



CAPITAL REGION
CLIMATE READINESS
COLLABORATIVE



Cleaner Air
Partnership

Building Regional Resilience

*How Wildfires Impact the
Environment, Public
Health, and the Economy*

**March 17, 2025
12:30 - 3:00 PM**

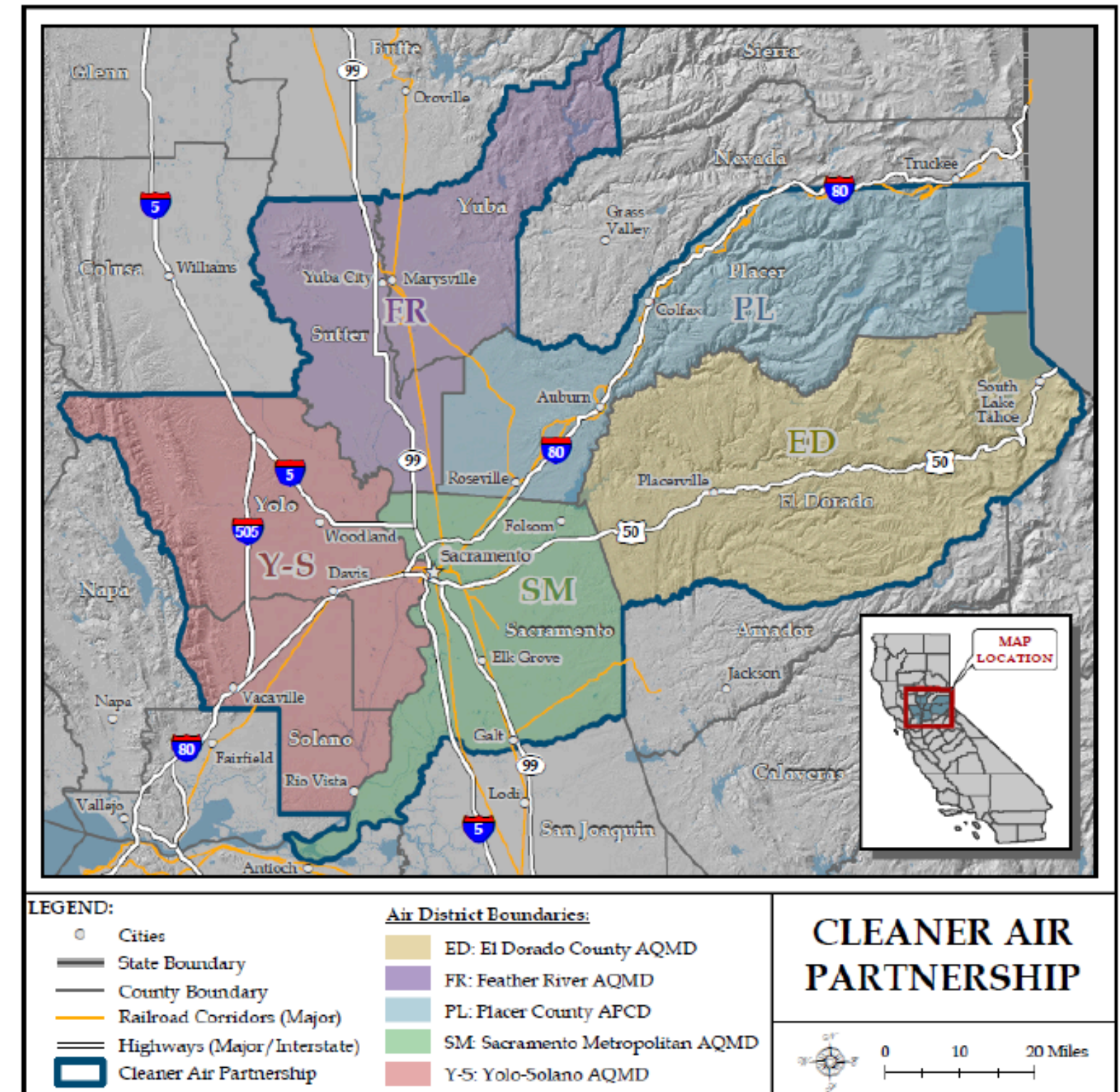
WE PROSPER TOGETHER



- Valley Vision is the regional convener and fiscal agent for **We Prosper Together**, leading the California Jobs First initiative in the Capital region.
- The program's *Regional Plan* identifies **Working Lands** as a priority industry for investment.
- As part of a phased funding approach, Valley Vision awarded \$5 million to pre-development projects supporting an inclusive, sustainable regional economy.
- Funded projects include efforts to strengthen local food systems, expand agricultural workforce development, and advance biomass utilization.

Cleaner Air Partnership (CAP)

Founded in 1986, the Cleaner Air Partnership is a **public-private coalition of air quality regulators, industry representatives, and environmental advocates** working together to improve air quality in the 6-county Sacramento region.



What is the Capital Region Climate Readiness Collaborative?

The Capital Region Climate Readiness Collaborative (CRC) is a network designed to promote greater resilience through coordination across the six-county Capital Region.

The purpose is to provide a forum for regional engagement for leaders from public agencies, business, nonprofit, academia, community groups, and other partners.

Through CRC-led initiatives, partners convene across market and jurisdictional boundaries to:

- share information and best practices
- leverage efforts and resources
- avoid duplication of efforts
- identify critical needs and funding opportunities



CAPITAL REGION
CLIMATE READINESS
COLLABORATIVE

Members of the Capital Region Climate Readiness Collaborative



Agenda

- 1:00 Welcoming Remarks**
- 1:10 Improving Forest Health and Watershed Resilience**
- 1:40 Public Health Impacts of Wildfires**
- 2:10 Break**
- 2:15 Economic Impacts of Wildfires**
- 2:45 Closing Remarks & Next Steps**
- 3:00 Adjourn**



***Thank you to the California
Endowment for hosting us!***



enjoy local pizza from Buffalo Pizza and fresh produce from Cloverleaf Farm!

Improving Forest Health and Watershed Resilience



JoAnna Lessard, PhD Watershed Manager





Yuba Water Agency: Improving forest health and watershed resilience

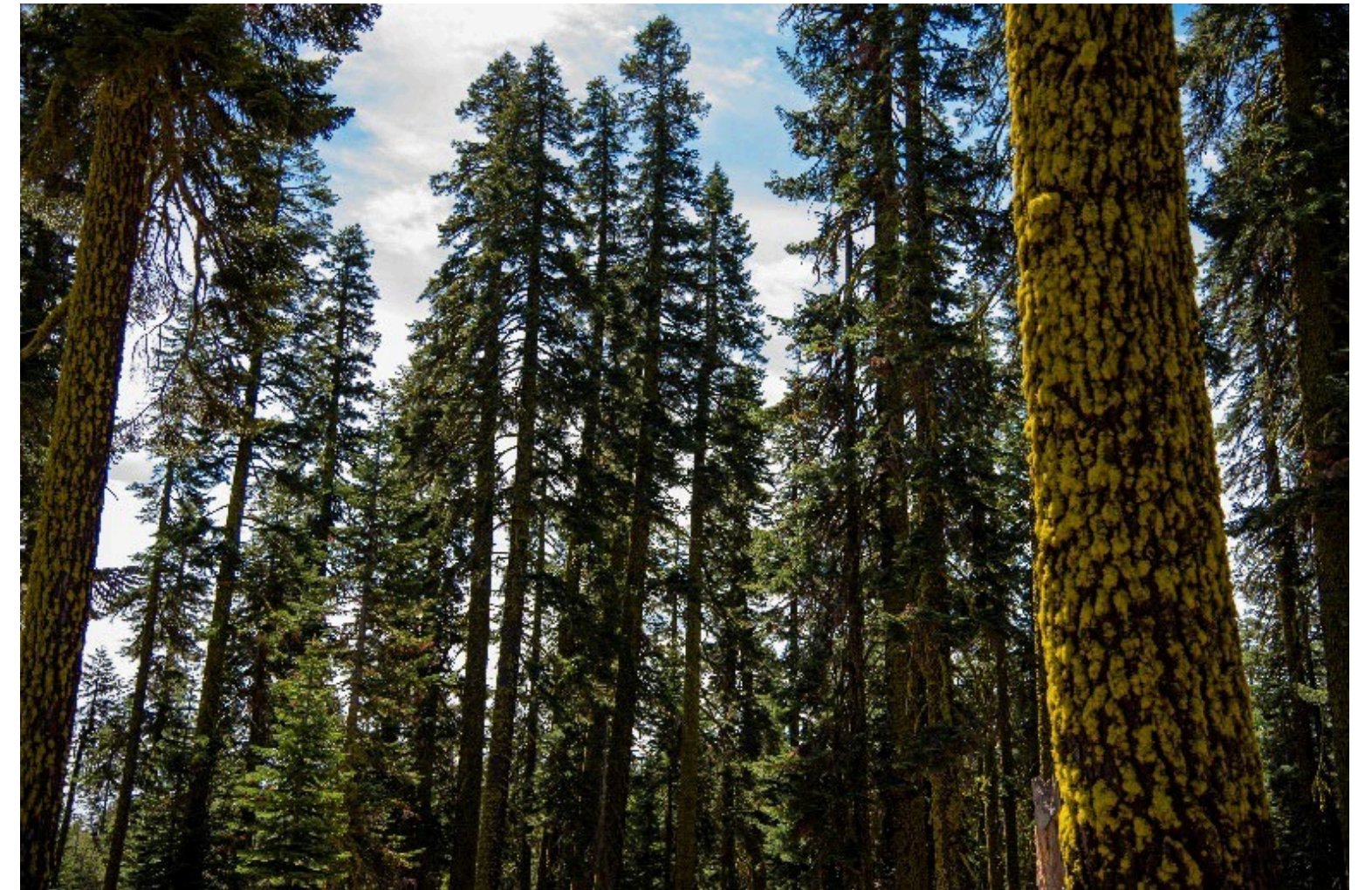
JoAnna Lessard, PhD
Watershed Manager



Follow us on social @yubawater
Visit our website at yubawater.org

Overview:

- Yuba Water's Mission
- Need for forest management
- Our Innovative Watershed Resilience Program
 - North Yuba Forest Partnership
 - Forest Resilience Bonds
 - Additional forest health efforts



Yuba Water Agency's mission areas



Flood Risk Reduction



Sustainable Water Supply



Hydropower Generation

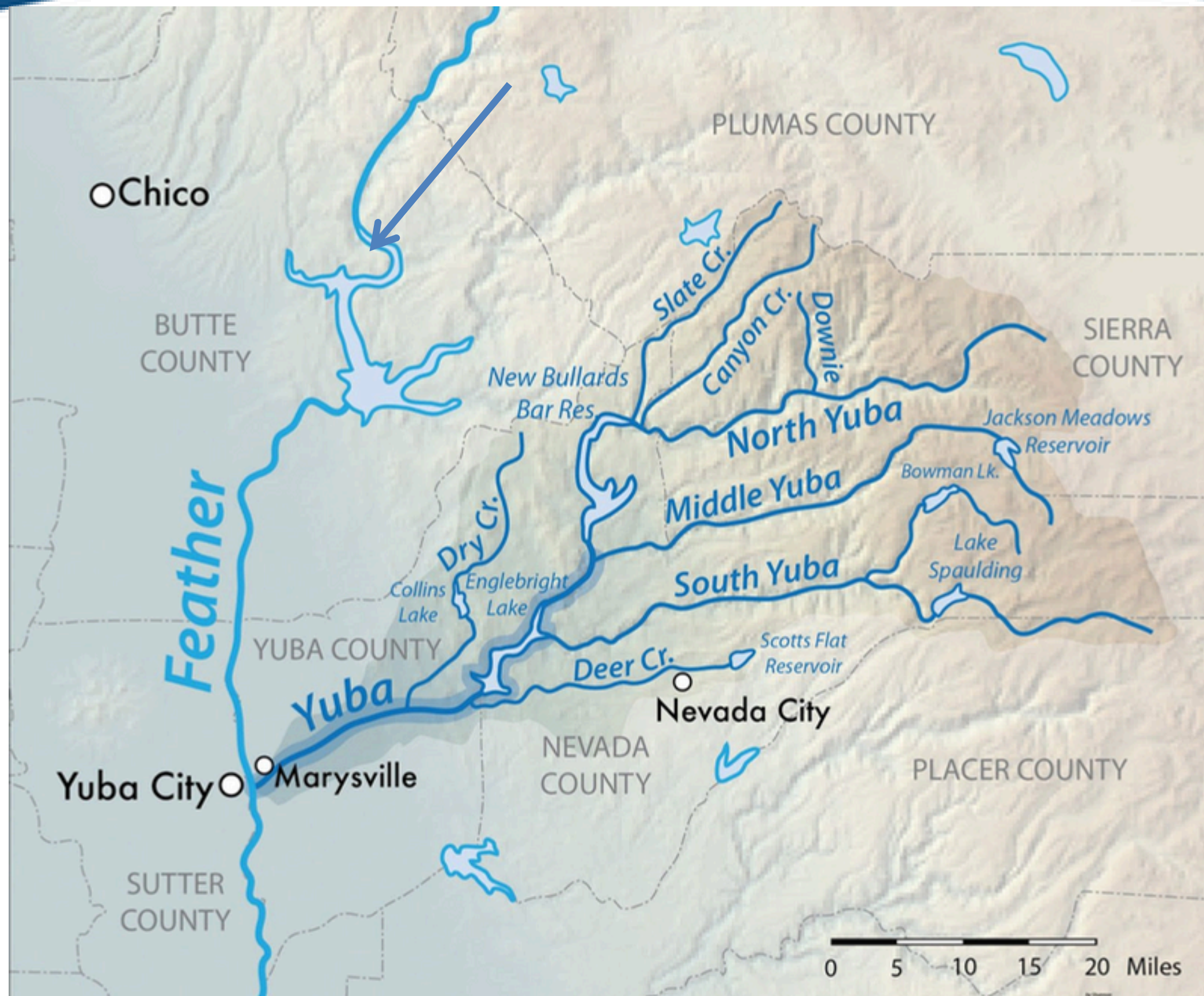


Fisheries Protection
and Enhancement

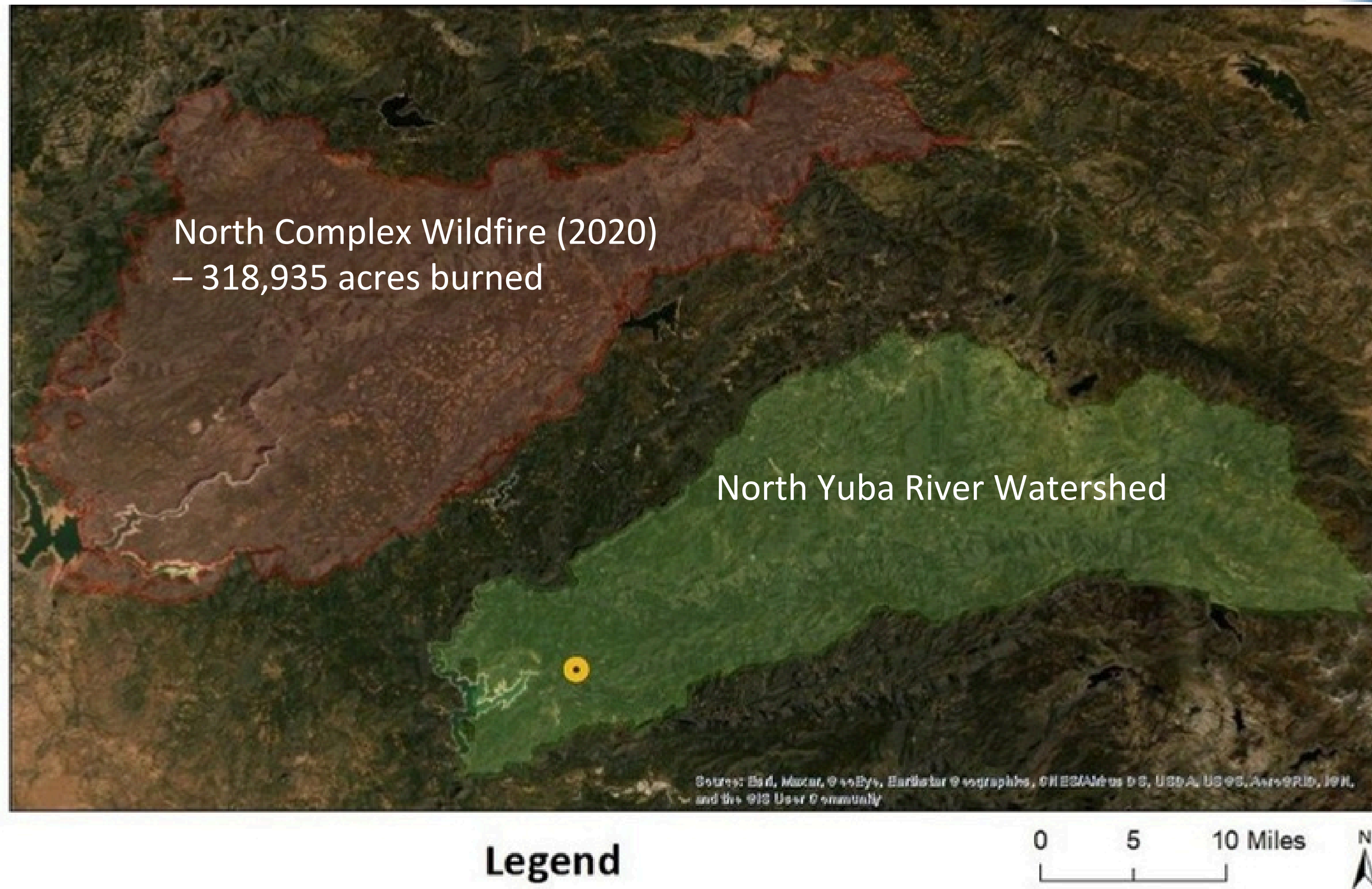


Recreation at New
Bullards Bar

The Yuba River watershed



Why do we need forest restoration?



