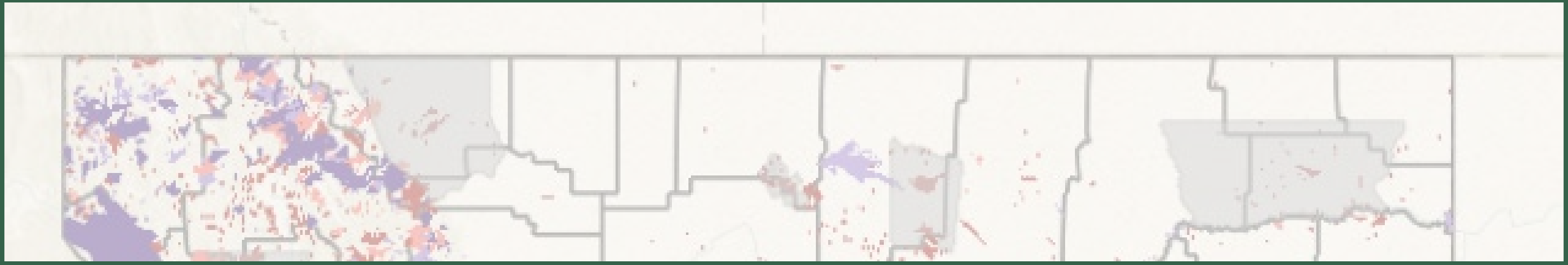
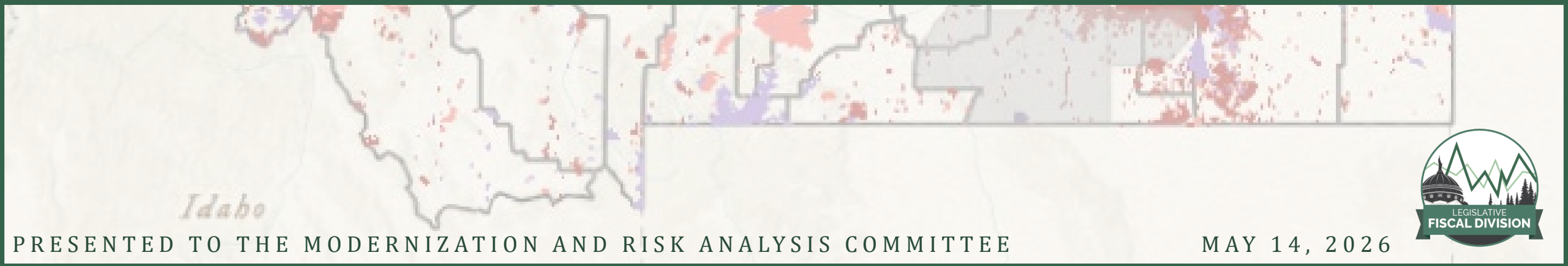


LEGISLATIVE FISCAL DIVISION

Wildfire Cost Data Tool
Updates, Improvements, and Future Direction

ALICE HECHT, LFD



PRESENTED TO THE MODERNIZATION AND RISK ANALYSIS COMMITTEE

MAY 14, 2026

Plan of Presentation

1. MARA Wildfire Timeline; Why Study Wildfire?
2. Summary of Preliminary Observations from Updated Model
3. Background Information – State & Federal Responsibility, the "Wildfire Hazard Potential" Product, & the Montana Fire Suppression Fund
4. 5 Preliminary Observations
5. Next Steps & Feedback

Why Study Wildfires?

MARA Wildfire Timeline

TIMELINE

I

Spring 2024
Project Begins: gather data, meet with experts, research, data work

II

October 2024
Version 1 Model presented to MARA

Formed a Foundational Dataset for Questions & Further Analysis

III

October 2025
Fire model updated and prototype of fire specific costs presented to MARA

Added in Cost Analysis, But Still Very Slow to Load

IV

May 2026
Updated model, improved load speed and accessibility, preliminary new data

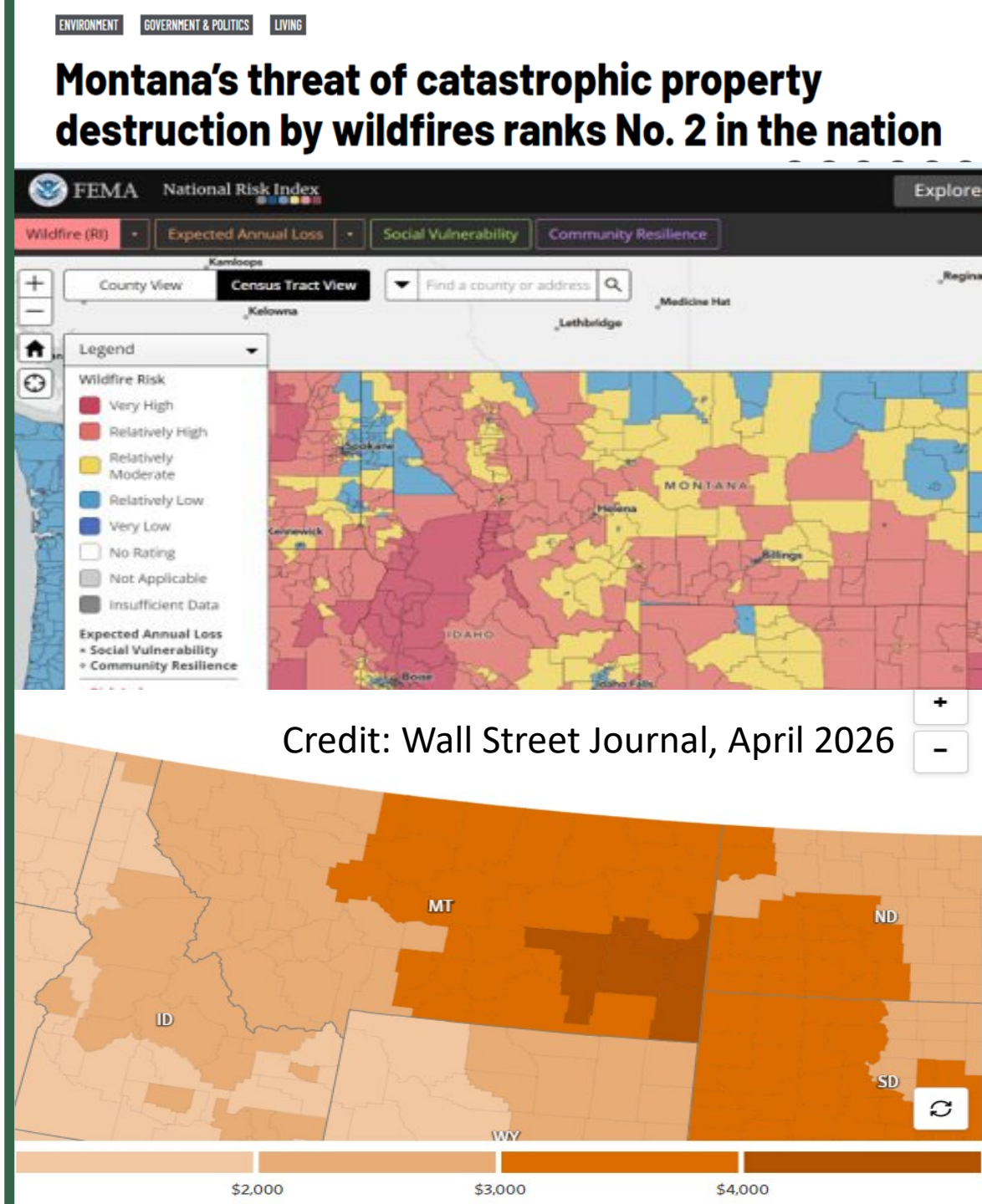
Faster Loading Version with More Detailed Cost Analysis

V

Next Steps
Contingent on Legislative Feedback & Needs
Updated Model Currently in Refinement and external validation phase.

WHY STUDY WILDFIRE?

- Wildfire Costs Continue to be a Large & Unpredictable Financial Obligation
- Montana is Ranked as High Risk in Many National Tools
- Track Costs and Trends Over Time as Policy & Technology Changes
- Increasing Insurance Costs for State's Residents
- Offer a Statewide Perspective for Lawmakers
- **Identify State Financial Pressures Related to Wildfires: Past, Present & Future**



HB 70 *(2025 Session)*

Section 1. Study of state fire suppression issues, methods, and costs. (1) The environmental quality council provided for in 5-16-101 shall conduct a comprehensive fire suppression study.

(2) The study must include an investigation of:

(a) firefighting operations in Montana by the state and federal governments, including operations on tribal land and private land, and the management policies affecting the success of those operations;

(b) the efficient use of fire suppression resources, including equipment and firefighters;

(c) the impact of operations on private land and the effective use of private resources to fight fires; and

(d) state and federal forest management and grazing policies and how those policies may potentially affect the number of wildfires, safety risk to firefighters, or fire suppression efforts.

(3) The environmental quality council shall complete the study by September 15, 2026, and report its findings and recommendations, including legislation, to the 70th legislature.

HJ 62 *(2025 Session)*

impacts of wildfire on property and communities;

(3) the current legal and policy framework regarding wildfire resilience in Montana, specifically:

(a) the barriers to widespread adoption of the state's existing laws and regulations; and

(b) the factors that reduce the efficacy of the existing framework;

(4) solutions that can alleviate risk in Montana, including examples of:

(a) how to incentivize action at the community level, including tax incentives, cost-share programs, grant programs, and other pathways to ease property owners' burden; and

(b) effective statewide regulation of building materials, development patterns, landscaping guidelines, and vegetation management in the wildland-urban interface, including:

(i) how the state can allow local jurisdictions to adopt more robust codes and standards than the state baseline that will allow high-hazard communities to protect homes, businesses, and their economies while not placing an onerous burden on lower-hazard communities;

(ii) the role of state agencies in effectively acting as liaisons and experts to municipal government in enacting and enforcing statewide wildfire resilience codes;

(iii) the development of hazard and risk maps that can inform property owners and local governments where areas of higher or lower hazard exist; and

(iv) solutions that effectively balance oversight and enforcement with on-the-ground conditions and flexibility for property owners.

