

MICHIGAN STATE UNIVERSITY: FOREST CARBON AND CLIMATE PROGRAM

Wildfire + Climate

FCWG Forest Climate Lab

July 20, 2023



Forest Carbon and Climate Program
Department of Forestry
MICHIGAN STATE UNIVERSITY



FOREST-CLIMATE
WORKING GROUP



American
Forests™

Panel: Wildfire + Climate

Moderator:

Danielle Watson

Society of American Foresters

John Bailey

Oregon State University

Mike Zupko

Wildland Fire Leadership Council

Bill Tripp

Intertribal Timber Council

Heidi Huber-Stearns

*Institute for Resilient Organizations,
Communities, and Environment,
University of Oregon*

*School for Environment and
Sustainability,
University of Michigan*



FOREST-CLIMATE
WORKING GROUP

FCWG unites the forest sector to provide innovative, science-informed strategies to leverage forests and forests products as a natural climate solution.



FOREST-CLIMATE
WORKING GROUP

FCWG Member Organizations include:

- **Forestry, conservation, and wildlife nonprofits**
- **Academic researchers & science educators**
- **Private forest landowners**
- **Forest products companies**
- **State foresters and other government agencies**
- **Carbon finance companies**

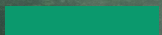


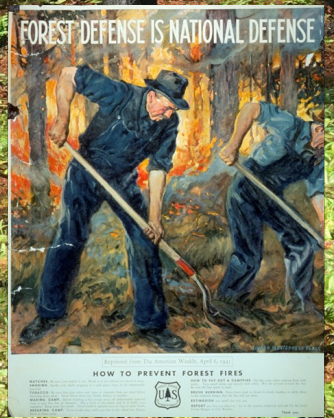
FOREST-CLIMATE WORKING GROUP

[#forests4climate](#) [#forestproud](#)

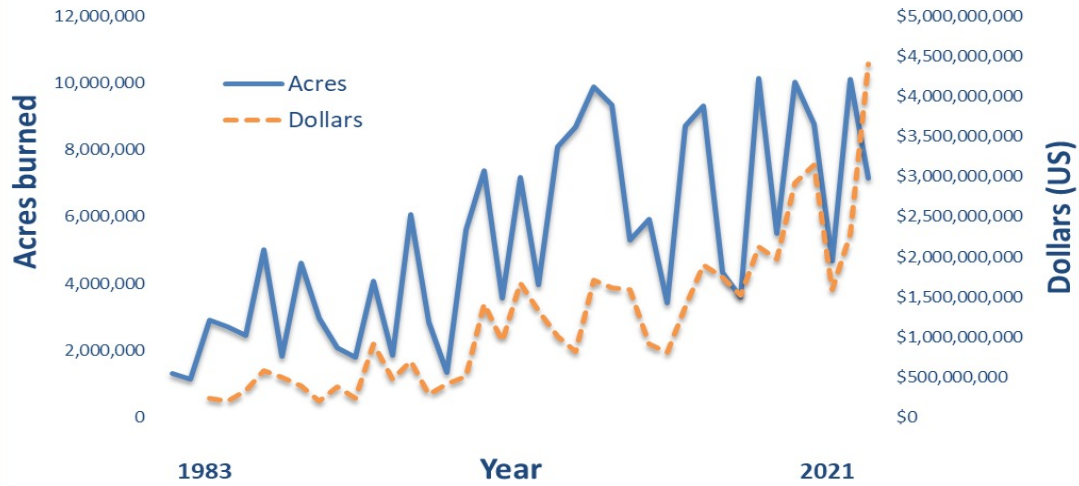
A dense forest of evergreen trees, likely spruce or fir, covering a hillside. The trees are lush green, and there is a soft, misty or foggy atmosphere in the background, particularly on the left side. The overall scene is serene and natural.