Historical comparison

Yosemite Valley



1899



1994

Gruell 2001

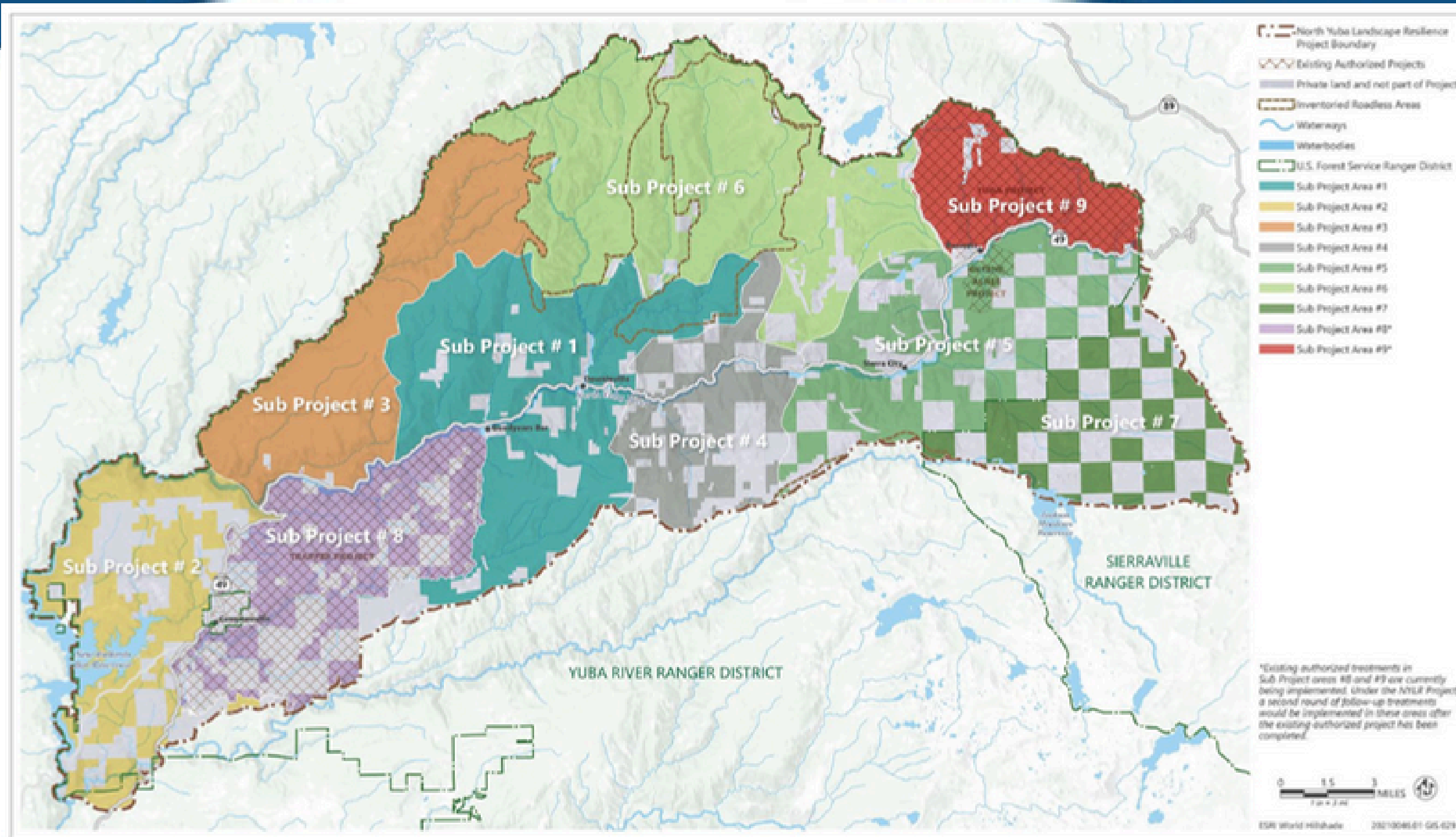


Yuba Water's Watershed Resilience Program

- Yuba Water created the Watershed Resilience Program in 2018 to **reduce risk of catastrophic wildfire, protect local communities and safeguard water supply**
 - Objective to build collaborative projects within Yuba County and Yuba River watershed that support these goals
- In 2020 we created the Yuba Water Community Impact Grant Program to **invest \$10 million per year in projects that further Yuba Water's missions and programs** (including the Watershed Resilience Program)
 - To date we have invested \$26 M in Watershed Resilience projects, which have leveraged \$182 M in external funding

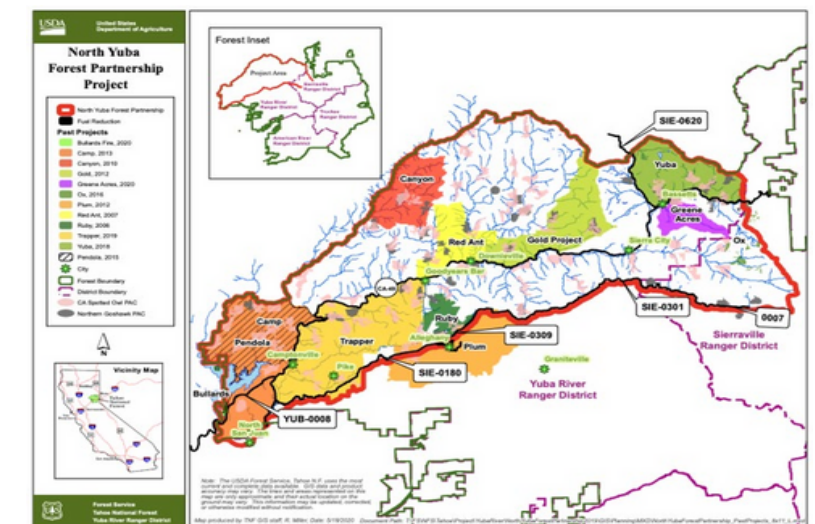


North Yuba Landscape Resilience Project EIS



Sources: Data downloaded from Forest Service in 2021 and Vibrant Planet in 2022.

- NYFP collaborated on the scoping of the EIS and on the strategic project sequencing
- Working together to increase the pace and scale of implementation to restore the entire watershed



Forest Resilience Bonds and Blue Forest



- First-ever Forest Resilience Bond piloted by Yuba Water and Blue Forest in 2018 with 15,000-acre Yuba 1 Project
 - Yuba Water contributes over 4 years \$1.5 M to leverage \$3 M
- Then in 2022 the 26,000-acre Yuba 2 Project was funded via second Forest Resilience Bond
 - Yuba Water contributes over 10-years \$6 M to leverage \$18 M
- Yuba Water's investments in these innovative FRBs led to the NYFP MOU
 - Pivotal to increasing pace and scale of this work (20,142.6 acres treated since 2018)
 - attracts local implementation contractors and local workforce development
 - demonstrated NYFP's ability to get work done—which directly led to \$130 million in new Federal funding for our watershed in 2023



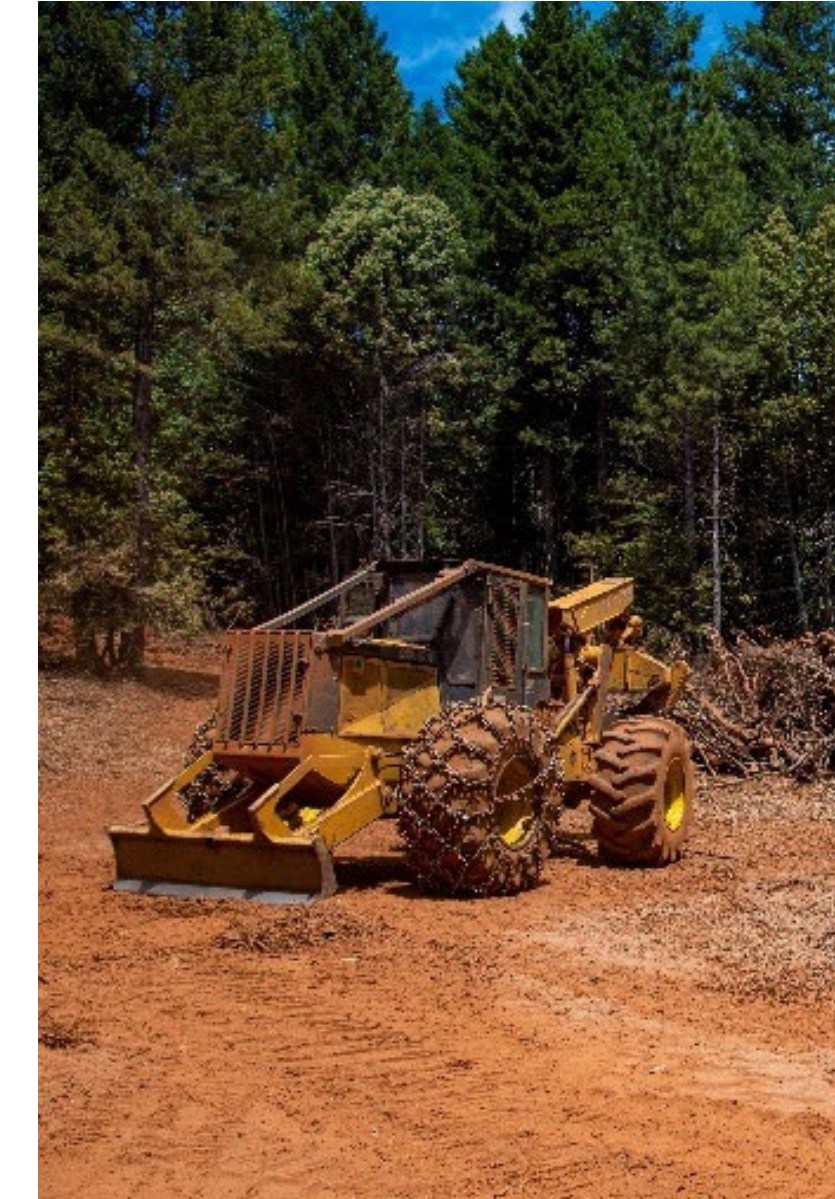
Additional Watershed Resilience efforts

CCP Biomass Utilization Infrastructure

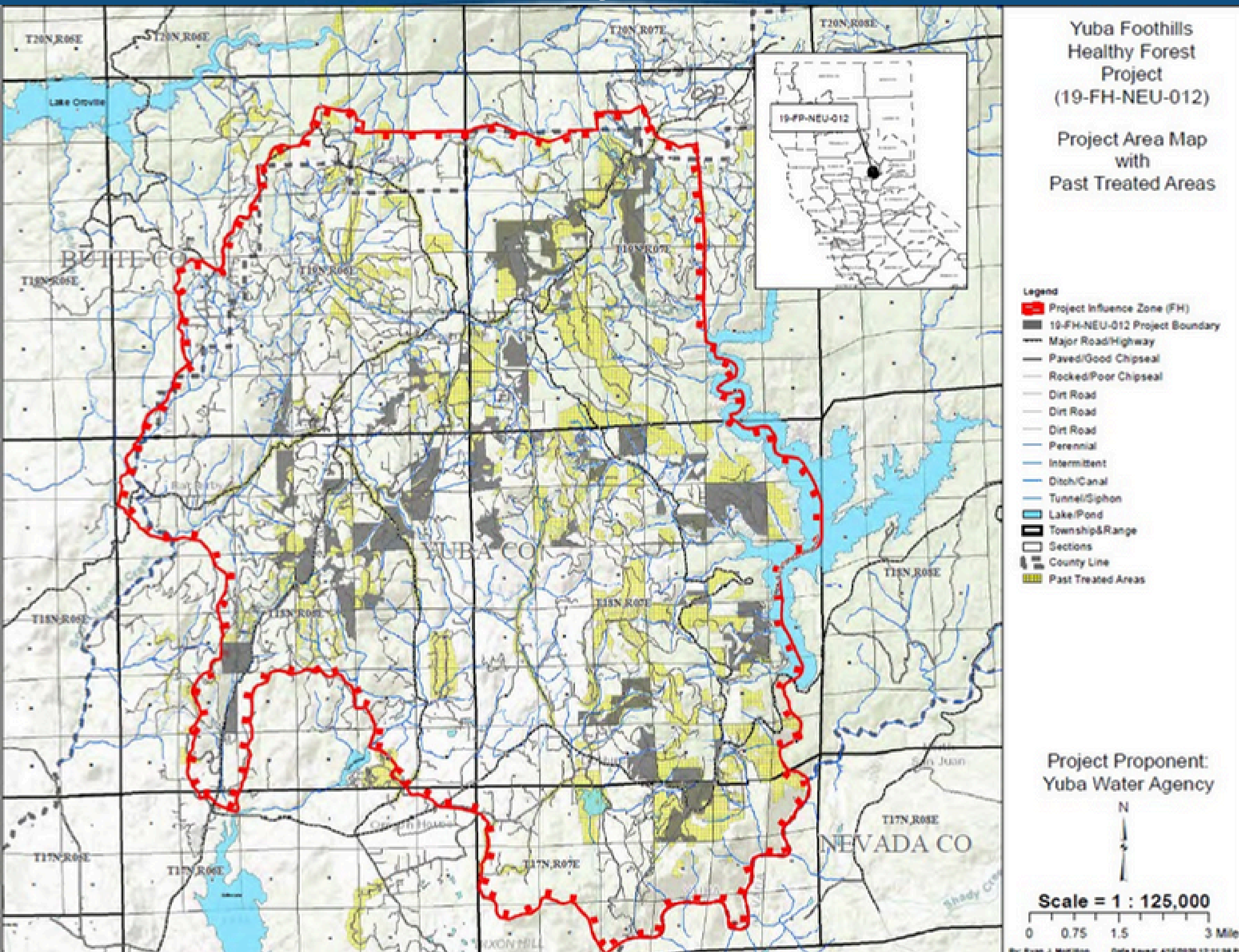
- 5 MW biomass plant and Forest Biomass and Business Center
 - Nearly ready to implement (co-located sawmill and other wood product business are being planned)
- Yuba Water provided planning grants and strategic support over the last several years;
August 2024 Yuba Water committed to supporting implementation financing with a \$7M grant and \$8.3 M low interest loan

Yuba Watershed Protection and Firesafe Council

- Role: Public Outreach, education and projects in the WUI
- YWA provides Annual support for Executive Director and cost share for new fire prevention grants



Yuba County Forest Health Grants: 2019 Yuba Foothills Healthy Forest Grant



Cal-Fire Awarded the Yuba Water **\$4.5 M grant** from the California Climate Investments Department of Forestry and Fire Protection Forest Health Program

- Forest health and fire risk reduction treatments on **5,400 acres in the Yuba County** foothills
- includes Plumas NF, Private Timber Companies, Boy Scouts and Yuba Water
- The Project Influence Zone of 71,244 acres and protects 2,721 structures at high risk for wildfire



Yuba Foothills Healthy Forest Grant

- Implementation began in 2020 and was completed in 2024
- treated 6,000 acres at close-out

Pre-thinning Treatment



Post-thinning Treatment



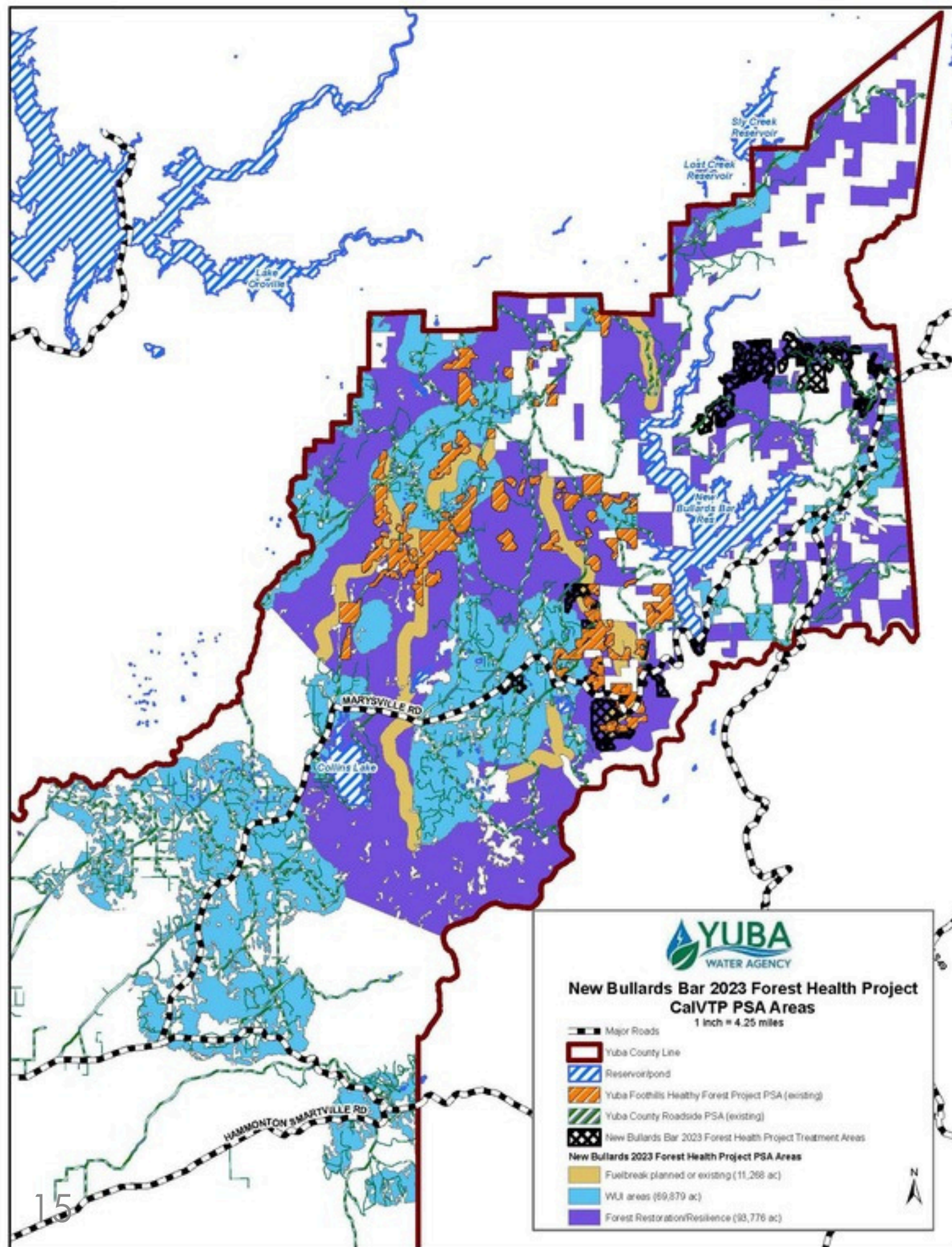
2023 New Bullards Bar Healthy Forest Grant

