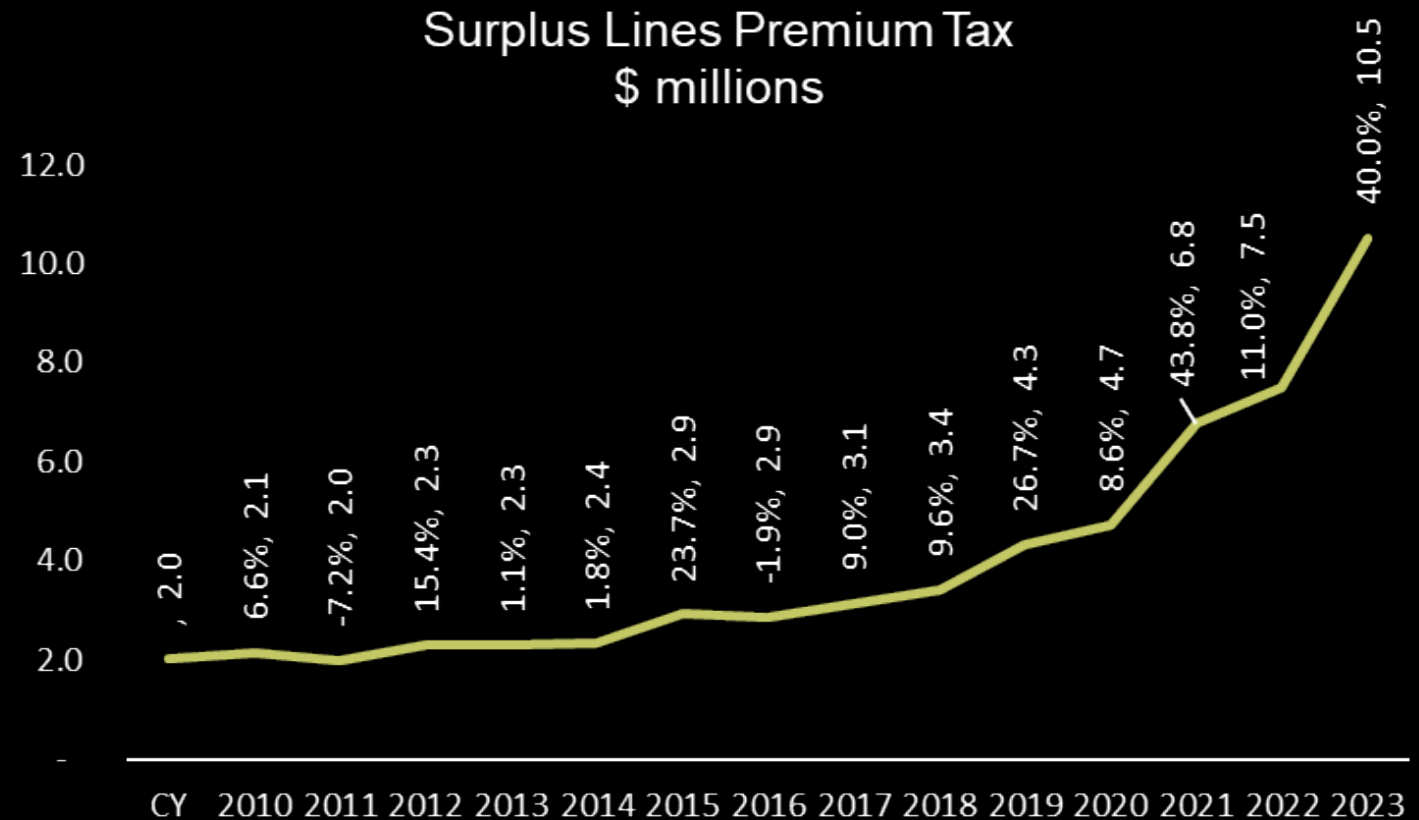
# INSURANCE RISK

- Surplus lines insurance is a policy type available when consumers can't get regular insurance because of high risk. Not subject to same rate and policy review
- Revenue on 2.75% of the net premiums sold has tripled since 2018
- Avg Montana regular homeowner policy around \$1508 in 2023, an increase of 46% relative to 2018
  - Source: National Association of Insurance Commissioners (NAIC)

Uninsurable?

