

CALIFORNIA FOREST STEWARDSHIP PROGRAM



Forestland

STEWARD

REGIONAL SPOTLIGHT: NORTHERN CALIFORNIA

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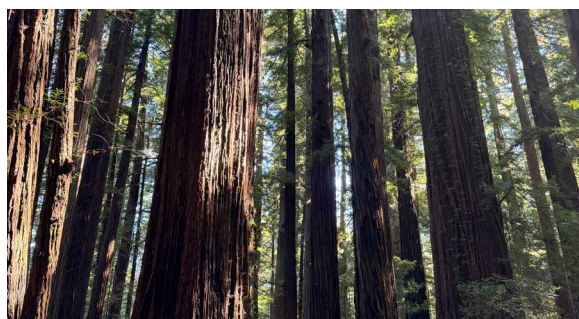
An Introduction to Northern California

California is a state of forests, from the towering redwoods of the North Coast, to the live oak woodlands of Central California, to the ancient bristlecones of the White Mountains. For the next three issues of the Forestland Steward Newsletter, we will be highlighting regional history and challenges facing forestland owners in Northern, Central, and Southern California, respectively. For the purposes of this issue, Northern California will be considered the region encompassed by the map in Figure 1, adapted from the California Climate and Ag Network's regional map.

Northern California is the state's timber powerhouse, famed for its old growth forests, remote terrain, and historic tension between timber managers and environmentalists. Prior to European contact, the forests of Northern California were comprised of ponderosa pine, Jeffrey pine, sugar pine, Douglas fir, lodgepole pine, California white fir, incense-cedar, redwood, and black oak.

Starting in the 1850's, the region became an important source of lumber to fuel gold-driven westward expansion. By the 1950's, annual timber production in the region had reached almost 5 billion board feet, and nearly 20% of the area's forests had been harvested at least once. Today, that number has dropped to 1.5 billion board feet per year for the entire state of California. Given that we know our state's forests are overstocked today, why the decline in harvest?

In addition to shifting forest composition (from lower density forests of large trees to younger stands of dense trees) and targeting old growth stands, some historical logging efforts caused substantial environmental issues such as erosion, spread of disease, habitat fragmentation, and loss of biodiversity. The actions of a few large timber corporations caused environmental activists in Northern California to reach a breaking point, manifesting in protests, destruction of machinery, tree sitting (top right on following page), and other methods of logging obstruction. Ultimately, efforts

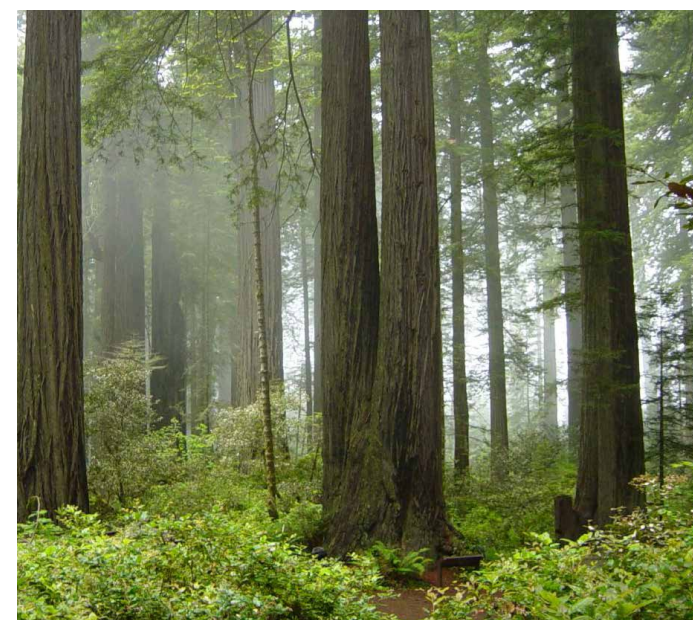


made during the "Redwood Summer" of 1990 (as well as the broader Timber Wars occurring in the Pacific Northwest during the 1980's and 1990's) led to regulatory changes, which drastically decreased the extent of logging and mandated that large timber companies must demonstrate sustained yield harvesting practices.

