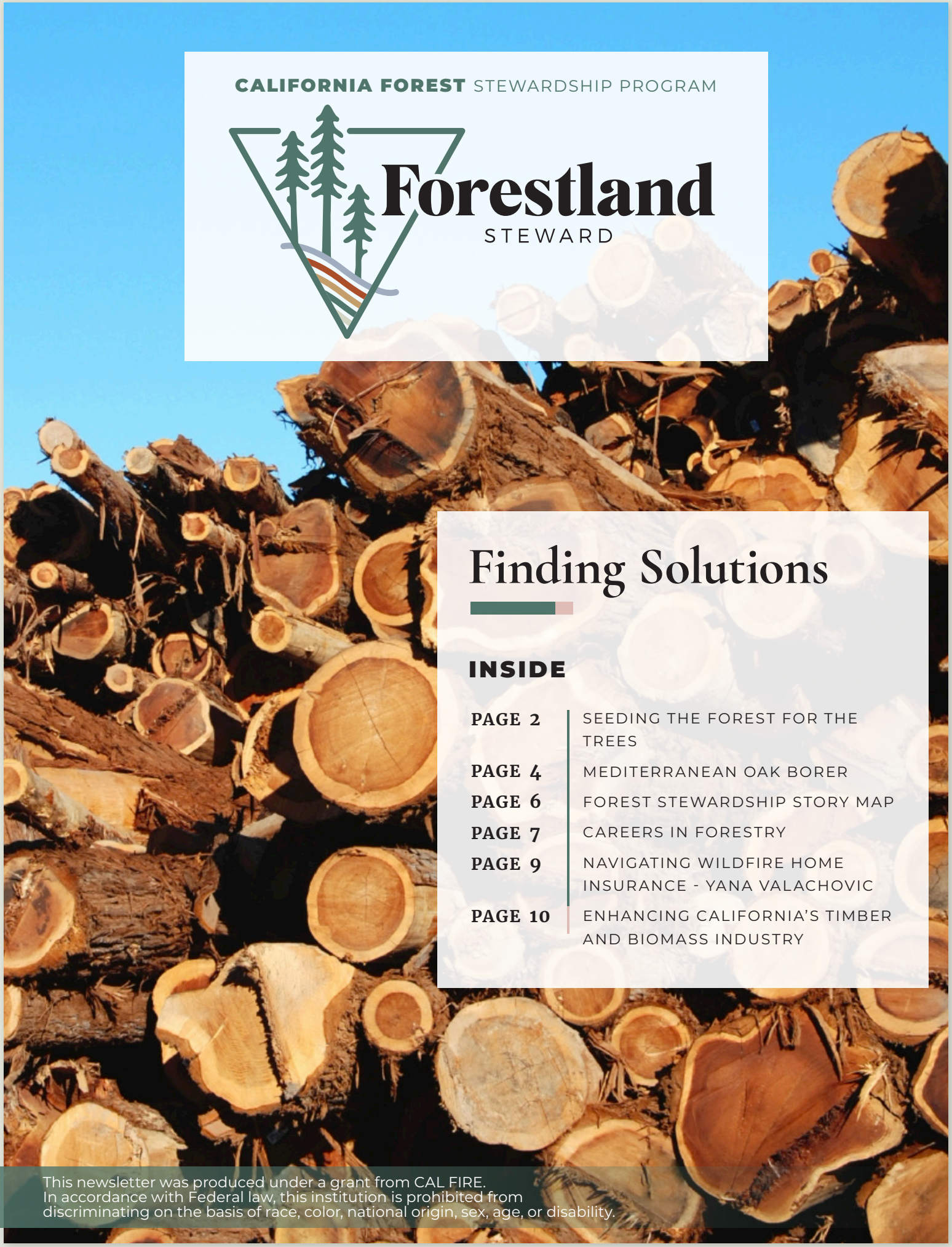


CALIFORNIA FOREST STEWARDSHIP PROGRAM

Forestland STEWARD

Finding Solutions

INSIDE

This newsletter was produced under a grant from CAL FIRE.