- Funded in 2023 provides \$7 M in new funding from Cal Fire CCI FH program
- includes the same partners as the Yuba Foothills grant with the addition of the National Forest Foundation and Tahoe National Forest (*counts as cost share for new direct federal funding for the NYFP)
- Includes ~4000 acres of fuels reduction treatments
- Increasing pace and scale through innovative CEQA covering all 175,000 forested acres in Yuba County



Cal VTP Project Specific Analysis (PSA)

- Will cover all treatments in the NBB FH grant
- Will also analyze fuel reduction treatments and mitigations of all forested acres in upper Yuba County
- Will support new projects by other partners being closer to shovel ready with only pre-treatment biological surveys being required and a notice of determination (NOD) filed for consistency with this PSA



Additional Watershed Resilience efforts:

Yuba Community College Watershed Resilience Program

- Yuba Water grant for \$700 k for Education and
 - Workforce Development
- Certificate programs for GIS, Soil Conservation and Watershed Management

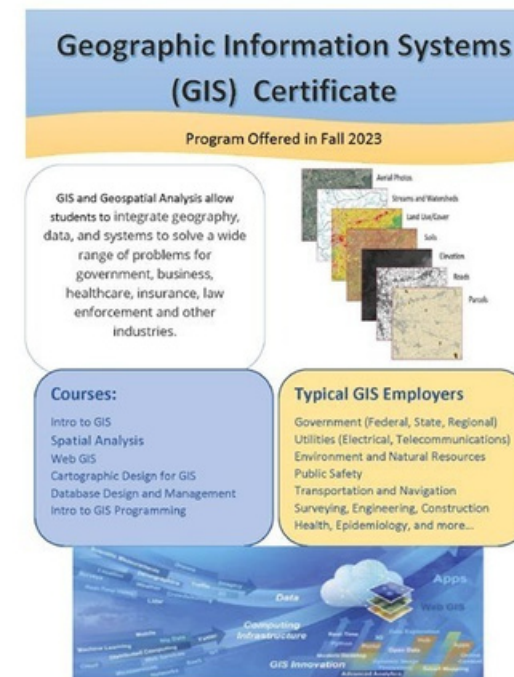
Geographic Information Systems (GIS) Certificate

Program Offered in Fall 2023

GIS and Geospatial Analysis allow students to integrate geography, data, and systems to solve a wide range of problems for government, business, healthcare, insurance, law enforcement and other industries.

Courses:
Intro to GIS
Spatial Analysis
Web GIS
Cartographic Design for GIS
Database Design and Management
Intro to GIS Programming

Typical GIS Employers
Government (Federal, State, Regional)
Utilities (Electrical, Telecommunications)
Environment and Natural Resources
Public Safety
Transportation and Navigation
Surveying, Engineering, Construction
Health, Epidemiology, and more...

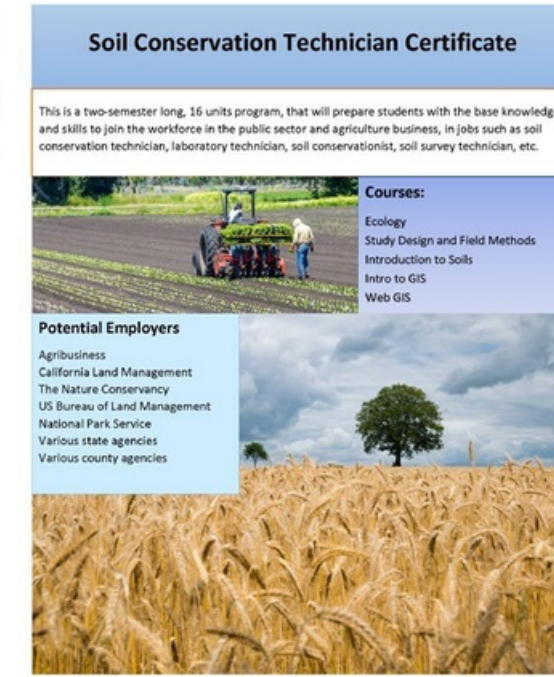


Soil Conservation Technician Certificate

This is a two-semester long, 16 units program, that will prepare students with the base knowledge and skills to join the workforce in the public sector and agriculture business, in jobs such as soil conservation technician, laboratory technician, soil conservationist, soil survey technician, etc.

Courses:
Ecology
Study Design and Field Methods
Introduction to Soils
Intro to GIS
Web GIS

Potential Employers
Agribusiness
California Land Management
The Nature Conservancy
US Bureau of Land Management
National Park Service
Various state agencies
Various county agencies



Field Technician- Watershed Management Certificate

This is a 16 units, two-semester long program, that will provide students with basic skills for employment in a variety of federal, state, or local environmental and water agencies, such as California Department of Water Resources, Yuba Water Agency, county, city water districts, etc.

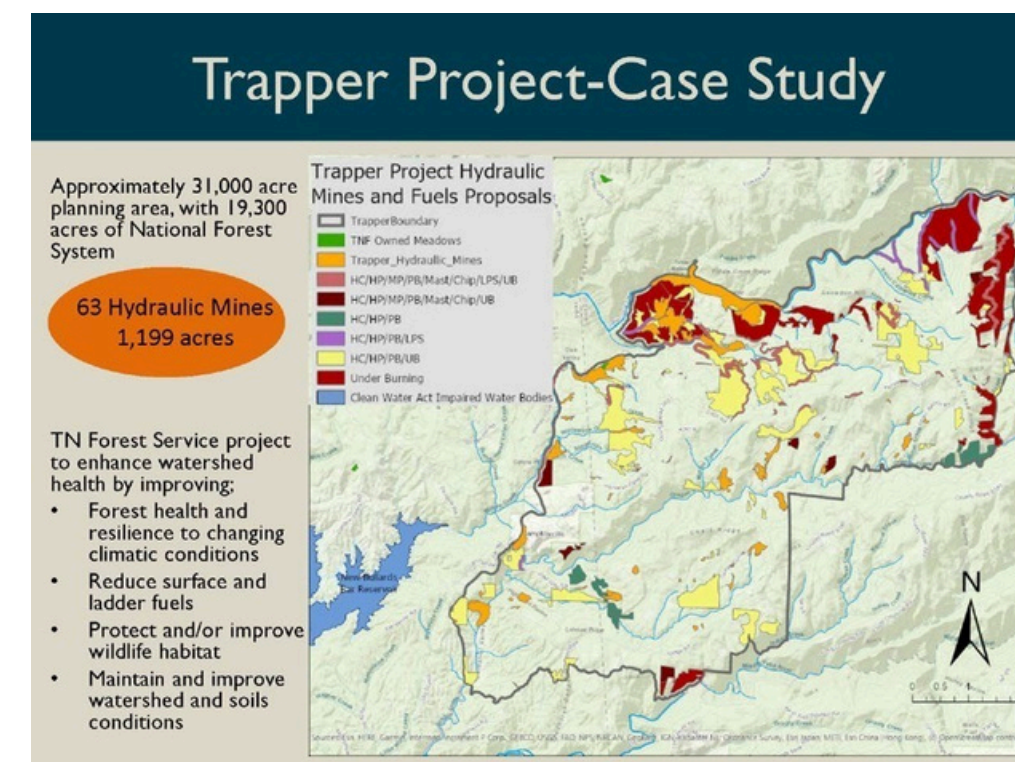
TYPICAL WORK ACTIVITIES:
Assists the Program Manager in community outreach programs and in supporting citizen efforts to reduce sources of lake and watershed pollution.
Collects technical data from stream and lake surveys, lab, and other research initiatives to assess sources of pollution.
Assists in the design of model land use regulations relating to stormwater management, steep slopes, onsite wastewater management, shoreline regulations, lot coverage requirements, and other conservation-based regulations.
Assists in preparing GIS maps and technical reports for land use studies and other research efforts to assess sources of pollution and their impacts on soil, water, and natural resources.
Assists in design and implementation of soil, water, and land-based management measures, such as streambank and road bank stabilization, wetland restoration, and agricultural environmental management, to reduce the impact of land-based watershed pollution.
Collects data, interprets maps and prepares basic drawings and maps.
Completes drainage area studies using field and computer skills.
Maintains records and prepares reports related to the work.
Watercraft Steward during the boating season.

Courses:
Ecology
Study Design and Field Methods
Water Resources and Conservation
Intro to GIS
Web GIS



The Sierra Fund-Meadow Restoration and Mine remediation Impact Bonds

- Partner for Bay Area Council Planning Grant
- Investigation of the benefits of hydraulic mine remediation and meadow restoration as part of Forest Health work



Watershed Resilience Program

Successes to Date:



Invested ~\$26 M to date to leverage more than \$182 M in external funds



Collaborating with 19 partners (and counting)



Helped develop and fund 14 projects in Yuba County and the upper watershed



More than 25,000 acres treated so far



Innovative planning including a NEPA EIS for all 210,000 acres of North Yuba watershed and Cal VTP CEQA for all 175,000 forested acres in Yuba County





Questions?

JoAnna Lessard, Watershed Manager jlessard@yubawater.org

Looking for more information?

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Follow us on social @yubawater
Visit our website at yubawater.org