John Bailey



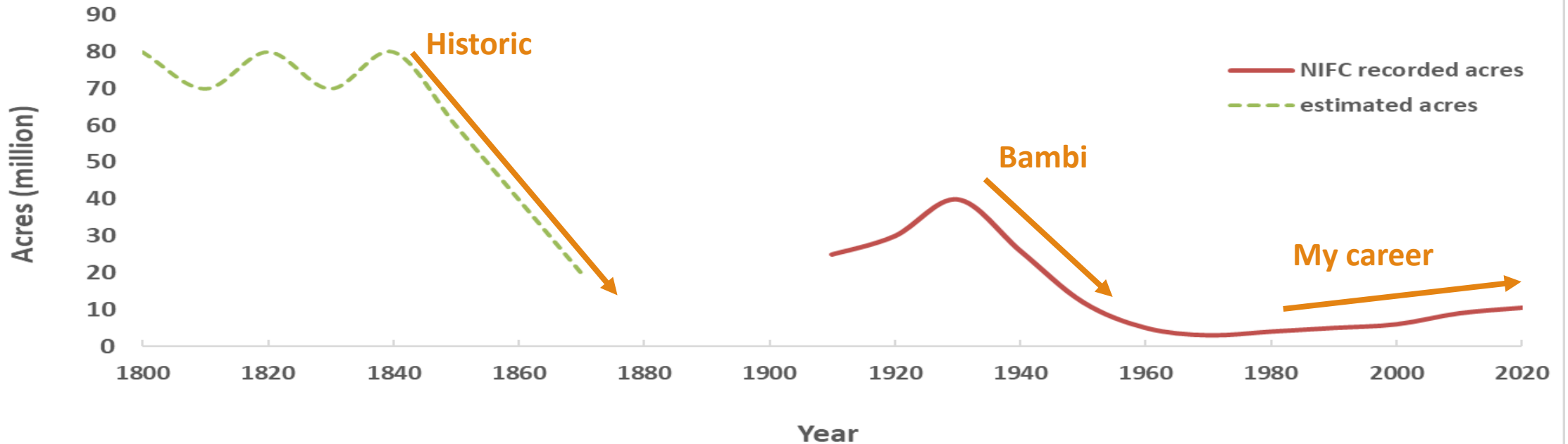


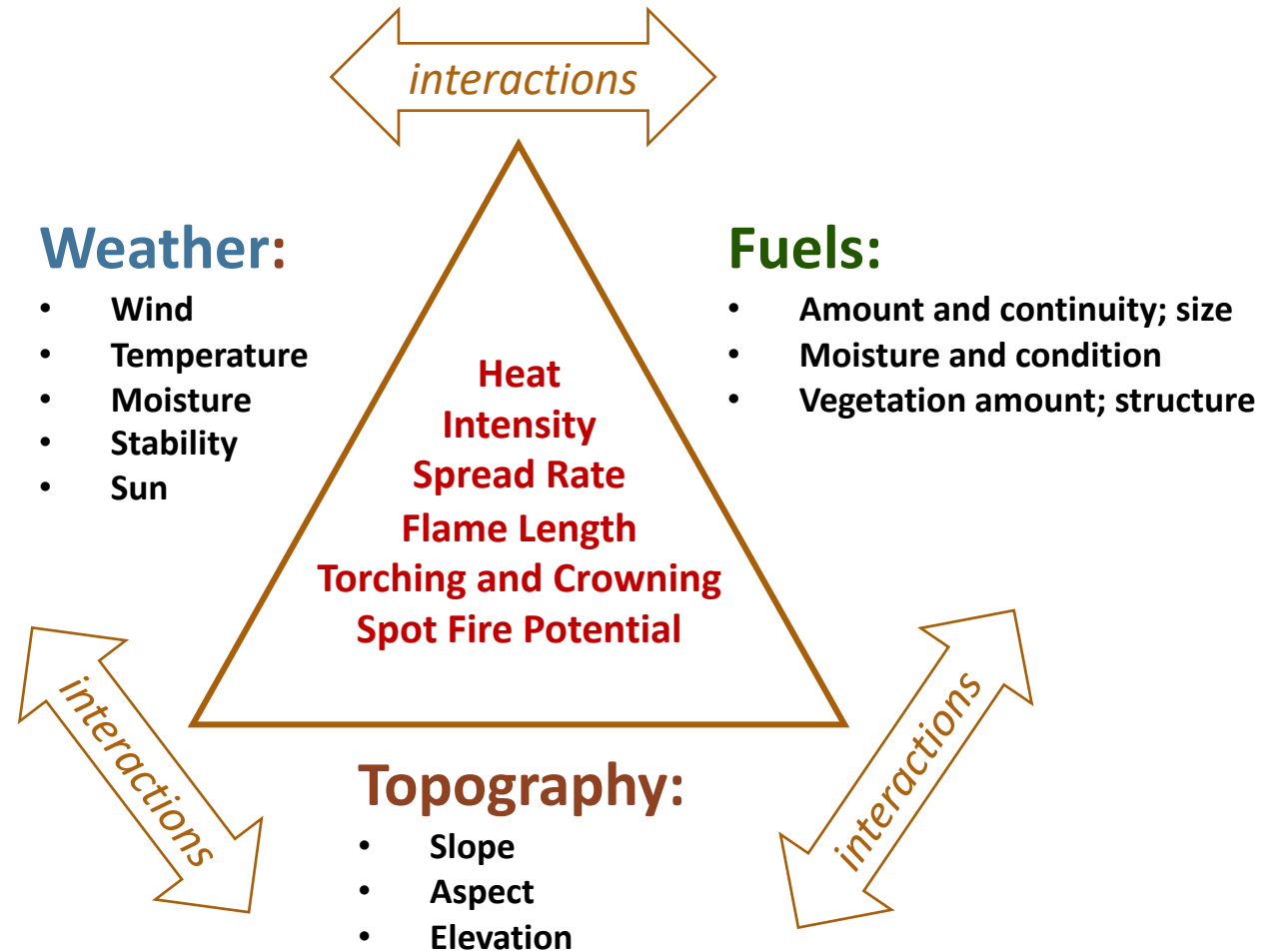
Wildfire Trends (1983-2021)



