



APPROVED

December 15, 2020

COUNTY OF SONOMA

SUMMARY REPORT

575 ADMINISTRATION
DRIVE, ROOM 102A
SANTA ROSA, CA 95403

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ATTEST: December 15, 2020

SHERYL BRATTON, Clerk/Secretary

BY 

Agenda Date: 12/15/2020

#53A

To: Sonoma County Board of Supervisors

Department or Agency Name(s): County Administrator's Office

Staff Name and Phone Number: Christel Querijero 565-7071, Yvonne Shu, 565-1739

Vote Requirement: Majority

Supervisorial District(s): All

Title:

PG&E Settlement Funds Vegetation Management Allocation Update and Initial Recommendations

Recommended Action:

Receive update on vegetation management and initial recommendations for allocation

Executive Summary:

The Board of Supervisors allocated \$25 million from the PG&E settlement toward vegetation management on October 6, 2020. With more than half of the county area (514,000 acres) occupied by private and public forest and woodlands, more frequent drought years, and a longer fire season, identifying how to prioritize this limited one-time funding for a never-ending need like vegetation management will require consideration of near-term implementation projects versus a measured approach to future projects. This item provides an update on vegetation management generally and a brief summary of the meetings held over the past six weeks with community and County department/agency stakeholders. Finally, a proposed approach for allocating these funds is discussed.

Discussion:

Background

Settlement Agreement

Litigation by the Sonoma County Board of Supervisors against Pacific Gas & Electric to recover damages related to the 2017 Sonoma Complex Fires (2017 Fires) resulted in an allocation of \$149.3 million. On August 11, 2020, your Board received background information on the fiscal impact and damages that the Sonoma County entities incurred from the 2017 Fires. As part of this discussion, your Board directed staff to accept input from the community and to return to the Board with that feedback for consideration of the allocation of the settlement funds into general expenditure categories. On October 6, 2020, staff presented a summary of the community feedback for the Board's consideration. At the October 6th meeting, your Board allocated \$25 million from the settlement for vegetation management efforts. Since that time, staff have met with a wide range of stakeholders, from non-governmental organizations (NGO's), community groups, and County departments/agencies to understand current vegetation management work and to elicit priorities.

Overview - Vegetation Management

Sonoma County and its population continue to face wildfire risk, stemming from, for example, homes built without fire-resistant construction materials and practices, insufficient defensible space, residential land use in

wildland areas, and excessive vegetative fuels within and near residential areas and on roadsides. CAL FIRE designates three types of Wildland Urban Interface (WUI) classes, which are defined by certain conditions where homes are built, with the following estimated distribution in Sonoma County (Attachment 1):

WUI Class	Incorporated / City Population	Unincorporated Sonoma County
Wildland Urban Interface: dense housing adjacent to vegetation that can burn in a wildfire	22,111	9,577
Wildland Urban Intermix: housing development interspersed in an area dominated by wildland vegetation subject to wildfire	8,130	19,329
Wildfire Influence Zone: wildfire-susceptible vegetation up to 1.5 miles from Wildland Urban Interface or Wildland Urban Intermix	25,683	73,436

Private and public forest and woodlands occupy more than half of the county area, or 514,000 acres, with 87% of that land held in small private or NGO parcels, and the remaining 13% held by public owners (EB Alive report, Attachment 2). Patterns of land use and development facilitated by land use regulation and policy have placed extensive residential infrastructure into places that recent fires have placed at severe risk, with this risk expected to continue and increase in the future. Further, climate change is expected to shift fire frequency and extent, due to more frequent drought years and lengthened fire seasons.

Vegetation management is the intentional alteration of vegetation for the purposes of reducing fire risk and for facilitating the ability to control a fire from spreading from one area to another. Vegetation management also occurs for safety and firefighting purposes, such as maintaining safe routes for evacuations and access for emergency vehicles. Finally, vegetation management can occur for non-fire related reasons, such as ecological restoration, timber management, and agriculture and horticulture. It is a key component of reducing fire risk but works in conjunction with other measures, such as home hardening.

More specifically, fuels management is conducted to slow the intensity and spread of fires, in a few primary ways:

- “Near home fuels management” within 100 feet of homes (defensible space), is done to reduce the likelihood that burning trees, brush, and other combustible items do not spread fire from surrounding areas to the home.
- “Landscape scale fuels management” occurs in forests, shrublands, or other larger areas, where the a primary purpose is to reduce fuels in order to reduce intensity, limit the spread potential of wildfires, and increase the possibility that firefighters can put a fire out if it starts. Another purpose for this type of management is to improve forest health, habitat and “natural values” (e.g., water quality and retention) that wildland landscapes provide. Large-scale projects usually use a suite of treatment methods.

- Roadside fuels management maintains visibility and roadway safety. Trees are removed either because they pose a risk of falling into the roadway or because they are impacting the road surface in some way. Roadside fuels management is especially important to reduce the risk of roadside ignitions and to provide access to public safety in the event of an evacuation.