FORESTLAND STEWARD IS A JOINT PROJECT OF CAL FIRE, PLACER COUNTY RESOURCE CONSERVATION DISTRICT, UC COOPERATIVE EXTENSION, AND USDA FOREST SERVICE TO PROVIDE INFORMATION ON THE STEWARDSHIP OF PRIVATE FORESTLANDS IN CALIFORNIA

Seeding the Forest for the Trees

TREE IMPROVEMENT **AND THE PATH TOWARD HIGH QUALITY REFORESTATION**

The **Summer 2023 issue** of the Forestland Steward Newsletter featured "Reforesting California: A Need for Seed", which discussed reforestation efforts throughout the state and a call to action for landowners to provide property access for seed collection. While seed collection is a major part of reforestation, there is always more to the story. As CAL FIRE collects seeds and grows seedlings for reforestation efforts, the importance of selecting for the healthiest and most phenotypically appealing trees looms large. Enter the concept of tree improvement.

Tree improvement describes the process of improving the genetic quality of a tree species. When selecting seeds for future reforestation plantings, foresters and geneticists select for traits such as hardiness and favorable observable characteristics (phenotype) to give the new seedlings their best chance of survival against disturbances like climate change, pests, diseases, and the elements. But how does one select for these traits and ensure they are passed on to the next generation of planted seedlings?

Seeds for reforestation are generally collected from wild stands, resulting in cultivated seedlings that carry a wide variety of traits, both good and bad. Seedlings resulting from this method of seed collection are superior in some ways due to their genetic diversity. However, when one is growing trees for timber harvesting or rapid reforestation projects, it's critical to both shorten the growing cycle and collect from only ideal specimens to ensure that the effort going into a given seedling will pay off in growth and vigor. Theoretically, by collecting seeds only from the healthy and physically appealing trees, the chances of healthy and physically appealing offspring increase. However, there is no guarantee that selected trees will transpose their features to offspring. To test this, seeds from wild trees are tested in progeny trials, and those that grow true to their parent are planted into "orchard" settings,

where conifers are grown specifically for seed production. While this method is still relatively slow, the waiting time until seed production can be cut in half by taking cuttings from a phenotypically appealing wild parent tree and grafting them onto an orchard tree.

Time isn't the only barrier to successful and rapid tree improvement endeavors in California. Between 2000 and 2012 many of the state-run tree improvement projects and state nurseries faced significant budget cuts. As a result, very few nurseries remained operational during this time and those remaining were only equipped to accept large seedling orders. This left non-industrial private landowners with few options for sourcing improved trees, as trees sourced from home improvement stores and backyard nurseries are more expensive and are not classified as improved trees.

This situation has improved in recent years. The U.S. Forest Service and CAL FIRE have revamped their improved seedling distribution efforts through the North Sierra Tree Improvement Association (NSTIA), which seeks to increase access to improved tree seeds for its members. For the most part, NSTIA sources the improved seeds and CAL FIRE processes them, dividing the seeds between partner agencies and distributing them to private non-industrial landowners upon request. Providing they match a landowner's **seed zone and elevation**, CAL FIRE offers these seeds at cost and will either grow them for the landowner in a CAL FIRE nursery or send them to a local nursery of the landowner's choosing.

Despite budget cuts and tight timelines, the hard work of foresters and tree geneticists throughout the state has ensured that non-industrial private landowners have access to high-quality seedlings that have been tested and hand-selected for superior health, appearance, and climatic adaptiveness. Increasing access to quality seedlings provides private forest landowners with the tools to recover from high-intensity wildfires, prolonged drought, and other disturbances that cause large-scale tree mortality. Landowners interested in improved seed may request orders through **CAL FIRE's Reforestation Services Program**.

LANDOWNER **RESOURCES**

Want to get your hands on improved seed or seedlings for your own forest?

Visit **CAL FIRE's Reforestation Services Program page**, where you can submit a seed order request form or review alternate seed or seedling resources.

Photos from CAL FIRE.

Mediterranean Oak Borer

VIGILANCE AND **EARLY DETECTION**

In 2018, a new threat to California's forests was discovered in the statuesque Valley Oaks of Northern Napa Valley. Crawling through the twisting branches and sturdy trunks of these classic California trees was the Mediterranean Oak Borer (Xyleborus monographus), also known as MOB.