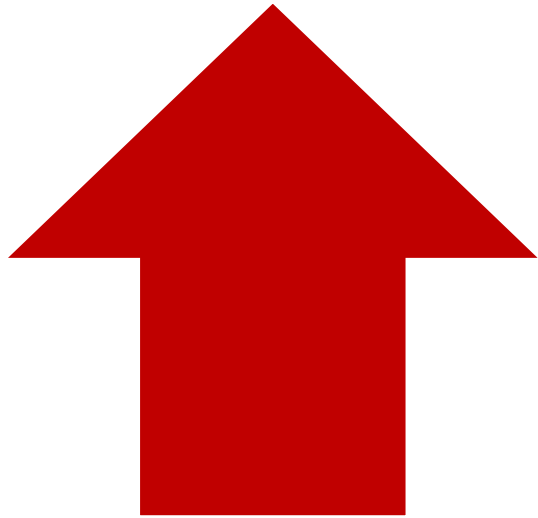
Trends in U.S. wildfire acres burned and dollars spent on suppression (www.NIFC.org), then with 1983-2021 increase (my career) placed in the context of the early 20th Century decline in wildfires (Bambi) and the larger decline (Historic) relative to long-term land history and indigenous burning practices

Longer-term trends in wildfire acres





Fire Behavior Triangle (FBT) with associated factors, plus burn metrics for fireline intensity (heat production, flame length and spread rate) and potential for torching, crowning and spotting. Strong potential for interactions between two or even all three sides.