Vegetation Management is generally accomplished with one or more of the following methods:

1. Mechanical Alteration. Cutting, digging, mowing, clearing using hand tools or mechanized equipment to physically remove vegetation from an area, e.g., mowing grasslands to remove fine fuels, mechanically removing shrubs and trees from the sub-canopy ("ladder" fuels), etc. This includes shaded fuel breaks, which are strips of forestland that have had their understory and canopy treated extensively to remove all but the minimum amount of vegetation to retain shade. Shaded fuel breaks can slow the path of wildfire considerably and protect homes or entire communities. This method is frequently used for defensible space management, within 100 feet of homes.
2. Timber Management Practices. A subset of mechanical alteration but includes various timber management practices, such as selective cutting, tree release, and different forestry approaches and techniques of stand management for particular forest types or forest species. Sustainable forest management, which balances environmental, wildlife, and community needs, includes timber management.
3. Prescribed Fire. Introducing or reintroducing prescribed (intentional and managed) fire into a particular plant community to reduce fuel loads, maintain a beneficial community type, e.g., an open woodland versus dense overstocked forest, etc. This method is generally more cost effective when done on a larger scale.
4. Prescribed Grazing. Introducing or reintroducing prescribed (intentional and managed) grazing, usually by non-native species like cattle, sheep or goats, into a particular plant community, usually to reduce or manage fine fuels.
5. Permanent Type Conversion. Another subset of mechanical alteration, but the purpose is to replace one vegetation type with another, e.g., converting natural grassland to a less flammable agricultural use like irrigated pasture or vineyard; creating and maintaining bare soil fuel breaks, etc.

Funding Models

Vegetation management requires ongoing investment, as vegetation will grow back regardless of funding constraints. Different approaches to a sustainable funding model are discussed in brief below.

Marin Wildfire Prevention Authority. The residents of Marin County passed a parcel tax in March 2020 to fund a new joint powers authority (JPA), the Marin Wildfire Prevention Authority (MWPA). The special parcel tax, which required a two-thirds vote, will provide about \$20 million annually to the organization, comprised of 17 agencies and formed to support the development and implementation of a comprehensive wildfire prevention and emergency preparedness initiative. Specifically, the proceeds are designated as follows:

- 60%: vegetation management, wildfire detection, evacuation plans and alerts, grants, and public education;
- 20%: defensible space and fire-resistant structure evaluations, mitigation of fire threats thereof
- 20% local-specific wildfire prevention efforts
- 10%: administrative costs

The FY 2020-21 parcel tax rate is \$0.10 per building square foot for most building types, \$75.00 per unit for multifamily residential buildings of three or more units, and \$25.00, \$100.00 or \$150.00 for unimproved parcel

rates, depending on parcel size. The maximum tax per year for each property type will be adjusted to reflect any increase in the Consumer Price Index (CPI) beyond the first fiscal year. The increase will be the lesser of three percent of CPI, as calculated from February of the immediately preceding year to February of the current year.

Lake County Community Risk Reduction Authority. The Lake County Community Risk Reduction Authority, another JPA, was created under the California Government Code in 2018 and amended in 2019 to “enhance home and property protection for Lake County residents and to support the continued development of local resiliency through improved resources, tools and information to assist public and private entities.” Its participating agencies include multiple fire protection districts and a watershed protection district. Unlike Marin County, however, the Lake County Community Risk Reduction Authority seeks to support its goals through grant funding, donations, and potential alliances with organizations such as the California Earthquake Authority, the Blue Ribbon Commission, and local tribes. The Lake County Community Risk Reduction Authority’s functions include:

- Development of low or no-cost resources to reduce the risks of fire from hazardous vegetation, earthquakes and environmental causes;
- Development of community infrastructure improvements;
- Development of property inspection programs and scoring and assessment tools to prioritize the level of individual and community risk;
- Development and management of funding sources necessary to the Authority’s risk reduction programs;
- Development of educational and training tools to assist Authority members, the public, and non-member governmental agencies in discovering, assessing and reduction the risks associated with fire and other disasters, and mitigating the potential impacts.

Sonoma County Wildfire Prevention, Emergency Alert and Response Transactions and Use Tax Ordinance. Your Board supported a fire sales tax measure (Measure G) which was placed on the March 2020 ballot, which would have established a half percent sales tax to provide funding for disaster and fire services and upgrades in Sonoma County. Unfortunately the measure lost by 1.83%. The County measure had identified 3.74% of the proceeds specifically for vegetation management, equivalent to \$1.5 million annually. During budget hearings this year, your Board allocated \$500,000 to explore for Sonoma County the feasibility of a fire sales tax measure for the fall 2021 ballot, which would include some funding for vegetation management.

Legislative Advocacy and Grants. Another funding approach for vegetation management is seeking grants or lobbying legislators, both of which require staff to pursue consistently. While Sonoma County has been successful in obtaining Hazard Mitigation Grant Program (HMGP) funding from the Federal Emergency Management Agency (FEMA), the lifecycle of a grant is resource intensive and requires thoughtful consideration of staffing capacity before pursuit of outside funding.