Summary of Preliminary Observations

From the Updated Wildfire Model

5 Preliminary Observations from Updated Model

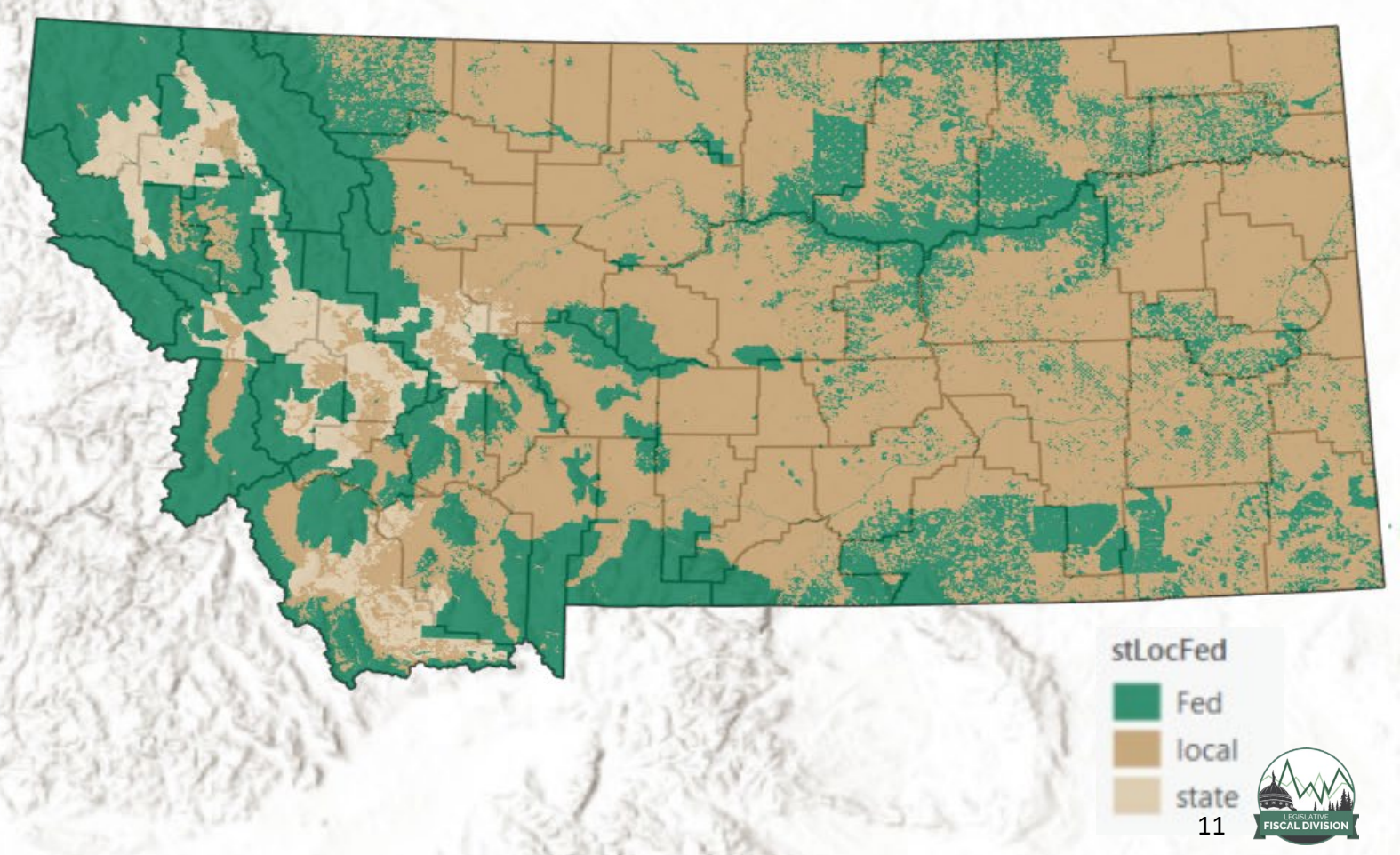
1. **History of Wildfires in Montana**
   - Annual acres burned decreasing slightly overall since 2000
2. **State and Federal Suppression Costs**
   - $2.3 billion on fire suppression in the last 20 years – about **75% federal**, 25% state; real state costs per acre appear to be increasing
3. **State and Federal Mitigation Projects**
   - Mitigation projects are relatively small but are carried out in strategic areas – are they associated with lower suppression costs?
4. **Wildfire Hazard Potential and Cost: Measure from the U.S. Forest Service Fire Modeling Institute**
   - In the past 5 years (2021-2025) 4.1% of acres burned were in areas of "Very High" wildfire hazard potential but made up 32% of total state cost
5. **Structure Loss by Fuel Type and Wildfire Hazard Potential**
   - In the past five years, more structures have been lost to grass fires than any other fuel type.

Background Information

State & Federal Responsibility, the "Wildfire Hazard Potential" Product, & the Montana Fire Suppression Fund

BACKGROUND
Responsibility for Fire Suppression

FED	33,531,688	35.64%
LOCAL	55,465,605	58.95%
STATE	5,089,481	5.41%
TOTAL ACRES	94,086,774	



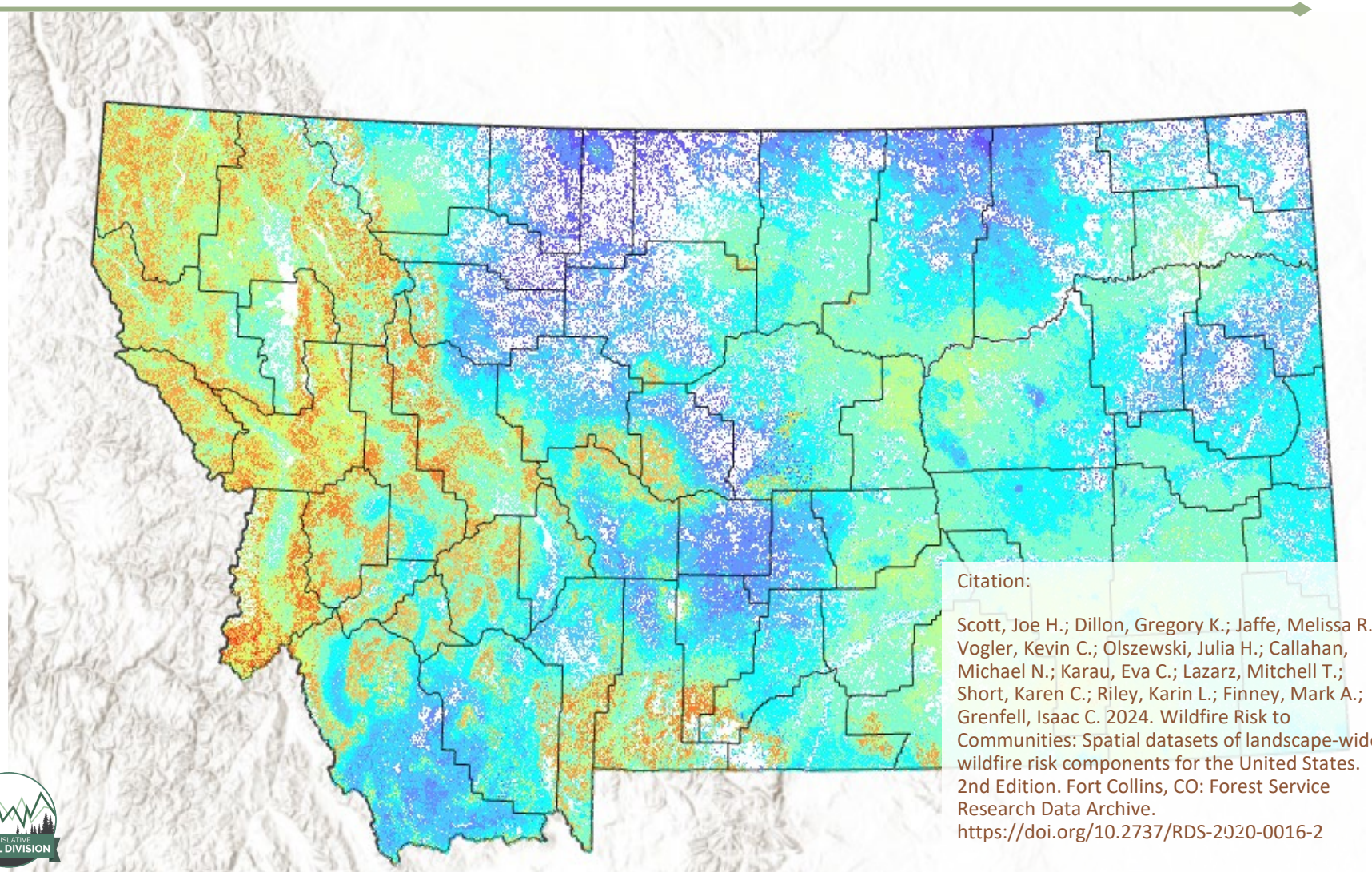
BACKGROUND
Wildfire Hazard Potential (WHP)
Data from the U.S. Forest Service Modeling Institute

Index Of These Factors

- Probability of wildfires
- Severity of wildfires
- Fire modeling results
- Historical fire locations
- Data on fuels and vegetation

Intended Use

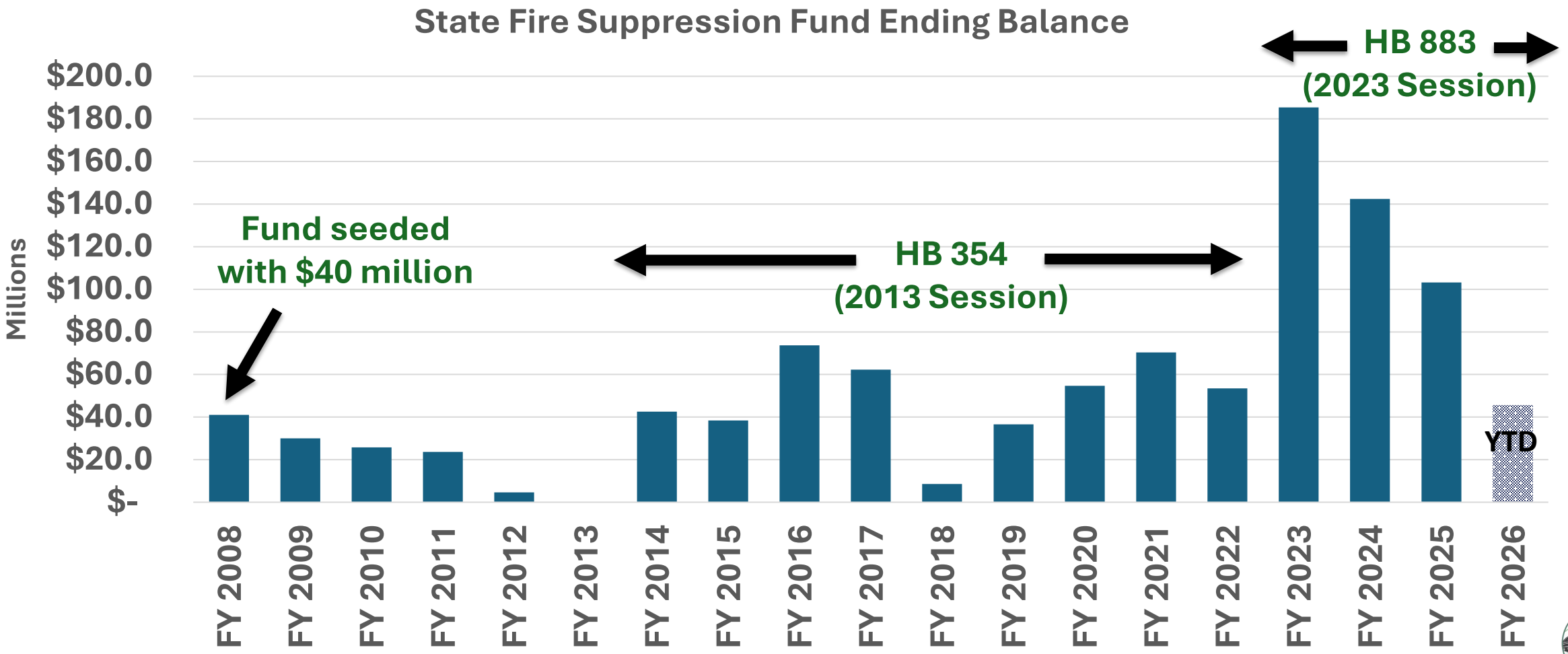
- Depict the relative potential for high-intensity wildfire that may be difficult to manage in order to prioritize fuel treatments