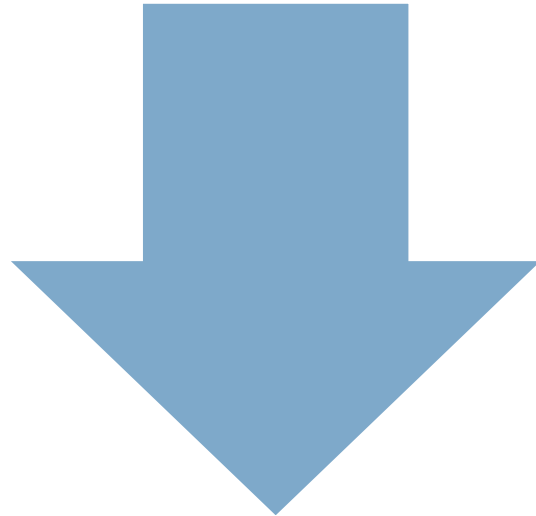


Dry, fine fuels (at/near the surface); abundant and contiguous

Wind

Low humidity and heat; high vapor pressure deficit

Steep slopes and tight valleys



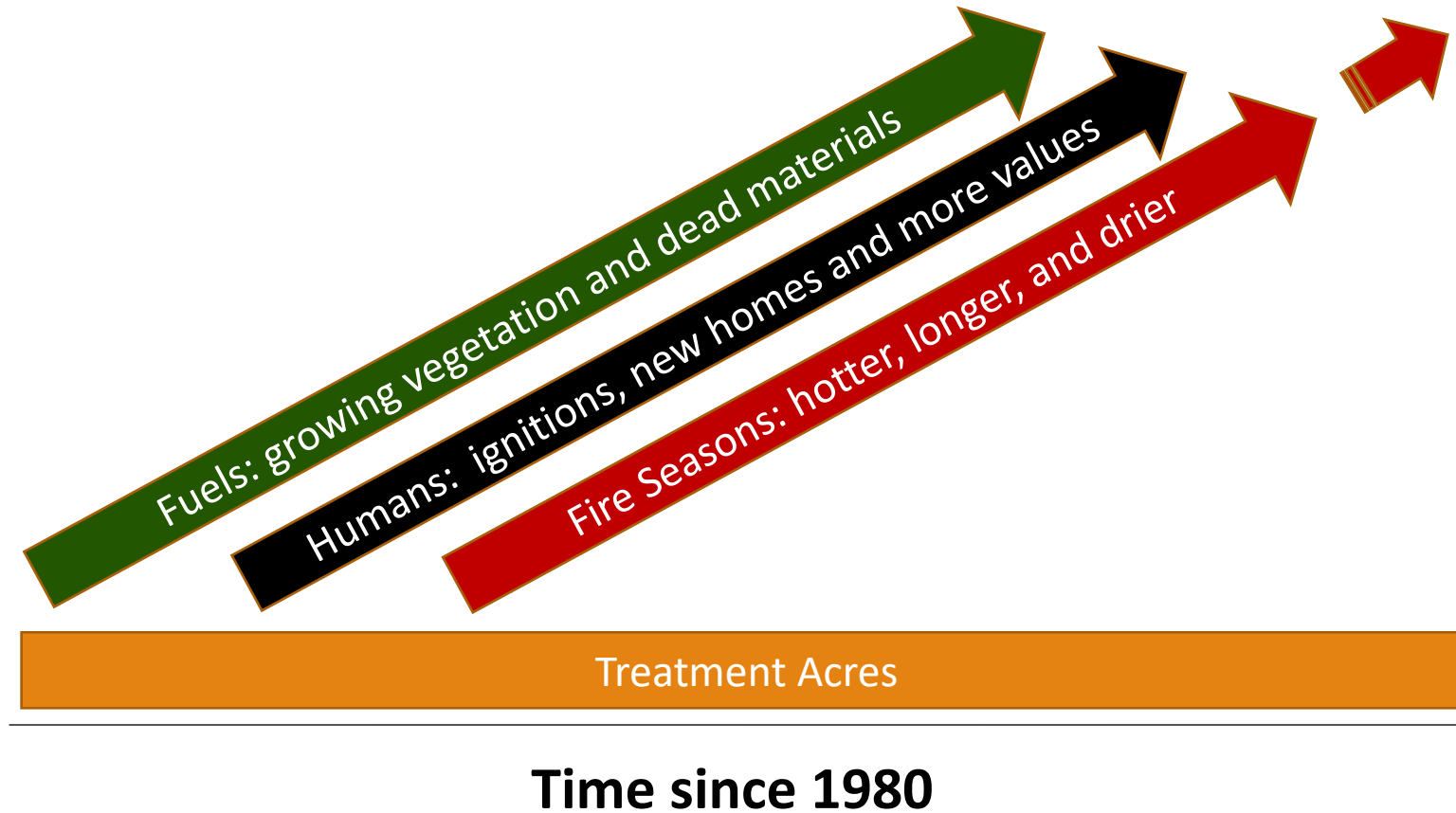
Light, scattered fuels; moist fuels and coarse wood