HEALTH EFFECTS OF WILDFIRE SMOKE



Dr. Vanessa Walker, Chief Medical Executive





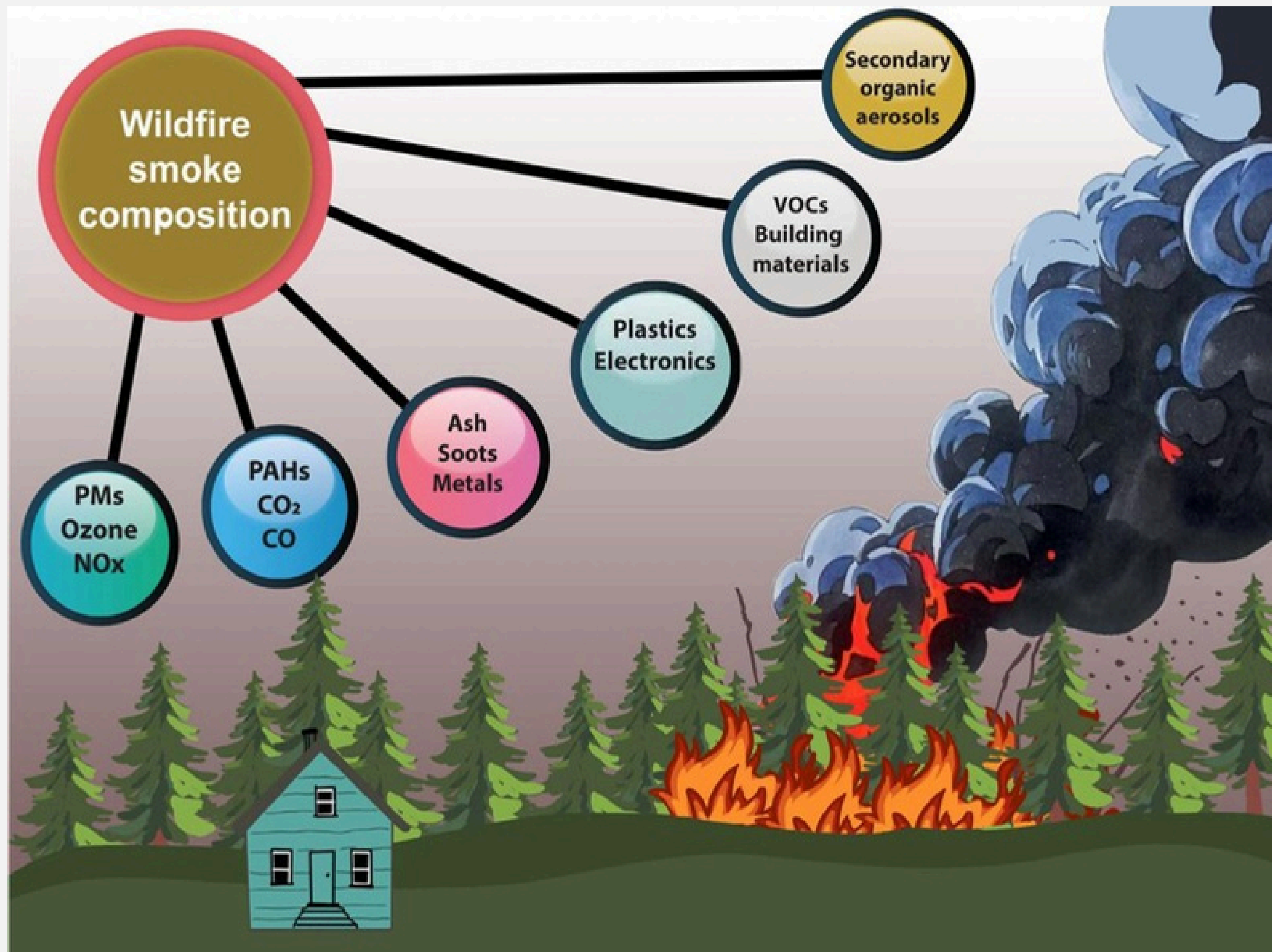
HEALTH EFFECTS OF WILDFIRE SMOKE

Vanessa Walker,

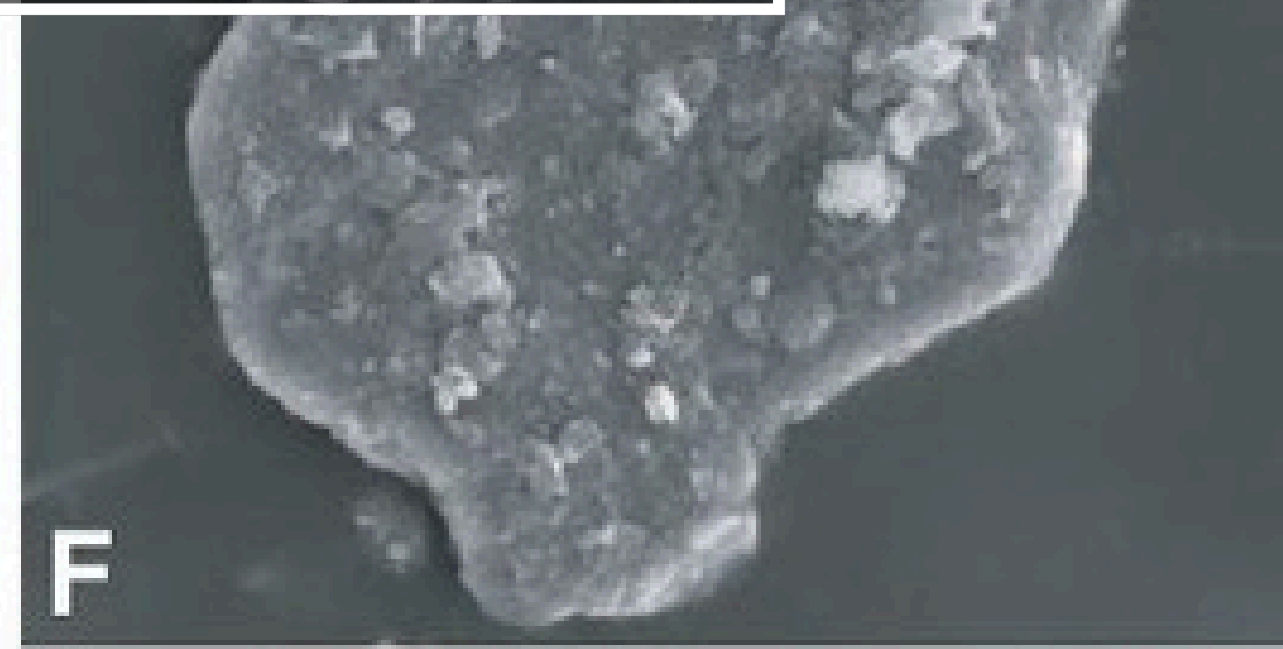
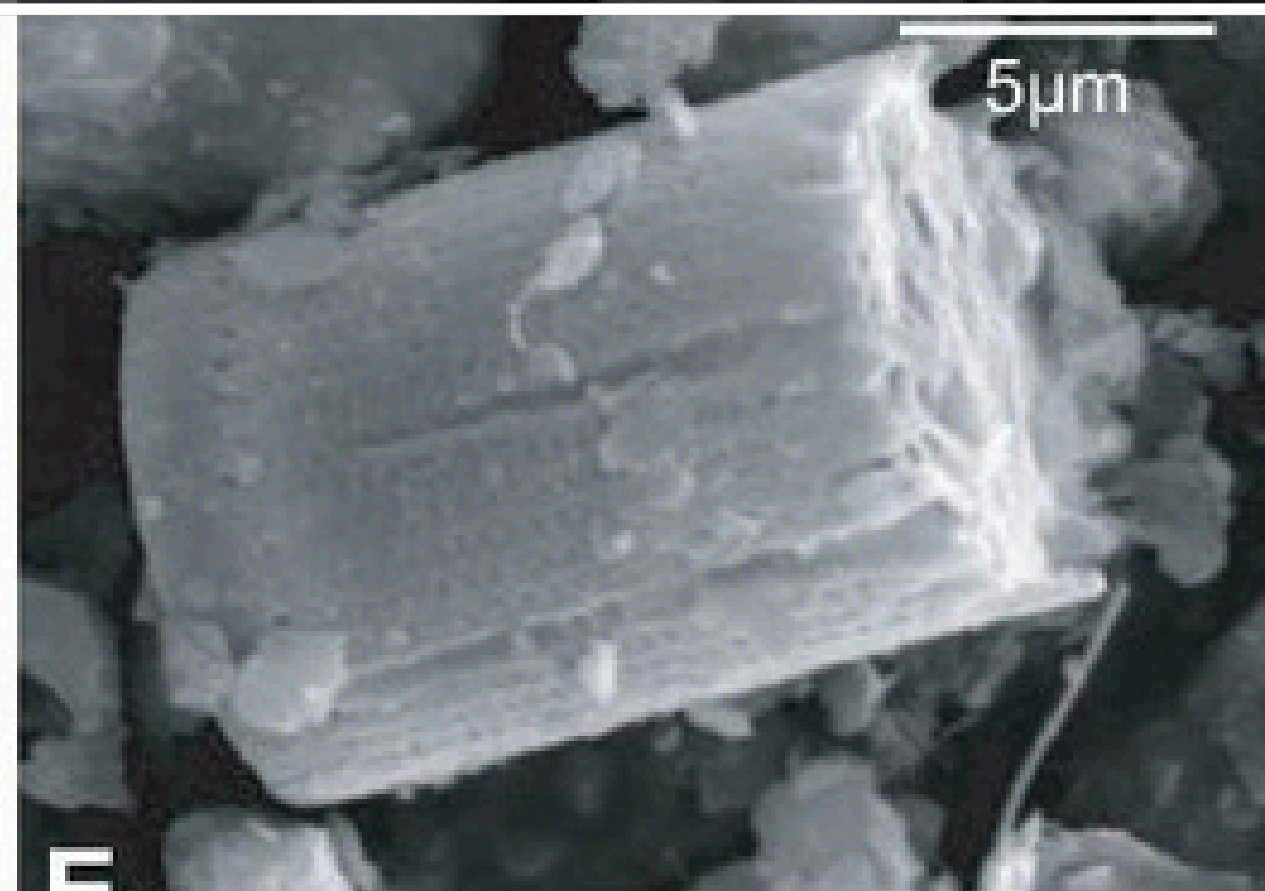
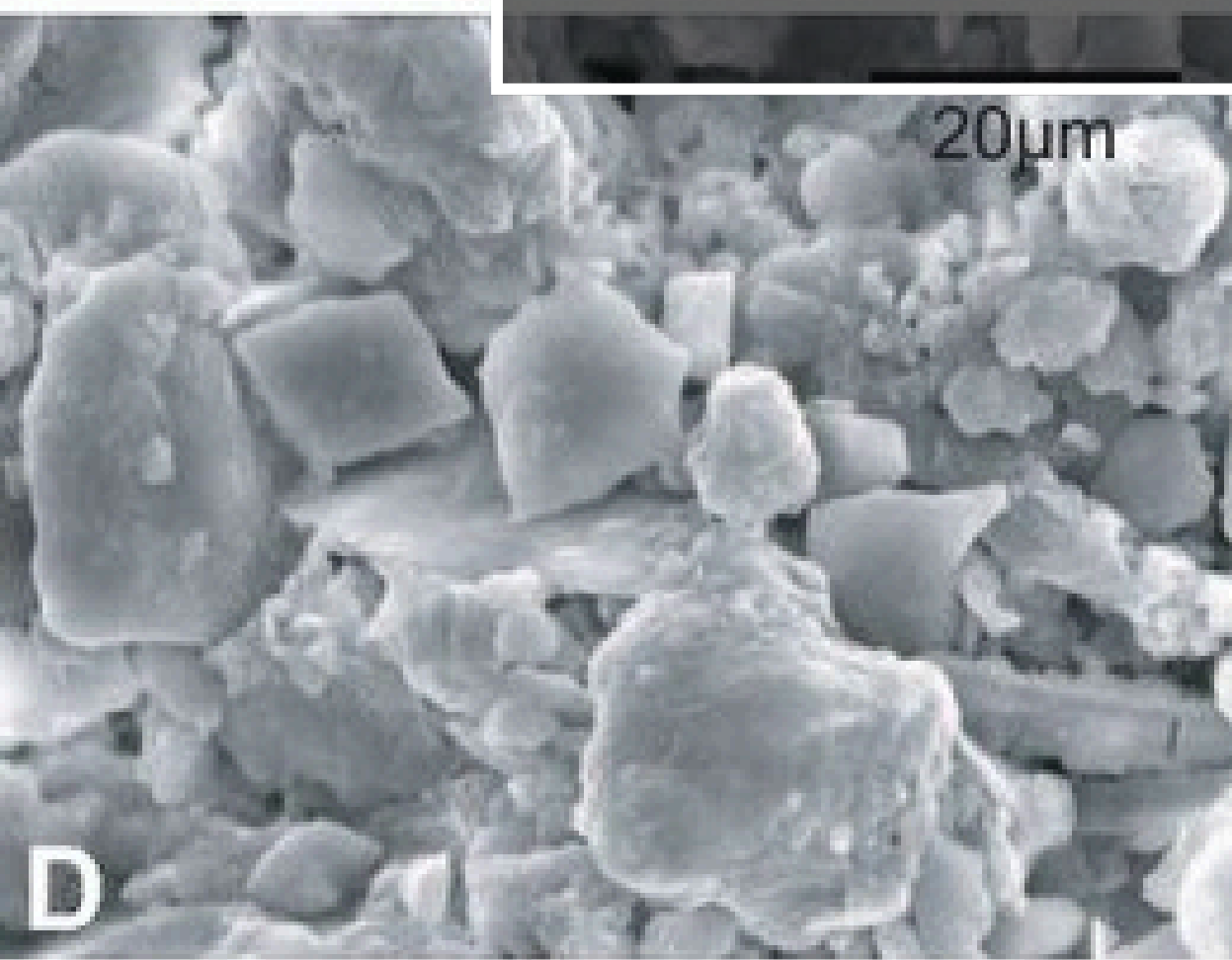
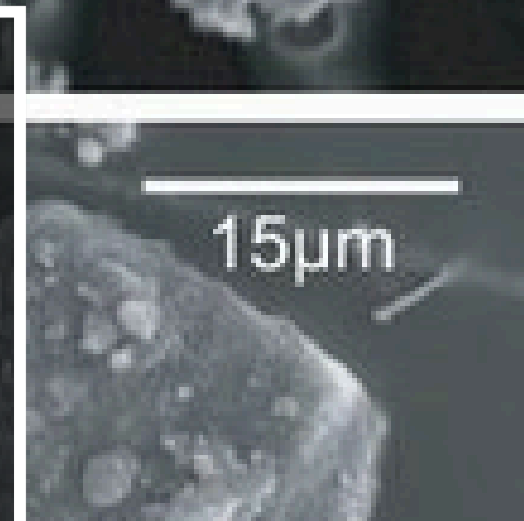
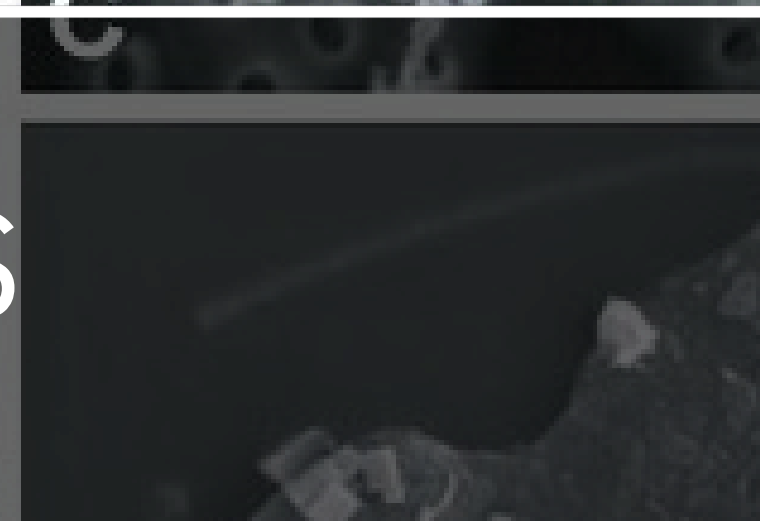
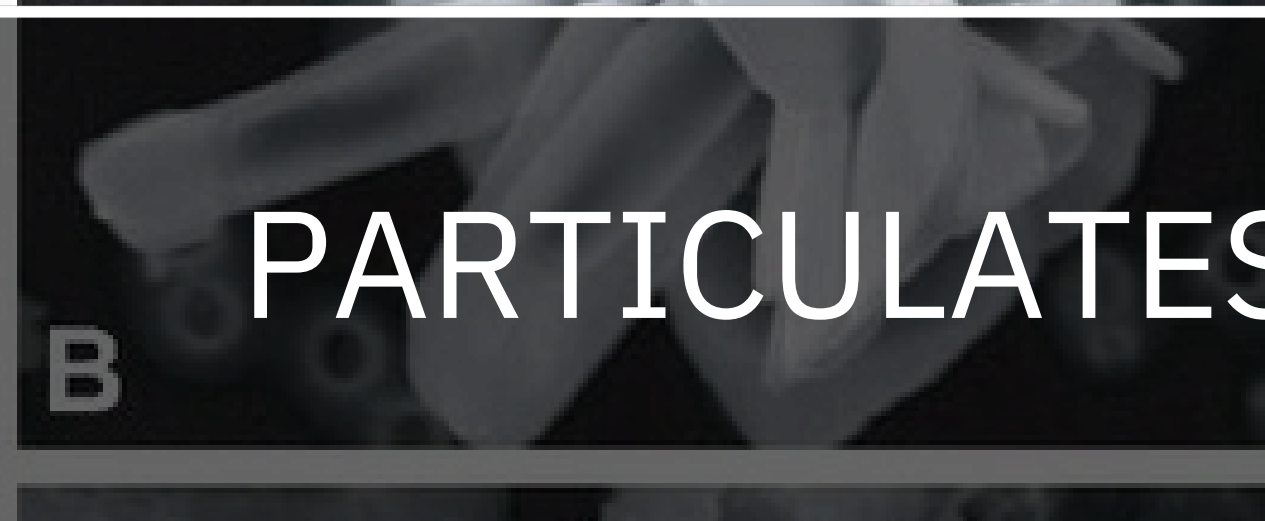
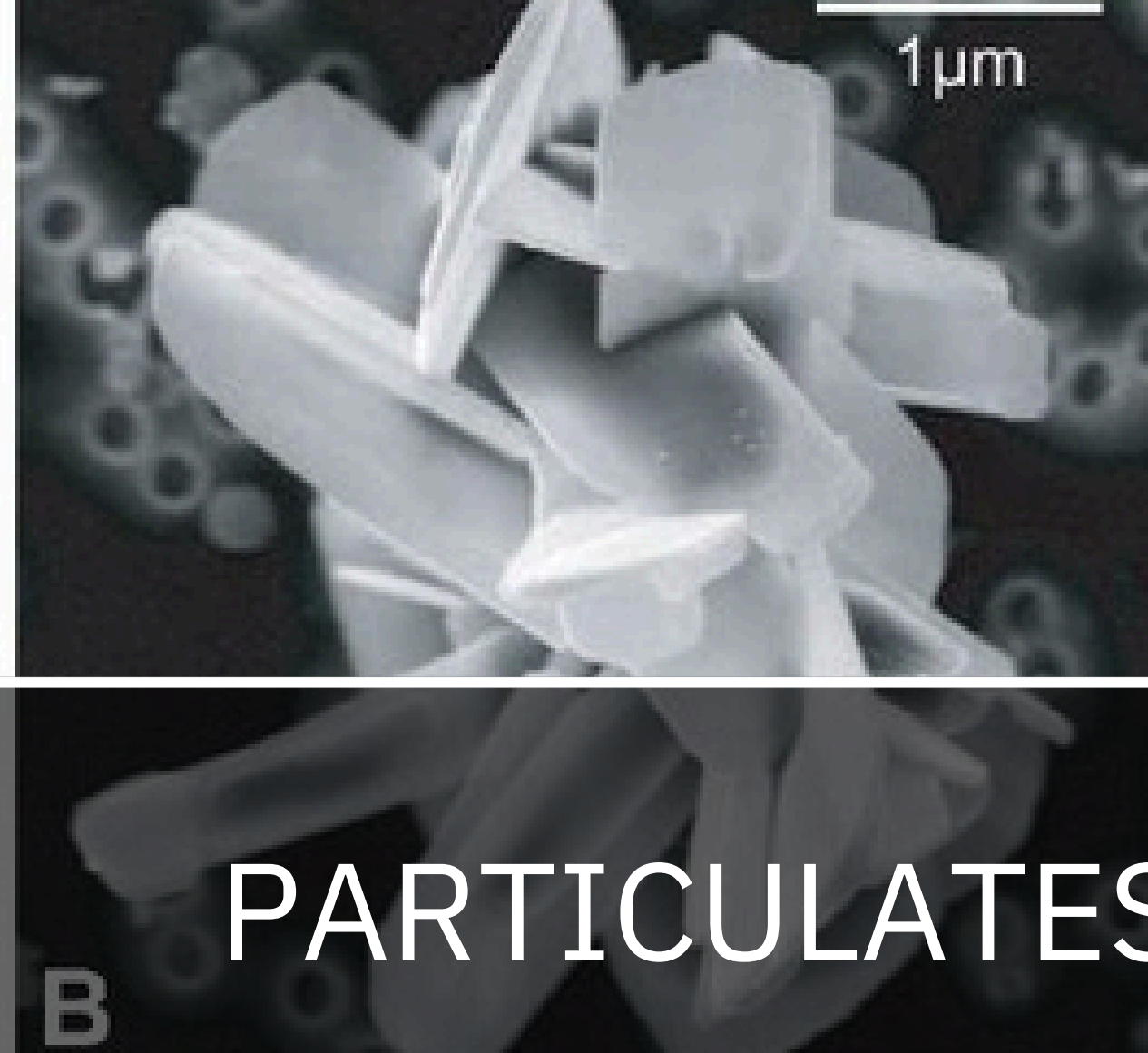
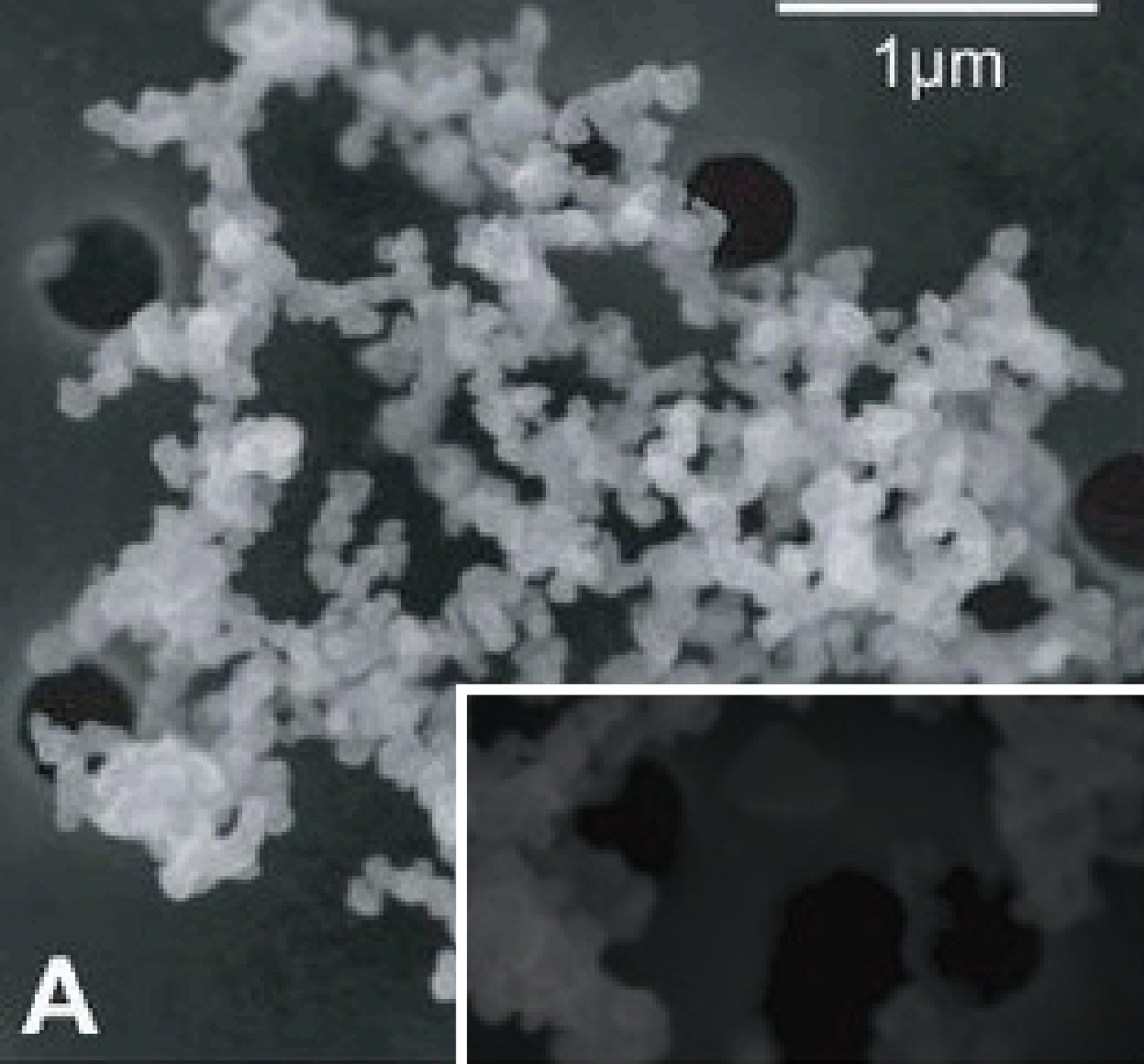
DO Pulmonary and Critical Care Medicine Chief