While some historic logging certainly resulted in severe environmental impacts, it also helped prevent excess fuel buildup in tandem with naturally occurring wildfires. As forest management regulations have changed, the logging industry in California has continued to be reduced, and wildfire suppression tactics have improved, Californian forests have continued to become overstocked and overcrowded. In many regions, no management has been done at all in forestlands. These combined factors have heavily contributed to the most severe environmental impact California faces: megafires.

In this issue, we will discuss the importance of Northern California's contemporary timber and biomass industry, understand what it's like to work in the logging industry, examine the efficacy of fuels reduction efforts in the face of wildfires, and offer insight into navigating funding opportunities in the face of recent state-wide budget cuts. While these topics are not unique to Northern California, the region's history provides important context for how we can overcome today's issues in forestry.

Photos from Shaun Walker, 1990 (top right), Library of Congress, 1910 (bottom right).



Effects of Fuels Treatments

IN THE FACE OF WILDFIRE

Humans managed the forests of California long before European contact. Cultural burning practices reduced understory fuels, enhanced wildlife habitat, and tended forests, woodlands, and meadows. As time marched on, Californian tribes were all but eliminated and cultural burning practices ceased. Though burning continued in agricultural settings at a smaller scale, the overall reduction in burning, paired with profit-driven logging practices and eventual policy shifts, created the forests we see today throughout the state: unburned and full of understory fuels.

As our contemporary understanding of beneficial fire and healthy forests has shifted, we have begun to lean away from fire suppression and toward mitigation. Wildfires are inevitable; what can be done to decrease severity, save lives, and reduce damage?

Today, fuels treatments are carried out by state and federal agencies, Resource Conservation Districts, contractors, tribes, non-governmental organizations, prescribed burn associations, and more.

According to recent research conducted by Fallon et al., 2024, these treatments fall into the following categories: 1) Fire, 2) Rearrangement, 3) Surface Reduction, and 4) Removal (Figure 2). Treatments can be applied independently or in combination.

In Fallon et. al's 2024 study conducted within California's National Forest system, it was determined that all pre-wildfire treatments have effectively decreased wildfire behavior at a rate of 61%. Treatments that included removing fuels (Fire, Removal in Figure 2) were more effective at reducing fire severity than treatments focused on fuels rearrangement (Rearrangement, Surface Reduction in Figure 2). Various combinations of the four different treatment categories were analyzed, and researchers found that a combination of Removal and Fire resulted in a 72% reduction of extreme fire behavior, making it the most effective of the combinations. This finding is supported by

FUELS TREATMENTS

Fire: treatments dominated by broadcast fire, taking the form of either prescribed fire or wildfire. Ex: Prescribed fire, cultural fire, natural wildfire.

Rearrangement: treatments that rearrange the fuel structure but do not reduce the overall level of on-site biomass. Ex: Mastication, piling of fuels, herbicide.

Surface Reduction: treatments that reduce the volume of surface fuels, primarily in the larger fuel size categories. Ex: Grazing and pile burning.

Removal: treatments dominated by a large wood removal component. Ex: Commercial thinning, stand improvement, selective thinning).

FIGURE 2 FUELS TREATMENTS

C.N. Skinner's 1970 research paper, *Reintroducing fire into the Blacks Mountain Research Natural Area: Effects on Fire Hazard*.

It is important to underscore that all tested fuel reduction treatments were proven to be effective in modifying wildfire behavior. Doing something is better than doing nothing. That said, in the face of budget cuts, climate change, and increasing fire severity, strategic use of funding is crucial when it comes to modifying wildfire behavior. Examining and integrating research into decision-making can help substantially in navigating complex issues surrounding wildfire. Furthermore, the resurgence of traditional ecological knowledge can improve and enhance the strides that have been made in forest management practices. A return of beneficial fire to the landscape and careful logging and timber management can benefit the land, the people, and is proven to reduce the severity of wildfires.

