



Building Regional Resilience: How Wildfires Impact the Environment, Public Health, and the Economy

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

[Notes](#)

Link to presentation slides:

<https://climatereadiness.info/wp-content/uploads/2025/03/March-2025-Presentation-Slides.pdf>

Grace Kaufman, Senior Project Manager, Valley Vision - Intro

- Wildfires impact both the rural and urban communities of our region
 - It's important we support resilience across the region
 - Camptonville Project from [We Prosper Together](#) catalyst funds is an example of a collaborative effort to address wildfire impacts
 - This is the first collaborative event for the [Capital Region Climate Readiness Collaborative](#) and [Cleaner Air Partnership](#)!
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JoAnna Lessard, Ph.D. | Watershed Manager, Yuba Water Agency

- Collaborative projects to increase pace and scale of watershed management projects
- [Watershed resilience program](#)
 - Started in 2018
- Yuba Water Agency created to provide flood risk reduction, create hydropower, maintain sustainable water supply, fisheries protection, and recreation
- Water supply comes from Sierra county
 - Protecting the water supply meant collaborating outside of the county!
- Why do we need forest restoration?
 - Have been extremely close to mega fires
 - North complex fire was 4 miles away from Yuba River Watershed
 - Featherriver watershed burnt, almost identical to Yuba Watershed
 - Really just luck there has not been a mega fire
- Fire suppression activities led to dense, even age stands
 - Low heterogeneity
 - Branches touch, leading to mega fire
- Yuba Water's Watershed Resilience Program
 - Look for ways to develop large collaborative projects to increase pace and scale of forest managements projects
 - Board allocated 10 million per year for projects that further Yuba Water Agency's mission
- Flagship effort is north yuba forest watershed
 - Almost all land is in Tahoe National Forest

- Small strip in private land
 - In 2018 got involved to fund and implement one, out of multiple, projects
 - Blue forest conservation
 - Leverages private investment to pay for work that state and federal grants can pay back
 - Need agency to fulfill that interest
 - Yuba Water Agency was able to do just that!
 - Project was completed in 4 years, would have likely taken 10 without collaboration
- Goal is first resilient watershed in California
- When forest work is done, you start over
 - It grows back!
- Can't walk away from the forest in the face of climate change
- [Forest Resilience Bonds and Blue Forest](#)
 - Investments have started to snowball
 - Because Yuba Water Agency was thinking and addressing at larger scale, they were able to receive larger funds
 - Had a board able to/ interested in experimenting with solution approaches
- CCP Biomass Utilization Infrastructure
 - Top ⅓ of the county are considered high risk areas
 - Several things that make this work hard
 - Wood problem!
 - Most material is branches (waste products)
 - Would be nice to use it!
 - Take it to bioutilization facility
 - There are 3 within driveable distance (3-4 hrs one way)
 - \$2-3 Million just in trucking
 - [Camptonville Community Partnership](#) has been developing biomass utilization plant for 10 years. At a place where the plant is ready for financing, very much possible because of Yuba Water Agency
 - 5 mega watt plant is kind of a drop in the bucket
 - Yuba could use 10 of these and still have material
 - Mountain of wood they are trying to get rid of
 - Forest Biomass business center campus
 - Use additional wood material and use the energy
 - Restoration economy in Yuba County
- Reducing fuels on roadways
 - Important for fire reduction and evacuation
 - Working with small land owners
- Yuba County Forest Health Grants
 - First grant Yuba Water Agency led grant