Medical Executive-Sutter Roseville Medical

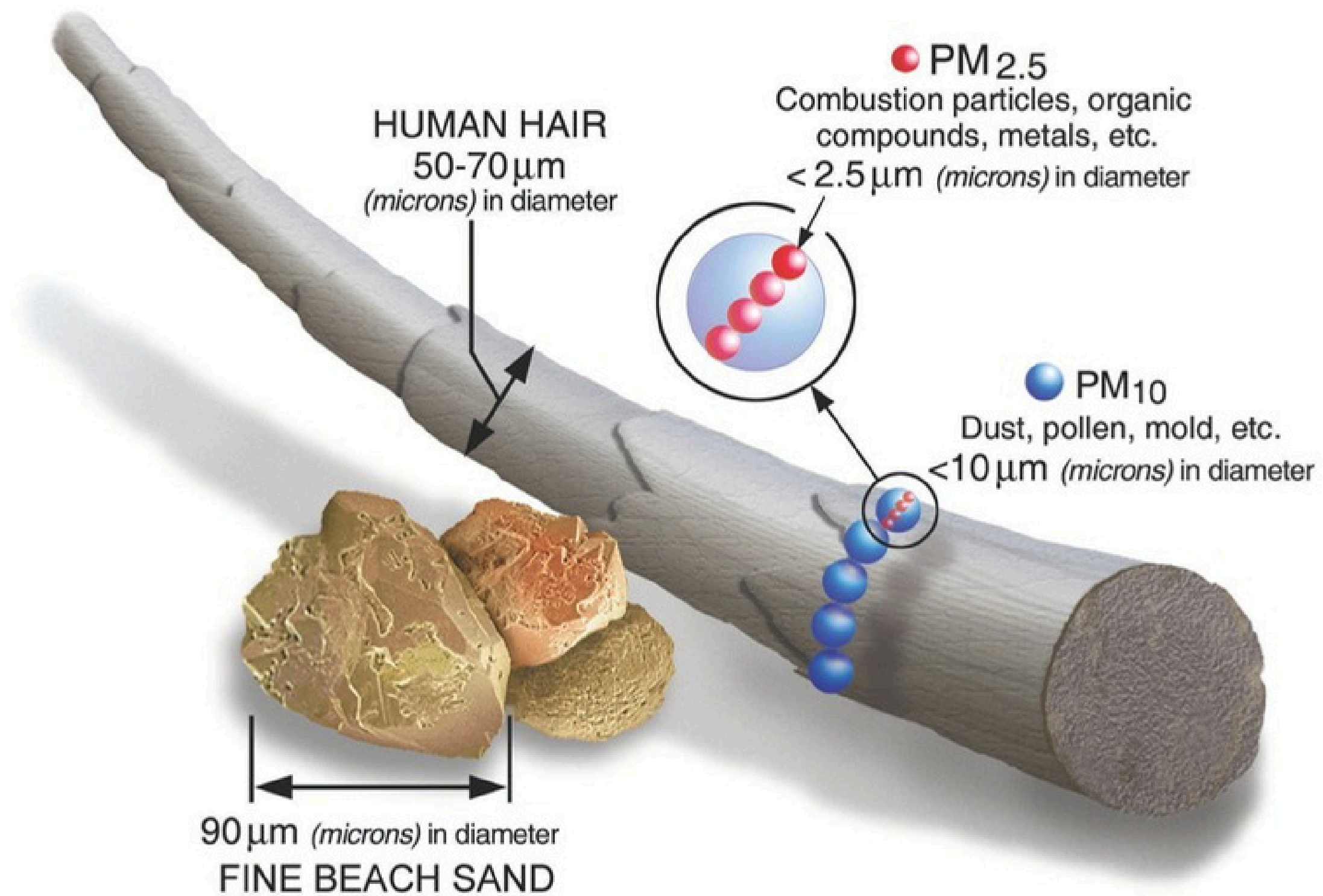
Center Sutter Health



Primary composition of the wildfire smoke. PMs, particulate matters; NO_x, nitrogen oxides; PAHs, polycyclic aromatic hydrocarbons; VOCs, volatile organic compounds.



PARTICULATE SIZES

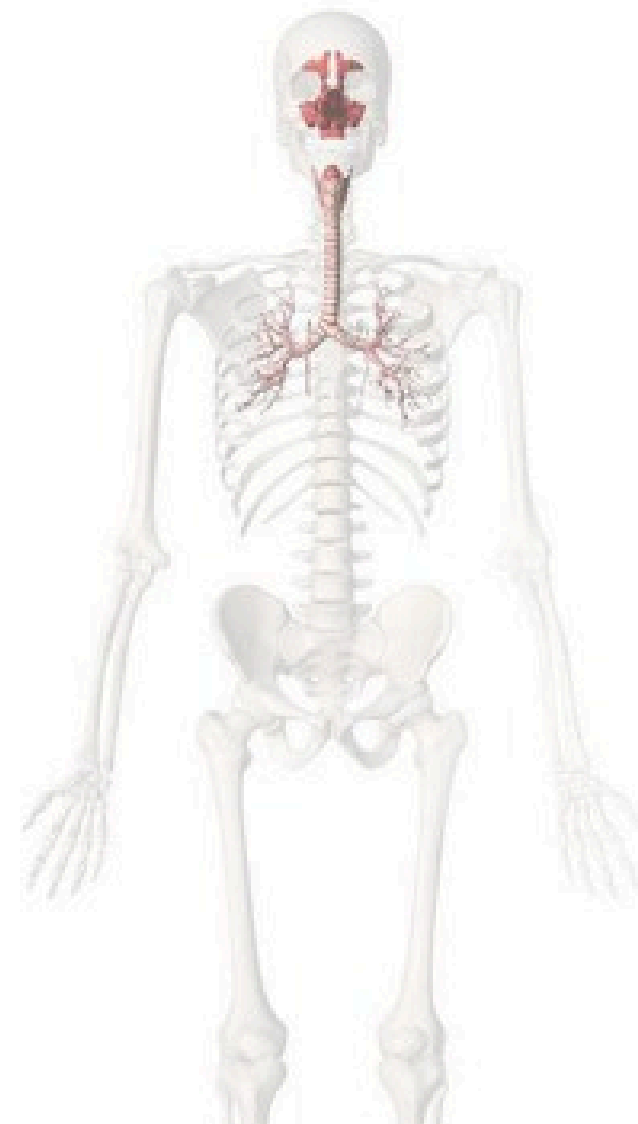


PENETRATION OF PARTICLES INTO THE BODY

PM10

COARSE PARTICLES

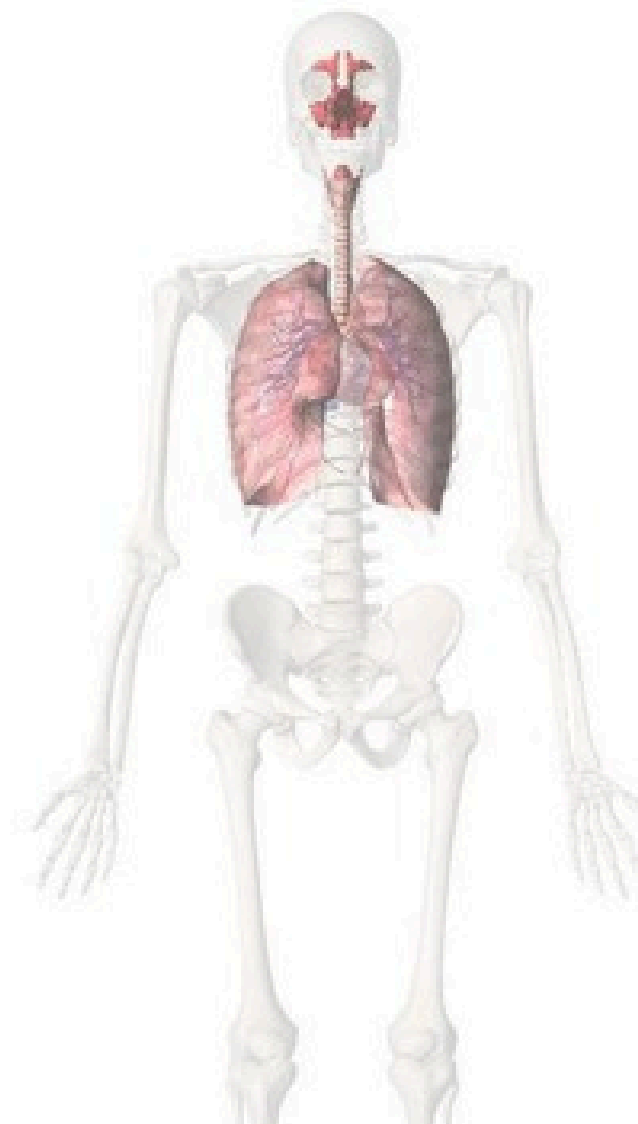
Pollen
Wood burning
Dust
Construction
Fireworks
Road traffic



PM2.5 & PM1

FINE PARTICLES

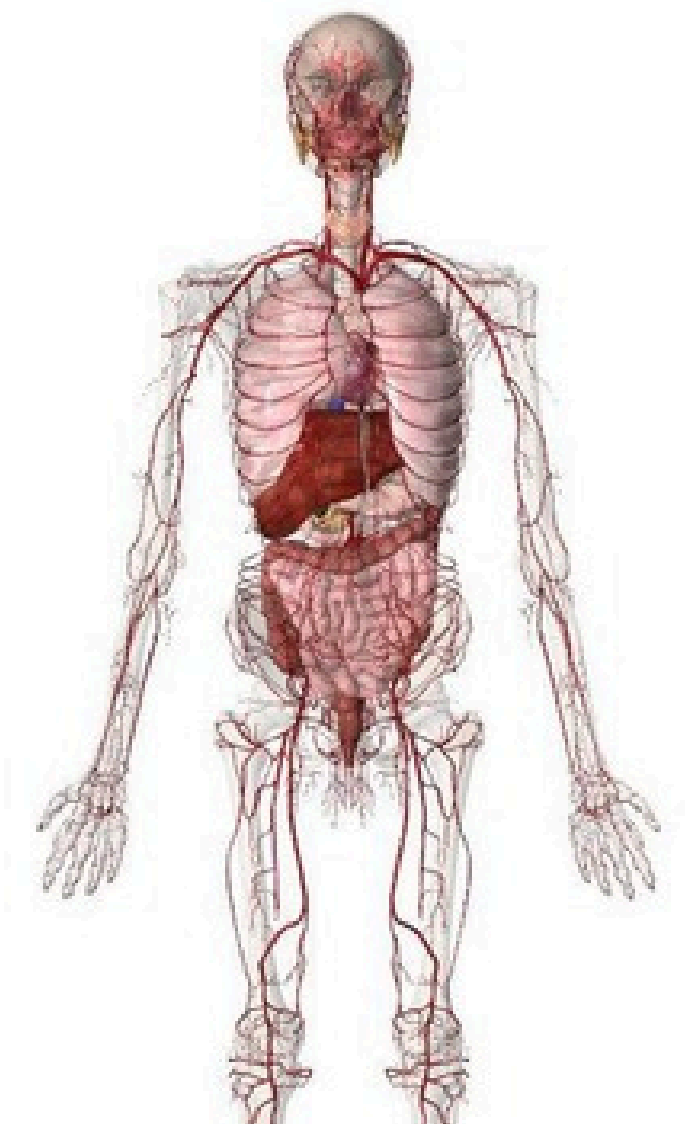
Wood burning
Car exhaust
Biomass
Agricultural burning
Fireworks
Cooking
Bacteria & Fungi



PM0.1

ULTRAFINE PARTICLES

Wood burning
Car exhaust
Biomass
Agricultural burning
Viruses



HOW PARTICULATES
ENTER THE BODY

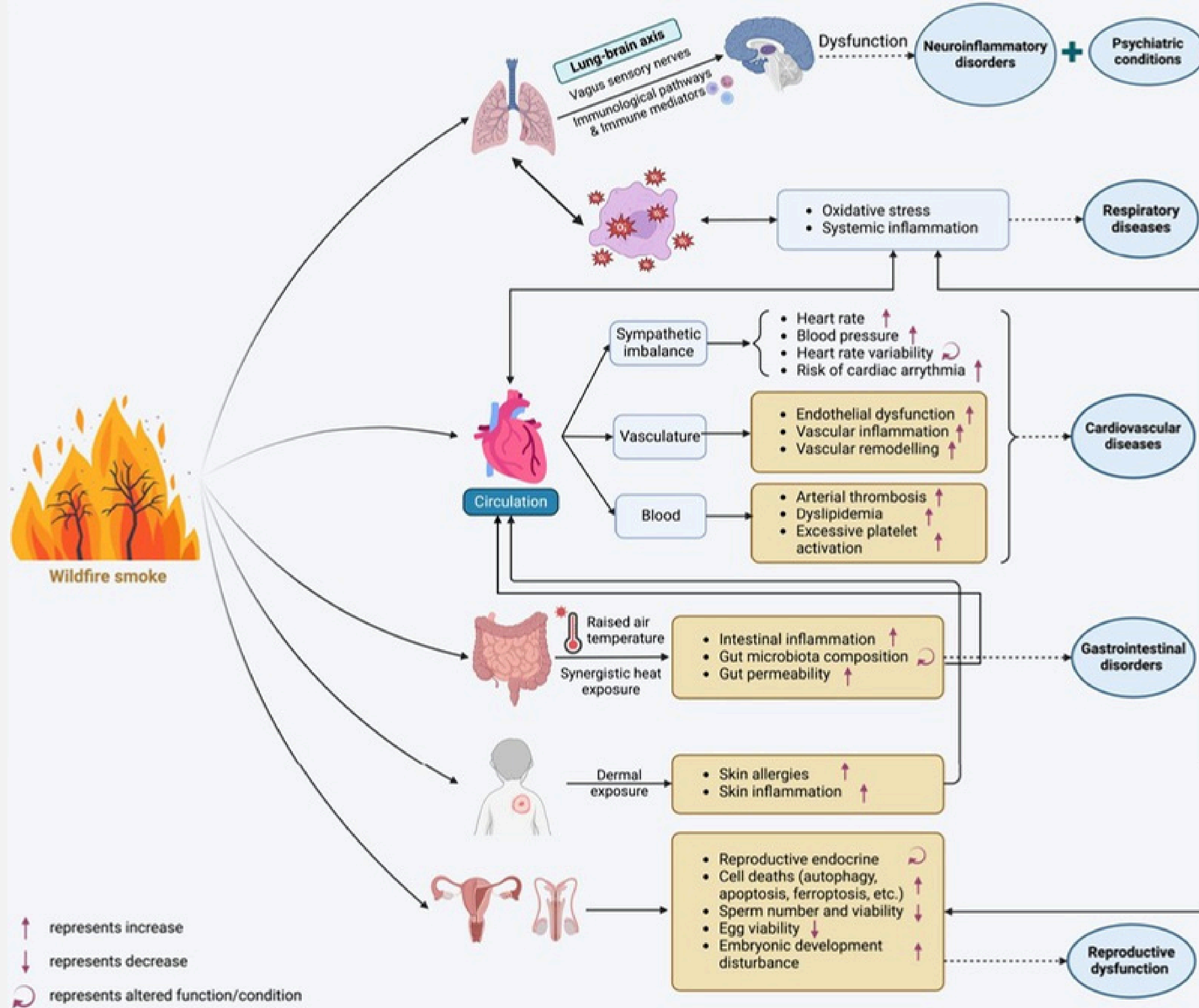
SIGNS AND SYMPTOMS OF EXPOSURE

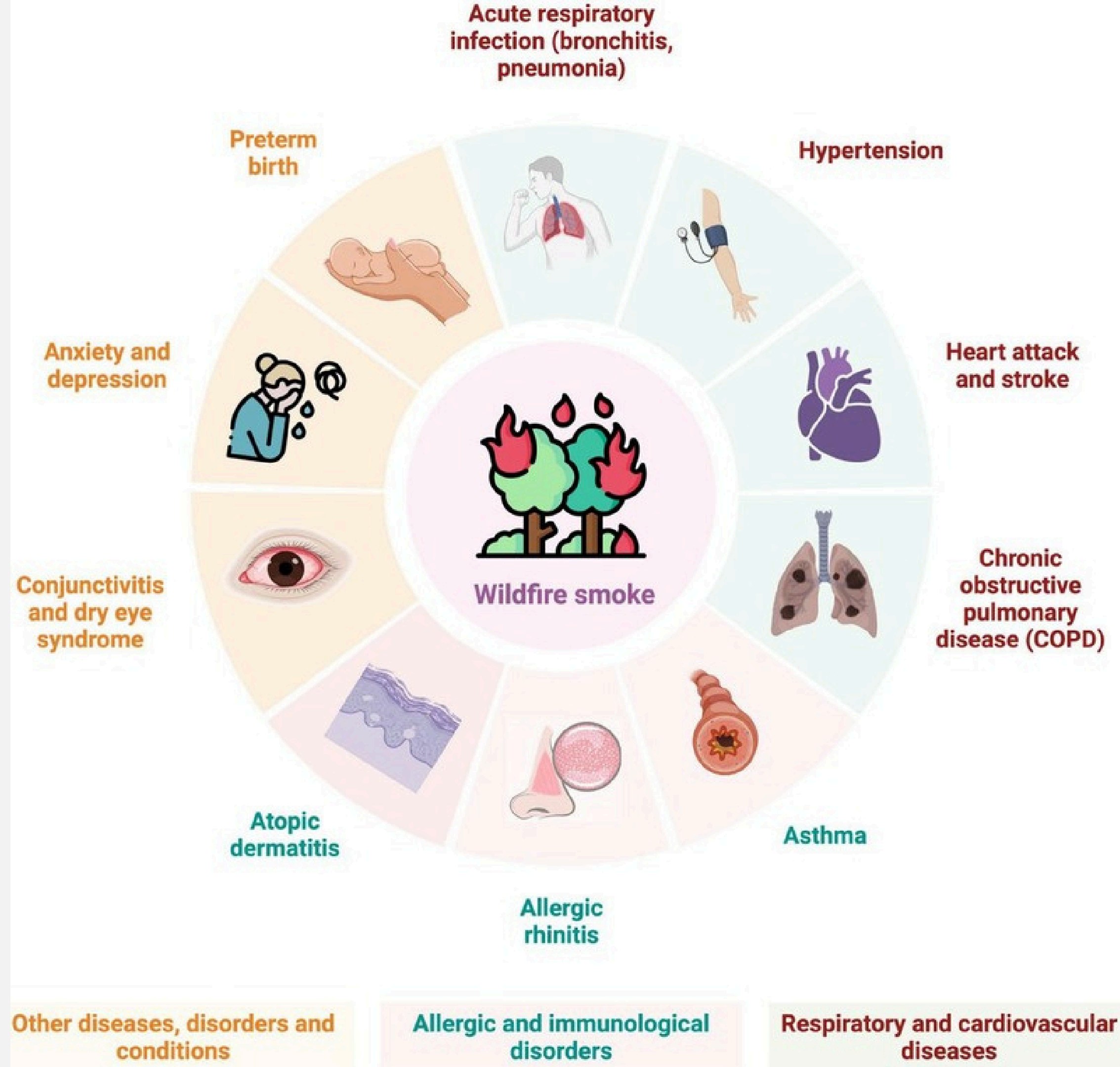
RESPIRATORY/ENT

- Scratchy or watery eyes
- Coughing
- Sore throat
- Phlegm production
- Shortness of breath
- Wheezing

CARDIOVASCULAR

- Chest tightness
- Chest pain
- Palpitations
- Shortness of breath
- Unusual fatigue



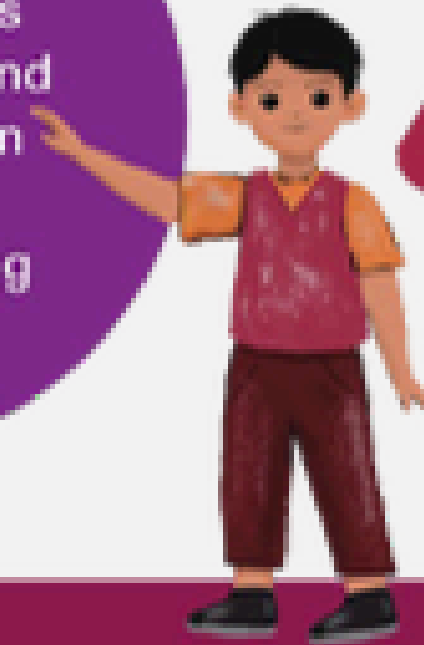




Hormonal and physical changes can occur and lung capacity can be reduced during pregnancy.