Nighttime cooling; humidity and fuel moisture recovery

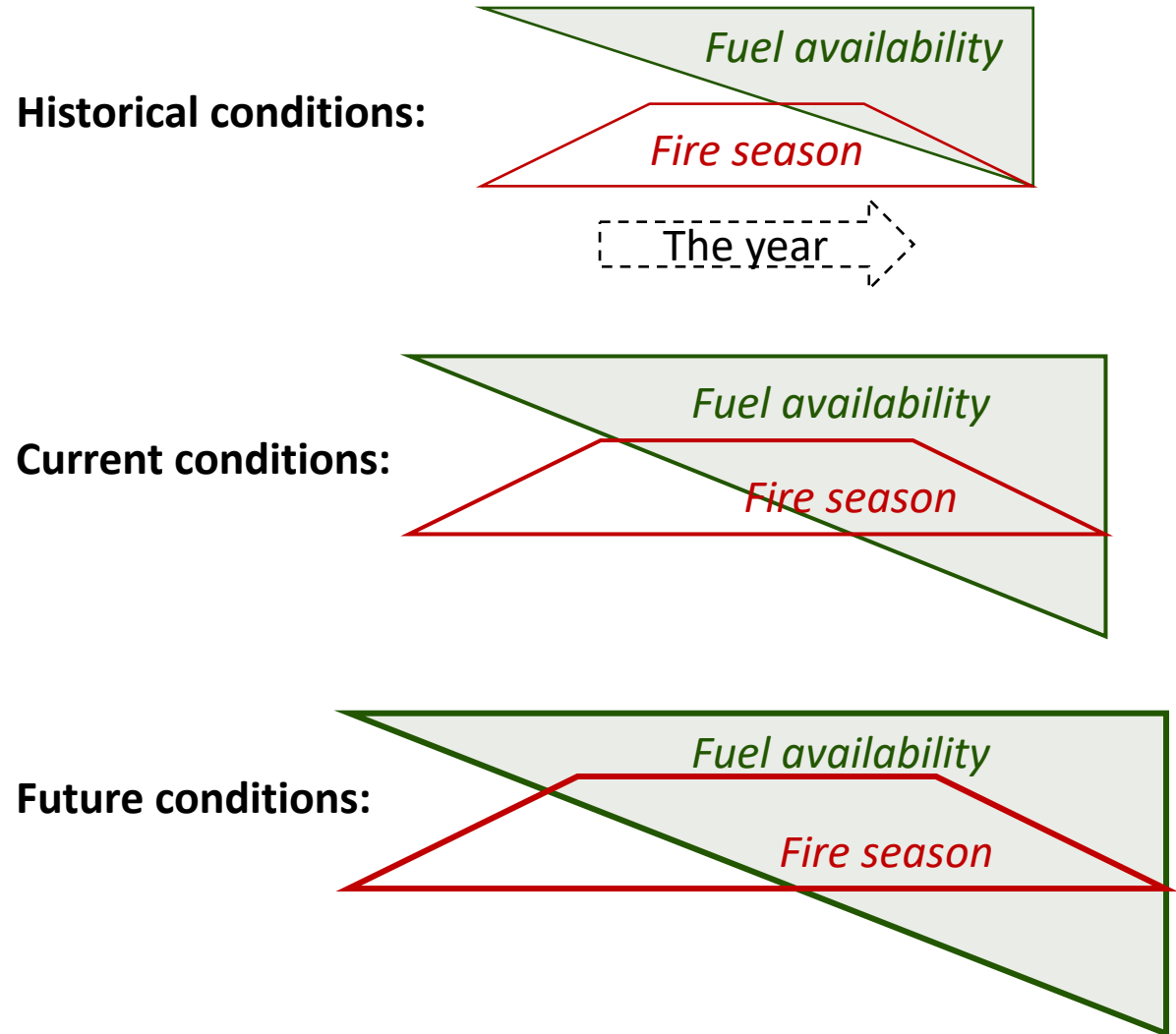
Precipitation and calm weather

Flat terrain

Factors that accelerate combustion, heat production, flame length and fire spread vs. those that tend to dampen combustion and fire spread.

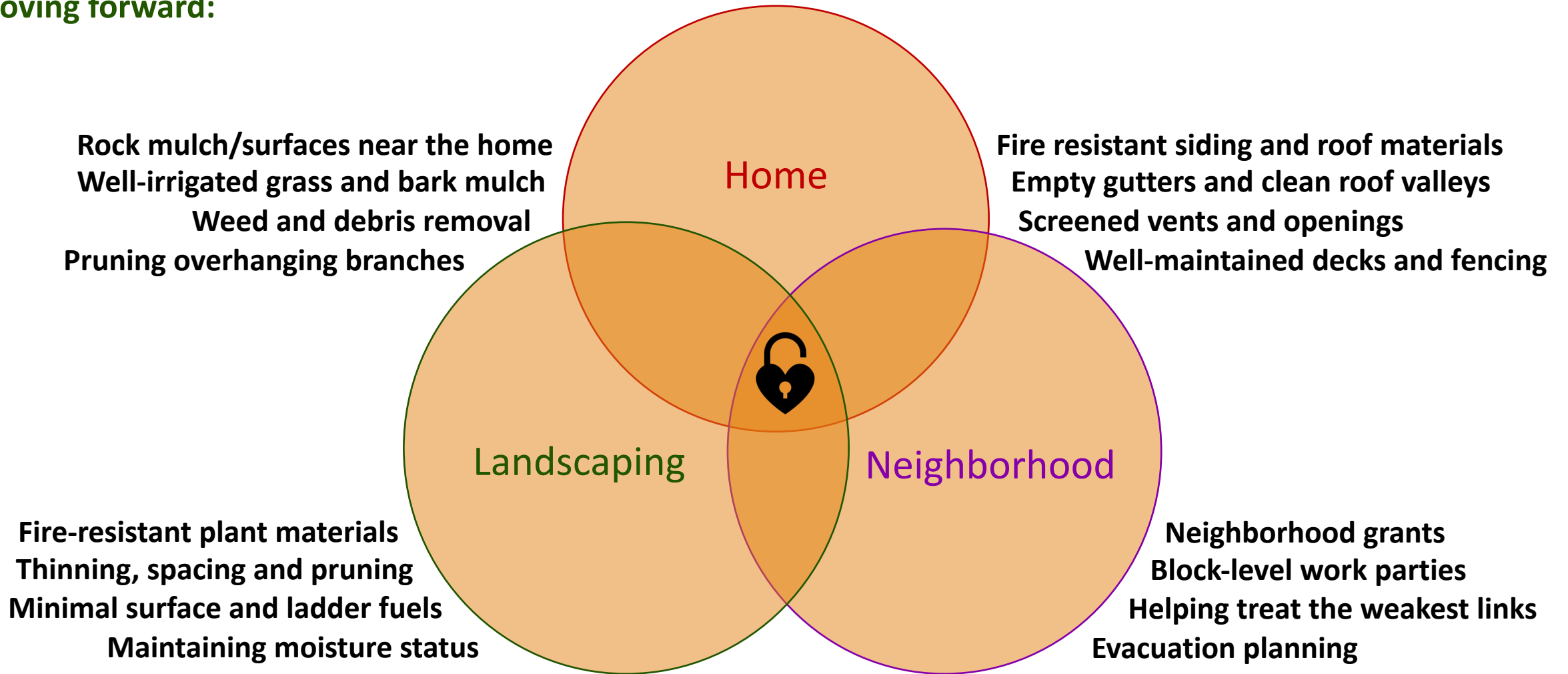


Three larger trends are driving increases in large wildfires without any active land management offsets. The future will certainly hold increasingly severe wildfire seasons, but all the other trends are “manageable.”