Citation:

Scott, Joe H.; Dillon, Gregory K.; Jaffe, Melissa R.; Vogler, Kevin C.; Olszewski, Julia H.; Callahan, Michael N.; Karau, Eva C.; Lazarz, Mitchell T.; Short, Karen C.; Riley, Karin L.; Finney, Mark A.; Grenfell, Isaac C. 2024. Wildfire Risk to Communities: Spatial datasets of landscape-wide wildfire risk components for the United States. 2nd Edition. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2020-0016-2

BACKGROUND
Montana Fire Suppression State Special Revenue Account

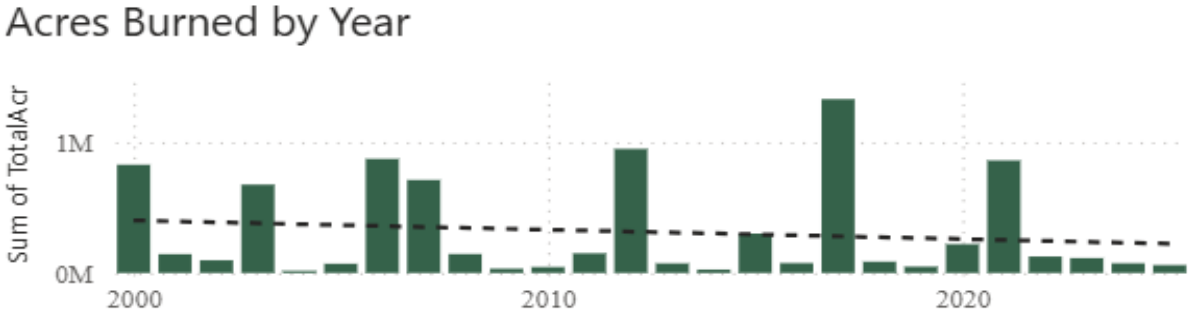


5 Preliminary Observations

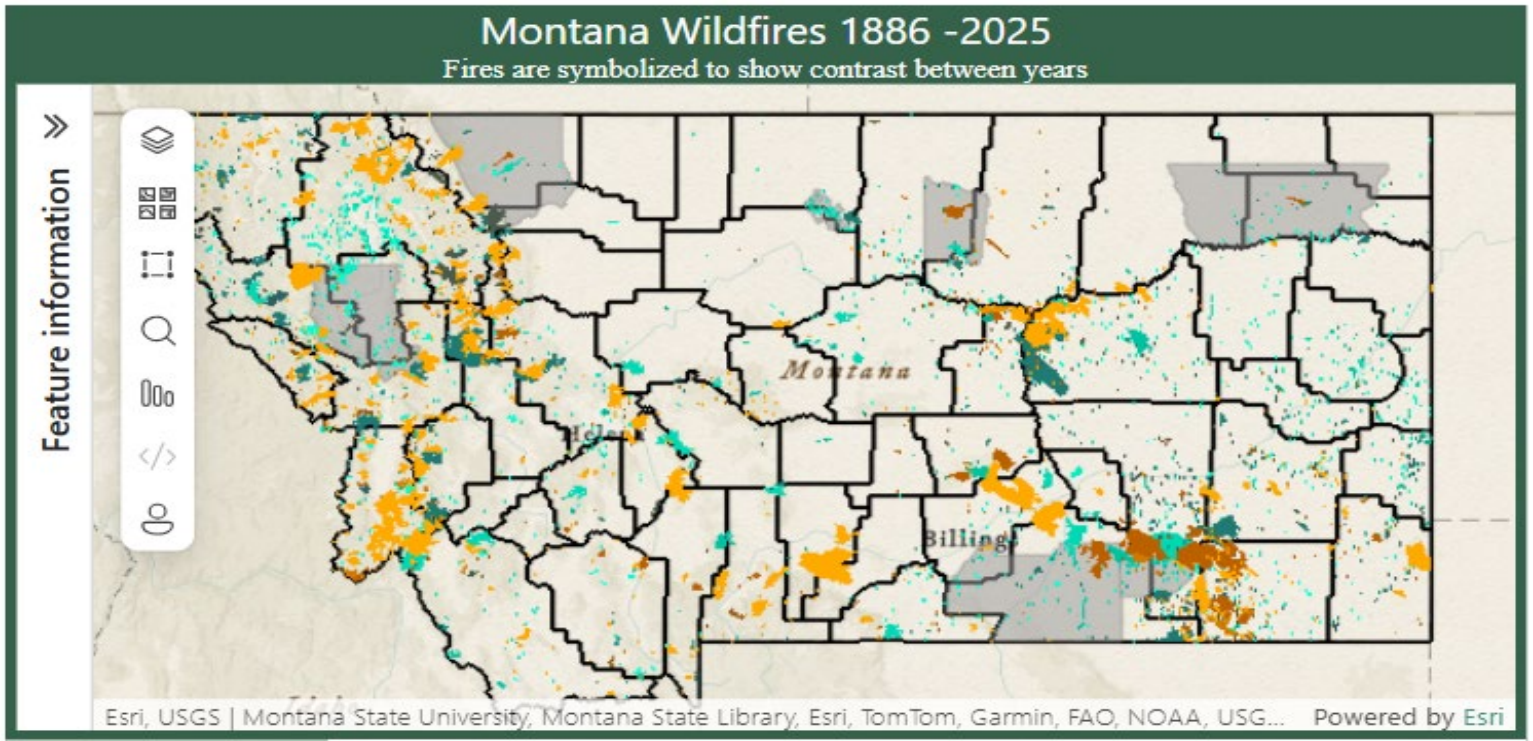
History of Wildfires in Montana

Average Acres Burned in Selected Years

312,711



Data for this page was compiled from the National Interagency Fire Center (NIFC)



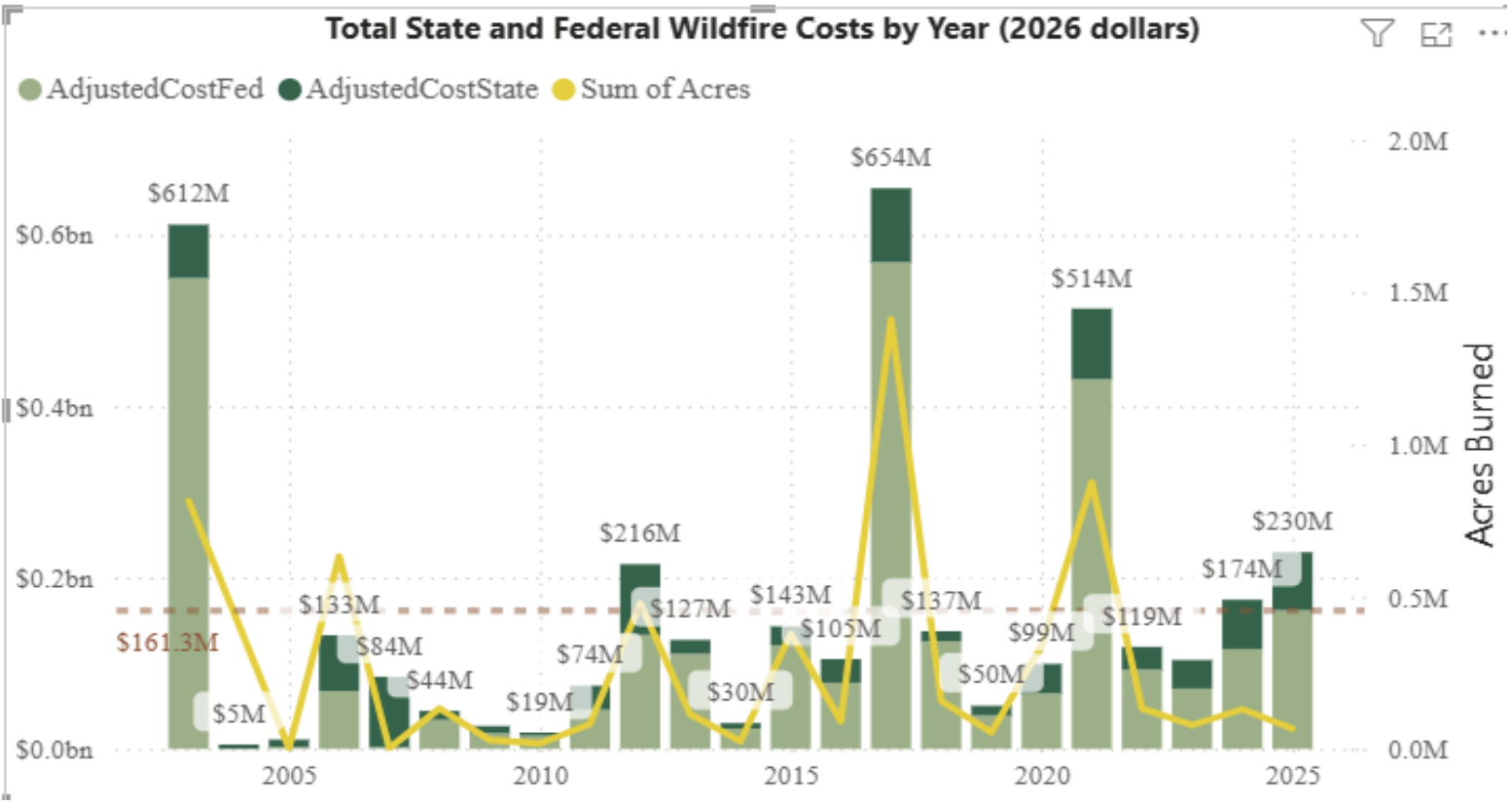
Observation 1:

Acres Burned

Decreasing Slightly

Since 2000

State & Federal Suppression Cost



Total Suppression Costs in Selected Years

Federal 77.1%, Montana 27.4%

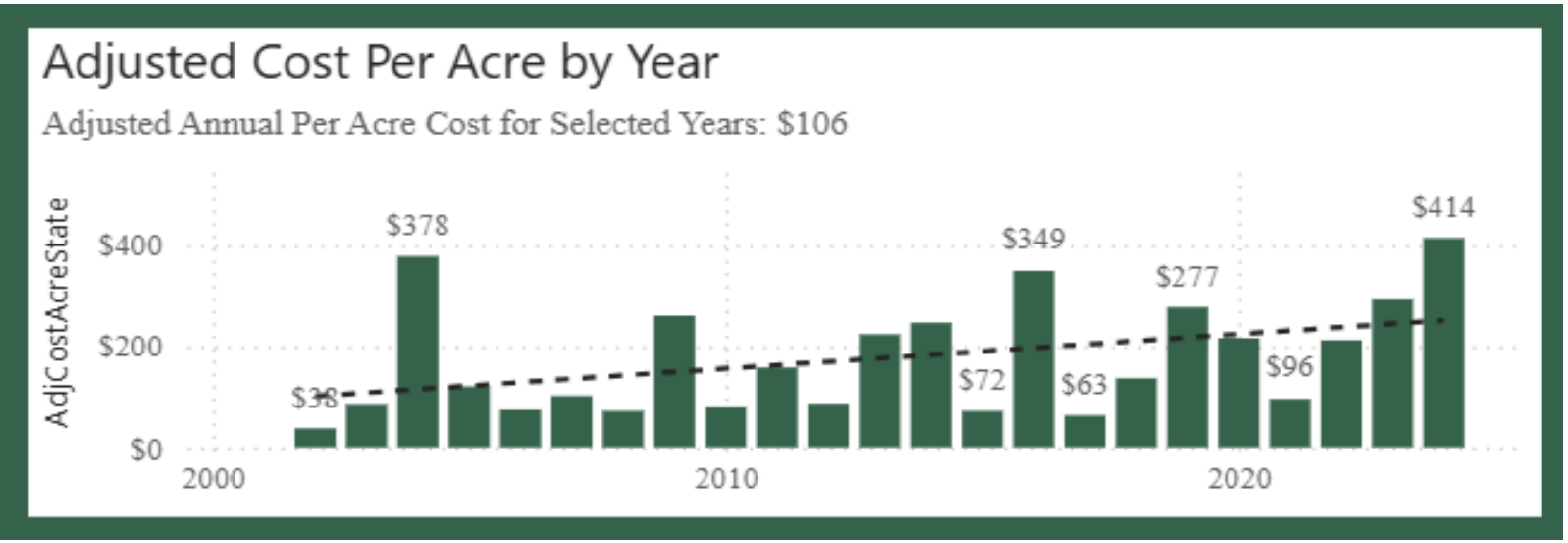
Federal	Montana
$2,119,738,259	$629,800,000

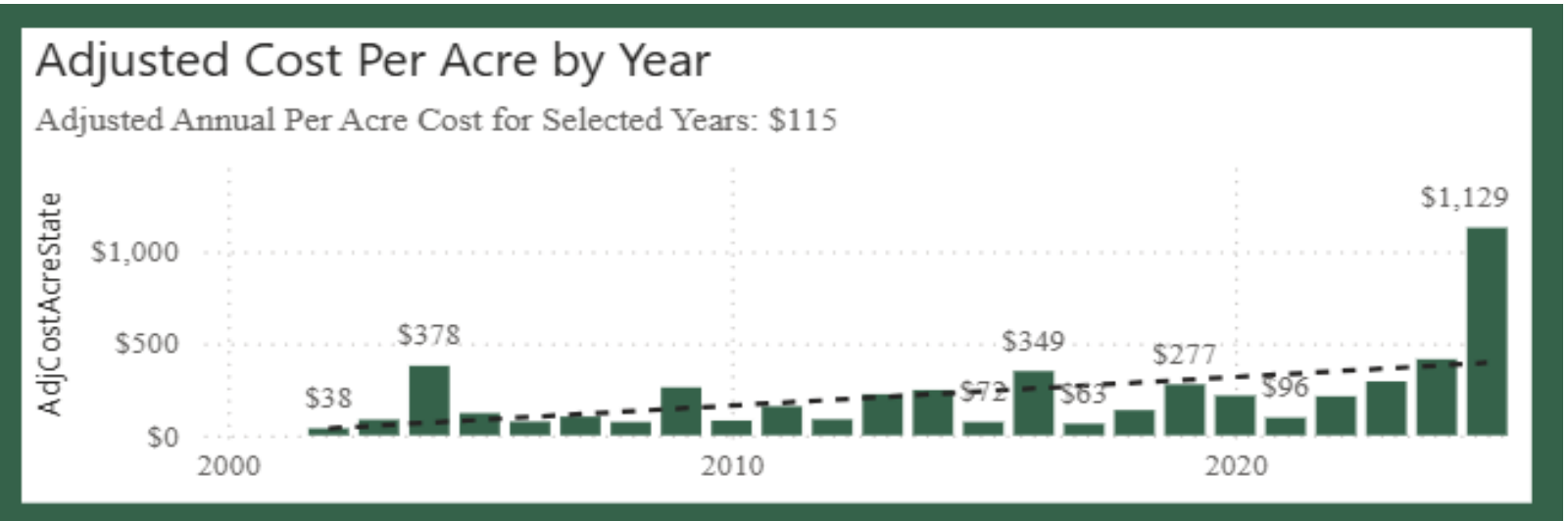
Observation 2:

Costs are about 75% Federal / 25% State;

Real State Cost per Acre Appears to be Increasing

State & Federal Suppression Cost





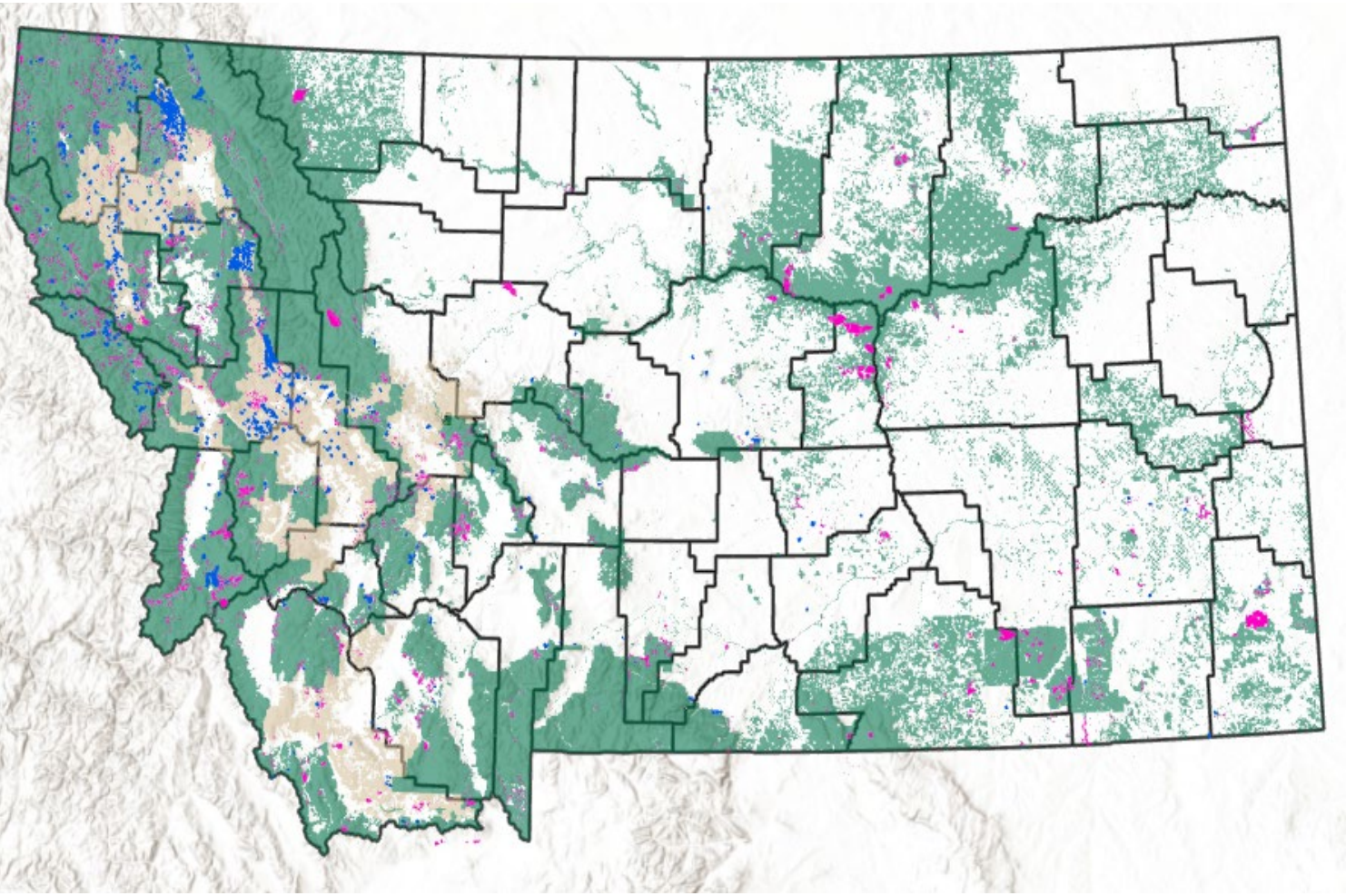
Observation 2:

Costs are about 75% Federal / 25% State;

Real State Cost per Acre Appears to be Increasing

State & Federal Mitigation Projects

Research Question: Are mitigation projects associated with lower suppression costs?