This tiny, reddish-brown ambrosia beetle is native to the Mediterranean region, where it targets a variety of oak species. Affected trees display symptoms such as boring holes measuring 1/16th of an inch, boring dust, oozing sap, and ultimately crown die-back.

Mediterranean Oak Borers cause structural damage by physically feeding on a tree's sapwood, but unfortunately these ambrosia beetles pack a one-two punch. As the beetles feed on their host tree, they inoculate the tree with a symbiotic ambrosia fungi, which colonizes the tree and breaks down parts of its cellular structure while providing a food source for beetle larva. In some instances, "ambrosia fungi can spread in the xylem (or sapwood, where water movement occurs), restricting or preventing the movement of water in that tissue, which can cause stress. Mortality usually occurs when the feeding and fungal growth girdle the main stem," explains Mike Jones, UC Cooperative Extension Forest Advisor.

Jones adds, "Ambrosia beetles can also pick up 'hitchhiking fungi' that can be more serious tree pathogens and cause significant tree damage." Some of these detrimental fungi have been found in California, and though more testing is needed, "it does seem they are likely contributing to the deaths of infested oaks in California." A tree's overall health also contributes to its resistance to MOB and chances of survival.

Since initial detection in Napa, this destructive beetle has been identified in Sonoma, Lake, and Sacramento Counties, with reports of appearances in Southern Oregon. Given the advanced stage of damage on the trees first associated with MOB, it's likely that this pest had gone undiscovered in California for at least a decade, making the true extent of its range and destruction in California difficult to ascertain. While Valley Oaks appear to be the preferred host, MOB will attack any white oaks, including Blue Oak and Oregon White Oak.

Detection of MOB generally occurs after a tree is already showing signs of a heavy infestation, but landowners can take steps to mitigate the damage. By removing the dead tree or dying stand and destroying the material in-place through chipping, burning, mastication, or solarizing, landowners can slow the spread to other trees. "Not moving infested material is the most important way to help prevent or slow the spread of invasive insects," Jones advises.

The impact of invasive species on California's forests is nothing new, but that doesn't mean that landowners are helpless in the face of this threat to their trees. Across the board, one of the best things landowners can do is keep an eye on the health of their trees and call upon experts when they first notice something wrong or different. Looking for symptoms such as declining canopy health (specifically starting with one branch), oozing sap, and boring dust can help narrow down the cause of damage, and taking down impacted trees will help slow the spread of this new pest.

LANDOWNER **RESOURCES**

Looking to learn more about MOB?

For more information, read UCANR's pest overview at **https://ucanr.edu/sites/mobpc/**.

Photos from UCANR & C. Ewing - CAL FIRE

Forest Stewardship
STORY **MAP**

For the past four years, UCANR's Forest Stewardship Education Coordinator Kim Ingram has been recording the experiences of private forest landowners who participate in the Forest Stewardship Workshop series. Ingram and the Forest Stewardship team published a story map (Figure 1) project in 2023 to highlight these stories, offer knowledge from forestry professionals across the state, and provide landowners with a virtual platform to share their perspectives and land management practices.

One such private landowner is Lynn Garric of Sonoma County, whose story map feature demonstrates the resilience and tenacity of forest landowners.