Climate warming effects on wildfires, through changing the probability of concurrent fire weather conditions and increasingly available fuels (both amount and dryness); i.e. earlier, drier and longer fire seasons and more fuels.

Moving forward:



Securing your home and family, landscaping and property, neighbors (very important) and neighborhood, and larger community.

The Forest:

Standing dead trees and logs -

Living plants

Fine surface fuel -

Soil carbon

Belowground dead material -

Low severity

Moderate severity

High severity

Half

Pre-fire

Fire Event

1 Year

10 Years

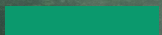
Decades

Time

Impact of variable wildfire severity (low-, moderate- and high-) on near- and long-term carbon dynamics in an archetypal forest ecosystem. Near term changes are dominated by obvious dead wood following high-severity wildfire; long-term changes are dominated by differences in stored carbon (decomposition emissions vs. sequestration over time)

A dense forest of evergreen trees, likely spruce or fir, covering a hillside. The trees are a deep green color, and there is a soft, misty atmosphere in the background, particularly on the left side. The overall scene is serene and natural.

Mike Zupko



Wildfire + Climate

National Strategies for Addressing Wildfire Risk

July 20, 2023

Mike Zupko, Executive Director





Presentation Overview

- Who is WFLC
- Interrelationship with...
- Cohesive Strategy
- Wildfire Resilience Framework
- Wildfire Resilience Coalition

WFLC

WILDLAND FIRE LEADERSHIP COUNCIL



WFLC

Brief History



The Commission (in brief)



Established by statute (Bipartisan Infrastructure Law)



Focused on recommendations to mitigate and manage wildland fire



50 members from diverse geographies and backgrounds



Consensus-based process to complete two reports to Congress

Two Products

Aviation Report

- Transmitted to Congress in February, 2023
- Contains findings and recommendations related to aviation strategy.



Full Commission Report

- Anticipated Sept. 2023
- Opportunity for more holistic view



Workgroup Topics

Wildland Fire Mitigation and Management Commission

Aviation



strategy to meet aerial firefighting equipment needs through 2030 in the most cost-effective manner

Cohesive Strategy



review of the Cohesive Strategy and recommendations for increasing its effectiveness

Communities



structure ignition zone (modifications to structures and landscapes, defensible space) insurance, Community Wildfire Protection Plans, land-use planning, codes and ordinances, risk assessment, community risk reduction.

Landscapes



landscape treatments, prescribed fire, landscape planning (including discussion of CEs and capacity). Includes industry and wood utilization.

Post-fire



Social recovery, long-term recovery planning, flood after fire. Includes remediation and reforestation post fire,

Response Coordination



evaluation of coordination of response to and suppression of, wildfires occurring across jurisdictions. Includes suppression remediation.

Public Health & Infrastructure



utilities, transportation, occupational health, monitoring and alert infrastructure, water, public health, and evacuation. Physical health infrastructure.

Science, Data & Technology



policy change for modernizing and expanding use of technology. Includes data-mining issues and data diversity.

Appropriations



assessment of Federal spending, performance measures, and accountability for wildland fire-related disaster management

Workforce



compensation, recruitment and retention, staffing structure, and ways to meet the challenge of filling workforce capacity needs (including workforce support structures like housing as well as workforce health and wellbeing)

Background

- 2009 FLAME ACT
- Collaborative effort
- Strategic framework
- Additional drivers



The National Strategy

The Final Phase in the Development of the
National Cohesive Wildland Fire Management Strategy



April 2014

It really is a **STRATEGY**

- With (all) your stakeholders and partners, define and understand your risk.
- Collaboratively set landscape level and community-wide priorities.
- Share and co-manage specific risk across boundaries and jurisdictions.
- Accept some short-term risk for long-term benefit.
- Collectively invest in outcome-based approaches and activities, rather than outputs.



Cohesive Strategy Addendum Update

WFLC agreed that the Cohesive Strategy is still the appropriate and solid foundational framework for changing the negative trajectory of wildland fire across the nation.

Objective: Evaluate and address what was not identified or focused on in depth in the 2014 framework and any challenges to Cohesive Strategy implementation.