Infants have developing systems, breathe more air, and are closer to the ground.



Immune system is still developing, as well as the brain and the lungs. Children are also moving more and spending time outdoors.



Adolescents continue to develop mentally and physically through their teens and are also more active.

Increased risk of:

Pregnancy and birth

Pre-eclampsia
Miscarriage or stillbirths
Gestational diabetes
Gestational hypertension
Preterm labour

Infant health

Low birth weight*
Congenital defects
Paediatric diabetes
Death

*associated with later-life respiratory problems and reduced height-for-age

Young child health

Asthma & respiratory diseases
Weaker immune response
Lower cognitive and neurological function

Adolescent health

Asthma & respiratory diseases
Metabolic disorders, e.g. obesity
Adverse neuropsychological effects



Increases in respiratory hospitalizations ranging from **1.3 to up to 10%** with a $10 \mu\text{g m}^{-3}$ increase in wildfire-specific PM_{2.5}, compared to **0.67 to 1.3%** associated with non-wildfire PM_{2.5}

Increase of **3.1%** (95% confidence interval [CI]: 2.4, 3.9%) in all-cause mortality, **2.6%** (95%CI: 1.5, 3.8%) in cardiovascular mortality, and **7.7%** (95%CI: 5.9, 9.5) in respiratory mortality over 0–14 days with each $10 \mu\text{g}/\text{m}^3$ increase in daily wildfire-related PM_{2.5}



Ambient Particulate Air Pollution and Daily Mortality in 652 Cities

Cong Liu, M.S., Renjie Chen, Ph.D., Francesco Sera, Ph.D., Ana M. Vicedo-Cabrera, Ph.D., Yuming Guo, Ph.D., Shilu Tong, Ph.D., Micheline S.Z.S. Coelho, Ph.D., Paulo H.N. Saldiva, Ph.D., Eric Lavigne, Ph.D., Patricia Matus, Ph.D., Nicolas Valdes Ortega, M.Sc., Samuel Osorio Garcia, Ph.D., [et al.](#)

CONCLUSIONS

Our data show independent associations between short-term exposure to PM_{10} and $PM_{2.5}$ and daily all-cause, cardiovascular, and respiratory mortality in more than 600 cities across the globe. These data reinforce the evidence of a link between mortality and PM concentration established in regional and local studies. (Funded by the National Natural Science Foundation of China and others.)

Research Article

Cancer Mortality Risks from Long-term Exposure to Ambient Fine Particle

Chit Ming Wong¹, Hilda Tsang¹, Hak Kan Lai¹, G. Neil Thomas², Kin Bong Lam³, King Pan Chan¹, Qishi Zheng¹, Jon G. Ayres⁴, Siu Yin Lee⁵, Tai Hing Lam¹, and Thuan Quoc Thach¹

Cancer Epidemiology, Biomarkers & Prevention

For every 10 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) of increased exposure to $PM_{2.5}$, risk of dying from any cancer rose by 22 percent.

Ambient particulate air pollution causes both immediate and long-term effects.

MITIGATION
DURING FIRES
OR OTHER
POOR AIR
QUALITY DAYS

- Masks (well fitting N95 is needed), but have some contraindications
- Avoid outdoor activities during poor air quality days
- Keep doors and windows closed
- Close off large gaps in doors or windows
- HEPA filters or other air cleaners. Even DIY box fans with filters attached.
- Create “clean rooms” for sensitive people to stay safe
- Recirculate AC in the house or vehicles if possible
- Always keep 5 days of medications on hand if possible as well as 5 days of nonperishable food items
- Seek medical help quickly if severe symptoms develop

RESOURCES FOR MORE INFORMATION

- <https://www.epa.gov/pmcourse/references-particle-pollution-and-your-patients-health>
- <https://climate.nasa.gov/news/3027/getting-to-the-heart-of-the-particulate-matter/>
- <https://www.airnow.gov/?city=Auburn&state=CA&country=USA>
- <https://www.sciencedirect.com/science/article/abs/pii/S0012369218327223>
- [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30752-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30752-2/fulltext)
- <https://aacrjournals.org/cebp/article/25/5/839/71066/Cancer-Mortality-Risks-from-Long-term-Exposure-to>
- <https://doi.org/10.1038/s41467-022-35326-x> <https://doi.org/10.1038/s41467-021-21708-0>
- [Wildfire Smoke: Health Effects, Mechanisms, and Mitigation. Lei Y, Lei TH, Lu C, Zhang X, Wang F. Environmental Science & Technology. 2024;58\(48\):21097-21119. doi:10.1021/acs.est.4c06653.](#)

QUESTIONS?

Break & Mentimeter Exercise (5 min)





Economic Impacts of Wildfires



Erin Stumpf, MPPA, Broker Associate





Economic Impacts of Wildfires

**Capital Region Climate Readiness
Collaborative & Cleaner Air
Partnership**

Erin Stumpf, MPPA

March 17, 2025

About Erin Stumpf



- **REALTOR® , licensed since 2005**

- CA Real Estate Broker (DRE# 01706589), associate with Coldwell Banker Realty

- **Masters Degree in Public Policy & Administration from Sacramento State**

- **Sacramento Association of REALTORS®**

- Board of Directors 2011-2018, 2020-2023
- President in 2022

- **California Association of REALTORS®**

- Board of Directors member since 2010
- 2025 Strategic Planning Committee

- **National Association of REALTORS®**

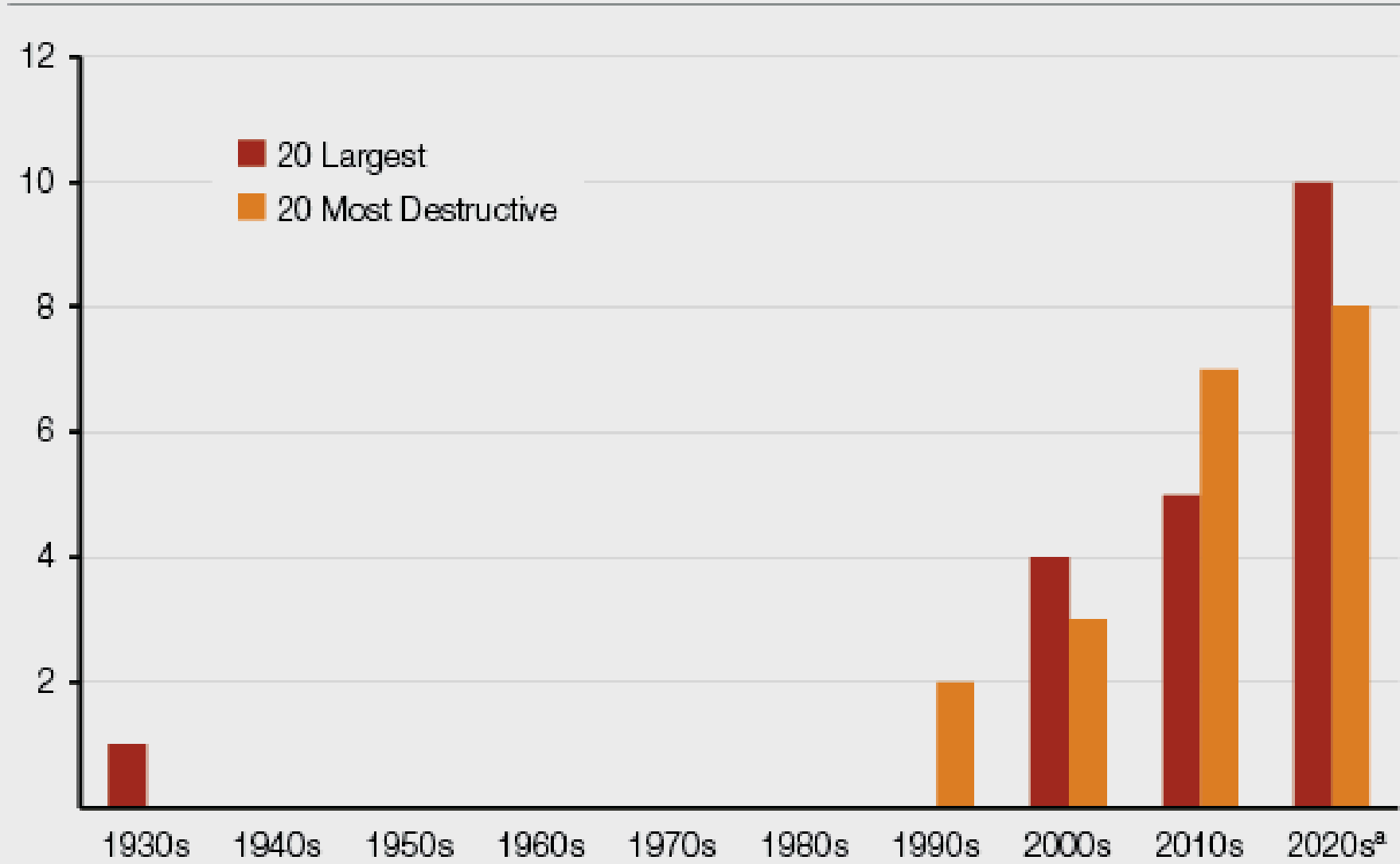
- Board of Directors member since 2022
- 2025 ‘Housing Policy Issues Liaison’ to the Executive Committee

Agenda

- **Wildfires: Why is this conversation important?**
- **Economic Consequences and Spillover Effects of Wildfires**
 - Housing Market Inventory and Housing Prices
 - Job Market, Local / State Government Fiscal Impacts
 - Individual and Aggregate Impacts
- **Migration Patterns Post-Wildfire**
 - Relocation Trends
 - Community Demographic Changes
- **Wildfire Risks in our SACOG Region**
- **Property Insurance Crisis**
 - Cost and Availability of Policies
 - California Fair Plan
- **Home Hardening & Community Risk Mitigation**
 - Fire Readiness versus Rebuilding
- **Legislative and Regulatory Relief Efforts**



Most of the Largest and Most Destructive Wildfires Have Occurred in Recent Decades

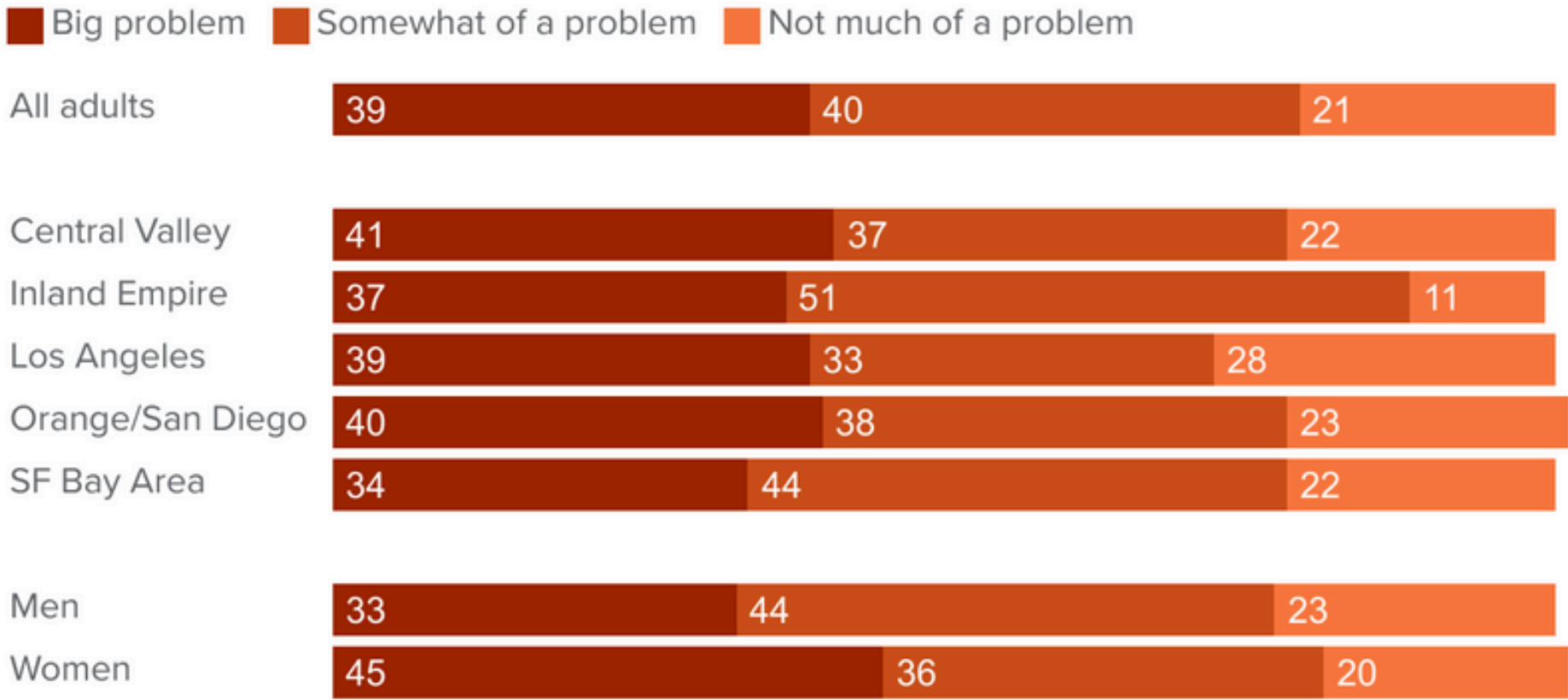


^a Includes wildfires that occurred from January 2020 through January 2025.

Wildfires...

...have intensified in frequency and severity, leading to devastating economic consequences

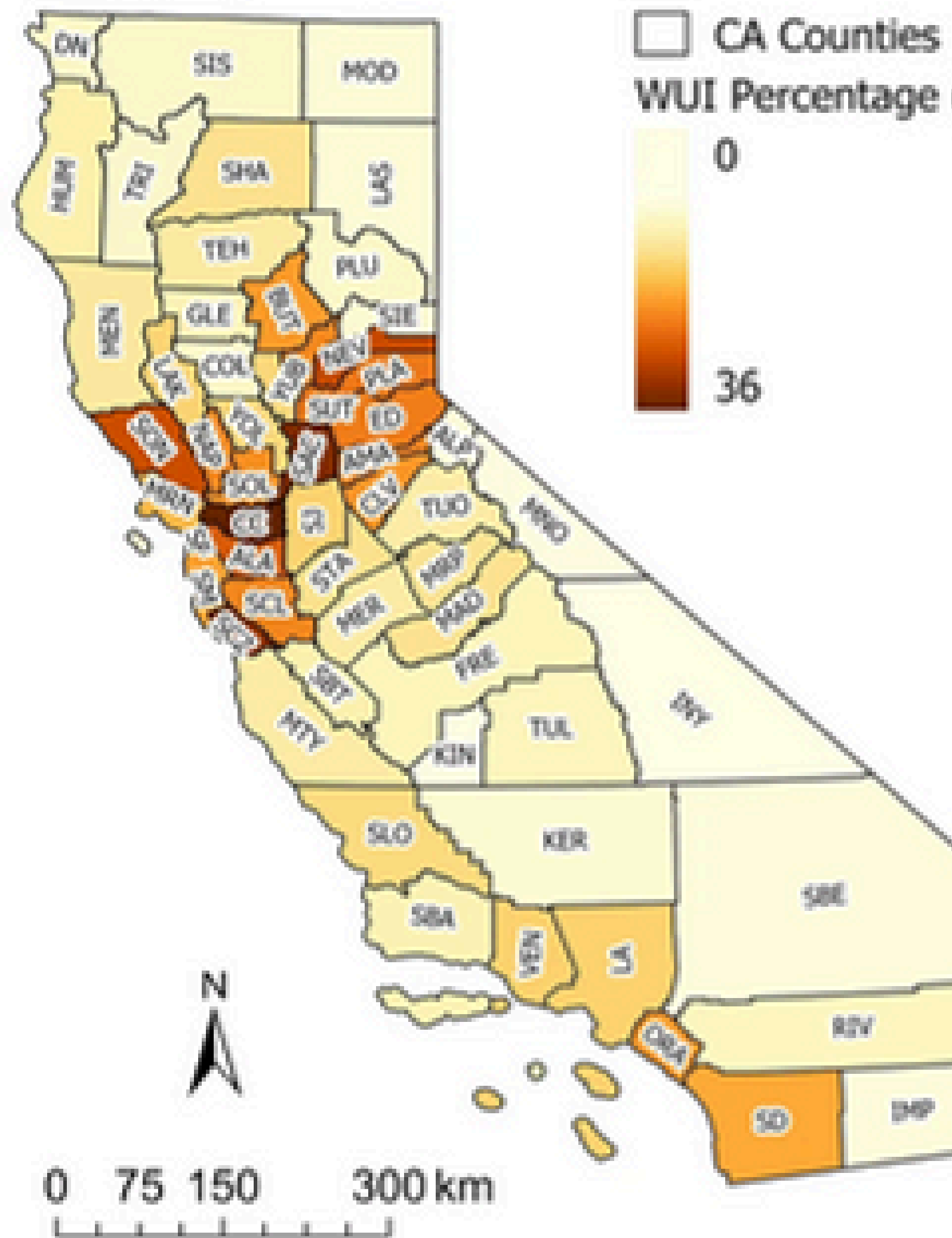
Most Californians view the threat of wildfires in their part of the state as a problem



SOURCE: PPIC Statewide Survey, July 2024. Survey was fielded from June 24–July 2, 2024 (n=1,648 adults, n=1,261 likely voters).
FROM: PPIC Blog, January 2025.