# Uninsurable? Wildfire costs crimp homeowner insurance market

Rob Chaney Jun 10, 2024 0







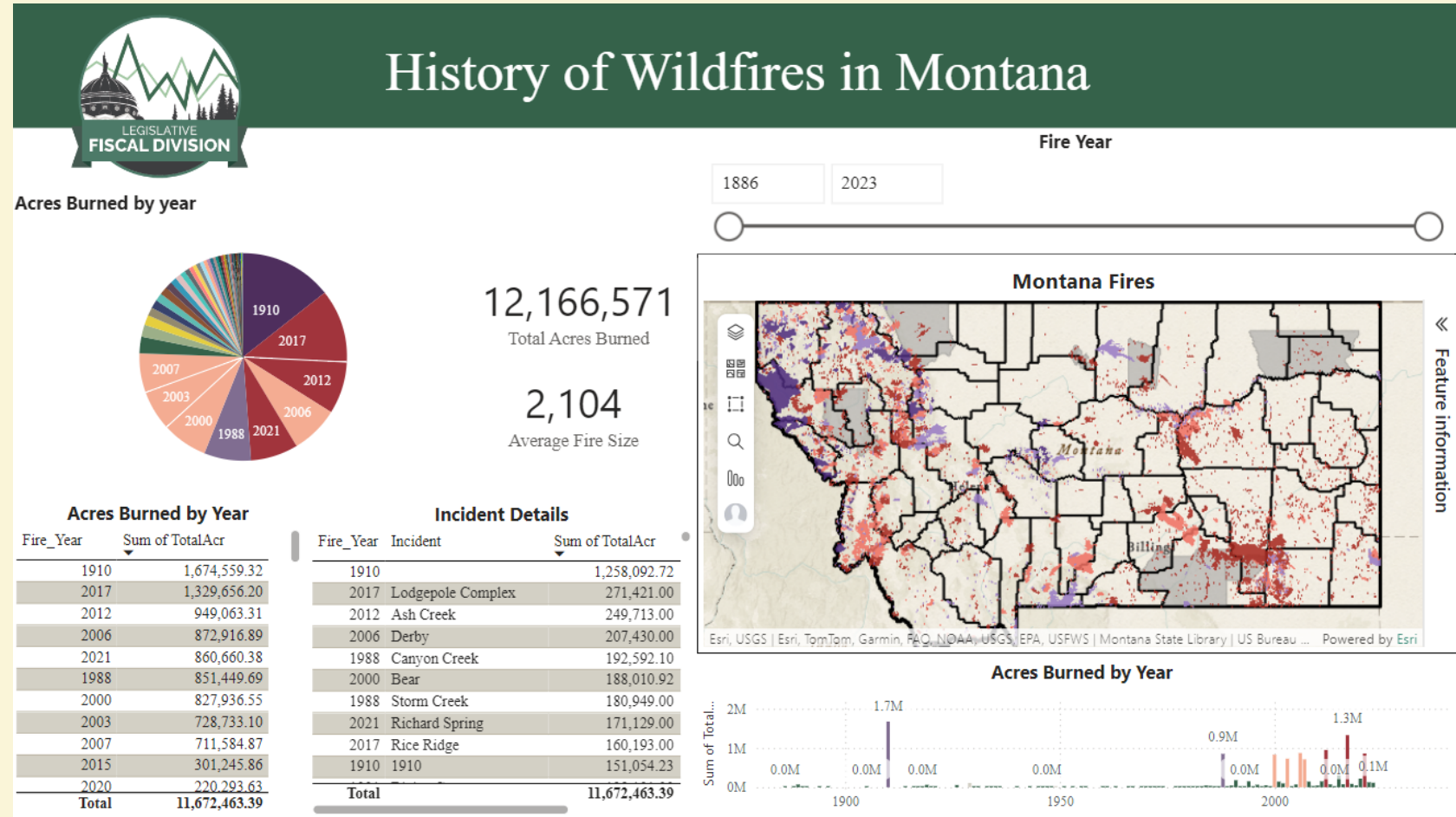
# HISTORY OF WILDFIRES IN MONTANA



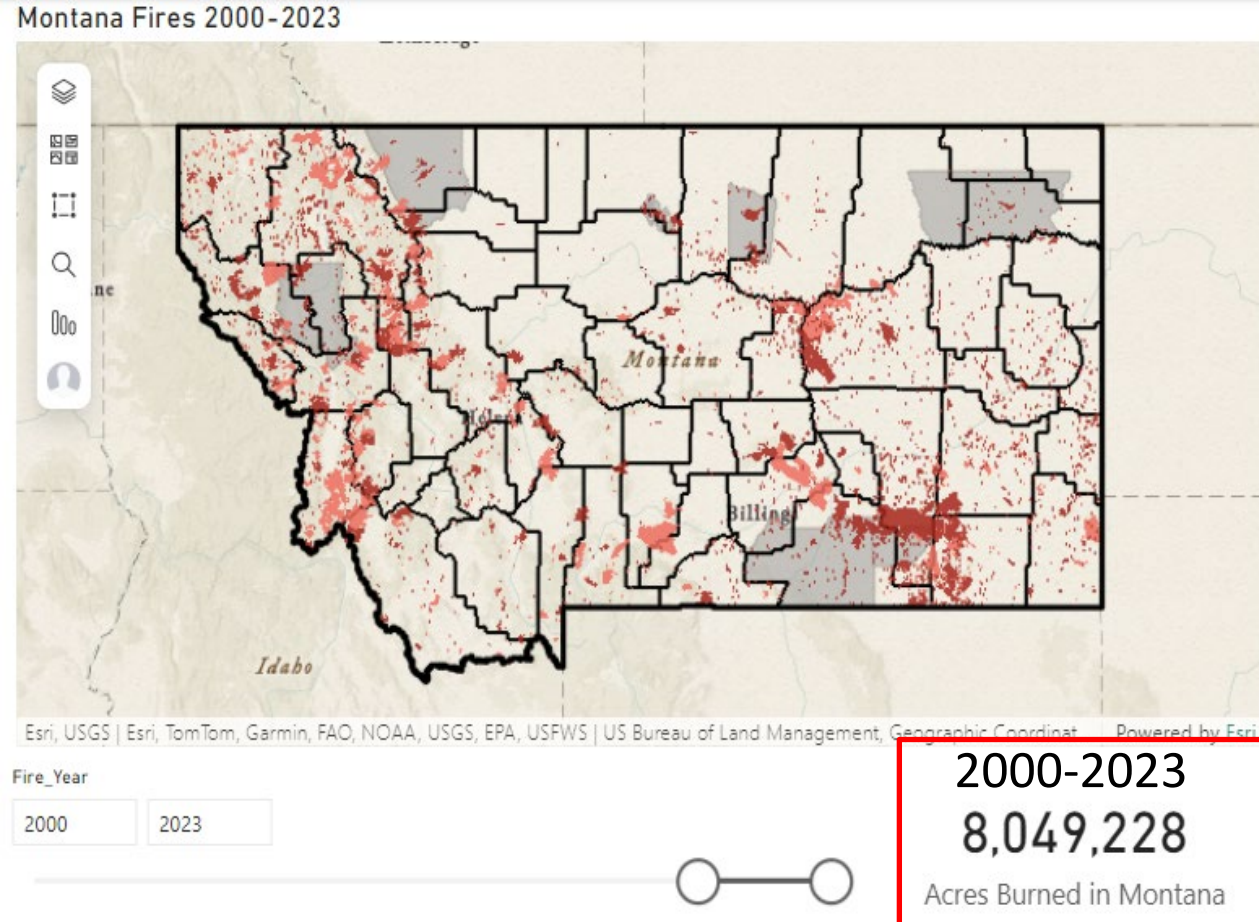
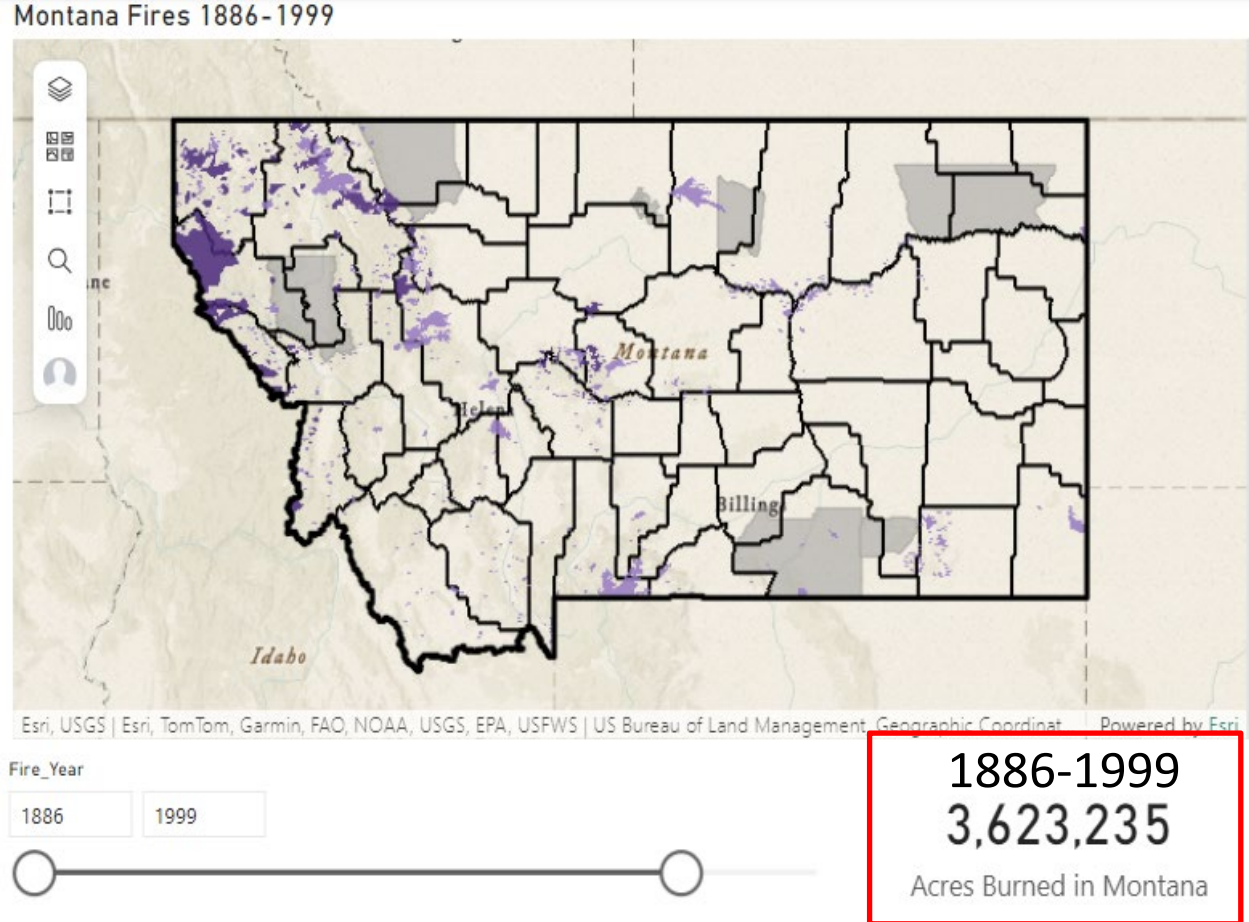


# MODEL PAGE: HISTORY OF WILDFIRES IN MONTANA

- Historic Fire Perimeters
- Of the last 238 years of recorded fire the top ten fire years account for more than  $\frac{3}{4}$  of acres burned.
- Biggest year 1910, followed by 2017
- Average fire size has decreased likely due in part by increased reporting of smaller fires



Of the 11.7 million recorded acres burned in the last 138 years 70% have burned since 2000.  
Roughly half of the acres burned prior to 2000 were in 1910.