In the commissioned report, “Guidance for Recovery and Resiliency Planning in Sonoma County Forest Ecosystems” (Attachment 2), EB Alive cites several organizing options, including special districts and creation of a forest health district. A non-enterprise special district is funded mainly through property taxes and assessments, while an enterprise special district is primarily funded through fees for service. Whether statutory authority exists to authorize formation of a forest health district would need to be clarified.

An endowment fund for vegetation management, while attractive in concept as a perpetual funding source, is hampered by California law that restricts County investment options that yield generally low rates of return. For example, at a 1% interest rate, the maximum withdrawal on a \$20 million investment would be \$140,000 per year.

Vegetation Management in the Community

Over the past six weeks, staff have held 31 discrete meetings, which have included approximately 120 stakeholders representing over 35 entities (Attachment 3). Many of these meetings were listening sessions to understand the types of vegetation management activities and needs that exist in the community. Broadly speaking, these community groups and organizations represent neighborhood and local councils, vocational/work crew development and conservation/research organizations. Numerous organizations in the community are engaged in vegetation management activities and represent an opportunity to build capacity to address vegetation management in the county.

Community

Often in collaboration with Fire Safe Sonoma, community-based fire safe councils (e.g., Occidental, Grove Street, Upper Mark West) and municipal advisory councils (e.g., Coast MAC, Springs MAC), organize and engage their respective communities to become knowledgeable about and to prepare for wildfire. Fire Safe Sonoma, in its capacity as an information and education resource on fire prevention and safety, serves as an organizing umbrella for many of these groups. Through primarily grant funding, these groups pursue initiatives that have a direct link to their neighborhoods, such as developing hyper-local community wildfire protection plans or outreach programs.

While many residents are taking proactive measures to reduce vegetation hazards on their properties, others are not, and this lack of action impacts a neighborhood's overall safety. More enforcement of properties that present hazardous conditions is needed, according to these neighborhood groups, as well as knowing whom to call if there are issues.

A contributing factor may be lack of awareness of the existing rules; clear, consistent guidance on vegetation management and effective communication of the guidance are cited as a need at the local, community level. Additional outreach and education are needed to help both the compliance stragglers and those who don't know where to start with vegetation management.

Some community groups have volunteer crews that tackle vegetation management projects regularly, but they state that they could benefit from general vegetation management guidance. They also see availability of chipping service as critical to their efforts to reduce vegetation hazards. Additional priorities for these local groups is maintaining ingress/egress routes, and the thoughtful establishment and maintenance of shaded fuel breaks. With mostly volunteer staff, these groups often have the human resources to apply for grant funding but not the financial resources for required grant matches. Some groups also stated their interest in purchasing equipment that could help to eliminate woody biomass (i.e., limbs, needles, leaves and smaller woody parts of trees.)

Workforce Development

Santa Rosa Junior College (SRJC) currently offers four workforce development programs (fire abatement and prevention, natural resources, animal science, landscape design/landscape construction and maintenance)

focused on mitigating wildfires and protecting homes through vegetation management and fire resilient landscaping. The programs address the various strategies for wildfire mitigation through vegetation management: fire resilient landscaping and creating defensible space; livestock grazing; arboriculture; ladder fuel reduction; watershed hydrology; improving soil and plant health; preparing for prescribed burns; invasive species eradication; and ecological restoration. With additional funding, SRJC could ramp up their workforce programs to train 300 students over the next three years, leveraging their partnerships with organizations serving disadvantaged residents of Sonoma County to recruit new students into the program. SRJC has also initiated conversations with the Sonoma County Probation Camp about future partnerships on vegetation management training.

Sonoma County Probation, whose supervised adult crews (SAC) have provided vegetation management for Transportation and Public Works, Regional Parks, Sonoma County Water Agency, Town of Windsor, City of Santa Rosa, and CalTrans, is in the exploratory phase of integrating vocational training and workforce development into SAC or their probation camps.

Organizations such as Conservation Corps North Bay, Circuit Rider (also known as the Center for Social and Environmental Stewardship), and the Sonoma County Youth Ecology Corps, partner with land management agencies, such as Sonoma Water and Regional Parks, to provide paid work experience to young adults through vegetation management and environmental work. Projects include the creation of defensible space and shaded fuel breaks, cutting seasonal grasses, invasive species removal, fire abatement, and flood mitigation and stream restoration activities, among many others. These organizations provide valuable job training, supportive services, work-readiness skills and potential career pathways to local youth, including at-risk youth. Additionally, they are helping to develop a future workforce who can meet the growing demand for vegetation management services in the county. With consistent workforce development contracts, these organizations would be able to provide more training and experience to those who could most benefit from these opportunities.

Conservation/Research

Resource Conservation Districts (RCDs) provide assistance with land-based conservation needs. Locally, the Gold Ridge and Sonoma RCDs provide forestry technical assistance, development of forest management plans, and education on forest management. Without a forest management plan, landowners generally do not qualify for cost share funding from the United States Department of Agriculture (USDA) and CAL FIRE. The forest management plan is written by a registered, professional forester, and currently Gold Ridge and Sonoma RCDs share a forester.