Navigating Funding Opportunities

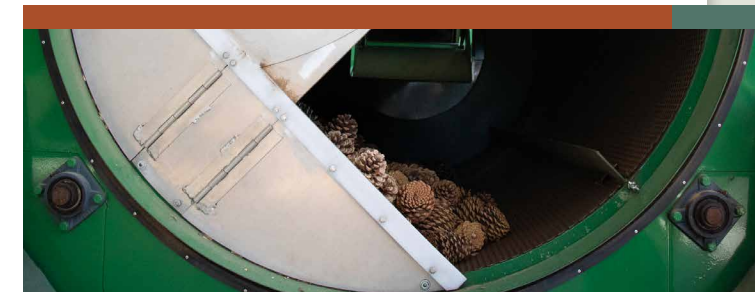
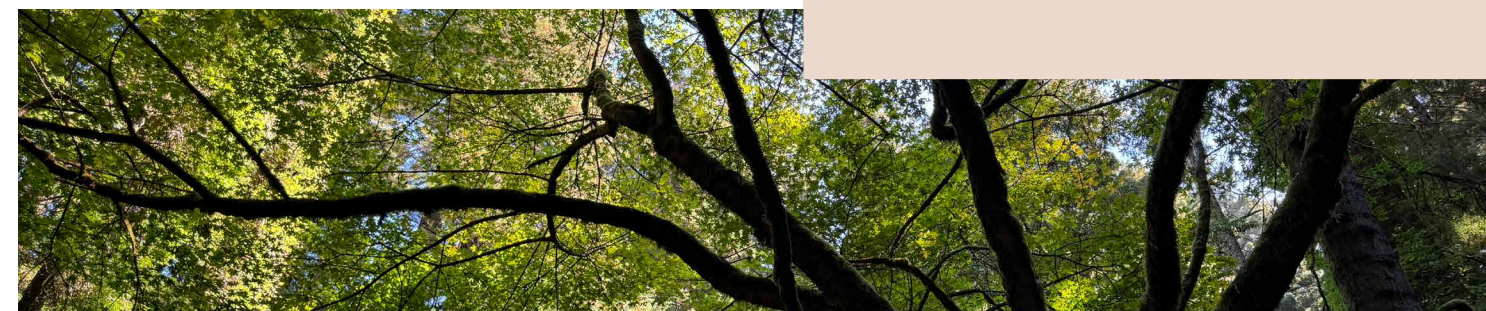
IN A BUDGET CRISIS

It is no secret that California has faced recent **budget cuts**. State operations have been cut by nearly 8%, approximately 10,000 unfilled positions may be eliminated, one-time spending has been reduced by \$19.1 billion, and ongoing spending has been reduced by \$13.7 billion. In the face of these budget cuts, many nonindustrial private landowners may be wondering where they can get funding for forest management on their property, or if any will be available at all.

The way money moves from the federal level, to the state, to the regional level, and eventually to a landowner can be difficult to navigate. The good news: there are funding opportunities at every level. Understanding how money moves throughout the state and where it comes from can help provide clarity on how to access funding. It is also incredibly important to highlight the indirect ways landowners receive assistance. Federal, state, and regional entities put a substantial amount of funding into ensuring properties aren't impacted by wildfires, technical assistance (free advice) and educational opportunities abound, and statewide fuels reduction and reforestation efforts are underway to improve forest health throughout California.

Landowners can benefit not only from the indirect support of projects that are funded throughout the state, but also from federal, state, and regional grants and programs. Even with state budget cuts, other funding opportunities remain available – one just needs to know where to look!

The following pages outline where funding originates, how it moves from and between the federal level, state level, regional level, and eventually how it makes its way to landowners.



DID YOU KNOW?

Where do seeds for reforestation come from?