- Working with landowners
 - Reducing fire risk for entirety of area
 - Including a large amount of structures
- [Yuba Foothills Healthy Forest Grant](#)
 - Treated 6,000 acres at close out
- [2023 New Bullars Bar Healthy Forest Grant](#)
 - Funded in 2023, provides \$7 million in new funding from Cal Fire CCI Forest Health program
 - Aimed to simplify projects to maximize what can be done with the funding
- [Cal Vegetation Treatment Project](#)
 - Wrap up a multitude of projects into one document
 - Can be utilized by other agencies in the county
- Workforce
 - Gave money to Yuba Community College to get people into this type of work!
 - Certification programming:
 - GIS, Soil Conservation, and Watershed Management
- Invested \$26 Million to date to leverage more than \$182 Million in external funds
- Questions?
 - We know what was being suppressed when it happened, indigenous practices, are you working with indigenous folks on these projects?
 - Yes, but not enough. Nisenan Tribe have ancestral lands in the North Yuba Watershed. Tribal members attend monitoring meetings. Tribal Ecological knowledge as metric. Nowhere near where we should be on that
 - Have you looked at Green Bonds at all for financing? Overselling 7-1. SMUD is giving out green bonds!!
 - Not familiar with Green Bonds. Forest Resilience Bonds are not bonds like typically thought of. These are with private investors. Contract local agencies and pay them weekly/ monthly, not waiting for grant cycle
 - Forest Resilience bond impact bond mitigated common cash flow issues
 - Mainly use state and federal funds, and general fund from hydropower sales
 - Worried about herbicides with spraying, how are you mitigating this?
 - A lot of it is mechanic mowing, not as much spraying
 - Getting power from anaerobic breakdown, have you considered this?
 - Had a white paper done looking at biomass utilization projects. Right now biomass to electricity is the most available. In years to come, new projects will be ready. Yuba Water Agency is looking at these projects.
 - Bold Prediction?
 - We will have 5 of the first Forest Resilience Bonds. Got IRA funding to get money on the ground. It is 1/3 of what is needed to get work done. Want to use funding for first resilient watershed in CA
 - Every watershed has had, or is at risk of fire?
 - There are no headwaters without fire risk

- North Yuba Partnership is in a unique position to bring people/ agencies together. Not there yet, aiming to be there before mega fire. Yes, there is no resilient watershed in CA
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Dr. Vanessa Walker | Chief Medical Executive, Sutter Roseville Medical Center

- Health effects of Wildfire Smoke
- What is in wildfire smoke?
 - A lot! None of it is good for you
 - Ozone, nitrous oxide, soot, ash,
 - Structures are burning
- Particulates
 - 2.5 microns
- How do they enter the body?
 - We are breathing them in
 - We typically filter with nose hair
 - Not good enough for super tiny particles
- Less than 3.5 microns get into the tissues of the lungs
- Ultrafine particles
 - Can go into blood vessels, can go into all of your organs
- Signs and Symptoms
 - Itchy, watery eyes, flem, soar throat
 - If you have asthma you may get tightness of breathe
 - Fatigue
- Wildfire smoke can impact every single organ of the body
 - High blood pressure, heart attack
 - Can go into the brain!
 - Increased episodes of smoke
- Starting to see that people closer to busy roads, older people have higher risk of dementia
- Causing inflammation
- Impacts immune system
 - If we continuously have inflamed state, weaker system
 - Increased cancer
 - Reproductive dysfunction
- If people are surrounded by wildfire smoke there are impacts on anxiety and depression
 - Areas in high risk of wildfire, there is fear.
 - Increased anxiety and depression
- High blood pressure from being in high pollution areas
 - One of the leading causes of death
- Pregnant mother impacts
 - Hormonal and physical changes can occur

- Babies born during certain years of bad wildfires
 - Higher risk of asthma, higher risk of lung development, weaker immune system, and cognitive impairment
 - Possibility of increased obesity from inability for activity
- Increased risk of cancer when there is longterm exposure
 - Risk of dying of any cancer rose by 22%
- We don't know exactly how long, or how much smoke leads to increased cancer
 - A large portion of 9/11 responders have developed ailments
- What can we do about it?
 - Decrease fires!
 - Mask, avoid outdoor activities, keep doors and windows closed, close off large gaps in doors/windows, HEPA filters, create "clean rooms" for sensitive folks, Recirculate AC in the house
- Questions
 - Misunderstandings?
 - People think you have to see it to be impacted. If you are smelling it, you are breathing it. These particulates are so small, they will impact you. N95 is key, other masks do not work.
 - Biomass - outlet for high hazard fuels.
 - When Biomass burns, it does release particulates. Sounds like the process in facilities has a filtering process that limits outputs. Rather burn in a controlled environment vs an uncontrolled environment.
 - Waste management issues, plastics and toxins in the homes that are burning. 20% of our homes are plastic. Can the medical community get more involved in this? When medical professionals speak, legislatures listen more.
 - We need to deal with this reality. As a medical community we can get more involved, we can make resolutions!
 - When you mention the smelling of smoke, in the winter you smell fireplace smoke. Is that just as dangerous?
 - It is typically a small amount. More concerning when you don't know why you are smelling it. Campfires are okay - they don't burn all day.
 - After exposure to intense particulate matter, does it clear out of your body?
 - Technically, there are permanent effects. Intent of our body is to clear things out. If cells that eat things out, cannot break things down - the body will calcify it , calcification of arteries. More particulate matter packed into blood vessels. We need to make sure we do our best to mitigate it. Need to do more research.
 - Urban pollution vs wildfire?
 - Very similar risk, almost the same. Particulate matter is the issue. Big distribution facilities are putting themselves in areas where there is less pushback. You are seeing disproportionate impacts of diesel smoke.
 - It is all the same. We need to protect people from particulate matter.