Most recently, the Rebuild North Bay Foundation has partnered with five resource conservation districts in Sonoma, Mendocino, Lake and Napa counties to develop and implement a regional landowner incentives program, the North Bay Forest Improvement Program (NBFIP). Its intent is to help small, non-industrial forest landowners with less than 500 acres to conduct fuels treatments and forest restoration projects on their properties. As a new initiative that is expected to grow to meet local demand, NBFIP could extend its incentives to more landowners with more funding. The program is expected to start in January 2021 and run for three years.

Pepperwood Preserve is a science-based partner to many conservation and land management organizations in the county and beyond. Pepperwood manages a 3,200-acre biological preserve, which is home to more than

900 species of plants and wildlife. Using data gathered on the preserve, they are able to track and collect data on forests and climate, for example. University of California Cooperative Extension (UCCE) and Sonoma Water are currently partnering with Pepperwood Preserve on expanding the pilot of the fuels data mapper to the entire county.

Vegetation Management Activities led by the County

Multiple County departments and agencies work on different aspects of vegetation management:

- Permit Sonoma: chipping near homes and roadways; inspections and abatement of non-compliant properties; coordinate fuels management projects with community members; education and outreach
- Transportation and Public Works: roadside vegetation management
- Ag + Open Space District, Regional Parks, Sonoma Water: fuels management and ecosystem service improvement projects in and near wildlands and watersheds; outreach and education
- UCCE: grazing program, fuels mapper decision support tool, outreach and education

In 2020, the County updated the County fire ordinance to enhance the Vegetation Management Program with incentives, inspection and abatement protocols, and appropriate funding. Additionally, the County continued to nurture community awareness and understanding of our fire-adapted landscape and the value of becoming a resilient fire-adapted community using results of post-fire monitoring and research. Key actions in 2020 include:

- Augmenting the annual Inspection and abatement of Hazardous Vegetation and Combustible Material program by updating the hazardous fuels ordinance. The Chapter 13A update was adopted on June 9, 2020.
- Extending the annual chipper program from 6 months to 11 months per year.
- Updating educational and notification materials through partners Sonoma Ecology Center and Fire Safe Sonoma for 2020 inspection season.
- In March 2020, the County received Phase 1 (planning phase) of a \$6.8 million grant from the Federal Emergency Management Agency Hazard Mitigation Grant Program (HMGP) for a Wildfire Adapted Home Hardening and Defensible Space program. Under the grant program, defensible space inspections will occur in designated areas of the county, selected for the grant based on population density, proximity to high/very high fire severity zones, areas that hadn't recently burned (due to the defensible space component) and vetted by local fire chiefs. Later, these homeowners can later receive financial assistance to make needed improvements through the grant program by contracting with a licensed contractor identified in phase 1. (Two of the selected areas have subsequently burned since the award of the grant, and Permit Sonoma is currently working with CalOES to determine how to provide grant benefits to communities that have lost a significant number of homes.) The defensible space implementation is estimated to include 550 parcels at an average cost share maximum per parcel of \$3,750, for a total cost of \$2,062,500. Cost share incentives will be offered on a "first come, first serve basis, with a maximum amount to be awarded per geographical area to provide a fair distribution of funding to those whose properties are the last to be inspected."
- Permit Sonoma submitted a full application to FEMA's Building Resilient Infrastructure and Communities (BRIC) grant program in December 2020, following acceptance of their Notice of Intent to apply in November. Under the application, the County is applying for the maximum amount of \$50 million (requiring a 25% local grant match, or \$12.5 million) to build on the work of the previously described HMGP grant. The goal of the BRIC grant is to apply a variety of risk reduction strategies to

one to three large project areas, where housing stock vulnerability to fire is exacerbated by abutting wildland areas. The reduction strategies will utilize both "house out" strategies, such as public education, defensible space / structural hardening assessment and incentives, and "wildland in" strategies, which will use a variety of fuels management techniques to moderate fire behavior near homes. Each project will be a demonstration of how to apply and maintain a systemic approach to risk reduction, deploying strategies at the scale of thousands or tens of thousands of acres. This multi-variate, landscape approach will help move residents towards generational change in how homes and wildlands adapt to future wildfire. Pre-award selection notice is anticipated in June 2021. The Board should consider setting aside an additional \$12.5 million of the PG&E Settlement funds in order to meet the local grant match, should the County be awarded the grant.

Finally, the County is considering scientific data about the condition, fire vulnerability, and relative impacts of the 2017 fires on natural and working lands during updates to land use policies, plans, and regulations.

- The County's Community Wildfire Protection Plan (CWPP) is being updated with FEMA HMGP funding and will become part of the County General Plan Safety Element. The CWPP Update will provide increased data about fuels and mitigation strategies for wildland areas. More information about the CWPP is included below.
- UCCE, in partnership with Sonoma Water and Pepperwood Preserve, is developing a Wildfire Fuel Mapper that evaluates landscape elements that affect fire behavior and determine fire hazard on individual land parcels of two acres or more. A pilot of the project will be launched in the Lake Sonoma area as soon as January 2021, and the countywide extension of the data is expected to be complete in April 2021. This tool will help homeowners understand which mitigation techniques will best address the vegetation on their property.
- The Board has allocated funding to Permit Sonoma to support the development and implementation of large-scale fuels reduction projects, including support of the environmental compliance components. Because of the complexity of implementing large-parcel fuels treatment projects, especially regarding permitting and environmental review, it is imperative that projects are of high value for both community resiliency and restoration of native habitat. When fuel modeling data is sufficiently available, Permit Sonoma Fire Prevention will begin project selection and work with partners, such as Resource Conservation Districts, CAL FIRE, and other partners to begin planning for large-scale projects.