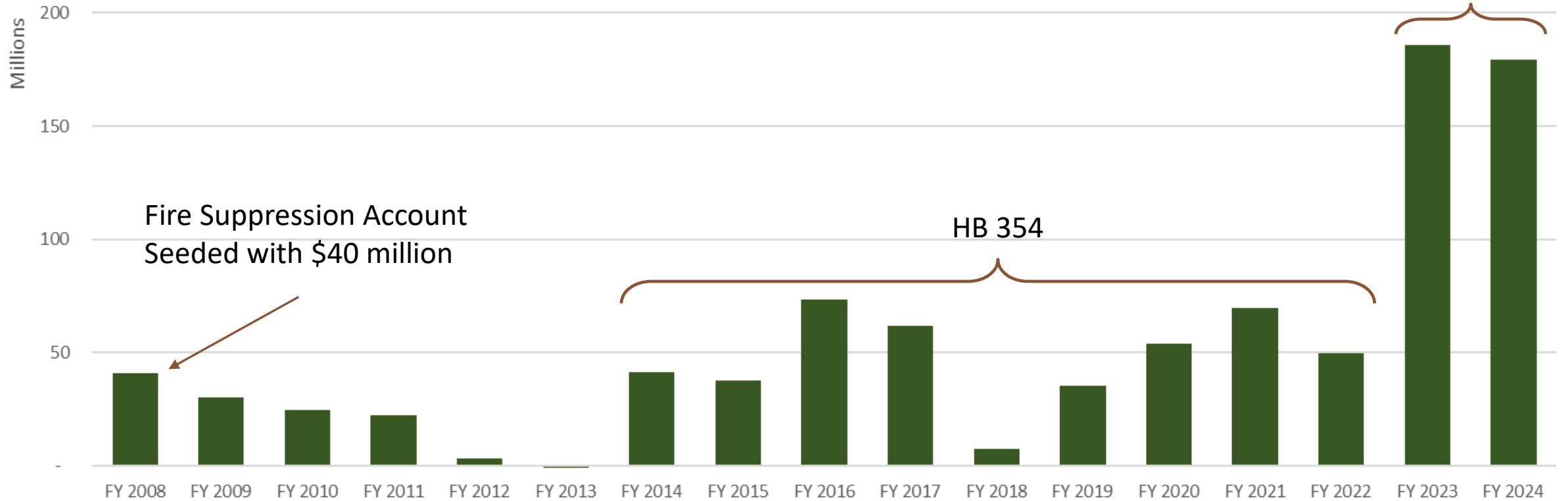


# STATE & FEDERAL SUPPRESSION COSTS

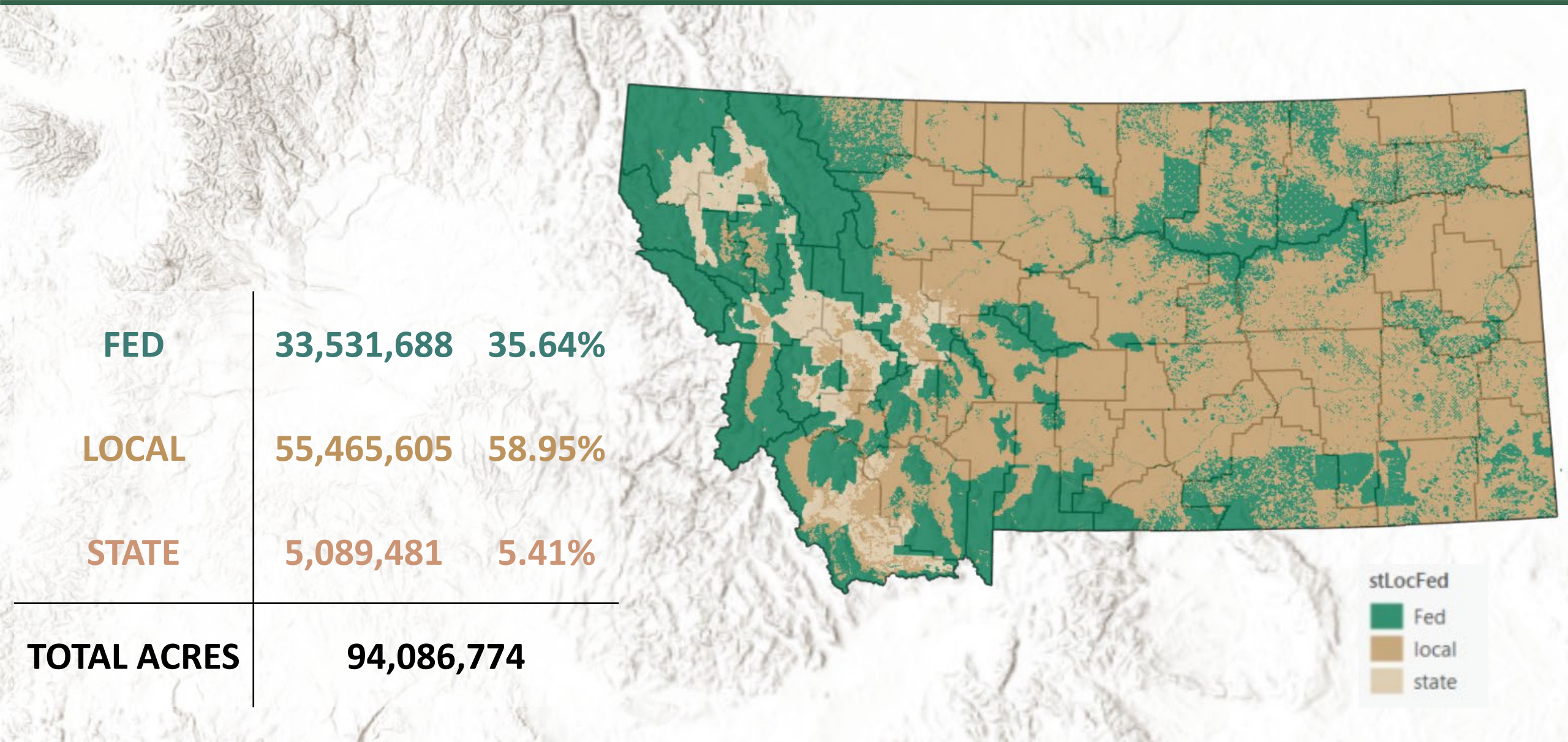


# MONTANA WILDFIRE STATE SPECIAL REVENUE FIRE SUPPRESSION ACCOUNT (Volatility Tool)

State Fire Suppression Fund Ending Balance



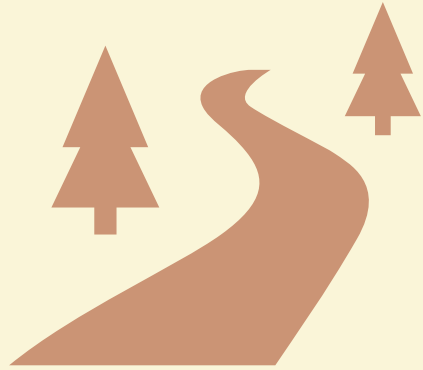
# RESPONSIBILITY FOR FIRE SUPPRESSION





# WILDFIRE SUPPRESSION RESPONSIBILITY DIAGRAM

*WHO PAYS? WHO FIGHTS?*



**PRIVATE LAND**  
*(59.0%)*



**STATE LAND**  
*(5.4%)*



**FEDERAL LAND**  
*(35.6%)*

Local Firefighters Protect Structures

If fire not controlled, DNRC assists to protect land

Local efforts not reimbursed

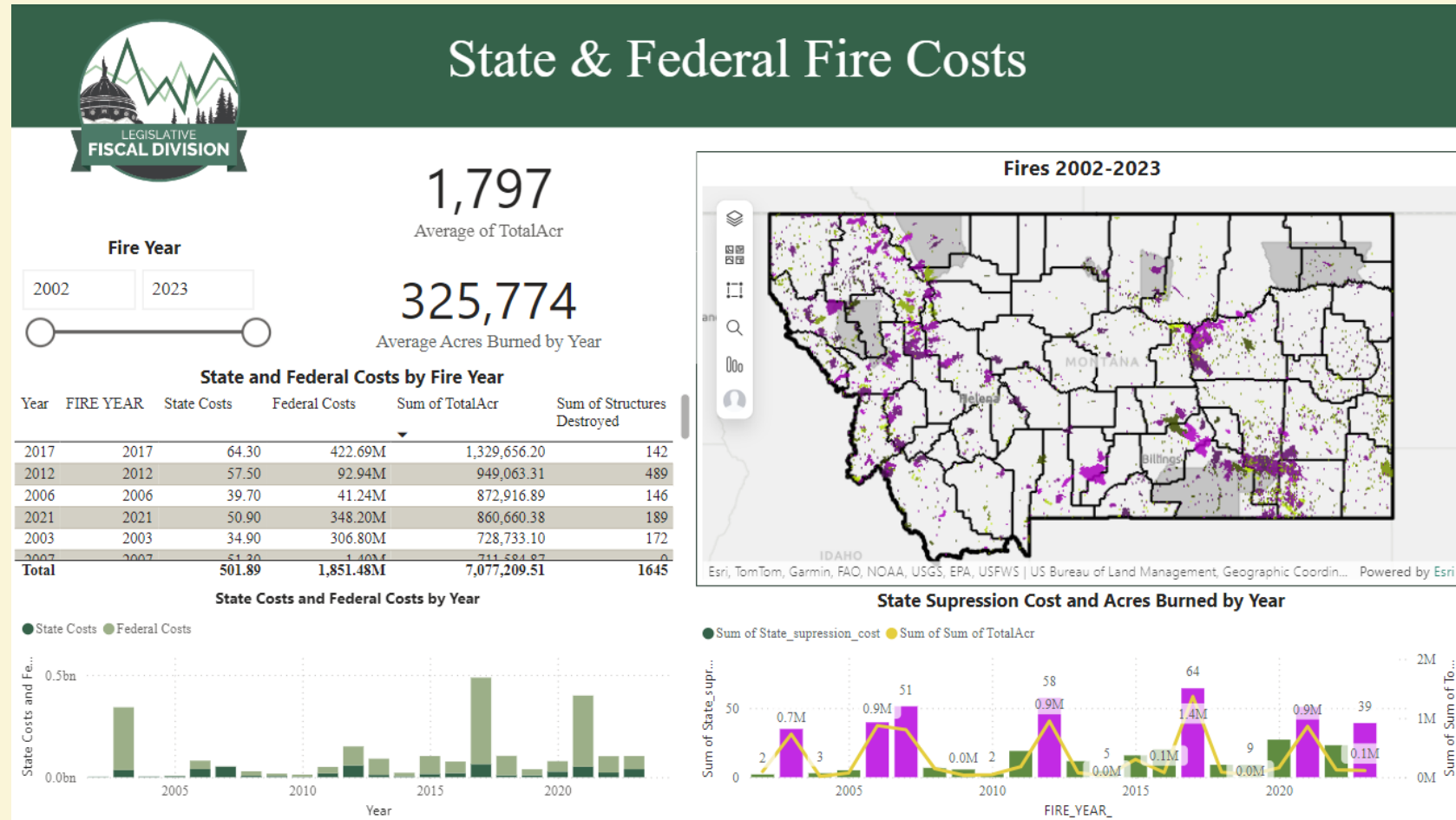
DNRC Protects Land

Federal Responsibility

If DNRC assists, they will be reimbursed

# MODEL PAGE: SUPPRESSION COST AND ACRES BURNED

- Historic Fire Perimeters paired with state and federal cost data
  - Montana has spent \$500 million on wildland fire suppression between 2002-2023
  - Most Expensive year: 2017 \$64.3 million
  - Average year \$30.0 million
  - More small fires, likely due to better reporting