Updated Vision Statement

To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and collectively, learn to live with wildland fire.

Updated Goals



Resilient Landscapes - Landscapes, regardless of jurisdictional boundaries, are resilient to fire, insect, disease, invasive species and **climate change** disturbances, in accordance with management objectives.

Fire Adapted Communities - Human populations and infrastructure are as prepared as possible to receive, respond to, and recover from wildland fire.

Safe, Effective, Risk-based Wildfire Response - All jurisdictions participate in making and implementing safe, effective, efficient, risk-based wildfire management decisions.

The Four

1. Climate Change
2. Workforce capacity, health and well being
3. Community resiliency (preparation, response and recovery)
4. Diversity, equity, inclusion and environmental justice

The Four

1. **Climate Change**
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The Five

1. The existing wildland fire management system has not kept pace with demands.
2. There is still a need for the significant increase in the use of proactive fire (prescribed and managed wildfire for resource objectives) across the country.
3. Science, data, and technology has not kept pace with the extent of wildland fire and postfire impacts, or been fully integrated into decision-making for fire, land and community managers.
4. Markets, infrastructure, and skilled human resource capacity are inadequate to utilize biomass and other wood products from ecosystem management or hazardous fuel treatments.
5. Education, communications and marketing are insufficient to inform stakeholders and decision-makers about Cohesive Strategy implementation.

Education & Integration Strategy



**All Hands
Wildfire
Resilience
Framework**



Wildfire Resilience Coalition



**Forest Service
10 year
Wildfire Crisis
DOI 5 year
Strategy**

**DoD, FEMA
Etc..**



THANK YOU

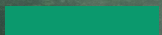
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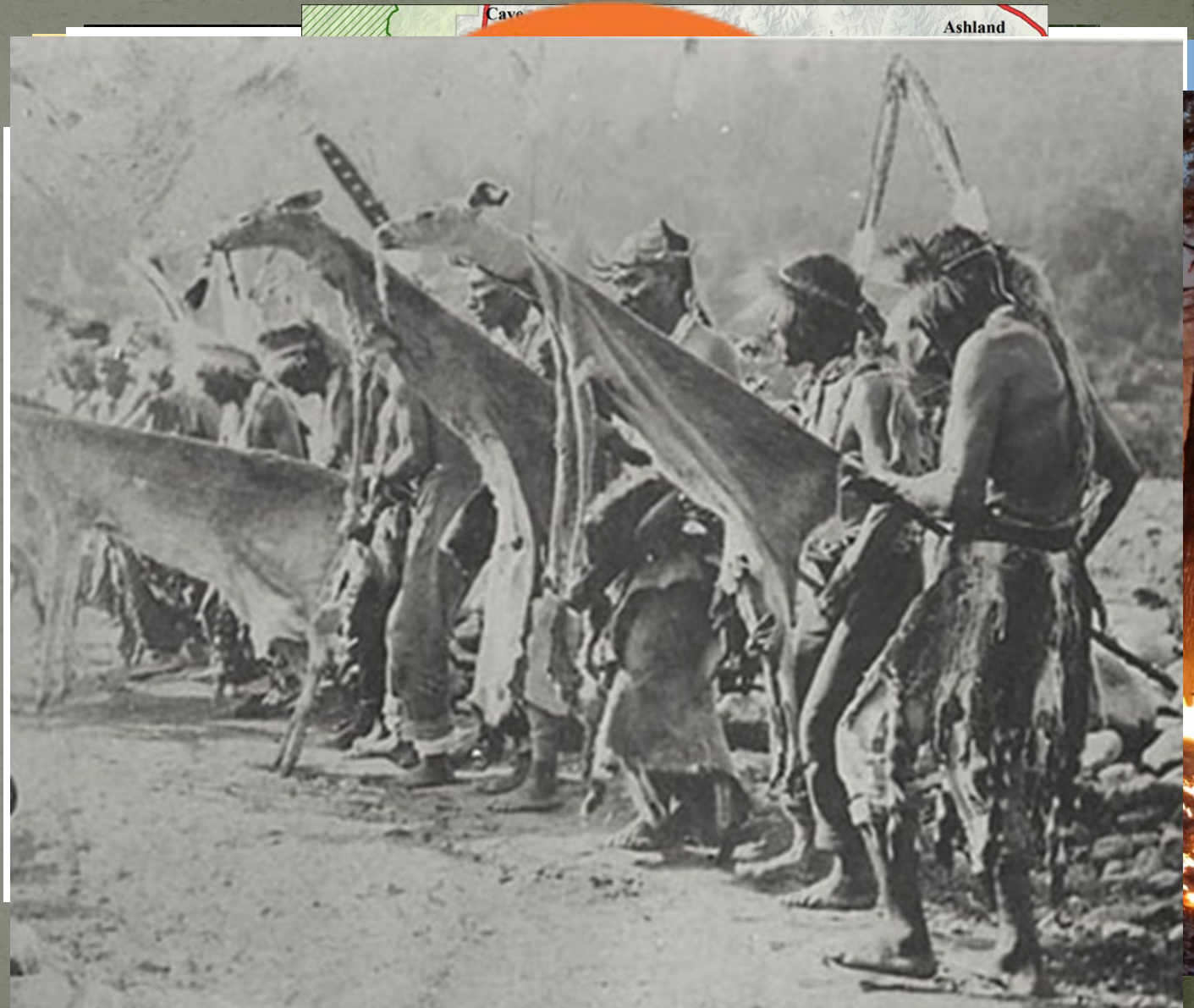
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Bill Tripp