Community Wildfire Protection Plan

The Community Wildfire Protection Plan (CWPP) is defined by the Healthy Forests Restoration Act of 2003, with the intention of enhancing collaboration between stakeholders from federal, state and local agencies and community groups as they search for solutions to Wildland/Urban Interface (WUI) wildfire issues. There are three requirements for a CWPP: 1) that it is collaboratively developed with input from agencies and community members; 2) that it identifies and prioritizes treatment areas, mitigation strategies and treatments; and 3) that it recommends measures to reduce the ignitability of structures.

The 2016 CWPP is the latest, Board-approved version today; however, the County received an HMGP grant to update the CWPP, and Permit Sonoma expects the update to be completed in spring 2021. The 2016 CWPP is available at <https://www.firesafesonoma.org/wp-content/uploads/cwpp-final.pdf> and a one-page overview of the CWPP is included as Attachment 4.

The CWPP contains a hazard reduction priority list that is intended to be part of a ranking system to assess risk reduction projects for the wildland urban interface (WUI). The priorities from the CWPP are as follows and are not listed in rank order:

- Projects that help Wildland-Urban Interface residents reduce fire fuels in the defensible space zone of homes, and along important egress and access routes.
- Projects that help residents reduce structural ignitability.
- Projects that serve to educate residents about fire, fire risks, vegetation management, ecosystem and forest health, structural vulnerability, and how to most efficiently reduce risks.
- Projects that increase community safety through planning.
- Strategic fuel breaks that can help firefighters stop the advance of wildfires, thus protecting homes, communities and natural resources. In addition to reducing wildfire threats, fuel breaks should also serve to improve ecosystem health.
- Projects that help highly motivated and organized community groups achieve their fire safety goals.
- Projects that consider demographic trends of residents such as age, language and disabilities.
- Projects that allow large land holding managers and nearby residents to achieve mutually acceptable strategies for fuels management.
- Projects that improve conditions and health in a variety of fire-prone ecosystems, especially in areas impacted by tree diseases, pathogens or insects, or in areas where native species are at risk because of changing conditions.
- Projects that address fire-prone invasive plant species including but not limited to gorse, broom, and eucalyptus.
- Projects that make use of woody biomass and other emerging technologies.
- Projects that support and aid fire agencies in achieving their missions.

Even though these priorities were developed prior to the series of wildfires that have devastated the county since 2017, they are still relevant today. The updated CWPP is expected to contain similar priorities and will provide increased data about fuels and mitigation strategies for wildland areas.

A CWPP ranking tool (see example, Attachment 4), developed for the 2016 CWPP, is a way to provide consistent evaluation standards to near-community or wildland-scale projects through a points-based system and based on the priorities. This tool includes questions organized by fire history, fuels reduction efforts, and unique local criteria. By using the existing tool as the basis, updated ranking tools for both near-community and landscape-scale projects can be created. The ranking tool is also used when local communities, typically through fire safe councils, write their own CWPP's (e.g., Mill Creek, Upper Mark West, Grove Street, Fort Ross, Fitch Mountain) and would like their projects to be annexed and listed as part of the County's CWPP.

County Discussion

County departments and agencies met several times to discuss the Board's allocation of \$25 million for vegetation management. Sonoma Water, Permit Sonoma, General Services, Emergency Management, County Counsel, Regional Parks, Transportation and Public Works, Ag + Open Space District, and UC Cooperative Extension were all part of the discussion and will collectively be referred to as the "working group" for the purposes of this summary.

The working group identified three areas of potential tension that would require compromise when

considering the \$25 million for vegetation management:

- House out versus wildland in: “House out” focuses on the structure and its immediate defensible space (100 feet), while “wildland in” looks at vegetation management beyond the 100-foot perimeter to supplement and support the “house out” effort
- Implement now versus a longer term “planful” approach
- Spend now versus save for future

Additionally, the working group agreed to a set of working principles to follow as they discussed possible projects:

- Use the 2016 CWPP priority list to guide decisions (acknowledging that an update is underway with new data)
- Life and property as priority
 - Near-term action on areas that have already burned, to take advantage of the vegetation management that has naturally occurred during the fires
 - Utilize data for non-burned areas
- Landscape-scale approach to protect the largest proportion of residential infrastructure
- Address both private and public lands, including large parcels
- Forest health
- Education and outreach
- Leverage grant funding
- Leverage vegetation management work by all partners, e.g., fieldwork, training

Initial Recommendations

As previously described, there is an implicit tension between the need to make immediate progress on vegetation management actions versus a long-term, sustainable approach. There are timing considerations for projects that can demonstrate appreciable progress in advance of the 2021 fire season, and the need to take a long-term approach to vegetation management generally. The PG&E allocation is a significant amount of money that ideally should be leveraged to sustain long-term vegetation management, despite the many immediate needs to which it could be applied.