Wildfires...

According to a Public Policy Institute of California Survey in July 2024, **79%** of all adults surveyed viewed wildfire threat as a ‘**Big Problem**’ or ‘**Somewhat of a Problem**’



Wildfires...

The SACOG Region faces substantial wildfire risks, particularly in the **Wildland-Urban Interface (WUI)**.

Source: Scientific Reports: “Mapping the wildland-urban interface in California using remote sensing data” (2022)

Economic Consequences & Spillover Effects of Wildfires

Coffey Park, Santa Rosa:
before and after the
2017 Tubbs Fire

Photo Credit: Business Insider / Google Earth



Economic Consequences & Spillover Effects of Wildfires

City of Paradise: before and after the **2018 Camp Fire**

Photo Credit: US Geological Survey



Economic Consequences – Housing Market

A decorative green line extends from the left side of the slide, and several geometric shapes in teal, yellow, and green are positioned in the bottom-left corner.

2017 Tubbs Fire

- Started October 8, 2017 – full containment October 31, 2017
- Destroyed over 5,600 structures
 - Roughly 3,000 homes, 5% of City of Santa Rosa's housing stock destroyed
- Immediate decline in home sales volume in Sonoma County
- Home prices surged by 10-15% in nearby unaffected markets
- Asking rents jumped almost 40% as displaced residents sought temporary or permanent housing alternatives

Source: Bay Area Council Economic Institute: "The True Cost of Wildfires" (2021)

Economic Consequences – Housing Market

A decorative green line extends from the left side of the slide, followed by a teal triangle and a yellow triangle pointing towards the bottom left corner.

2018 Camp Fire

- Started November 8, 2018 – full containment November 25, 2018
- Destroyed over 18,000 structures
 - Roughly 11,000 homes
- Housing market in Paradise essentially **ceased to exist**
- Within 25 miles of the fire's footprint, **home prices increased by 13 percent in the six-week aftermath** of the fire
- Rental rates in Chico and as far away as Sacramento increased as displaced residents sought temporary or permanent housing alternatives

Source: Economic & Planning Systems: “Camp Fire Regional Economic Impact Analysis” (2021), Journal of Housing Economics: “Catastrophic fires, human displacement, and real estate prices in California” (2024)

Economic Consequences – State & Local Government

A decorative green line extends from the left side of the slide, followed by a teal triangle and a yellow triangle pointing towards the bottom left corner.

2017 Tubbs Fire

- Decreased property tax revenues for Sonoma County
- State government also saw a **dip in payroll tax** collections due to job losses and business closures – **first time unemployment claims tripled** in Napa and Sonoma Counties in October 2017
- Hotel **Transient Occupancy Tax (TOT)** fell **approximately 6%** in Santa Rosa in FY17/18
- Rebuilding efforts eventually contributed to an economic resurgence, particularly in the construction sector, as insurance payouts and government aid stimulated activity

Source: Bay Area Council Economic Institute: “The True Cost of Wildfires” (2021)

Economic Consequences – State & Local Government

2018 Camp Fire

- The Camp Fire resulted in a reduction of approximately \$1.86 billion in assessed property value for Butte County, equating to an **over 8% decrease**
- State government also saw a dip in payroll tax collections due to job losses and business closures – the Butte County **unemployment rate went from 4.4% in October 2018 to 6.9% by January 2019**
- Hotel Transient Occupancy Tax (TOT) was nearly unchanged Butte County in FY18/19, balanced by decreased tourism, and from increased spending by debris removal and recovery crews
- Rebuilding efforts eventually contributed to an economic resurgence, particularly in the construction sector, as insurance payouts and government aid stimulated activity

Source: Bay Area Council Economic Institute: “The True Cost of Wildfires” (2021), Economic & Planning Systems: “Camp Fire Regional Economic Impact Analysis” (2021), Butte County (2019)

Economic Consequences – For Individuals

For Individuals

- Marshall & Swift/Boeckh have found about 60 percent of homeowners nationwide are underinsured by approximately 17 percent of the cost of their home
 - For those insured under the California FAIR Plan, there are payout limits that may fall short of covering losses, nor do these policies cover personal property
 - Across all of California, LendingTree found 806,600 owners without insurance coverage out of 7.66 million residences (approximately 10.5% of all homeowners)
 - 90-day mortgage delinquencies were 4 percentage points higher for properties that were damaged by wildfires compared to properties 1 to 2 miles outside of the wildfire perimeter
 - Negative wealth shocks after these events can delay mortgage payments, restrict borrowers' access to future credit, and increase lenders' exposure to default risk
- Source: United Policyholders (2025), Federal Reserve Bank of Philadelphia: “California Wildfires, Property Damage, and Mortgage Repayment” (2023)

Economic Consequences – Aggregate

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In the aggregate:

- “The total economic impacts of a wildfire go well beyond the cost of damages, as they include health costs and indirect losses due to power shut-offs, business closures, travel cancellations, supply chain disruptions, among other costs”
- “Researchers have calculated the full cost of 2018’s fires in California and found a **total cost of \$148.5 billion to the U.S. economy**—or 0.7% of the country’s annual gross domestic product”
- “Insured losses in California totaled **\$12.3 billion in 2017** and just over **\$13.0 billion in 2018**”
- “The state, through CAL FIRE, also spent nearly **\$1.3 billion during the 2020/2021** fiscal year on fire suppression costs, a rapid rise from the **\$90 million spent on suppression during the 2010/2011** fiscal year”

Source: Bay Area Council Economic Institute: “The True Cost of Wildfires” (2021)

Migration Patterns Post-Wildfire

Butte County Population by City, 2015-2021

City	2013	2014	2015	2016	2017	2018	2019
Bozeman	1,796	1,840	1,950	1,966	2,007	2,050	2,170
Cheney	60,215	60,207	61,166	62,040	63,026	64,040	65,000
Conrad	4,800	4,800	4,875	4,875	5,000	5,000	5,100
Deer Lodge	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Frontier	20,000	20,000	20,000	20,000	20,000	20,000	20,000
Bellevue OR County	60,000	60,000	60,000	60,000	70,000	60,000	60,000
County Total	256,811	256,857	268,091	268,811	279,033	286,090	297,270

From January through May 1999, Department of Health
Advised the New South Wales Nurses

Sonoma County Population by City, 2015-2021

City	2019	2018	2017	2016	2015	2014	2013
Albuquerque	15,000	14,500	14,000	13,500	13,000	12,500	12,000
Carroll	3,000	2,800	2,600	2,400	2,200	2,000	1,800
Chattanooga	11,000	10,500	10,000	9,500	9,000	8,500	8,000
Fort Worth	60,000	58,000	56,000	54,000	52,000	50,000	48,000
Indianapolis	45,000	43,000	41,000	39,000	37,000	35,000	33,000
San Antonio	110,000	108,000	106,000	104,000	102,000	100,000	98,000
Seattle	18,000	17,500	17,000	16,500	16,000	15,500	15,000
Washington	25,000	24,500	24,000	23,500	23,000	22,500	22,000
Atlanta, GA County	100,000	98,000	96,000	94,000	92,000	90,000	88,000
Grand Total	500,000	490,000	480,000	470,000	460,000	450,000	440,000

Migration Patterns Post-Wildfire



2017 Tubbs Fire

- Santa Rosa residents did not move out of the city: 695 or 9% of displaced persons crossed jurisdictional boundaries, most often to nearby cities or unincorporated areas in the same county

Source: Population Research Center (2025)

2018 Camp Fire

- Following the Camp Fire, an estimated 40% of displaced residents permanently left Butte County

Source: California Department of Housing & Community Development (2020)

Community Demographic Changes

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- 2017 Tubbs Fire

- “The place [Coffey Park] is much younger than it was before the fire; many of the elderly, mortgages paid off or intimidated by the rebuilding process, left to be closer to other family. But the young residents are also much wealthier than their predecessors, and a neighborhood once known for **architectural uniformity is now a playground of custom homes.**”
- “Many of the victims have been left without adequate insurance or financial means to rebuild. **Those who remained are in large part the well-off and the well-insured,** a trend helping remake and re-sort communities across the state by rich and poor.”

Source: Washington Post. “Gentrification by Fire” (2024)

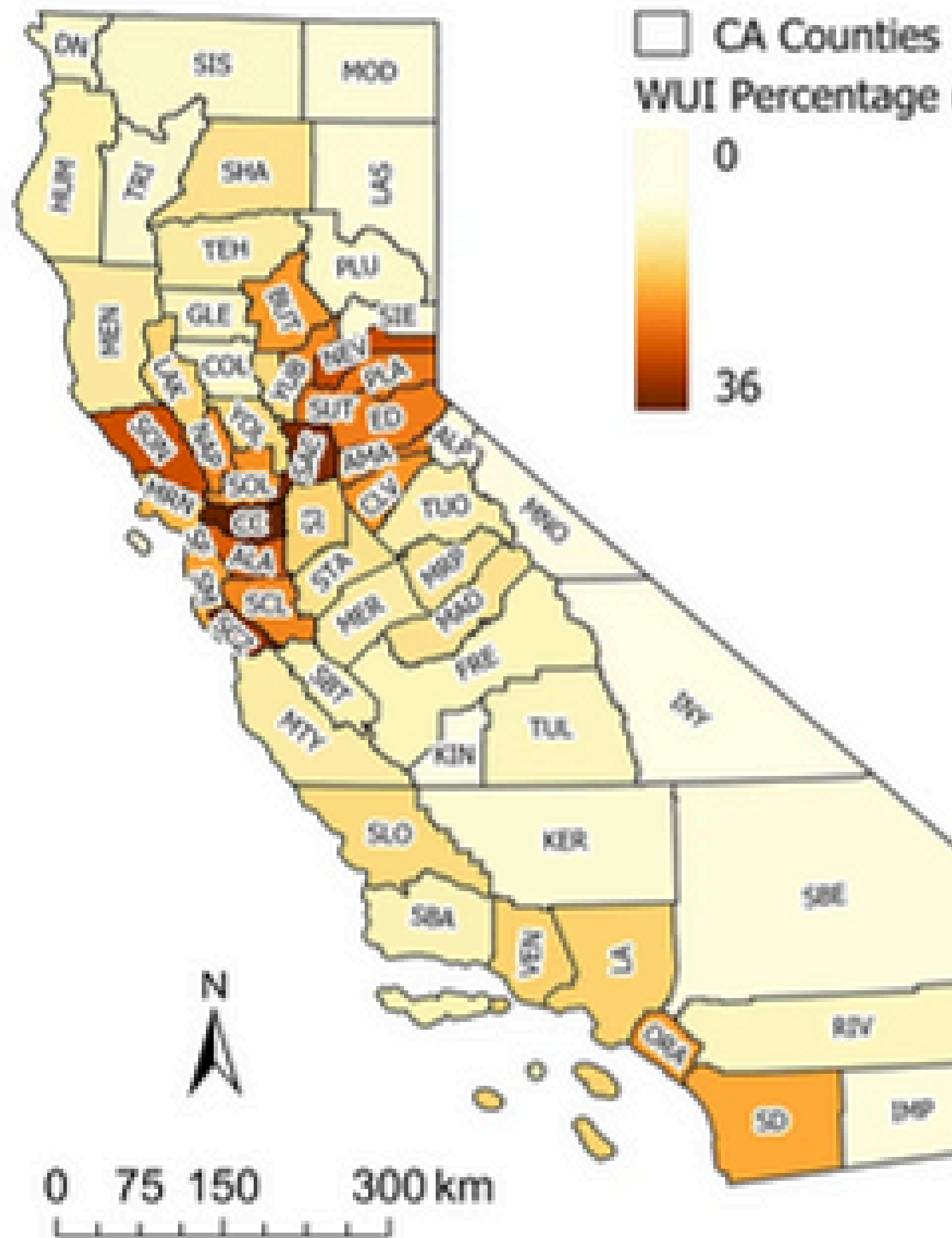
Community Demographic Changes

A decorative green line is positioned below the title. On the left side of the slide, there are three overlapping geometric shapes: a teal triangle pointing right, a yellow triangle pointing left, and a green triangle pointing right.

- 2018 Camp Fire

- “Compared to single-family residences, multi-family residences and mobile or motor homes were more likely to be destroyed in the fire. Compared to owner-occupied residences, renter-occupied residences were more likely to be destroyed. Lower-value homes were more likely to be destroyed than higher value homes.”
- “Compared to single-family residences, multi-family residences and mobile or motor homes were less likely to be reconstructed. Compared to owner-occupied residences, renter-occupied residences were less likely to be reconstructed. Lower-value homes were less likely to be reconstructed than higher value homes.”

Source: Journal of Landscape and Urban Planning. “Post-wildfire neighborhood change: Evidence from the 2018 Camp Fire” (2024)



Could it occur in our SACOG Region?

The SACOG Region faces substantial wildfire risks, particularly in the **Wildland-Urban Interface (WUI)**.

Source: Scientific Reports: “Mapping the wildland-urban interface in California using remote sensing data” (2022)



California Property Insurance Crisis

How much time do we have?

California Property Insurance premiums are rising for existing policyholders

“...[insurance] prices in California have risen rapidly in recent years and are expected to increase. In March 2024, both **State Farm** and **Farmers Insurance Group** — the state’s top two home insurers, carrying just over 35% of all policies — raised their rates by 20% and 15%, respectively.”

Source: San Francisco Chronicle (2024)



State Farm



California Context

RICARDO LARA
INSURANCE COMMISSIONER
California Department of Insurance

Insurance Group and Ranking (2022)	Market Share	2023 Rate Increases (Pending & Approved)	Major Action Since 2022
1. State Farm	21.22%	28.1%	Paused new policies
2. Farmers (10 companies)	14.9%	17.7%, 12.5%	Limited new policies to 7,000 per month
3. CSAA (2 companies)	6.9%	18.55% (approved 2021)	
4. Liberty Mutual (6 companies)	6.6%	29%, 10.6%	
5. Mercury	6%	12.6%, 7%	
6. Allstate (5 companies)	6%	39.6%	Paused new policies
7. USAA (4 companies)	5.7%	30.6%, 16.5%, 6.9%, 3%	Restricted underwriting to low-risk only
8. Auto Club	5.1%	20%	
9. Travelers	4.2%	21.7%	Limited new policies
10. American Family (3 companies)	2.8%	22.7%, 6.9%, 6.9%	
11. Nationwide (2 companies)	2.5%	19.9%, 24.5%	Limited new policies
12. Chubb (8 companies)	2.2%		Ceased writing high-value homes with higher wildfire risk, and non-renewed some high-value homes