Erin Stumpf, MPPA | Broker Associate, Coldwell Banker

- Intensity, frequency of wildfires has grown significantly
 - Previously did not have wildfire season
- Public Policy Institute of CA found that 79% of adults thought wildfire are atleast “somewhat of a problem” or a "serious Problem”
- Our SACOG counties have a higher number of structures in the WUI, comparative to other parts of CA
- Economic Consequences & Spillover Effects of Wildfires
 - 2017 Tubbs Fire and 2018 Camp Fire
- 2017 Tubbs fire
 - Destroyed thousands of structures
 - 3,000 homes - 5% of city of Santa Rosa Housing Stock
 - Led to immediate decline in value of homes in Sonoma County
 - Prices surged in unaffected makers
 - Asking rents jumped by 40% as fire refugees were looking for places to go
- 2018 Camp Fire
 - Destroyed 18,000 fires
 - 11,000 are homes
 - Within 25 miles of fire’s footprint, home prices increased by 13% in the 6 weeks of aftermath
- State and Local gov economic impacts
 - Pause of property tax for properties that burn
 - State has to step in to make up loss in property tax revenue
 - Unemployment rates tripled - tubbs
 - Tourism fell 6% that year - tubbs
 - Camp fire resulted in approx \$1.86 billion in assessed property value for Butte County
 - Increase in hotel spending, not from tourism - but from debris removal crews
- For individuals
 - 60% of homeowners are underinsured by roughly 17% of home value
 - LendingTree found that over 800,000 are without insurance coverage
 - 90 day mortgage delinquency rate are 4% higher for properties impacted by wildfires
 - 2018 wildfires cause \$145 billion
- Migration Patterns Post-Wildfire
 - Paradise population has not recovered
 - Absorbed by other cities in Butte County, overall county lost 10% of residents
 - 40% of residents permanently left the county
 - Santa Rosa population sank by 5k, largely picked up by other cities in Sonoma County
- Community Demographic Changes
 - Homes become rebuilt into custom homes
 - Well off and well-insured remain in areas, others leave
 - Lower value homes more likely to be destroyed than higher value homes

- California Property Insurance Crisis
 - California property insurers curtail offering new policies
 - Article! (link it)
 - Insurance has become a “day one” in home purchasing
 - Insurance carriers are non renewing existing policies
 - Tree encroachment in urban areas meaning non renewal
 - CA FAIR plan insurance is becoming de facto insurer
 - In Northern CA price of premiums are leading to slowly home sales that double the rate nationally
 - Difficulty obtaining insurance is affecting real estate transactions
 - 6.9% of survey respondents said their transactions were cancelled due to not obtaining insurance
- Home hardening & Risk mitigation
 - Multitude of ways to be more wildfire resistant
 - The more you do, the impact to the cost of the home becomes significant
 - Adding 20k to the cost of home, makes it less affordable
 - Defensible space
- Community Risk Mitigation
 - Prescribed burns
 - Sustainable timber harvesting
- Every \$1 in disaster preparedness saves \$13 in economic cost from climate event
- What is the legislature doing?
 - SB 269
 - AB 1
 - AB 75
 - AB 226
 - AB 238
- Questions?
 - Clients unable to get insurance at all. Do you see a particular point where the impacts will digress?
 - Ship has sailed for going back to what we think of as affordable insurance. Hard time imaging rate reductions.
 - Outside of the CA association of realtors meeting with statewide decision makers informing of economic impacts?
 - There is a wide coalition working towards an insurance solution. A lot of stakeholders meeting with commissioner Lara.

Please reach out to Grace.Kaufman@valleyvision.org to join the Capital Region Climate Readiness Collaborative and Kathy.Saechou@valleyvision.org to join the Cleaner Air Partnership.