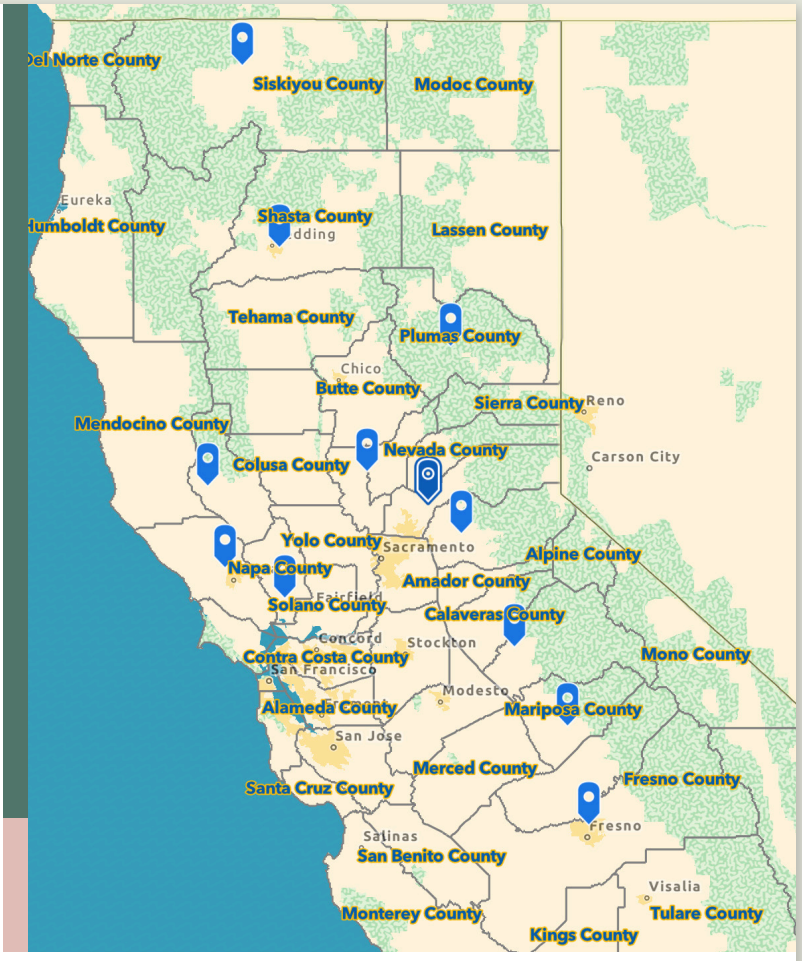


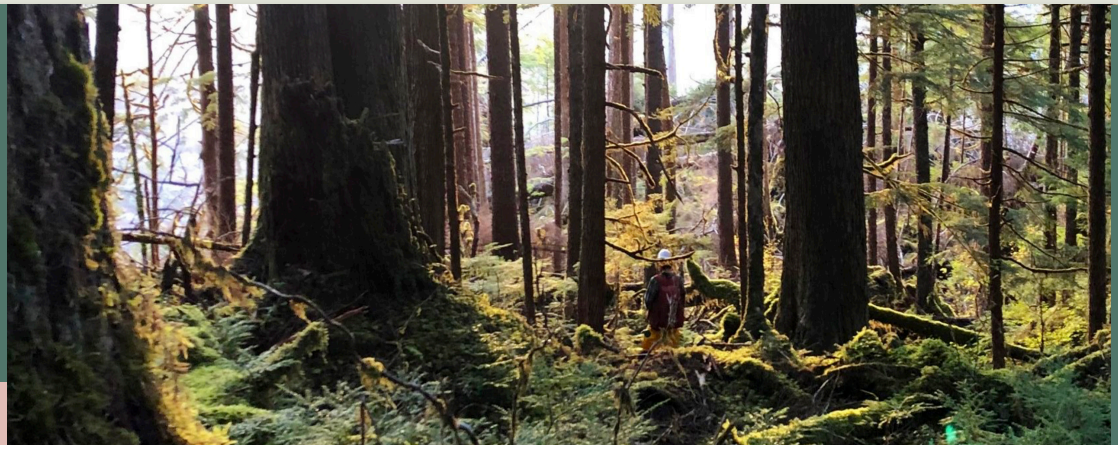
FIGURE 1 FOREST STEWARDSHIP STORY MAP

LANDOWNER **RESOURCES**

Explore the story map!

Visit **UCANR's Forest Stewardship Story Map** online, or scan the QR code.

"Being a forest landowner, I like to adhere to my three "P's": patience, perseverance, and politeness. After a wildfire being patient is difficult. There's a desperate desire to do something to make improvements. But waiting to see how nature responds, and to observe how plants are resprouting on their own can better inform our next steps. Then there's perseverance – if you don't persevere, you can't get things done. That means making multiple phone calls, trying multiple treatments, and not giving up. And lastly, be polite! Everyone has stress in their life, so being patient and understanding with your community members makes a big difference."



Careers in Forestry

A **DAY IN THE LIFE** SERIES

Danielle Lindler is the CEO and Co-Owner of Jefferson Resource Company, RPF License No. 2691 and PCA License No. 70419.