California Property Insurers curtail offering new policies

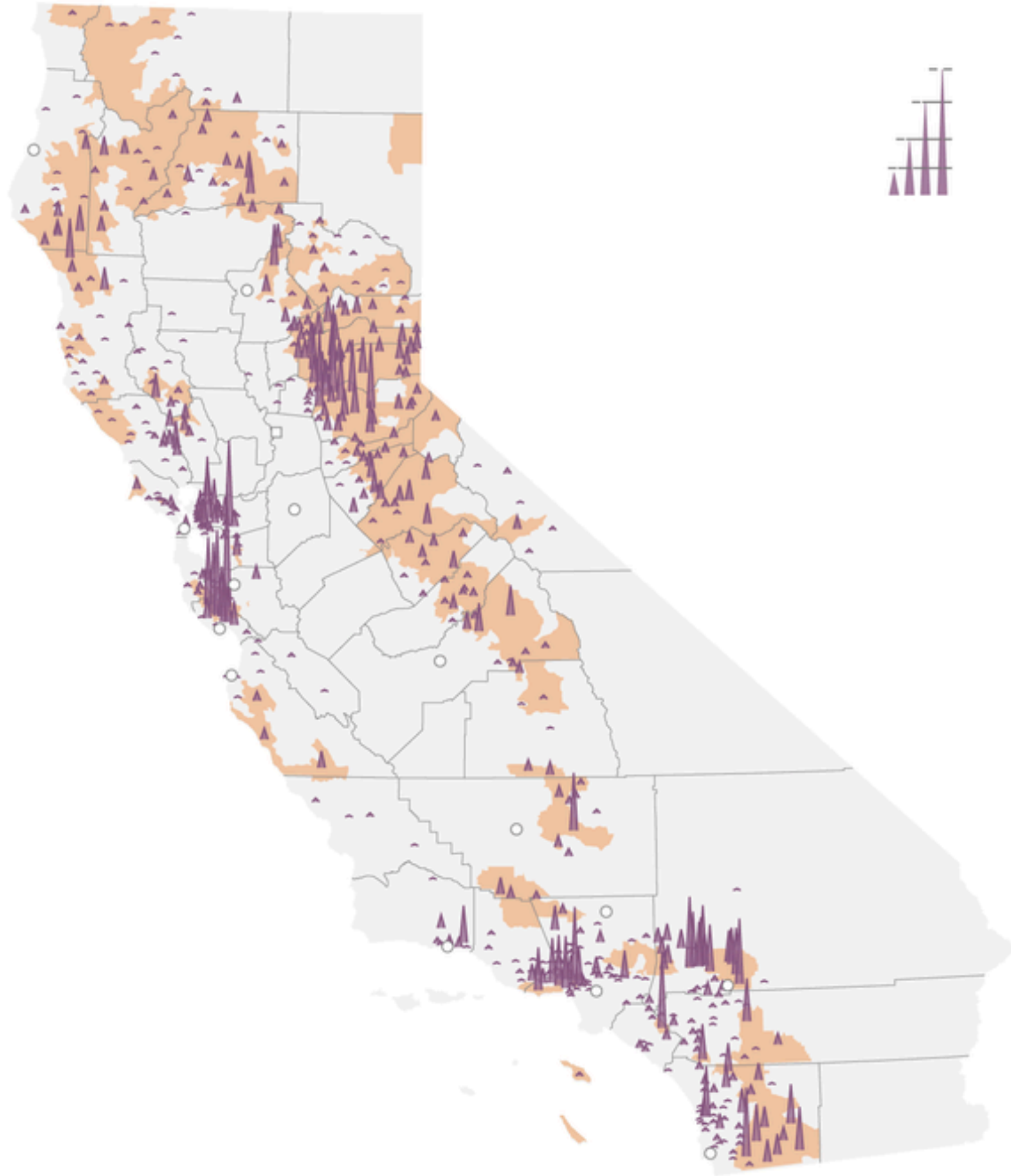
Source: California Department of Insurance (2023)



Insurance Carriers are non- renewing existing policies

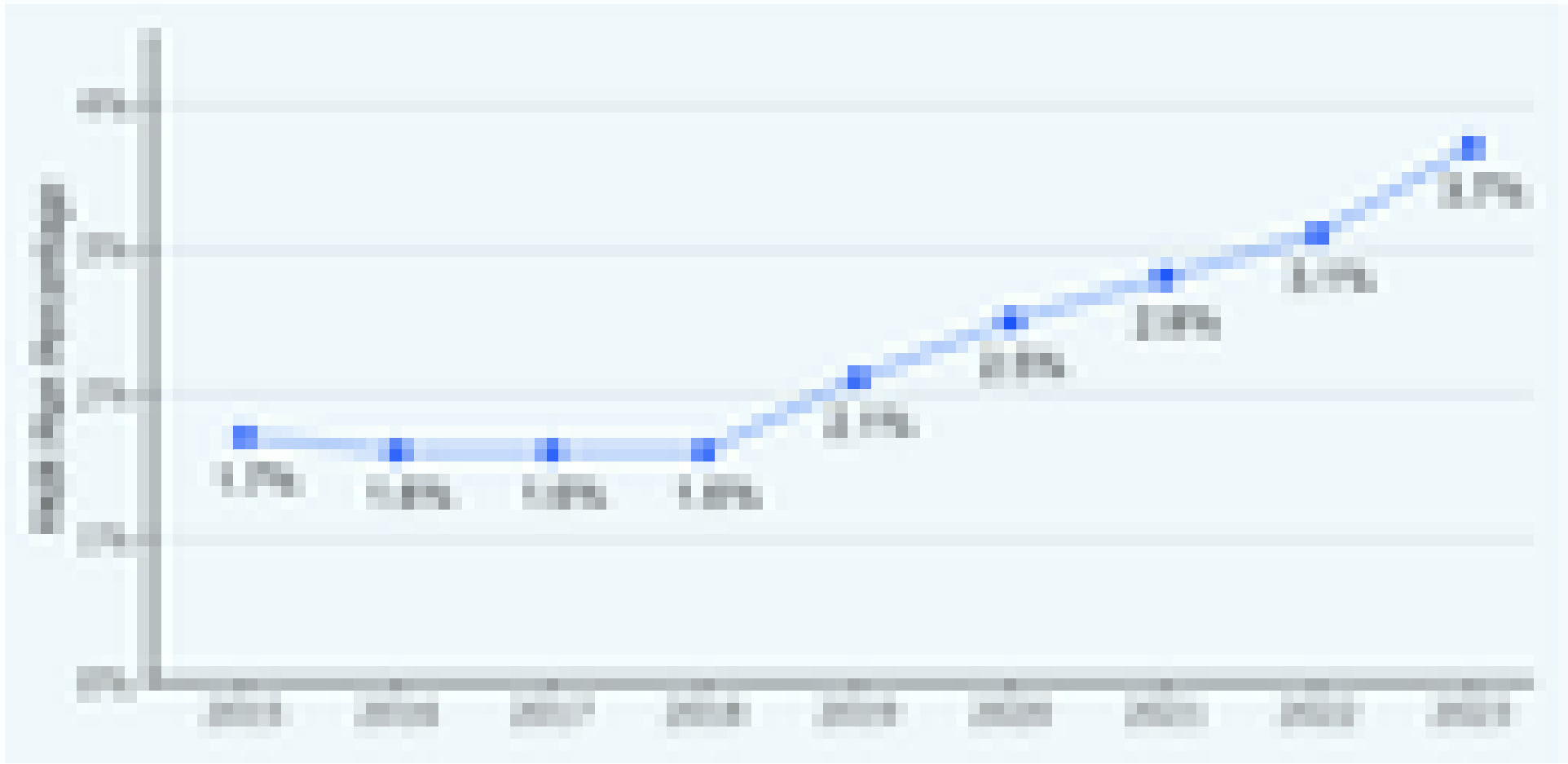
Non-renewals for every 100 policies per ZIP code, 2019-24 ZIP codes with moderate to very high fire risk are marked in orange

Source: SF Chronicle, California Department of Insurance (2025)



California FAIR Plan Insurance

Figure 1: Total and Maximum FAIR Plan Premiums as a Percentage of Total and Maximum Premiums Available in the Covered Market



Rising Property Insurance premiums slowing new home sales

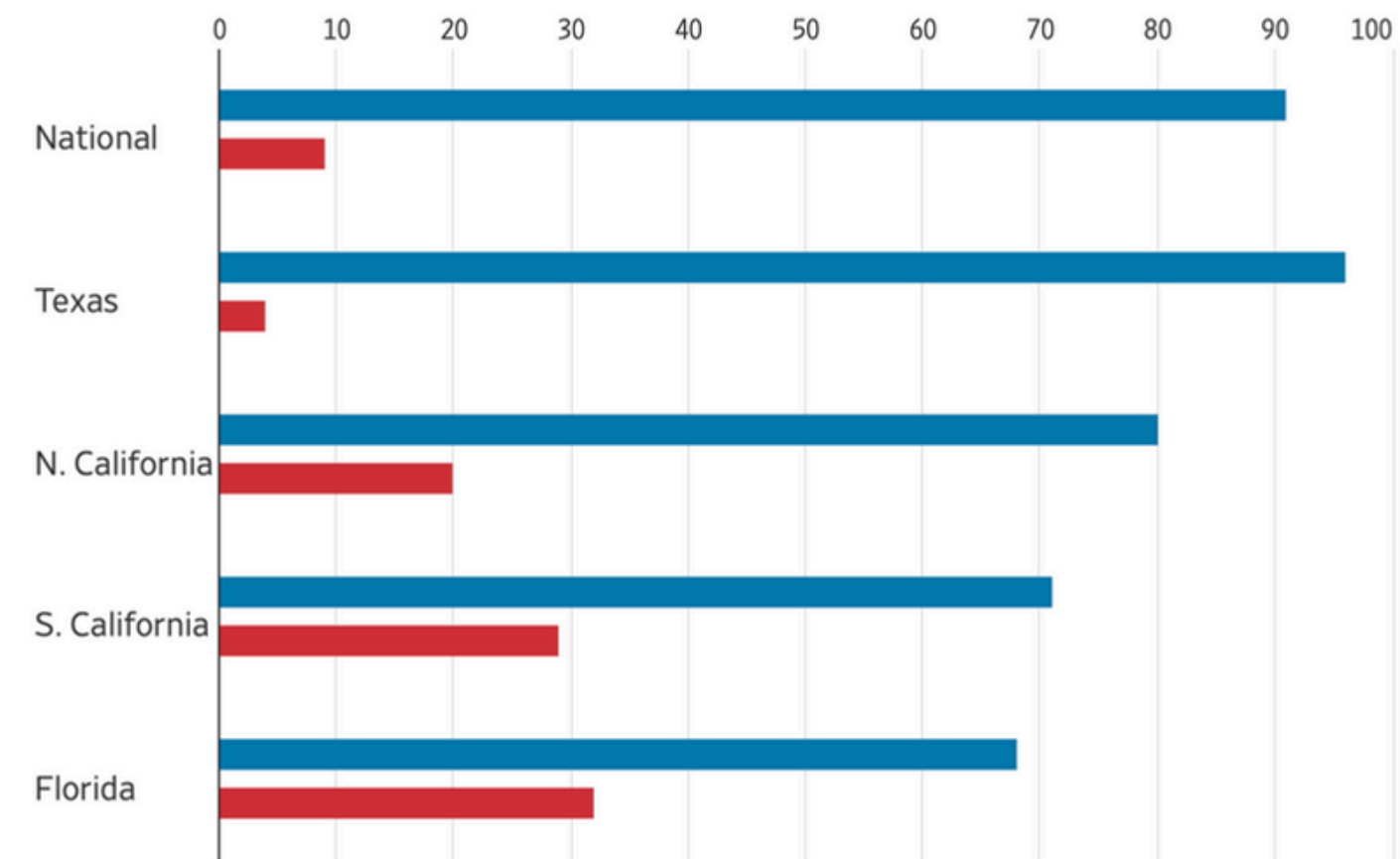
In 2022, new home builders reported that rising insurance costs were affecting new home sales – in **Northern California** at more than double the rate reported nationally.

Source: John Burns Research & Consulting (2022)

Pricey Premiums

Home builders say rising insurance costs are affecting sales

■ No effect ■ Somewhat slowing sales



Source: Survey by John Burns Research & Consulting

Difficulty obtaining insurance is affecting real estate transactions



In its annual membership survey:

- 6.9% said their transaction cancelled due to failure to secure affordable insurance
- 37% of respondents noted that insurance premium quotes were “too expensive”
- 27% said their “clients’ were denied a policy by a carrier”
- 35% reported difficulty obtaining insurance

Source: California Association of REALTORS (2024)

Home Hardening & Risk Mitigation

- In northern and southern California, building an Enhanced Wildfire-Resistant Home increased construction costs by approximately \$2,800 over the baseline home
- Constructing a home to Optimum Wildfire Resistance increased overall costs by **\$18,180 in northern California** and by **\$27,080 in southern California**

Source: Headwaters Economics: “Construction Costs for a Wildfire Resistant Home” (2022)

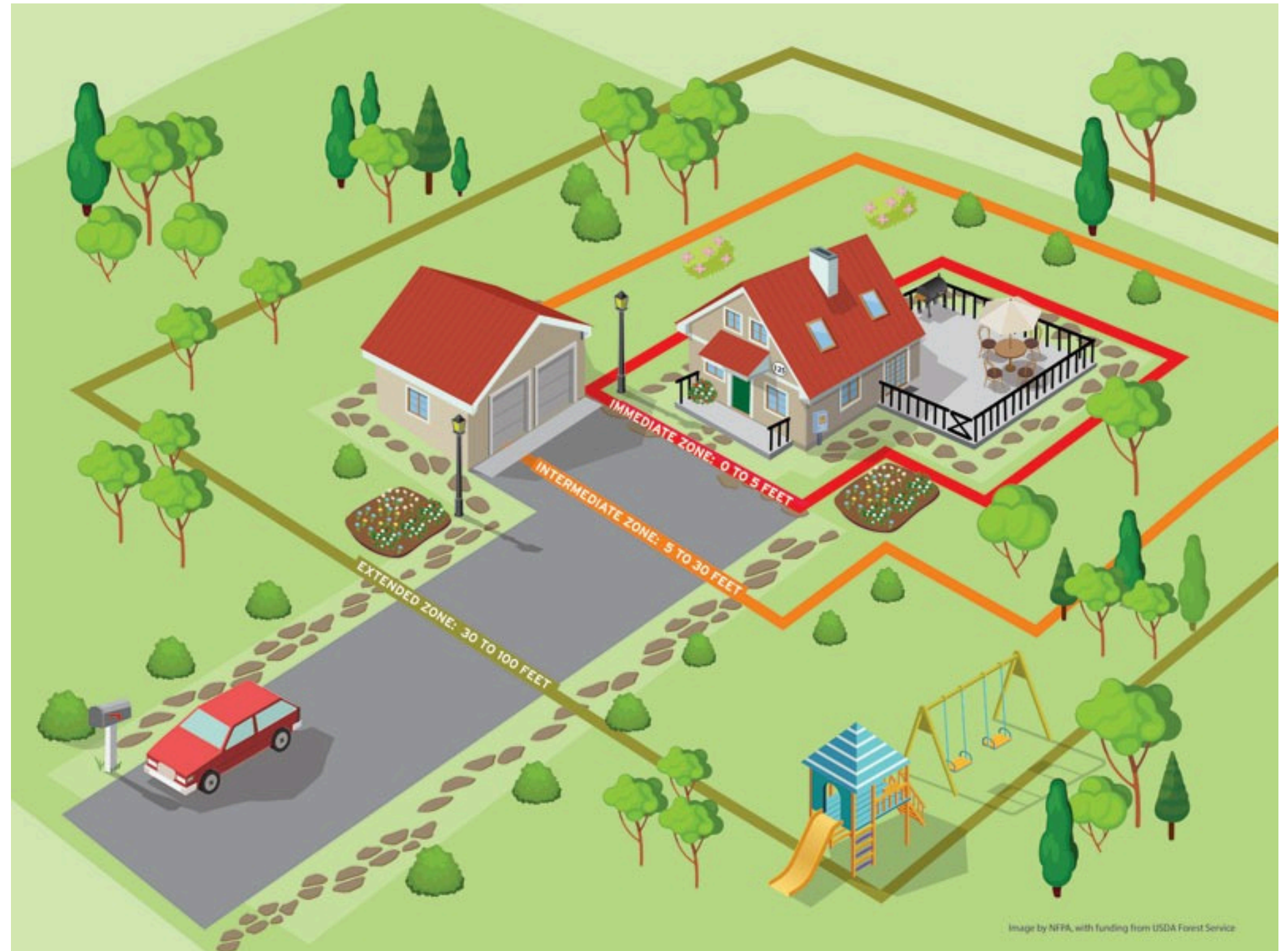


Home Hardening & Risk Mitigation

Defensible Space Zones:

- Zone 0 (0-5 feet): Non-combustible area around the home, including surfaces of the structure and areas under and around attached decks.
- Zone 1 (5-30 feet): Lean, clean, and green zone, where vegetation is managed to reduce fire hazards.
- Zone 2 (30-100 feet): Intermediate zone where fire intensity is reduced and flames are kept away from structures.

Source: USDA/USFS: "Make Your Home Wildfire Defensible" (2021)



Community Risk Mitigation



- Expand use of prescribed fires
- Increase sustainable timber harvesting
- Investments in early detection technology
- Investments in forest management projects that contribute to forest health and fire protection
- Educate wildfire-prone homeowners and neighborhoods, provide grants for home hardening
- Investment in more personnel, aircraft capacity, heavy equipment: pre-deploy in strategic locations and respond to breaking fires

Source: California's Wildfire and Forest Resilience Action Plan (2021)



Community Risk Mitigation

- “Each \$1 invested in disaster preparation saves \$13 in economic costs, damages, and cleanup cost after a climate event”
Source: US Chamber of Commerce: “The Preparedness Payoff: The Economic Benefits of Investing in Climate Resilience” (2024)
- “Departments are still implementing the funding from the prior wildfire and forest resilience packages and that information on the outcomes from those funds is limited”
Source: California Legislative Analysts Office: “Wildfire and Forest Resilience Package” (2022)



What is the Legislature Doing?

- **SB 269 (Choi) Fire Safe Home Tax Credits Act:** offers personal income tax credits to homeowners for expenses related to fire safety improvements. Specifically, it allows credits for qualified home hardening and vegetation management costs incurred between January 1, 2026, and January 1, 2031, with the total annual credits capped at \$500 million.
- **AB 1 (Connolly) Residential property insurance:** mandates that by 1/1/30 and every 5 years thereafter, the Department of Insurance must assess whether to update its regulations to include more building hardening measures and community wide wildfire mitigation programs.
- **AB 75 (Calderon) Residential Property Insurance Images:** would require insurers to notify residential property insurance policy holders at least 30 days before taking aerial images of the insured property, except when there is a submitted or pending claim. The images must also be provided to the policy holder upon request.
- **AB 226 (Calderon) California FAIR plan:** allows the FAIR plan to issue bonds that will help alleviate the strain on the insurance market when the FAIR plan must issue an assessment to cover its pay outs.
- **AB 238 (Harabedian) Mortgage Forbearance:** would allow homeowners affected negatively financially to receive two 180-day forbearance on their mortgage with an attestation of financial difficulties. (C.A.R. has a support if amended position on this bill to ensure that it does not cause conflict with the GSE servicing guidelines, is limited to those lenders who make or service 5 or more loans a year and is not reflected negatively on the credit reports of those who take advantage of such forbearance)

Any Questions?

Thank you!

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Closing Remarks & Next Steps

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**Cleaner Air
Partnership**



**CAPITAL REGION
CLIMATE READINESS
COLLABORATIVE**

Post Event Survey



Thank you for joining us!