Staff initially recommends enlisting feedback from external leaders who can provide long-term policy guidance for vegetation management prior to making specific allocations from the \$25 million, as well as proceeding with the outreach, support and expansion of the UCCE and Sonoma Water fuel mapper tool. Staff recommends that these two actions be funded through additional PG&E money, so that the full \$25 million is available for consideration. More information on each is provided as follows:

Policy Planning Support (\$70,000)

Staff recommends utilizing an outside resource to provide a blueprint for long-term consideration and application of the settlement funds, with an emphasis on identifying strategies to leverage this funding for many years. With your approval, Berkeley Law’s Center for Law, Energy and the Environment (CLEE) can convene two to three, small group discussions with financial, academic and public sector leaders, along with local stakeholders and experts, to identify a set of actions for long-term vegetation management funding, policy and actions. This process is expected to validate what staff have heard over the past six weeks and to present new constructs to frame the County’s vegetation management needs. The results of these

discussions, anticipated to be delivered in March 2021, will complement the input received from the community and County departments/agencies and will provide a broader context in which to make allocation decisions.

Expansion of fuel mapper decision support tool to landscape scale and outreach/education for roll-out of parcel-scale tool countywide \$1,600,000

Staff heard from community groups that they need more outreach and education for vegetation management. Many groups have volunteers who are ready to do the work but desire more guidance (“clear, friendly rules”) and training before proceeding. Individual landowners also want to do the right thing and prioritize their resources.

Understanding this need, UCCE and Sonoma Water led the development of a decision support tool (DST) to help identify where to apply limited resources to achieve the most benefit from vegetation management activities. The DST is intended to help landowners of parcels greater than two acres plan and implement fuels reduction at the parcel scale within the Lake Sonoma Watershed, the project’s pilot location. This tool will help analyze the vegetation on a given parcel, provide recommended mitigation actions, and connect the landowners with resources for next steps. UCCE partnered with the Pepperwood Preserve to expand the data to the entire county, but funding is needed to expand the outreach and technical assistance countywide.

Sonoma Water is proposing an expansion of the parcel-level tool to landscape scale vegetation management decision support, prioritizing locations for vegetation treatment actions and analyzing the future benefits of proposed treatment. This component will evaluate areas of high fire risk against built (e.g., roads, WUI density, water supply systems, telecommunications, etc.) and natural assets (e.g., streams, habitat, sensitive species). Input from stakeholders and community will be incorporated, with emphasis on local knowledge and data to develop prioritization criteria in the tool-building phase. This tool would complement and work in conjunction with the Sonoma County Community Wildfire Protection Plan, Local Hazard Mitigation Plan, and other local planning efforts.

Leading Ideas

The following items surfaced as frontrunners and will be part of the review of materials that are considered when CLEE convenes the focus groups.

Hire a CEQA (California Environmental Quality Act) consultant to develop a county-wide program Environmental Impact Report (EIR) \$1,500,000

Large-scale vegetation and/or forest management requires a comprehensive review of potential environmental impacts in a number of categories, including biological resources, cultural resources, greenhouse gas emissions and hydrology. A program EIR analyzes the potential impacts of a series of similar vegetation management activities or geographies such that subsequent environmental reviews can be streamlined or avoided. Because a program EIR can take substantial time to complete, it is important to begin this process as soon as feasible.

Implement vegetation projects in recently burned areas

Taking advantage of terrain that has already been burned affords the opportunity to continue vegetation management of that particular area, including reducing the potential for a severe reburn and ensuring tree regeneration. Minimizing erosion and retaining enough forest structure for wildlife are additional concerns of

recently burned areas, which have occurred across County Regional Parks and on Ag + Open Space lands.

Expand County chipping capacity

The County's residential defensible space chipping service is driven by property owner requests for service; staff consistently heard from community stakeholders that they would like to see expanded chipper capacity, as the program is frequently oversubscribed. An additional truck, chipper and associated maintenance would help to expand the program. Additionally, Regional Parks needs a self-propelled tracked chipper to effectively handle tree debris from its parks.

Funding for youth crews

Sonoma Water, Regional Parks, Transportation & Public Works, and UC Cooperative Extension have hired youth crews to conduct vegetation management through organizations such as Youth Ecology Corps (administered through Human Services Department), Conservation Corps North Bay, and Circuit Rider (Center for Social and Environmental Stewardship). These programs provide paid work experience and a pathway to move into regular jobs at the County or at local companies.

Outreach and education

Clear, consistent guidance on vegetation management and effective communication of that guidance is cited as a need at the local, community level.

Vegetation management special needs assessment program

This new program would provide assistance to disabled and elderly property owners for compliance with defensible space requirements.

Purchase parcels for green breaks

This forward-looking initiative involves working with willing sellers to purchase parcels suitable for integration in multi-benefit green breaks, a largescale approach to fire mitigation. This is item # NR 2.2.8 in the Recovery and Resiliency Framework.