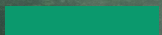
What Implementation Looks Like

- Fire
 - Indigenous Systems
 - Problematic Fire
 - Ecological Departure
- Wildfire Resilience
 - Fire and Smoke are Ecological Processes
 - Humans are Functional Components of Ecosystems
- Partnerships
 - Fire adapted Communities Bridge Cohesive Strategy Goals
 - Western Klamath Restoration Partnership



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Heidi Huber-Stearns



Wildfire + Climate



Heidi Huber-Stearns

Visiting Associate Professor of Practice, Western Forest and Fire Initiative, School for Environment and Sustainability, University of Michigan

Associate Professor of Research, Director, Ecosystem Workforce Program, Institute for Resilient Organizations, Communities and Environments, University of Oregon

Policy

- There are a range of efforts to protect communities, reduce hazardous fuels, deal with forests in a changing climate, such as:
 - Wildfire mitigation management within communities
 - Landscape level forest restoration
 - Expanding and improving conditions for workforces
 - Accelerating project design and planning
 - Indigenous Peoples burning
 - Air quality regulations, preparedness and smoke
- Focus today on federal level policy but important to note that state and local level work is key to navigating how to live with smoke and wildfire.

Some considerations

- **Community and organization capacity**
- **Local resources and expertise are key**
- **Traditional Ecological Knowledge, Tribal burning and other practices**
- **Just because federal programs exist does not mean that they are accessible and that organizations have the capacity to apply.**

Expanding and improving conditions for workforces

- Working conditions and pay for firefighters, forest workers and others who are critical avenues to accomplishing this work
 - Senator Ben Lujan (D-NM), working on an agroforestry marker bill for language in the 2023 Farm Bill that would provide better protections to forest workers: Title IV – Forestry Programs, and Title V - Protections of Forestry Workers
 - The bipartisan Wildland Firefighter Paycheck Protection Act
- National Interagency Prescribed Fire Training Center and the Forest Service Fuels Academy

Farm Bill: Recommendations for Community based and collaborative capacity, Rural Voices for Conservation Coalition

1. Provide Dedicated Funding for Community-based and Collaborative Capacity
2. Reauthorize the Joint Chiefs' Landscape Restoration Partnership and Collaborative Forest Landscape Restoration Program (CFLRP)
3. Improve Accessibility of the Regional Conservation Partnership Program (RCPP)
4. Make Good Neighbor Authority (GNA) More Inclusive
5. Increase the Utility of Tribal Co-Management Authorities
6. Expand Match Flexibility and Advance, Up-Front Funding Models
7. Support Workforce Development through Locally-Driven Strategies
8. Expand the Work of Southwest Ecological Restoration Institutes (SWERIs) across West

Landscape level forest restoration & Rx fire

- Emergency Wildfire Act of 2023: H. R. 3439: “To direct the Secretary of Agriculture to select and implement landscape- scale forest restoration projects, to assist communities in increasing their resilience to wildfire, and for other purposes.”
- National Prescribed Fire Act: working groups and other interested parties have proposed revisions to the act, in 2023, such as:
 - specific requirements for plans to increase prescribed fire
 - more inclusive workforce descriptions and trainings
 - improved performance measures to increase accountability for prescribed fire, cultural burning and fire hazard reduction

Air quality and smoke management

U.S. Environmental Protection Agency's (EPA) proposed rule to modify the National Ambient Air Quality Standards (NAAQS) for fine particle pollution (PM_{2.5}):

- Potential unintended consequences for efforts related to the use of prescribed fire, cultural burning, and wildfire managed for natural resource benefit
- Protecting human health while still working to reduce smoke impacts, balancing short and long term

start somewhere

it can be overwhelming to determine where to engage in this complicated space, but all facets of wildfire policy need champions

Resources, contacts

- Prescribed Fire Policy Group, Courtney Schultz, Colorado State University
- Rural Voices for Conservation Coalition
- Heidi Huber-Stearns: hhuber@uoregon.edu

Questions?

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