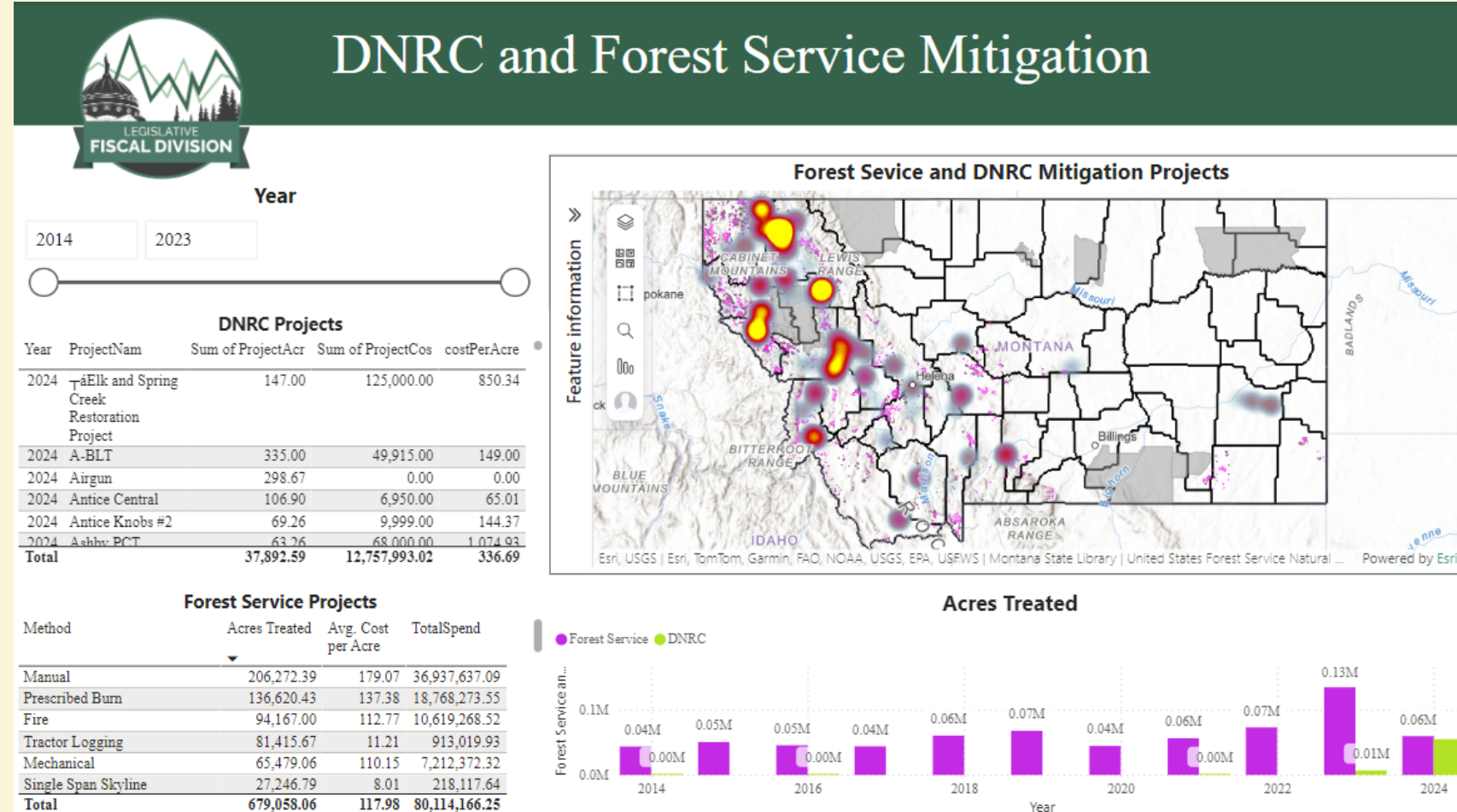


# STATE AND FEDERAL MITIGATION PROJECTS



# MODEL PAGE: STATE AND FEDERAL MITIGATION PROJECTS

- 10 years of Forest Service mitigation projects
  - \$80 million and 680,000 acres treated
- Recent DNRC projects
- Finding: HB 883 materially increased the state mitigation effort and in 2024 brought up to par with the Forest Service







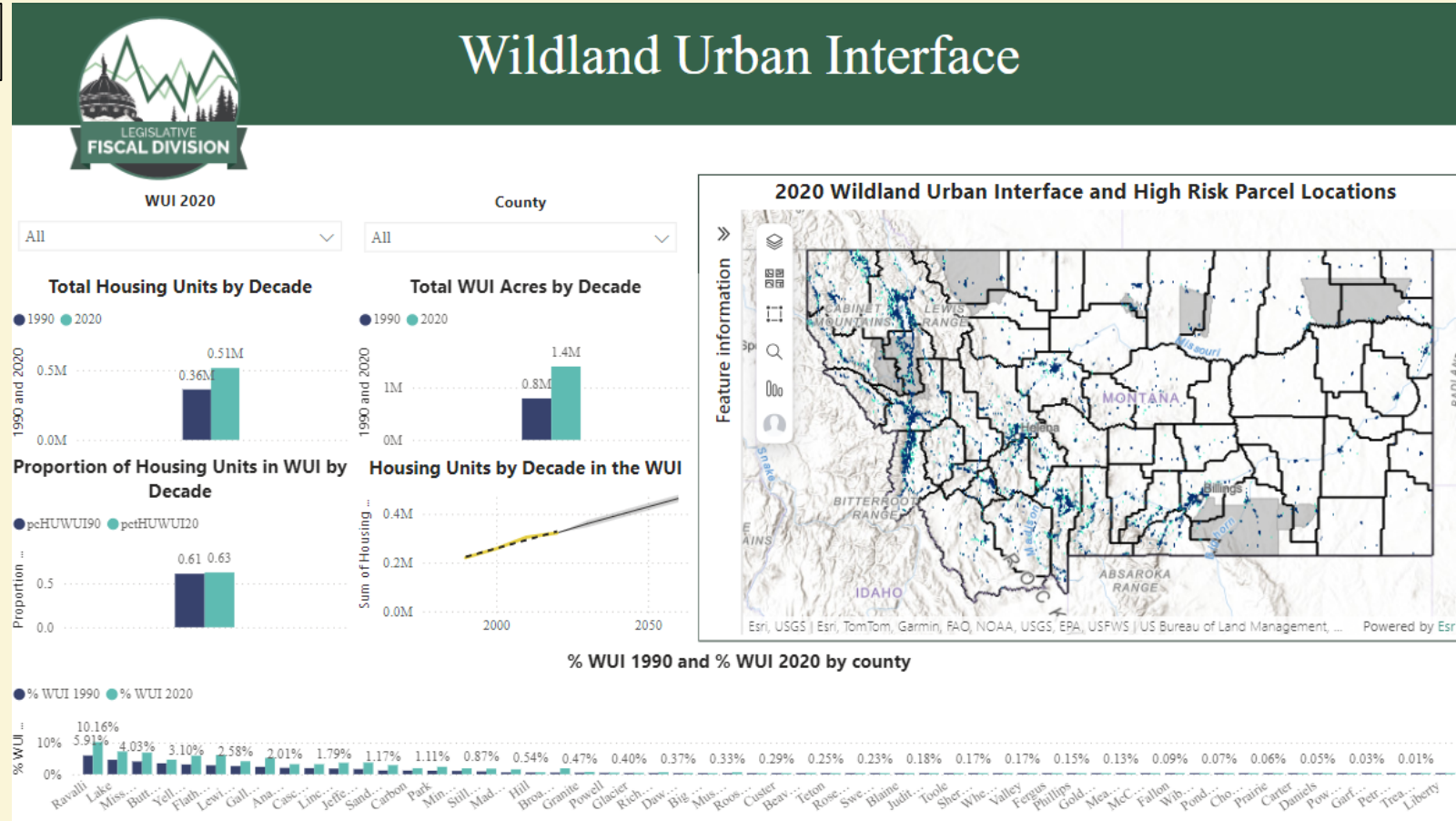
WILDLAND URBAN  
INTERFACE  
*(WUI)*



# MODEL PAGE: WILDLAND URBAN INTERFACE

Not the best metric of risk for Montana

- USGS definition of WUI
  - Density of housing and vegetation, census blocks
- Often conflated with risk
- Nationally 9.4% of land area and 32% of homes in WUI
- In Montana only 1.5% of land is in the WUI and 63% of homes
- Proportion similar since 1990



Wildland-urban interface maps for the conterminous U.S. based on 125 million building locations