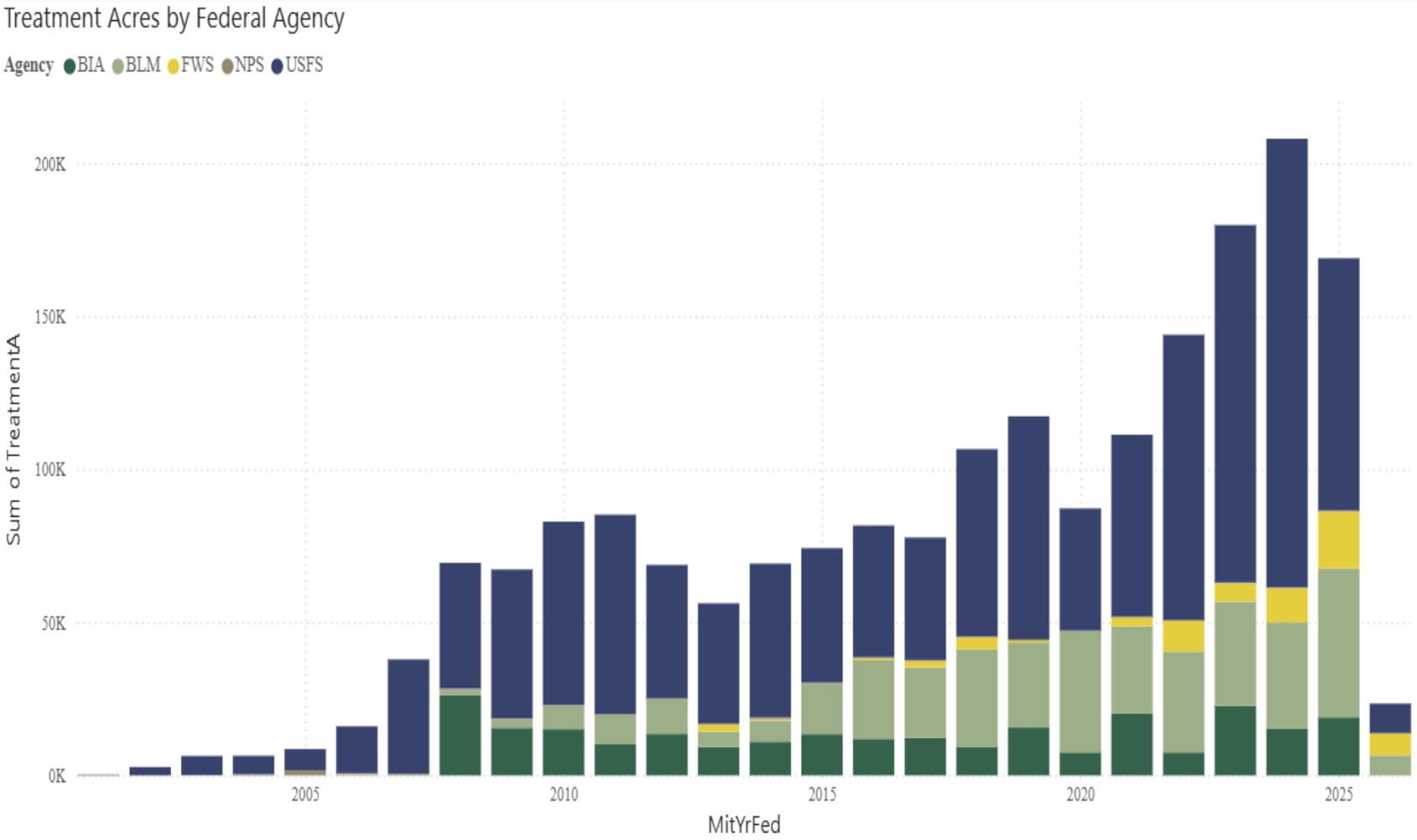
Observation 3:

Mitigation Projects are Relatively Small, but Strategic

FEDERAL	1,955,279	Since 2000
STATE	146,275	Since 2021
TOTAL ACRES	2,101,554	

State & Federal Mitigation Projects

Research Question: Are mitigation projects associated with lower suppression costs?



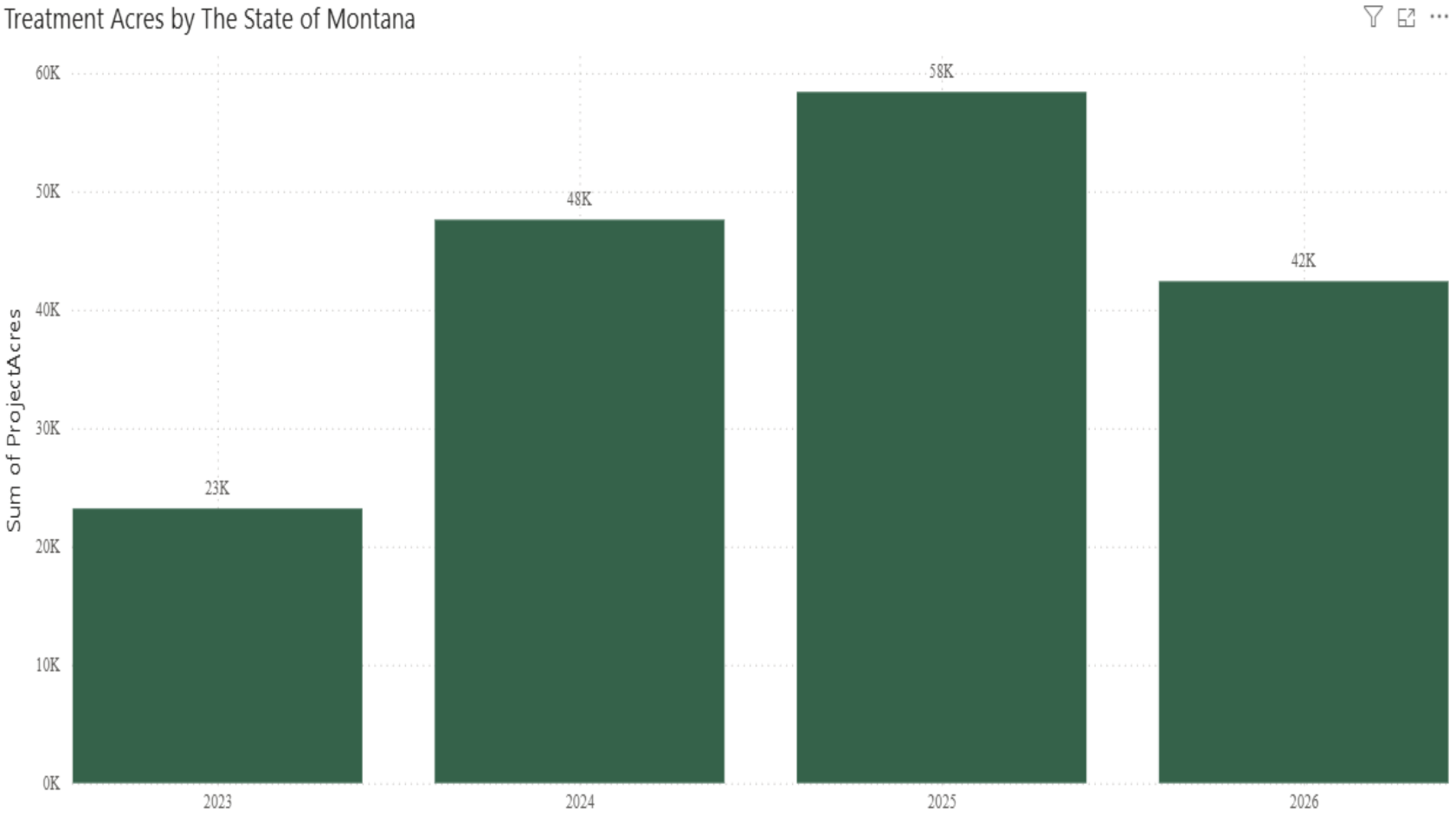
Observation 3:

Mitigation Projects are Relatively Small, but Strategic

State & Federal Mitigation Projects

HB 883 (2023 Session)

Permits DNRC to utilize a portion of the Fire Suppression Fund for mitigation depending on fund balance

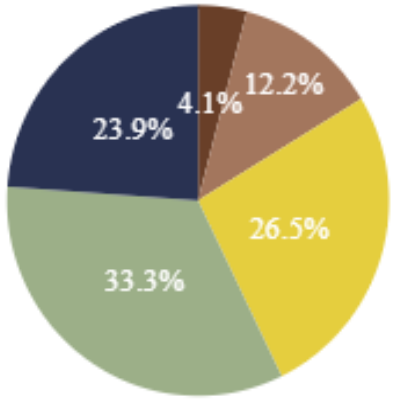


Observation 3:

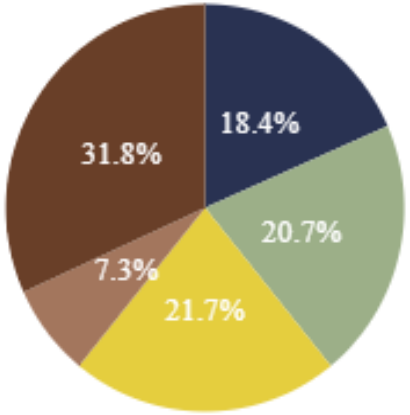
Mitigation Projects are Relatively Small, but Strategic

Wildfire Hazard Potential (WHP) & Cost

Acres Burned by Wildfire Hazard Potential



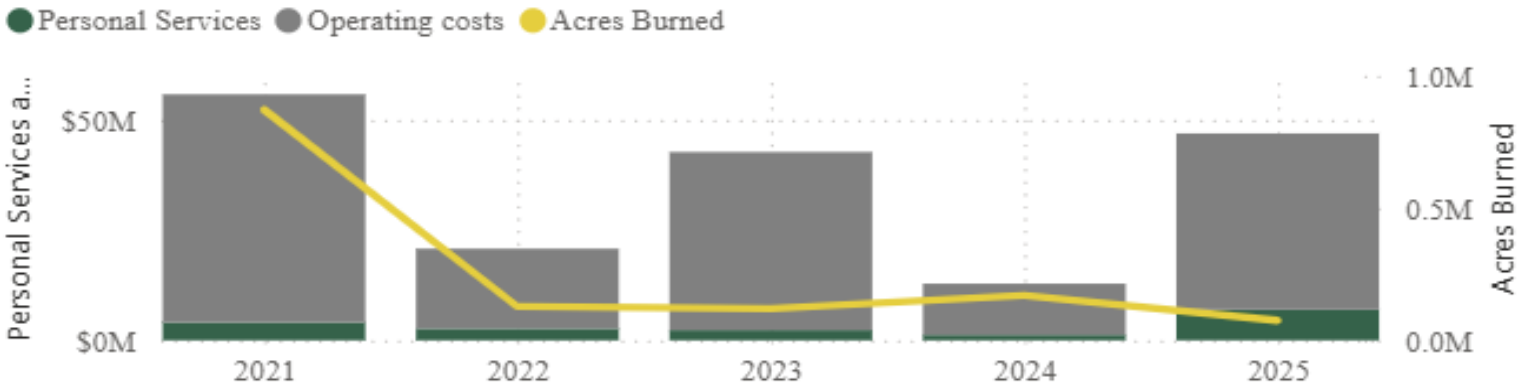
Total State Costs by Wildfire Hazard Potential