As discussed in the **Spring 2024** issue of the Forestland Steward, many seed banks throughout the state had closed due to budget cuts. In 2018, the LA Moran Reforestation Center reopened in Davis, CA with special funding from the Timber Regulation and Forest Restoration Fund Program (**Assembly Bill 1492**). When lumber is sold in California, a tax comes to this fund to aid state entities with reforestation efforts, which is critical given the time, effort, and money that must go into seed collection.

Seeds for reforestation are difficult to acquire: someone must climb a tree, scale out to the ends of branches, collect cones, bag the cones, and bring the cones to LA Moran for sorting. From there, seeds are sorted, hand-cleaned, labeled, and frozen until the time they are ordered by landowners for their reforestation efforts. The funding that comes from the taxes on lumber sales helps not only make this process possible, but allows the seeds to be affordable for non-industrial private landowners.

How does funding make its way from the Federal, State, and Regional levels to forest landowners?

- - - Funding goes directly to landowners.
- + Funding is distributed and either directly or indirectly benefits landowners.

Greenhouse Gas Reduction Fund

The Environmental Protection Agency's **GGRF** seeks to address the climate crisis with a \$27 billion investment. Part of this fund has been legislatively allocated to CAL FIRE via the **Climate and Energy Program**, which creates the Forest Health Grants Program and Wildfire Prevention Grants.

Wildfire Resilience Block Grants

Reforestation Services Program

Regional Forest and Fire Capacity Program

Wildfire Prevention Grants

Forest Health Grants Program

Block grants such as CAL FIRE's **Wildfire Resilience Block Grants** allow more flexibility than other kinds of grants, allowing the applicant to propose the scope of work that will be done, an estimate of acreage, and type of land. Once funding is granted, entities can spend it in a more landscape-scale approach, which often includes nonindustrial private landowners.

These **grants** are intended to fund projects within and near communities threatened by wildfire. Funded projects tend to occur on land that is owned by nonindustrial private landowners, directly benefitting both those who own the land and who live in the community surrounding it.

This **program** is managed by CAL FIRE and offers regular cycles of grants for federal and state entities, governmental nonprofits, nonprofits, private industrial landowners, and more. Nonindustrial private landowners can often access this funding by applying for grants from local organizations and entities.

The tax from every lumber sale in California goes directly to supporting **reforestation efforts**, allowing seeds for reforestation sourced by CAL FIRE to be affordable for nonindustrial private landowners.

The California Department of Conservation's **Regional Forest and Fire Capacity Program** provides funding to regional entities, allowing them to expand their capacity to build fire-resilient communities.

Environmental Quality Incentives program

Bipartisan Infrastructure Law

Inflation Reduction Act

State entities and other partners can apply for **funding** from the USDA Forest Service Urban and Community Forestry Program, and **funding** from Forest Service Landowner Support. This funding can be used to bolster existing programs that benefit nonindustrial private landowners, such as CFIP.

Emergency Forest Restoration Program

Forest Stewardship Program

California Forest Improvement Program

Emergency Forest Restoration Teams

EQIP provides direct funding to private nonindustrial landowners looking to enact conservation on their land, whether it's for farming, ranching, or forestry. An NRCS representative will help navigate the process to create a conservation plan.

This **law** invests approximately \$5.5 billion in Forest Service lands, and can be used in wildfire prevention and restoration efforts through partnership with federal, state, tribal, and other partners.

EFRTs are funded by a variety of sources, and are created as an emergency response to wildfires. EFRT reforestation efforts can occur on all types of land, include privately owned land.

CAL FIRE's flagship private **landowner assistance** program provides direct financial assistance for forestry improvement, from fuels reduction to replanting and everything in between. Funding is based upon state surplus, and a Registered Professional Forester must assist with planning.

Operating similar to EQIP and CFIP, this program is managed by the **USDA Farm Services Agency** and supports private landowners seeking to restore their forestland following a destructive event. Interested parties can check in with a local FSA office following a natural disaster to learn more.