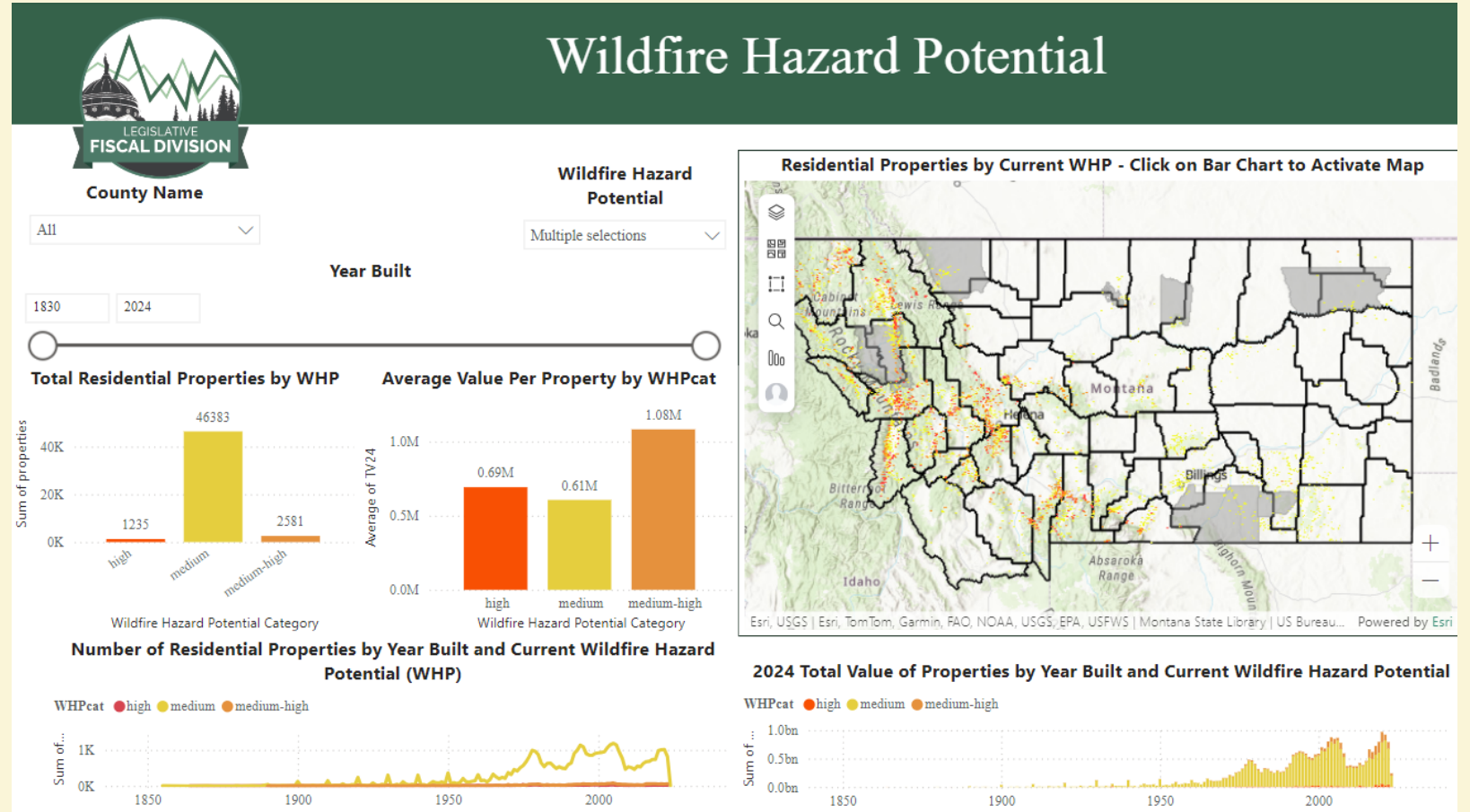


RESIDENTIAL  
PROPERTIES BY  
YEAR BUILT  
&  
RISK POTENTIAL



# MODEL PAGE: WILDFIRE HAZARD POTENTIAL

- Current wildfire hazard potential (WHP), by year built
- Not for risk of individual homes
- Where fires may be difficult to control by burn probability, terrain, vegetation
- Properties in high and medium-high hazard zones tend to be higher value
- The majority of properties are in lower hazard zones







# Wildfire Hazard Potential

County Name

All

Wildfire Hazard Potential

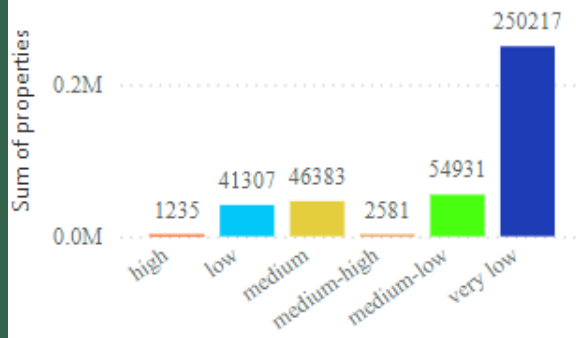
All

Year Built

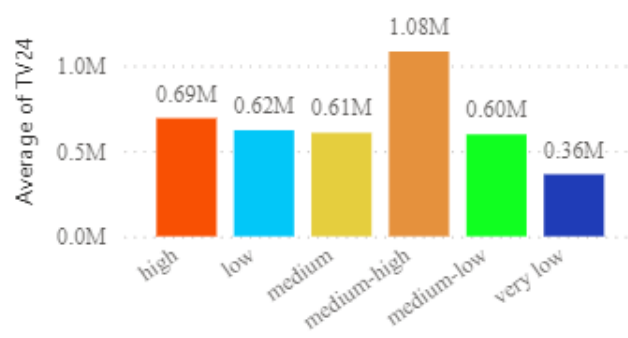
1830 2024



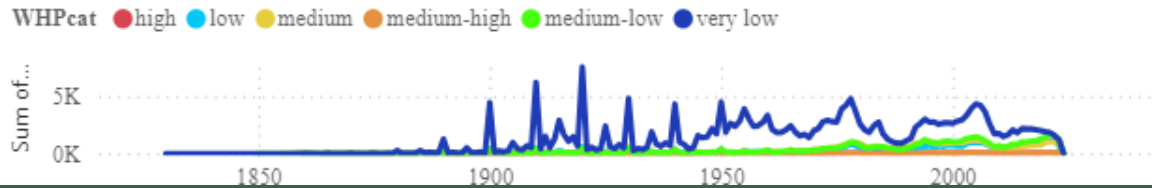
Total Residential Properties by WHP



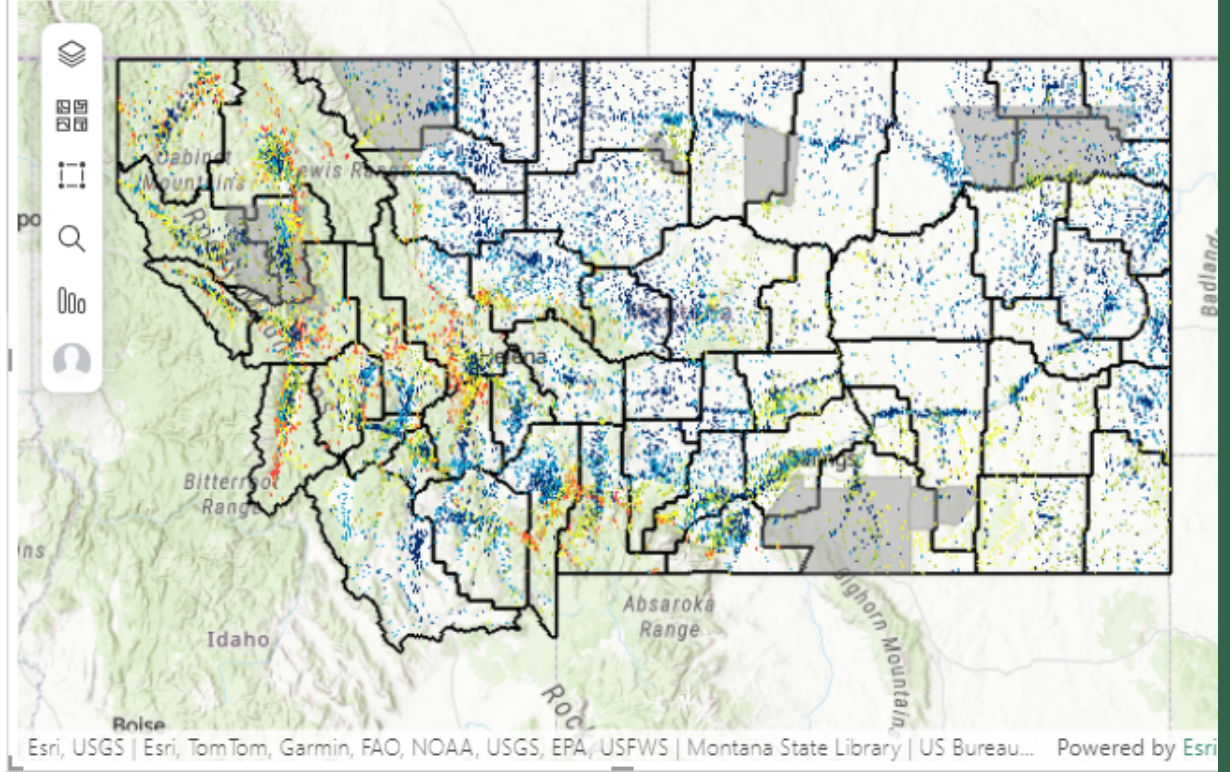
Average Value Per Property by WHPcat



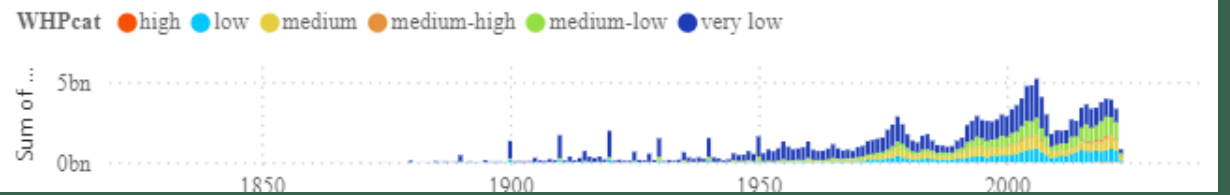
Number of Residential Properties by Year Built and Current Wildfire Hazard Potential (WHP)