WHP Legend

- Very High
- High
- Moderate
- Low
- Very Low

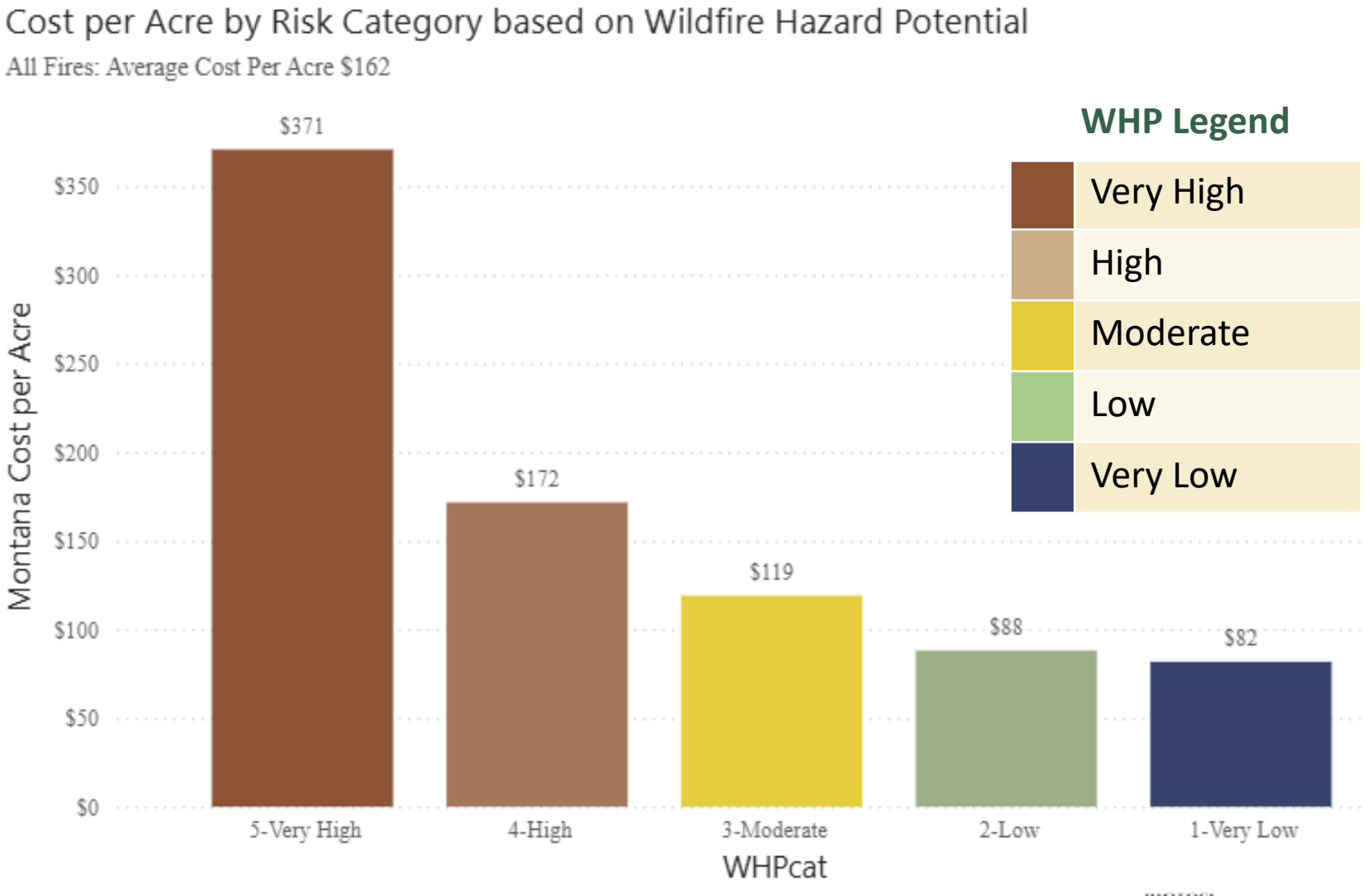
State Costs and Acres Burned by Year



Observation 4:

In the past 5 years, 4.1% of acres burned were in areas of "Very High" WHP, but made up 32% of State Cost

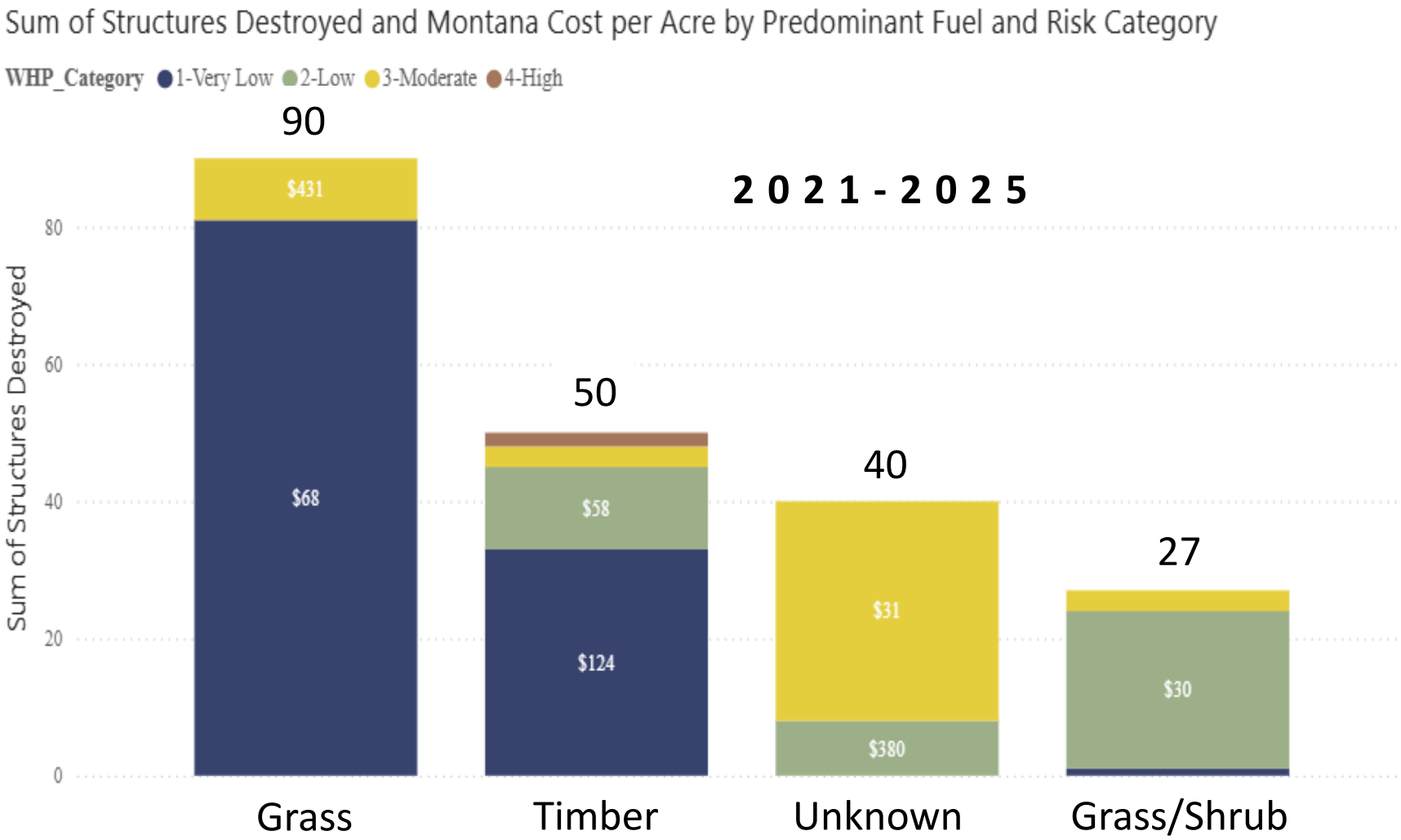
Wildfire Hazard Potential (WHP) & Cost



Observation 4:

In the past 5 years, 4.1% of acres burned were in areas of "Very High" WHP, but made up 32% of State Cost

Structure Loss by Fuel Type & WHP

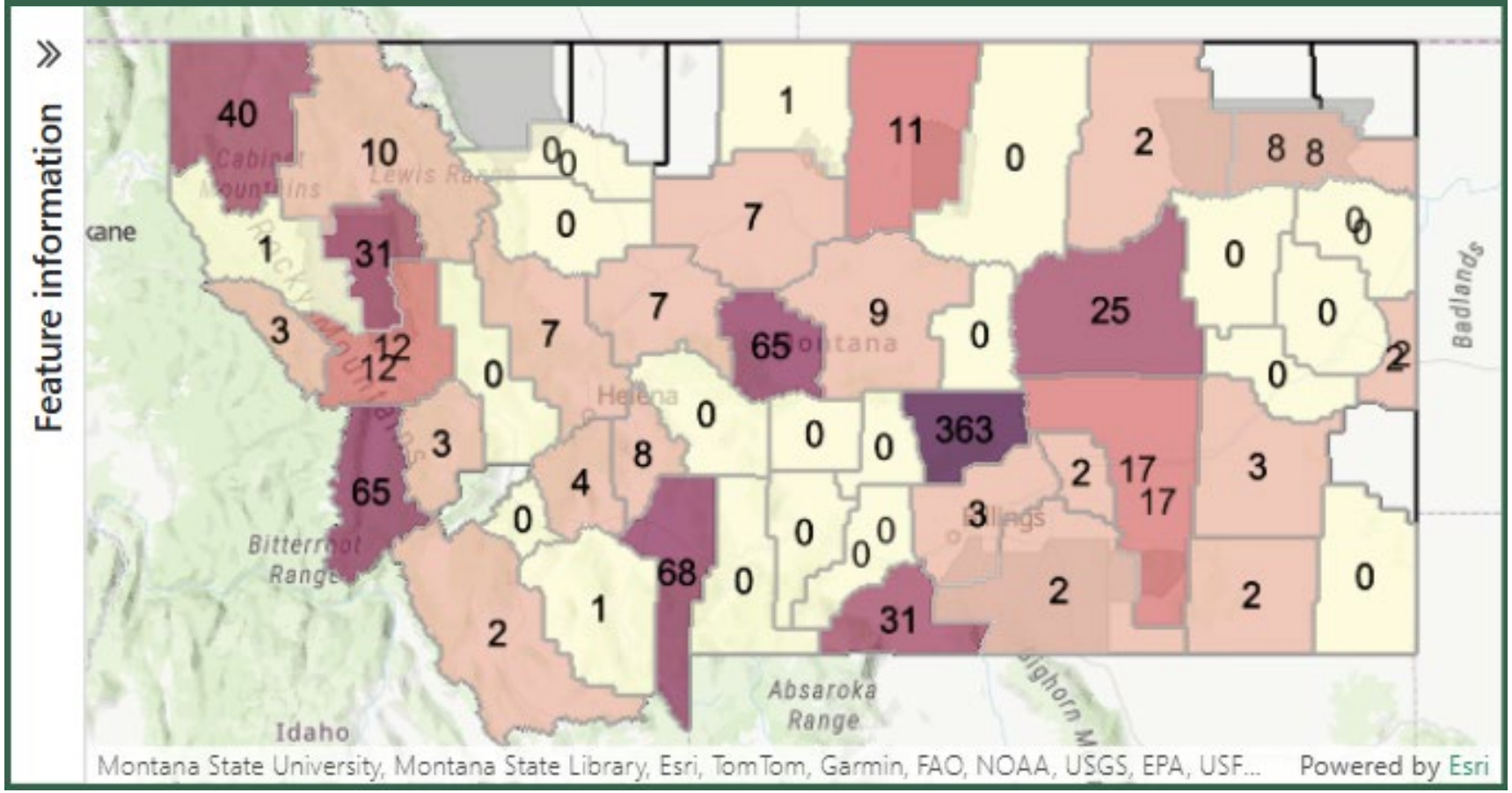


Observation 5:

In the past 5 years, structure loss is associated with grass fires

Structure Loss by Fuel Type & WHP

Structures Burned by County 2004-2025
(Federal Data from wildfire.gov)



Observation 5:

In the past 5 years, structure loss is associated with grass fires

Review of 5 Preliminary Observations from Updated Model

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5. **Structure Loss by Fuel Type and Wildfire Hazard Potential**
   - In the past five years, more structures have been lost to grass fires than any other fuel type.