Community grants for vegetation management

Community organizations have provided a wide range of suggestions on how they could utilize funding for vegetation management related uses, including grant matching, enhancement of educational and vocational training programs, and capacity building (e.g., hiring another forester). This allocation could be specifically dedicated to community organizations.

Staffing

Finally, one of the working group's leading recommendations is to establish a unit to serve as County vegetation management lead. A single point of coordination and resources was a common theme across the various listening sessions and meetings over the past six weeks. This lead would provide central coordination, outreach and education, and leadership of vegetation management initiatives across departments/agencies and in coordination with community partners, such as Sonoma RCD or Fire Safe Sonoma. This lead division would also be responsible for lobbying and legislative efforts for County vegetation management priorities and applying for related funding. Staffing resources and organizational structure will need to be considered when the Board considers the findings from the CLEE group discussions.

Next Steps

Staff will return in March 2021 with the results from the CLEE small group discussions for your Board’s consideration, as your Board determines how to prioritize the vegetation management allocation for the near-term and the future.

Prior Board Actions:

- 10/6/20 Community Feedback and Preliminary Allocation of PG&E Settlement Funds
- 8/11/20 PG&E Settlement Funds preliminary discussion

FISCAL SUMMARY

Expenditures	FY 20-21 Adopted	FY 21-22 Projected	FY 22-23 Projected
Budgeted Expenses	1,670,000		
Additional Appropriation Requested			
Total Expenditures	1,670,000		
Funding Sources			
General Fund/WA GF			
State/Federal			
Fees/Other	1,670,000		
Use of Fund Balance			
Contingencies			
Total Sources	1,670,000		

Narrative Explanation of Fiscal Impacts:

The County Administrator’s Office is requesting appropriations of \$1,670,000 from the PG&E settlement allocation, with \$70,000 for the policy planning support, \$600,000 for outreach and education of the parcel-level fuel map decision support tool, and \$1,000,000 for the expansion of the fuel map tool to the landscape scale.

Staffing Impacts:			
Position Title (Payroll Classification)	Monthly Salary Range (A-I Step)	Additions (Number)	Deletions (Number)

Narrative Explanation of Staffing Impacts (If Required):

Attachments:

1. Wildland Urban Interface map
2. EB Alive report
3. List of organizations spoken with in preparation for this item
4. CWPP overview
5. CWPP ranking tool example
6. Fuel Map Decision Support Tool summary

Related Items “On File” with the Clerk of the Board:

County of Sonoma Wildland Urban Interface Incorporated & Unincorporated Land

Wildland Urban Interface

The Wildland Urban Interface (WUI) dataset represents the CAL FIRE Fire & Resource Assessment Program's (FRAP) preliminary result in an effort to capture WUI for the 2015 Assessment. The current dataset is appropriate for displaying the overall pattern of WUI development at the county level and comparing counties in terms of development patterns. Until the dataset is refined through a field review process, it is not suited for WUI designation for individual houses or neighborhoods. (WUI12_3 | April 2019)

Three WUI classes are mapped:

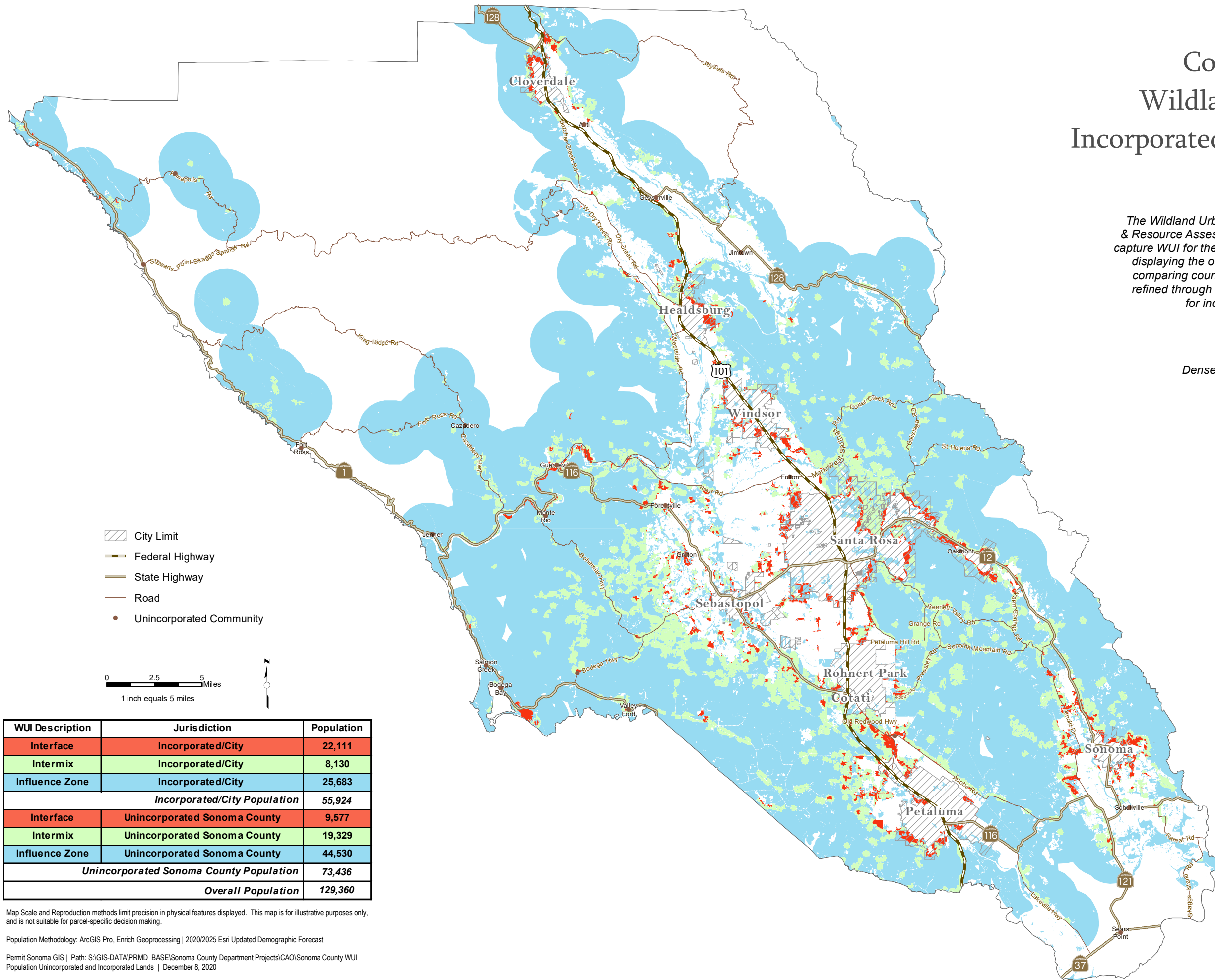
Wildland Urban Interface
Dense housing adjacent to vegetation that can burn in a wildfire