Residential Properties by Current WHP - Click on Bar Chart to Activate



2024 Total Value of Properties by Year Built and Current Wildfire Hazard Potential





# Risk to Potential Structures

County Name

All

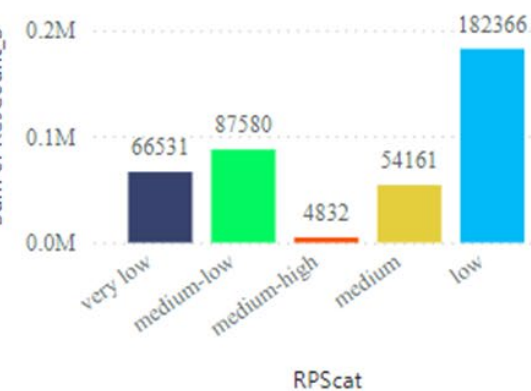
Risk to Potential Structures

All

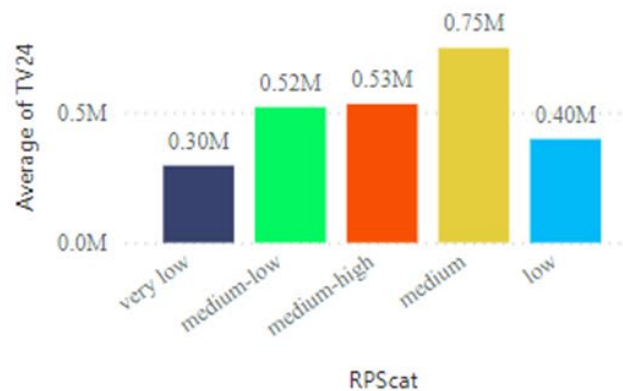
Year Built

1830 2024

Total Residential Properties by RPS

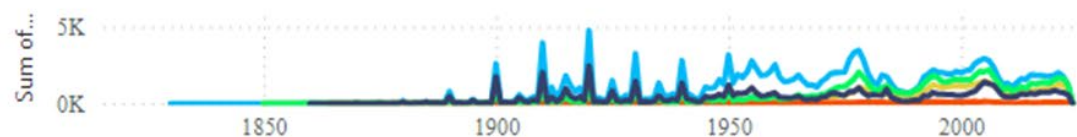


Average Value Per Property by RPS

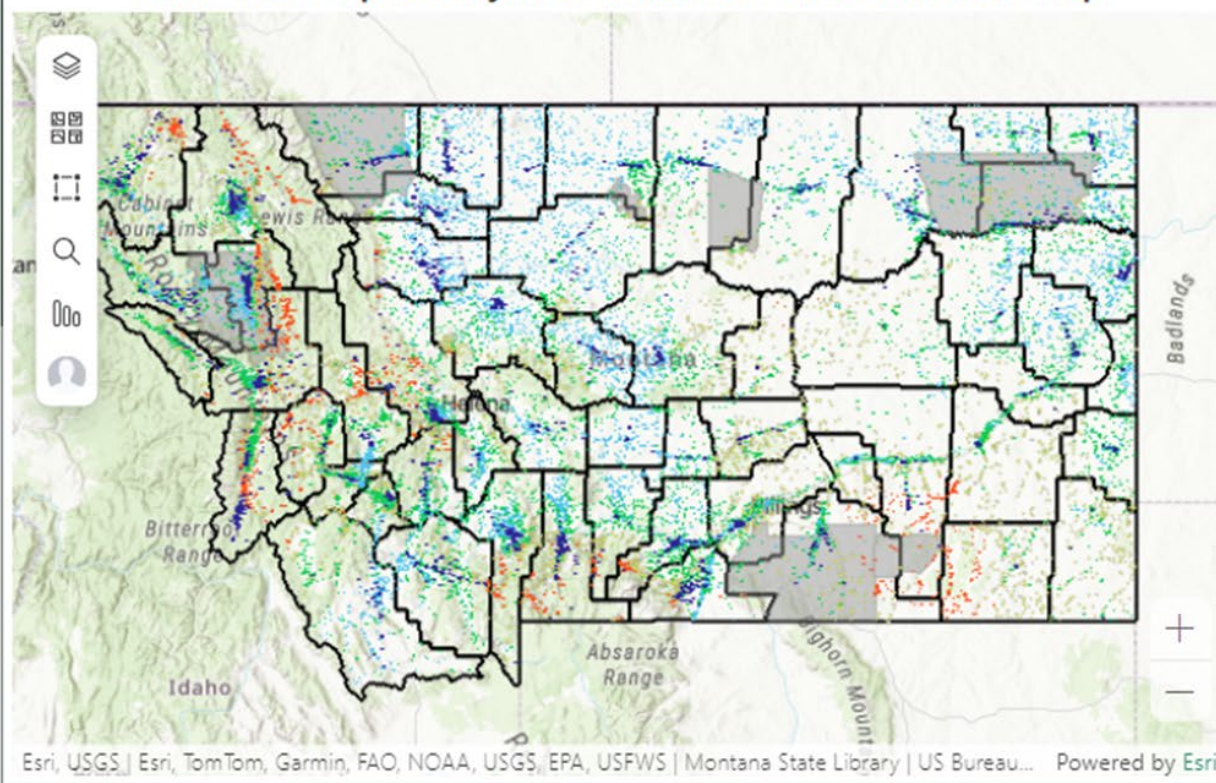


Number of Residential Properties by Year Built and Current Wildfire Hazard Potential (WHP)