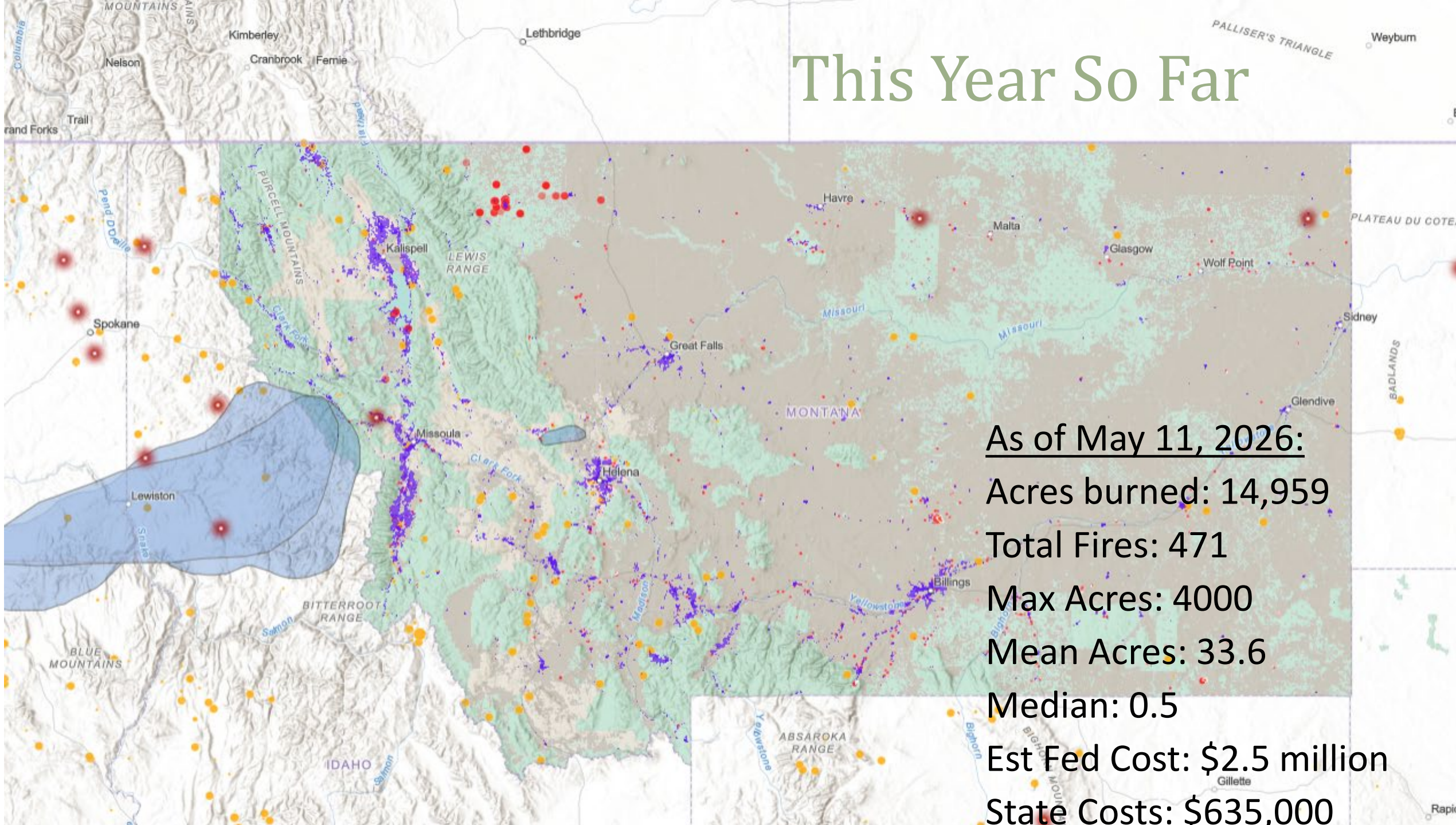
Next Steps & Feedback

Next Steps

- Incorporate Legislative Feedback, Questions, & Ideas
- Model Refinement & Accessibility Improvement
- External Validation with Experts
- Position the Tool to be Useful to Policymakers Entering the 2027 Session

Questions & Feedback

This Year So Far



As of May 11, 2026:

Acres burned: 14,959

Total Fires: 471

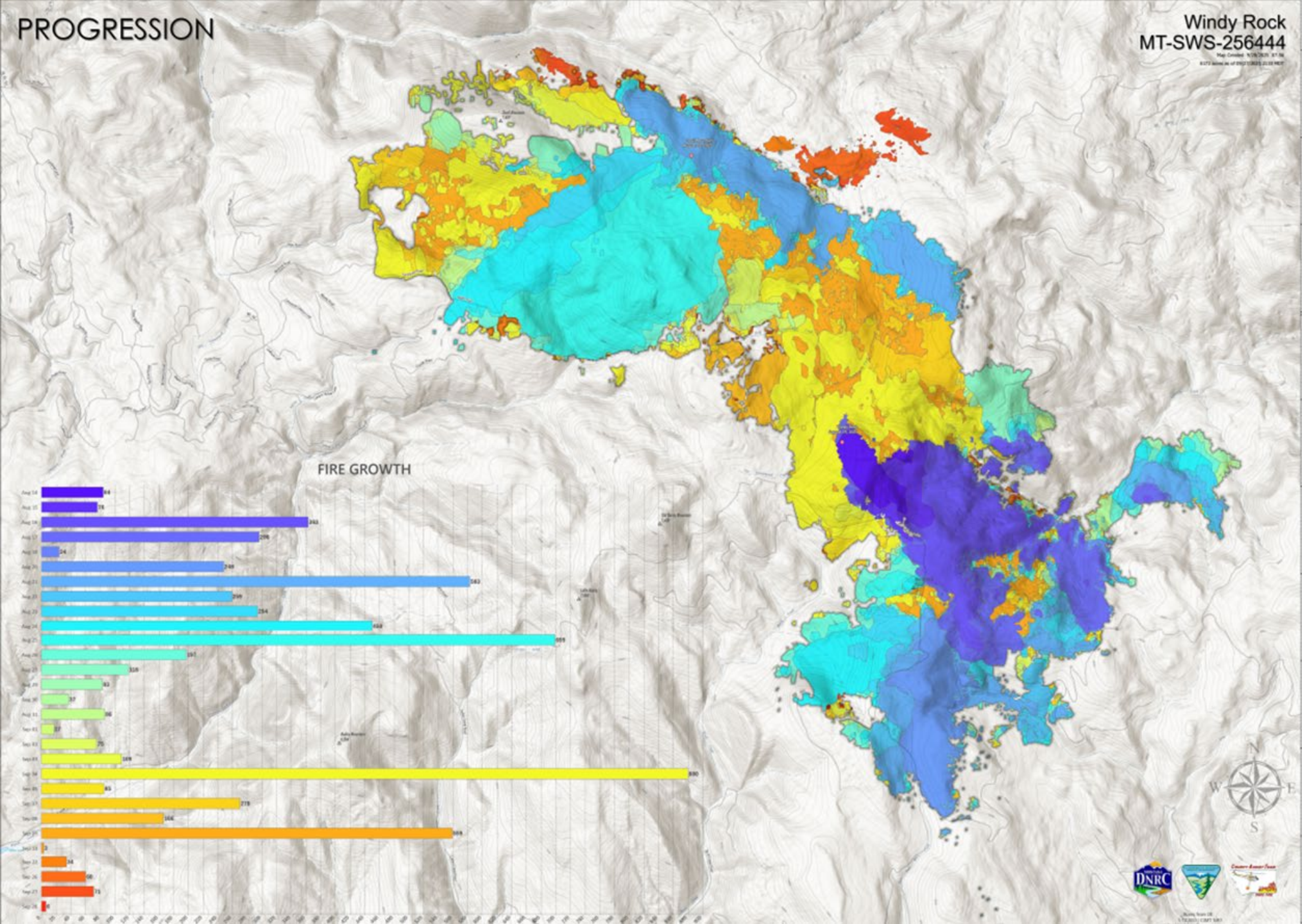
Max Acres: 4000

Mean Acres: 33.6

Median: 0.5

Est Fed Cost: $2.5 million

State Costs: $635,000



Windy Rock

- 6% of total acres burned in 2025
- 55% of state suppression costs for 2025
- Caused dramatic increase in avg cost/acre
- State cost: $25.7 million
- Fed cost: $55.8 million
- Acres: 6,175
- WUI Acres: 1,621
- Cause: Lightning
- Burn Period: August 14 - September 29, 2025
- Est. State cost/acre: $6,049
- Est Fed cost/acre: $9,036
- Homes at risk(within 1.5 mi): 26

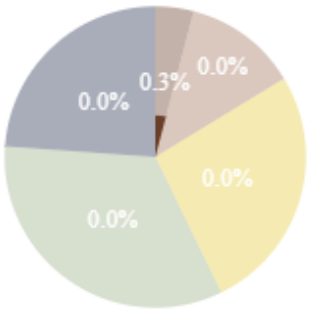
State Wildfire Suppression Costs 2021-2025