Can you tell us a bit about your background and how you became interested in a career in forestry?

I've always had an affinity for the outdoors. I worked as an off-trail spelunking guide in high school and early years of college, and loved hiking and being in the forest. I started college as an environmental engineering major but after taking a Forestry 101 class I switched majors and was immediately hooked on forestry. Forestry quickly became not just a major or a career, but my life. I started working for Menasha Corporation as an undergraduate, and was even writing Timber Harvest Plans by the time I was a junior. After I obtained my degree from Humboldt focusing on forest production, road design, erosion control and management, I passed my RPF exam on the first attempt. Ultimately, the science of reforestation became my focus and I am still involved with that aspect of forestry to this day.

You say you passed your RPF exam on your first attempt; tell us a bit about the exam and why it's famously so challenging.

The RPF exam has a very low first-time pass rate and a low overall pass rate. The exam covers many topics that RPFs are expected to be experts in such as forest mensuration, economics, silviculture, entomology and pathology, soils, general road and culvert design, plant physiology, forest policy and environmental laws, fire ecology, dendrology, and more. Given such a broad scope of topics and the required essay format, you can't guess your way through the test. Now I sit on the Professional Foresters Exam Committee for the State Board of Forestry. We review test questions and make sure the test is reflective of a professional level to practice forestry in this State.

If someone wanted to pursue a career as an RPF, what tips or insights would you give them (beyond studying hard for the exam)?

Work in the field with an RPF as soon as you can. Learning how to identify features in the field and how operations are conducted will make you a better forester, and the field experience makes class material more relevant if you're still in school. Aside from that, attend the California Licensed Foresters Association Conference, Forest Vegetation Management Conference, and California Forest Pest Council Conference to network and learn from practicing professionals.

Photos from Jefferson Resource Company.

Speaking of practicing professionals, in what context might a private landowner need to hire an RPF? What services do RPFs provide for private landowners?

Private landowners should hire RPFs to oversee management of their forests. Whether it's forest health, reforestation, forest inventories, development on forested landscapes or harvest design and implementation, RPFs are vital to forest management. RPFs prepare permits to state agencies, oversee and conduct botanical and wildlife surveys, ensure roads and watercourse crossings are properly designed, design erosion control measures, and develop reforestation programs.

I understand that creating a Timber Harvest Plan (THP) is an important part of some RPF's roles: do you suggest landowners request THPs?

Due to the costs of traditional THPs, we encourage most small landowners to use exemption permits, which allow thinning and fuels reduction work to be done on their property at a significant time and cost savings. RPFs preparing an exemption still need to evaluate all the resources required in a THP (plants, animals, soils, water, forest health, etc), however due to imposed regulatory limitations, there is less paperwork involved.

What resources would you recommend for landowners trying to find and hire an RPF in their area?

The California Licensed Foresters Association is the professional organization that most practicing RPFs are members of, making it an excellent resource. Additionally, the California State Board of Forestry maintains an **online list** of active RPFs for public use.

Last of all, what is your favorite part of being an RPF, and why is this an important career?

I specialize in postfire reforestation and given the extent of forest loss due to fire and insects, it is tremendously important that experts oversee efforts to reestablish forests on both public and private land. The catastrophic wildfires we experience now cause seed banks to disintegrate, and without reforestation we'll be left with brush fields rather than forests. There is nothing more satisfying than seeing the results of your efforts in establishing a new young forest.

Navigating Wildfire Home Insurance

GUEST AUTHOR **YANA VALACHOVIC**

Yana Valachovic is County Director – Forest Advisor for the University of California Cooperative Extension in Humboldt and Del Norte Counties.

Chances are you or someone you know has been given a nonrenewal for homeowners insurance. Everywhere I go, I hear concerns, fears, and interest in finding ways to stabilize the insurance market so that we can protect the investments we have made in homes, properties, and businesses.

The loss of over 43,000 structures to wildfire over the last 10 years has not gone unnoticed by the insurance industry. Increasing fire hazards and skyrocketing costs to rebuild has everyone on notice that business as usual is not working.

California's policymakers and the Insurance Commissioner have their hands full with structuring the insurance market, creating a market that manages risk and attracts a diversified pool of insurance carriers, stabilizing insurance availability and affordability, and supporting the real estate sector of California's economy.