RPScat ● low ● medium ● medium-high ● medium-low ● very low



Residential Properties by RPS - Click on Bar Chart to Activate Map

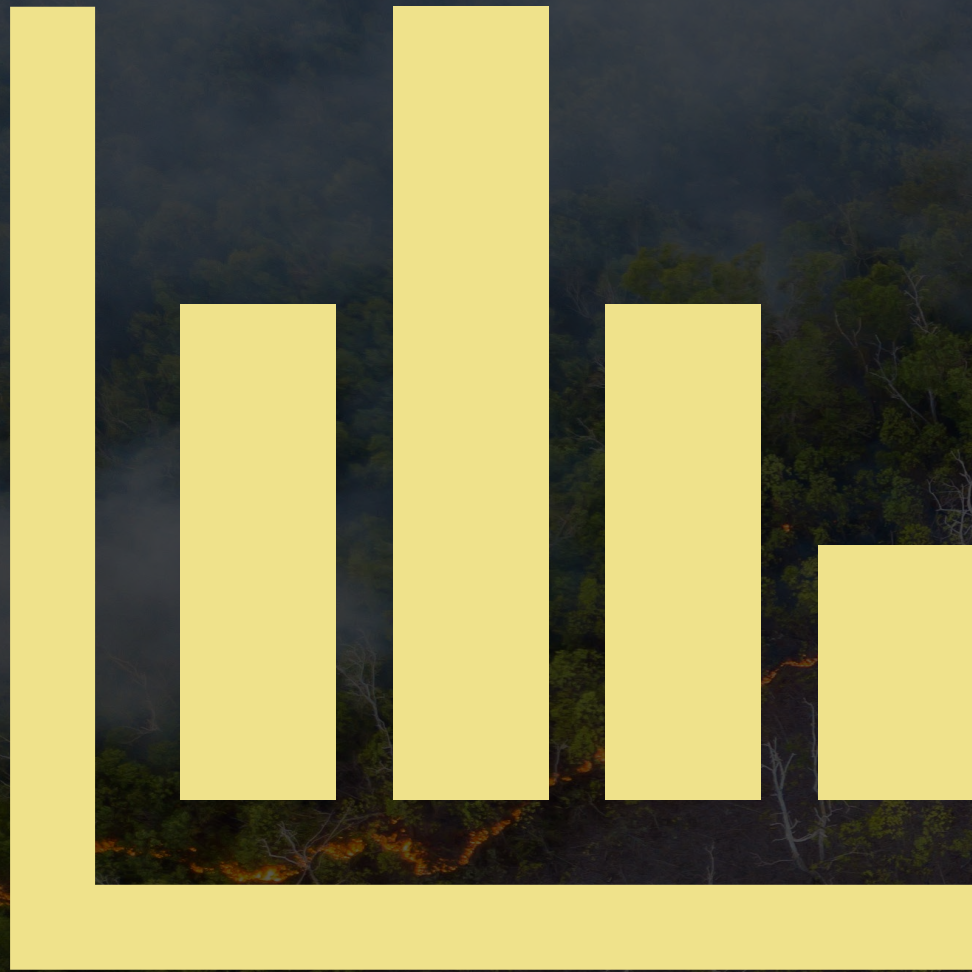


2024 Total Value of Properties by Year Built and Current Wildfire Hazard Potential

RPScat ● low ● medium ● medium-high ● medium-low ● very low

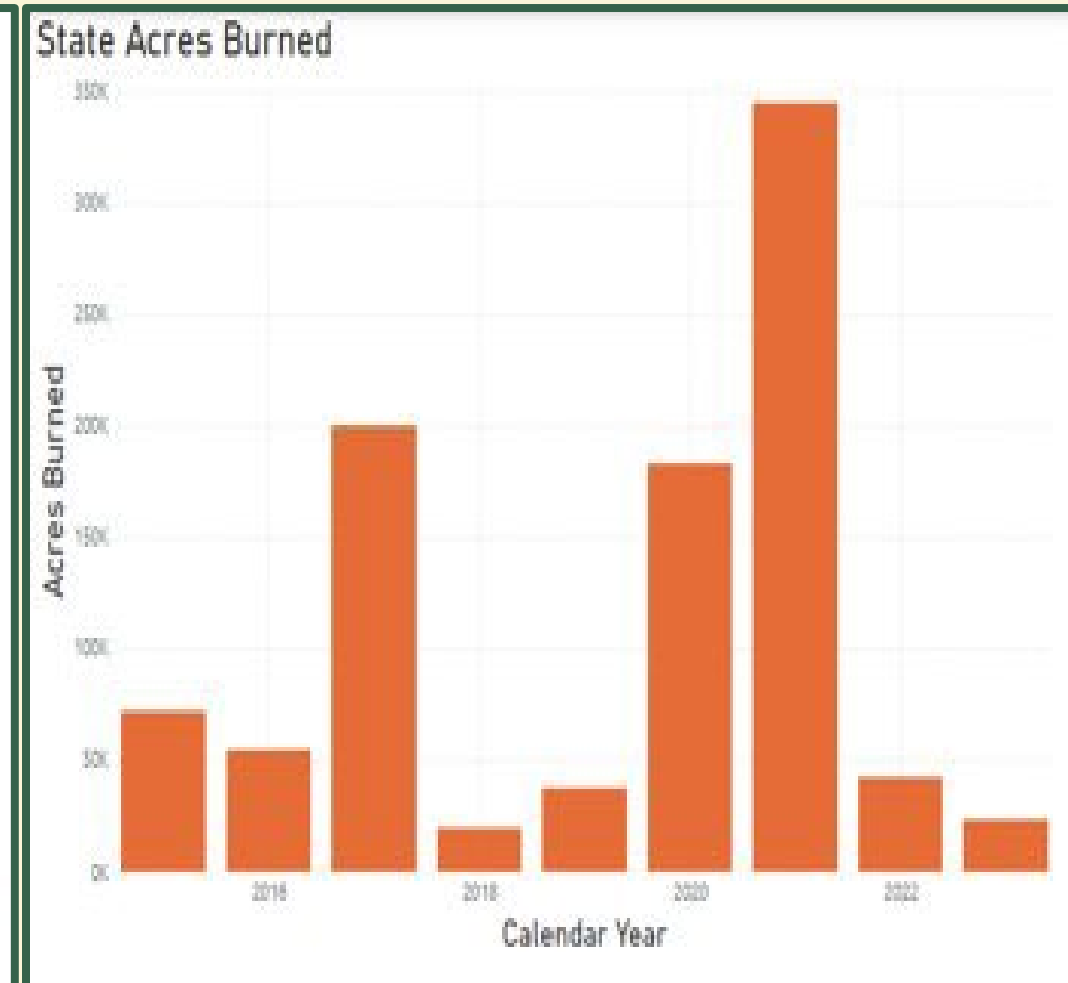
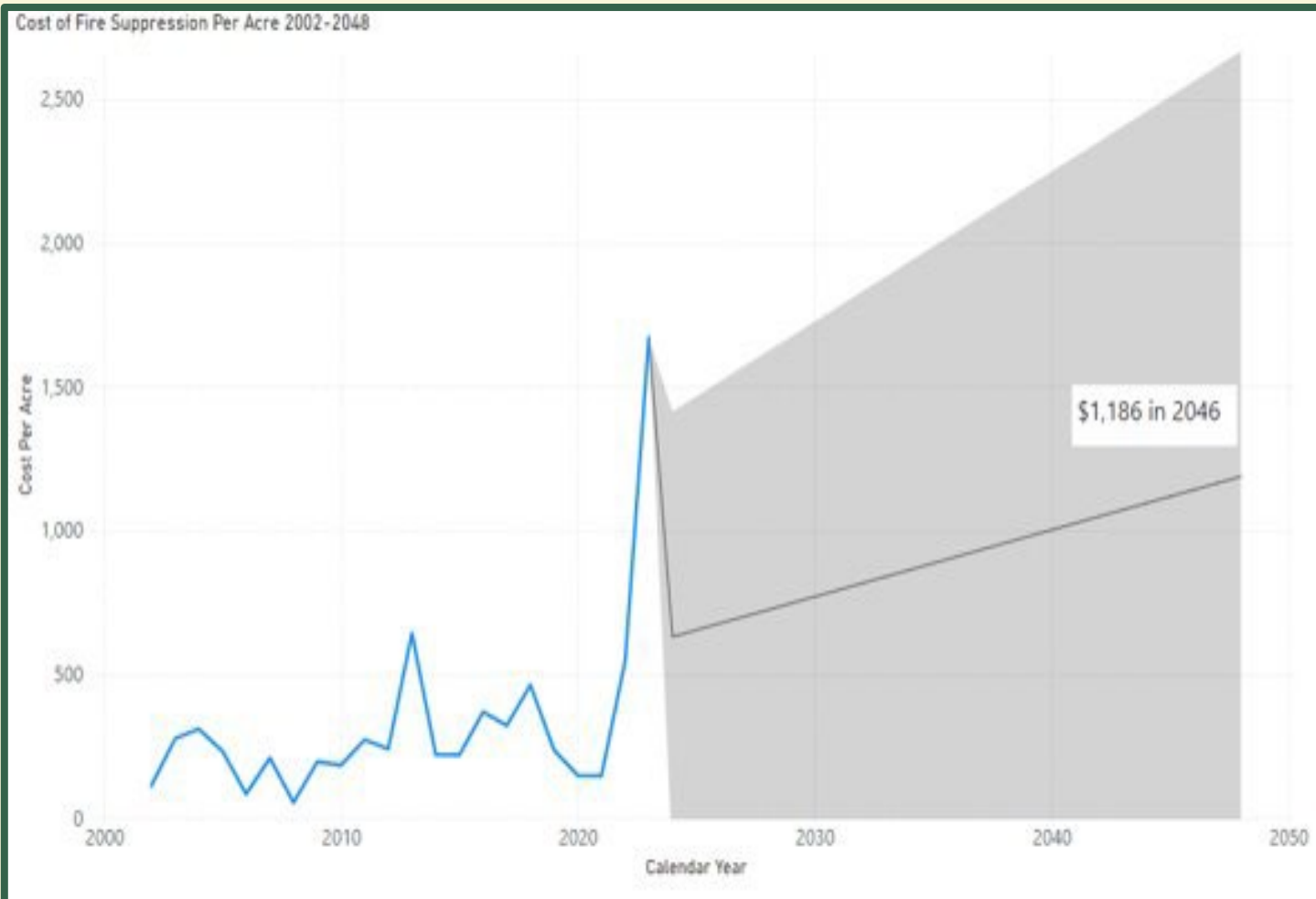