This US Forest Service Program connects state agencies, Resource Conservation Districts, cooperative extension, and other entities to provide educational opportunities and technical assistance for private landowners.

Careers in Forestry

A DAY IN THE LIFE SERIES

Amanda Godon is the President of Volcano Creek Enterprises Inc.



Can you tell us a bit about how you became interested in a career in logging, and what your role looks like now?

My background is business management, and my interest in logging and all varieties of vegetation management began first with a love of the outdoors. Secondly, my husband comes from a logging background which further sparked my interest in the field. Now I manage the business side of our operations, plus have the pleasure of being an Engine Boss on our type 6 engines. I also handle quality control and walk our projects.

What is the importance of logging in today's economy, especially within California?

Logging is crucial in California and across the nation. Forests are overstocked and the trees are unhealthy due to pests and drought, and are unable to fight off disease due to competing vegetation. Overcrowding affects California's forests and watersheds because the overcrowded vegetation overdraws water from the soil. When we start thinning the forests and reducing the competing vegetation, the now properly spaced trees can withstand the pests, drought, and wildfire pressure because they are strong, healthy, and well-spaced.

Are more folks needed in the timber industry? What do you think needs to be done to expand the workforce?

We always need people who are passionate about caring for California's forests and being stewards of the land. Forest workers can be everything from scientists to mill workers, trades people to heavy equipment operators, foresters to office employees: the opportunities are endless. Educating young people regionally and nationally on the crucial role this industry plays will hopefully help expand the workforce.

If someone wanted to pursue a career in timber harvesting, what tips or insight would you give them?

I would suggest reaching out to statewide industry groups like Associated California Loggers or Sierra Cascade Logging Conference. They have many programs designed to educate and enlighten the public. There are also scholarships and educational programs that can lead them to the right place. Finally, just talk to local loggers and those associated with the industry! They could possibly need employees, or they may know who does.

Last of all, what is your favorite part of the work you do, and why is this an important career?

I love being part of caring for our forests and making a difference to the world through stewarding the land. When an active wildfire ends on the land you managed, you cannot help but be proud. I have so many favorite things about my career, but really I just love seeing trees thrive after the forest has been thinned properly.



Photos from Volcano Creek Enterprises, Inc.

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

GUEST AUTHOR **CLARKE STEVENSON**

Clarke Stevenson is a Forest Stewardship Specialist with the Watershed Center, working to increase forest biomass utilization in the North Coast Region and across California.

Markets for biomass and small diameter trees (known as "non-merchantable material") are essential to supporting forest management goals across all land ownerships. Whether supporting aesthetic beauty and habitat for small landowners, fuel reduction for the community, or tree size and vigor for industrial management; California has an ever present need to provide an outlet for non-merchantable material. However, as discussed in Forestland Steward's Spring 2024 issue, a lack of markets limited the state's ability to make land management viable. With so much that can be made from wood products, how are there no markets?

California does have markets for dimensional lumber, fencing, veneer, bioenergy and few other products at a small scale, but these markets are not accessible to small private landowners, and have diminished in scale over time. According to UCANR, there are 24 sawmills and 22 bioenergy facilities operating today, down from a high of 675 sawmills in 1956 (Board of Forestry, 2020) and 50 bioenergy facilities in 1990 (Morris, 2000). With

this significant decrease, California now imports 80% of its lumber and 90% of its total wood products. Fundamentally, while markets for this material do exist, they are out of reach and difficult to establish. Attempts to support new wood product businesses are regularly met with setbacks and hurdles, and it all comes down to scale.

The smaller the business venture, the less one needs to manage. However, there is an incentive to increase cost effectiveness as operation size increases. Once a business decides to produce over a certain number of tons, board feet, or units in general, investing in equipment helps improve the efficiency of production. This pushes business owners to maximize their equipment use and requires more coordination to obtain supply, manage employees, and ensure equipment is properly calibrated. This is evident in biomass conversion facilities. A 2-megawatt (MW) bioenergy system costs \$8 million for every 1 MW generated whereas the 30 MW costs \$3 million per MW; and the operation and maintenance costs are roughly the same for both systems (Pacific Forest Trust, 2020). However, even with the economies of scale, the smaller system may be more feasible due to the issues surrounding the forest supply chain.