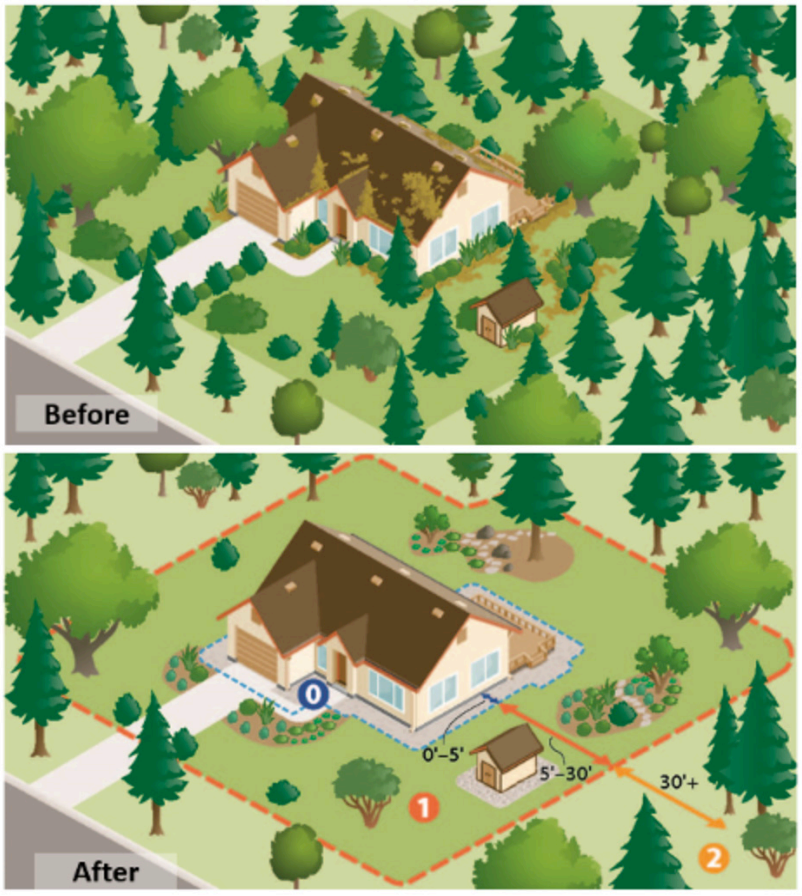
As a member of the state's Risk Modeling Workgroup, I can tell you that many approaches are being debated to address our challenges, including 1) allowing reinsurance calculations to be a part of insurance rates, 2) finding other ways to fund the **Fair Plan** (California's insurance plan of last resort), and 3) allowing categorical models to forecast risk to better anticipate future losses. With the passage of Proposition 103 in 1988, rate setting has been driven by past claims experience. Most suggest that future losses are likely to be significantly worse than past losses.

While these approaches are nuanced and complicated to understand, there are many actions that property owners can take to protect the values of their properties and mitigate risks.

Given this period of insurance instability, the best action property owners can take is to understand and mitigate wildfire risks. **Reducing fuels**, **improving defensible space**, and **hardening the exterior of their structures** to heat, flame, and ember exposures will help to entice insurance companies to underwrite their property, enhance the ability to sell the property, and improve the odds of the building surviving future wildfires. By marketing the value of these actions, just like the remodeled kitchen or other property upgrades that attract homebuyers, you can market your asset to future insurance companies and buyers. Proactive actions, like upgrading vents, are a key part of the solution.

AB 38 (2019) started this process by mandating that the seller of a property disclose to the future buyer defensible space actions that have occurred for properties in Very High and High **Fire Hazard Severity Zones**. In 2025, these disclosures need to include home hardening actions based on an established **low-cost retrofit list**. Over time, theseactions are likely going to become key for the negotiation of price and potentially the closure of the sale.

FIGURE 2 DEFENSIBLE SPACE



Reducing fuels around a structure is a key action both to reduce pathways for fire to travel to the property but also to create a space where fire crews can work to safely defend a structure.