LEGISLATIVE FISCAL DIVISION

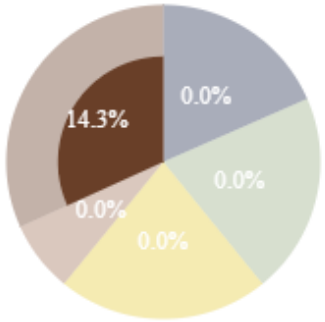
Calendar Year

2021 2025

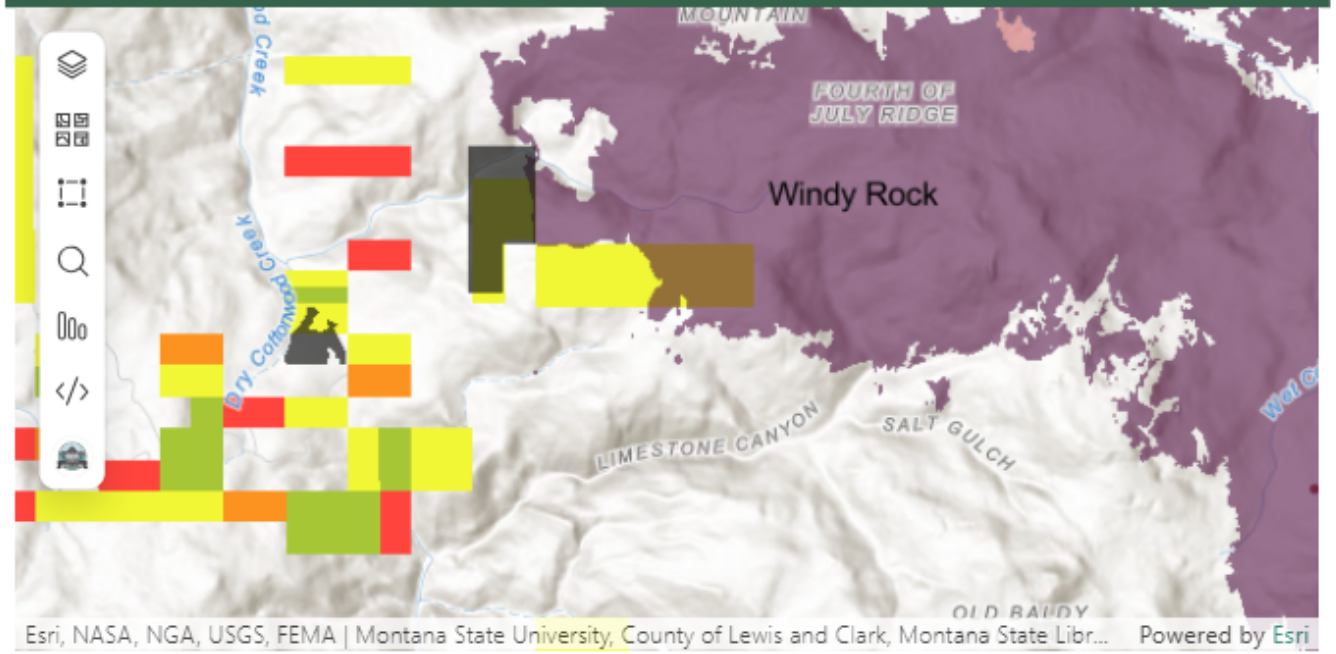
Acres Burned by Wildfire Hazard Potential



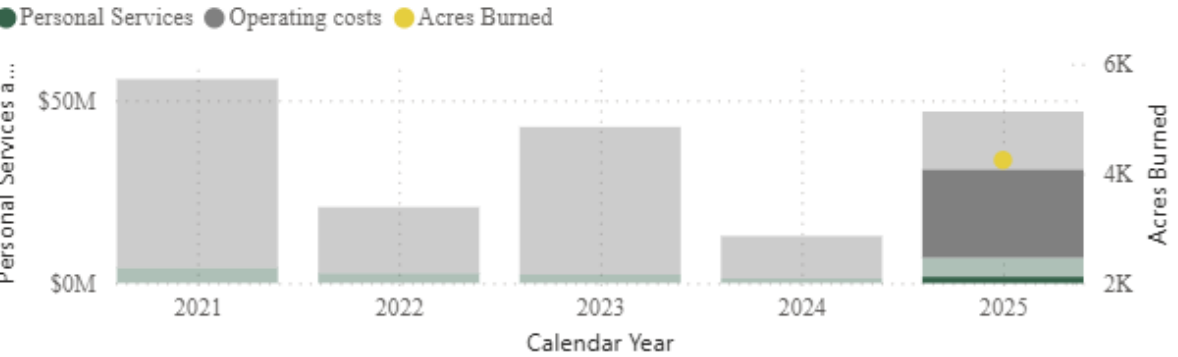
Total State Costs by Wildfire Hazard Potential



Montana Wildfires, Mitigation, and Residential Properties 2021-2025



State Costs and Acres Burned by Year



CalendarYe	IncidentNa	State Costs	Personal Services	fiPCtWUI	Operating Costs	Predominan
2025	Windy Rock	$25,664,082	$1,671,996	26.26	$23,992,087	Timber
2023	Colt	$24,869,775	$621,027	0.00	$24,248,748	Timber
2021	Harris Mtn	$11,265,054	$226,377	0.00	$11,024,083	
2023	River Road East	$9,749,922	$190,404	0.23	$9,559,518	
2021	Richard Spring	$5,334,394	$138,353	2.56	$5,196,041	Grass-Shrub
2021	Robertson Draw	$4,739,131	$54,005	2.63	$4,685,126	Timber
2021	Alder Creek	$3,487,614	$142,474	1.31	$3,345,140	Timber
Total		$179,135,150	$17,331,160		$161,758,595	

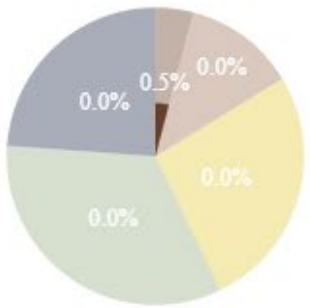
State Wildfire Suppression Costs 2021-2025

LEGISLATIVE FISCAL DIVISION

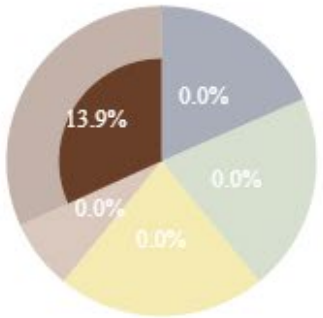
Calendar Year

2021 — 2025

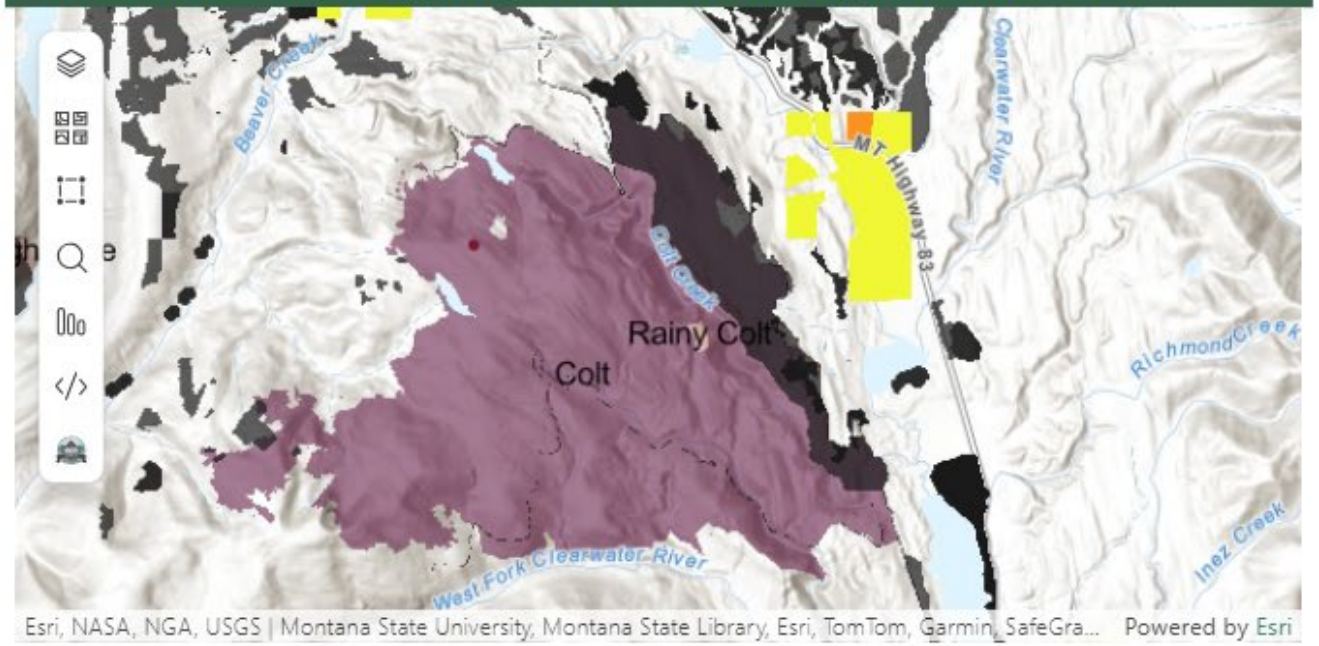
Acres Burned by Wildfire Hazard Potential



Total State Costs by Wildfire Hazard Potential



Montana Wildfires, Mitigation, and Residential Properties 2021-2025



State Costs and Acres Burned by Year

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Total		**$179,135,150**	**$17,331,160**		**$161,758,595**	

Federal Wildland Fire Reform Impact on Data Sources

- Pros:
  - lots of disparate data sources
- Cons:
  - Data sources breaking – bad for updates
  - Some data sources going behind walls

- **Strategic Priorities for Reform**
- The plan will focus on five interdependent priorities:
- Address systemic inefficiencies and modernize aviation and coordination systems
  - Create a joint federal firefighting aircraft service
  - Consolidate predictive services into a national intelligence capability
- Strengthen interagency wildfire coordination and response
  - Modernize and right-size qualifications and training
  - Standardize the Emergency Firefighter Program
- Improve federal partnerships and reduce administrative burden
  - Streamline cooperative agreements
  - Establish a joint contracting, procurement and payment center
- Ensure wildfire research, technology, and IT investments are mission-ready
  - Build a modern, cohesive Wildfire Enterprise IT System
  - Modernize personal protective equipment standards to better safeguard firefighters
- Integrate pre- and post-fire activities into a complete wildfire strategy
  - Deploy a unified wildfire risk mapping tool
  - Establish a consistent Emergency Stabilization and Rehabilitation framework
  - Expand beneficial use of biomass and residual forest products

https://www.doi.gov/pressreleases/departments-interior-and-agriculture-announce-wildland-fire-service-plan-modernize

What is Wildfire Hazard Potential?

Wildfire Hazard Potential

Release Date

June 17, 2024

The wildfire hazard potential (WHP) map is a raster geospatial product produced by the USDA Forest Service, Fire Modeling Institute that can help to inform evaluations of wildfire hazard or prioritization of fuels management needs across very large landscapes. Our specific objective with the WHP map is to depict the relative potential for high-intensity wildfire that may be difficult to manage. To create the 2023 version, we built upon spatial datasets of wildfire likelihood and intensity generated with the Large Fire Simulator (FSim), as well as spatial fuels and vegetation data from LANDFIRE 2020 and point locations of past fire occurrence (ca. 1992 - 2020). We present the WHP map in two forms: 1) continuous integer values, and 2) five WHP classes of very low, low, moderate, high, and very high. Areas mapped with higher WHP values represent fuels with a higher probability of experiencing torching, crowning, and other forms of extreme fire behavior under conducive weather conditions, based primarily on landscape conditions at the end of 2020.