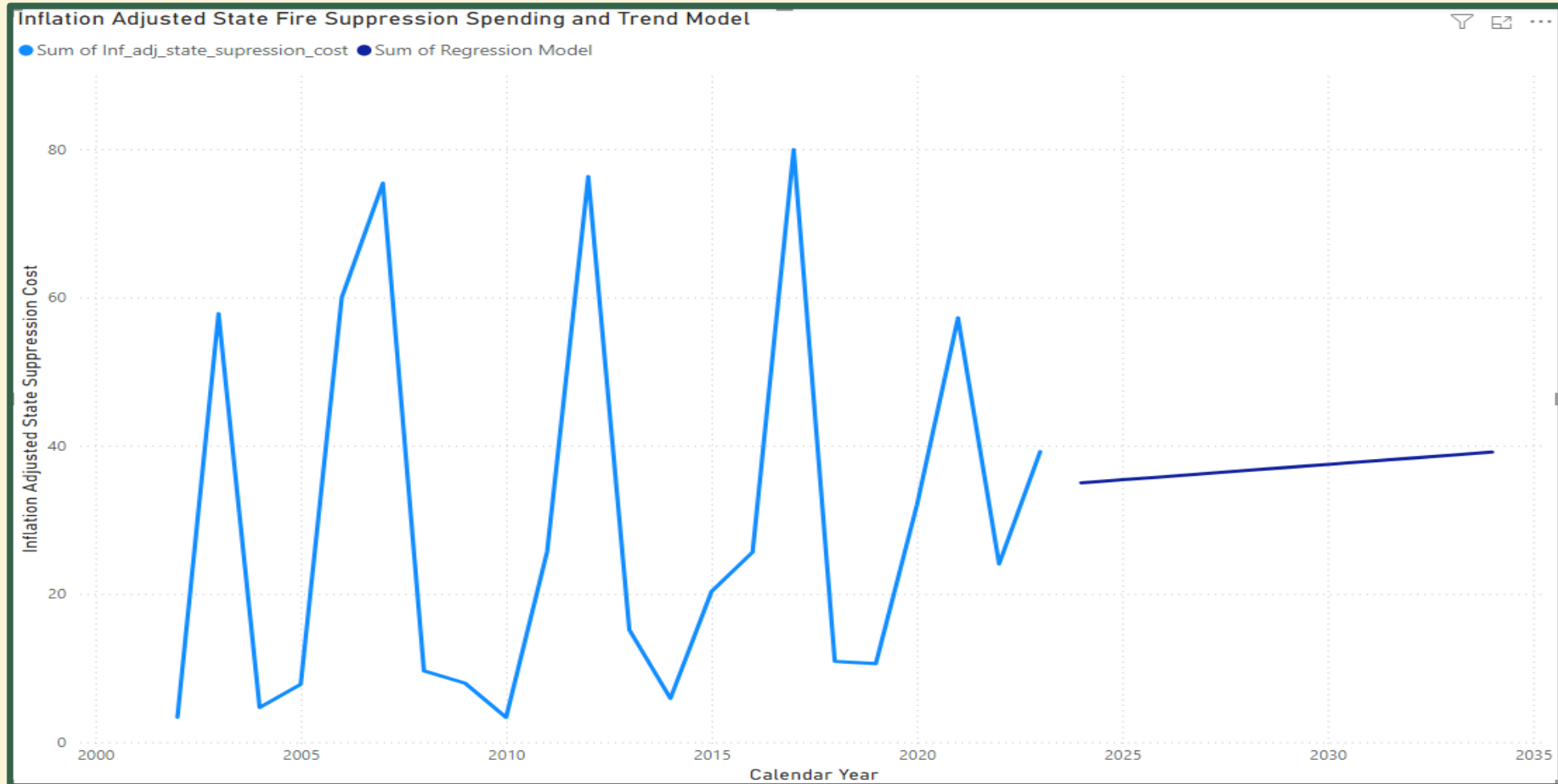
# FORECASTS: Two Methodologies

# PROJECTION 1: STATE SUPPRESSION COST PER ACRE

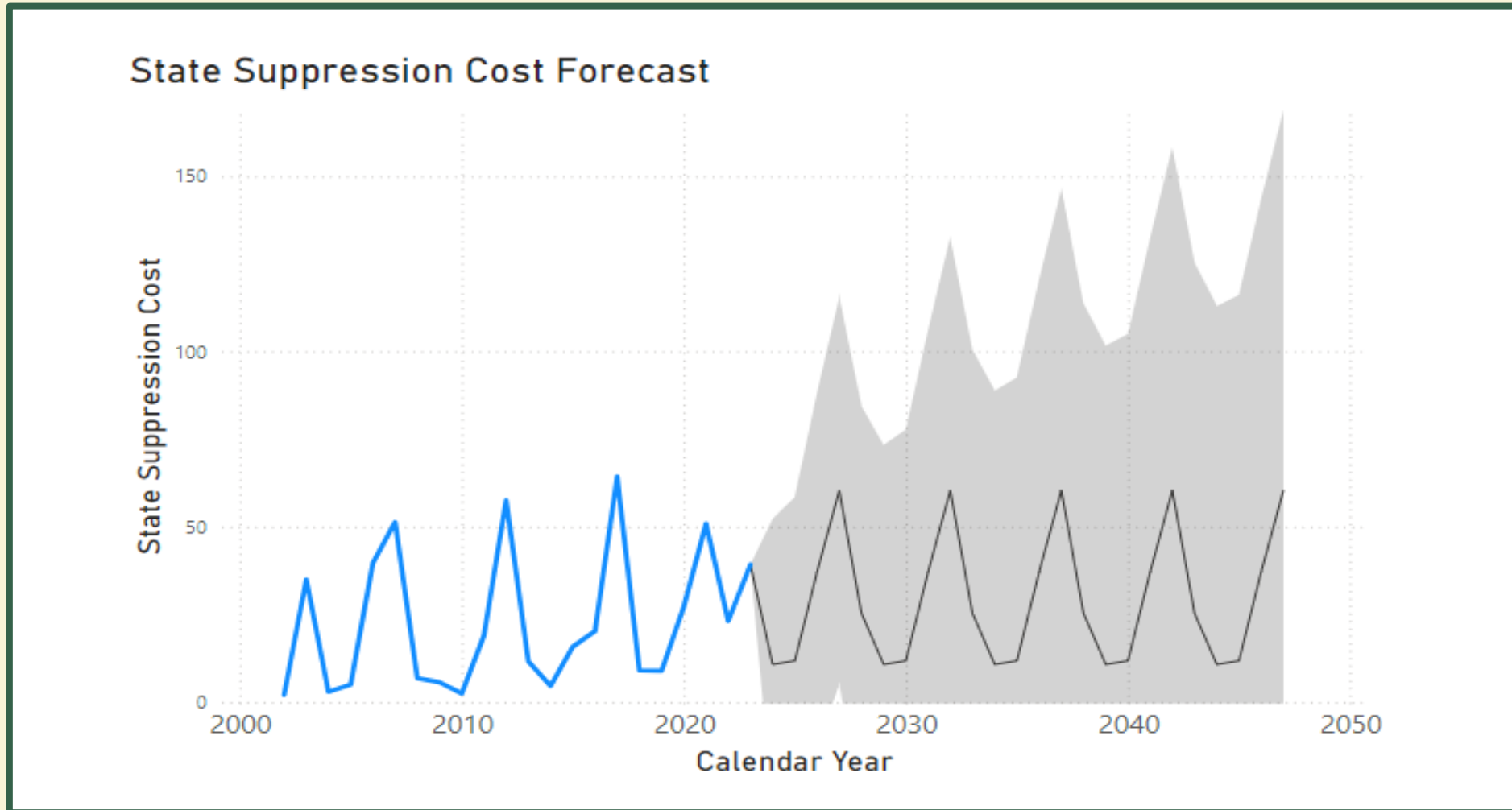




# PROJECTION 2: STATE SUPPRESSION COST



# PROJECTION 2: STATE SUPPRESSION COST





# FINDINGS



1. History of Wildfires in Montana  
70% of acres burned in Montana history have been since 2000
2. State and Federal Suppression Costs  
\$2.3 billion on fires, 25% state, 75% federal
3. Mitigation and Priority Areas  
The Forest Service has spent \$80 million on Mitigation in the last 10 years  
HB 883 materially increased DNRC mitigation
4. Wildland Urban Interface (WUI)  
WUI acreage has doubled over past 30 years but proportion of houses within have stayed level
5. Residential Properties by Year Built and Wildfire Hazard Potential  
Homes built in high risk areas are on average higher value

# IMPLICATIONS

## **Short Term Challenges**

- Insurance market – increasing cost, or loss of availability
- Risk of elevated suppression costs

## **Long Term Challenges**

- Development trends – population growth and high value residences

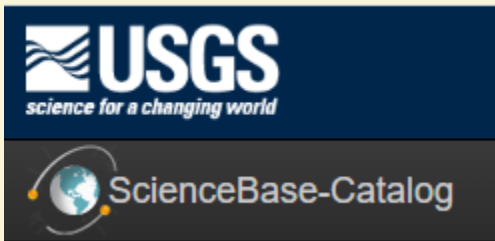


# SUGGESTIONS FOR FUTURE RESEARCH

## **The Legislature May Wish To Consider:**

- Deeper Analysis of Fire Costs
- Analysis of Mitigation Benefits and Costs
- Wildfire Mitigation by Additional Agencies
  - Insurance Rates and Availability

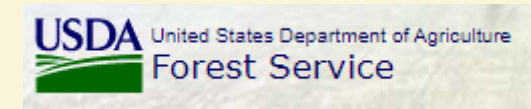
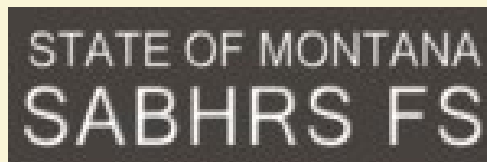
# DATA SOURCES



Wildland-urban interface maps for the conterminous U.S. based on 125 million building locations



 **Wildland Fire Application Information Portal**







Questions?