Independent assessment of preventive actions may also be helpful. The **Safer From Wildfires** program was established in 2023 to help promote insurance discounts for the voluntary adoption of wildfire mitigation actions; in my opinion, it could be used as an insurability assessment as well. Another option is to consider the Insurance Institute for Business and Home Safety's **Wildfire Prepared Home** designation. Helping your community think through the issues and take collective action to meet a **Firewise** designation is another approach to consider.

More information about home hardening and defensible space can be found at UC Cooperative Extension's Fire **website**. And if you need help navigating a recent insurance cancellation, **United Policyholders**, a consumer rights advocacy organization, has helpful resources.

Wildfire adaptation will not occur overnight, but I believe we have a pathway and clear evidence to demonstrate that these types of specific actions will help all of us live successfully with wildfire in California now and into the future.

Enhancing California's Timber and Biomass Industry THROUGH THE LENS OF **POLICY**

Over the next three issues, the Forestland Steward Newsletter will be covering the complexities of California's timber and biomass economy by interviewing policy makers, stakeholders, and facilities throughout the state. This issue provides a birds-eye view of the problem and highlights the steps policymakers are taking to address the task at hand.

California contains **33M acres of forest**, which makes up 31.5% of the massive state's landcover. These forests are made up of non-industrial privately owned land, public lands, and, to a lesser degree, timber operations. Much of this forestland is too dense and highly vulnerable to disturbances including drought, wildfire, and pests and pathogens. As timber operations, non-industrial private landowners, and public land stewards work to remove excess material from these forests, the material needs a place to go. Patrick Wright, Director of The California Wildfire & Forest Resilience Task Force says it plainly, "The lack of market for the material is limiting how much work we can do."

Courtesy of the Sierra Institute

The number of sawmills in California has dropped from 150 in 1990 to less than 30 today (**American Logger's Council**). "They may have decreased in quantity, but the remaining sawmills have increased in size and capacity to meet demand. In California, we have a couple dozen sawmills throughout the state and about 20 biomass power plants that use forest-sourced biomass. The issue is that the wood processing capacity we do have is not going to be big enough to accommodate an increase in harvesting over time," explains Helena Murray, Wood & Biomass Utilization Program Manager for Region 5 of the U.S. Forest Service (USFS). An increase in harvesting is inevitable, particularly in the face of wildfires adding dramatically to the glut of material with no place to go.

State and Federal initiatives are underway to address this need. Since 2021, California and the Federal Government have ramped up their investments in the wood utilization industry through grant opportunities with the USFS, CAL FIRE, Department of Conservation, and the California Infrastructure and Economic Development Bank (IBank). Murray observes, "I've noticed that these opportunities have catalyzed more businesses to start up and get going faster than they have been able to in the past. Starting up a new wood processing business takes quite a while, so we're a year or two away from seeing some of the bigger successes – but they're coming." From facilities contracted to only use forest-sourced biomass to high-value biofuel production, new businesses are springing up throughout California to address the growing need for processing capacity.

As for the role of non-industrial private landowners in all of this? "Well, they're essential. They are a critical part of the **Task Force's Action Plan** and the future of our forests, especially given how many acres are managed by them," Wright says. The California Wildfire & Forest Resilience Task Force's Office of Planning and Research (OPR) has **funded five pilot programs** across the state to propel biomass utilization and to help non-industrial private landowners participate in forest product industry by giving them a marketplace through which to get rid of their forest restoration materials.

If you are a landowner looking to help achieve statewide goals for forest treatment Murray advises, "working with a Registered Professional Forester (RPF) is the best way to get product removed from your forest. A local RPF can help you find out where the markets are and where you can take your materials if you're working at a large enough scale." Non-industrial private forest landowners are encouraged to contact local RPFs to develop a harvest document and stay apprised of updates regarding biomass or other forest product processing facilities in your area.

LANDOWNER **RESOURCES**

Keep up to date on The California Wildfire & Forest Resilience Task Force's actions at **https://wildfiretaskforce.org/**

Locate an RPF near you through CA's Board of Forestry and Fire Protection
RPF Roster

Photo from UCANR

Events Calendar:

California Forest Stewardship Workshop
Fresno-Madera Counties
Online March 20 - May 15, 2024
In-peron April 6, 2024
Register Now!

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