Siskiyou County post-fire recovery, Clarke Stevenson.

A forest supply chain depends on the economic viability of delivering the right tree species of the right wood quality at the right time, while also ensuring there is a qualified and available workforce with an interested consumer market to sell to. This is a lot to manage for any one company over time, no matter the company's size. Building or expanding a supply chain in regions that have not seen active management for decades is a herculean task. Many regions in California often are faced with a workforce and housing shortage, not to mention the added costs of environmental compliance, higher taxes on businesses, and the general perception of using wood as part of the climate-smart, circular economy in both consumer markets and policies.

Ultimately, when we talk about markets for biomass or small diameter trees, one of the most challenging aspects of the supply chain is also the most counterintuitive: we can not guarantee a long-term (at least 10-year) supply. Without the security of a guaranteed supply, financing a multi-million dollar wood processing facility is nearly impossible. Thus ensues the vicious cycle: a supply chain must already be established for an "end-user" to be developed, but all the individual components that make up a supply chain must have enough confidence that an "end-user" will be built before shifting to accommodate new facility

demand. This generally won't occur without a pre-existing market for compensation. Often, the most secure procurement strategy for a wood product business is to work with an industrial landowner who generates large quantities of nonmerchantable material on a regular basis through the management of their land for lumber.

Existing markets had the advantage of being developed earlier in California's forest practice and economic history and remain instrumental for expanding the pace and scale of treatments. There is a need to focus on how we can better support existing infrastructure to modernize equipment and innovate into new markets like mass timber or biofuels, as many existing companies have the capital, equipment, workforce, expertise, and marketing brand to leverage. However, there is also merit to better supporting a more geographically dispersed and robust wood product market by reducing barriers to new business development.

Today, grants such as the US Forest Service's [Wood Innovation Grant](#), and CALFIRE's [Business and Workforce Development \(BWD\) Grant](#) provide funding for planning, design, and innovation in wood product development. There are also flexible, low-cost credits to bridge financial gaps in development from the [California Infrastructure and Economic Development Bank \(IBank\)](#), and Blue Forest Conservation's [Wildfire Innovation Fund](#). Finally, there is the Office of Planning and Research (OPR) [Wood Feedstock Aggregation Pilot Program](#), also known as "the OPR Pilots" or "CalFRAME". The OPR Pilots directly address the need to guarantee long-term feedstock supply through a variety of solutions including: (1) investigating a new wood broker entity to aggregate supply contracts under a single master supply contract, (2) exploring new partnership opportunities among public entities to work together specific pilot regions, (3) developing an insurance product for feedstock supply guarantees, and (4) creating a "digital marketplace" of companies-that-buy wood products, companies-that-sell, and companies who offer the services that facilitate everything in and around land management. Some of the



Burney Sawmill, Clarke Stevenson.

items being explored through OPR would be a first in the US forest sector, however, in the case of the digital marketplace, we can learn from what other states have done like Oregon Wood Innovation Center's (OWIC) [Forest Industry Directory](#).

A vibrant, locally-led industry can help make beneficial use of the non-merchantable material being removed from California's forests, reducing carbon emissions and wildfire risk while enhancing and maintaining local jobs and revenue. We need an industry that can take material of all sizes, from chips to long straight boards and everything in between. If we want to support a stewardship-based economy that incorporates wood in new and innovative ways, we need to lower the barriers to participate in wood markets for both small landowners and entrepreneurs without compromising environmental protection.

Events Calendar:

Sierra Cascade Logging Conference

February 6-8, 2025

Anderson, CA

Register Now!

Forestry Strategies and Innovations (FSI)

February 11-12, 2025

Sacramento, CA

Register Now!

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