Wildland Urban Intermix
Housing development interspersed in an area dominated by wildland vegetation subject to wildfire



Wildfire Influence Zone
Wildfire susceptible vegetation up to 1.5 miles from Wildland Urban Interface or Wildland Urban Intermix



WUI Description	Jurisdiction	Population
Interface	Incorporated/City	22,111
Intermix	Incorporated/City	8,130
Influence Zone	Incorporated/City	25,683
Incorporated/City Population		55,924
Interface	Unincorporated Sonoma County	9,577
Intermix	Unincorporated Sonoma County	19,329
Influence Zone	Unincorporated Sonoma County	44,530
Unincorporated Sonoma County Population		73,436
Overall Population		129,360

Map Scale and Reproduction methods limit precision in physical features displayed. This map is for illustrative purposes only, and is not suitable for parcel-specific decision making.

Population Methodology: ArcGIS Pro, Enrich Geoprocessing | 2020/2025 Esri Updated Demographic Forecast

Permit Sonoma GIS | Path: S:\GIS-DATA\PRMD_BASE\Sonoma County Department Projects\CAO\Sonoma County WUI Population Unincorporated and Incorporated Lands | December 8, 2020

County of Sonoma
Permit Sonoma

2550 Ventura Avenue, Santa Rosa, California 95403



Final Report

Prepared for the Sonoma County Office of Recovery and Resiliency

Guidance for Recovery and Resiliency Planning in Sonoma County Forest Ecosystems

By



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Final Report

Prepared for the Sonoma County's County Administrator's Office, Office of Recovery and Resiliency
By EBalive

Introduction

This report provides recommendations and a summary of the work performed by EBalive under contract with the Sonoma County Office of Recovery and Resiliency in 2018. The purpose of the project and this report is to identify key leverage points for improving the health and resilience of forest (i.e., conifer, oak woodland and shrub communities) ecosystems relative to reducing wildfire hazards. The guidance will be integrated in adaptation planning for natural and working lands¹ in Sonoma and adjacent counties.

The Office of Recovery and Resiliency (ORR) was established by the Sonoma County Board of Supervisors (Board) to assist with recovery from the devastating wildfires of October 2017 and help chart pathway to enhanced resilience to withstand future disturbances including drought, flood, and wildfire. The Board adopted a Recovery and Resiliency Framework in December 2018 that affirmed the County's vision for recovery, including continued stakeholder involvement and organized around five strategic areas for action.

The framework's strategic areas for action are community preparedness and infrastructure, housing, economy, safety net services and natural resources. While a focus on the area's natural and working lands falls most clearly within the natural resources category, programs to manage, sustain and protect the area's forest, oak woodland, shrub, grassland and agricultural landscapes also contribute to all five of the strategic areas. Given the patterns of development and importance of the natural environment in Sonoma County, efforts to make landscapes more resilient in the face of disturbance will help protect life and property, improve preparedness and infrastructure, and add to the strength of the regional economy.

The EBalive project work was organized into four tasks: coordination with the Governor's Forest Management Task Force, outreach with key regional leaders, development of organizing and governance options, and an overview of ecosystem services economic values. To highlight what was learned during the project, this report covers:

¹ Forest' in this context is all of the major woody plant communities. 'Natural and Working Lands' spans all major land uses: agricultural, grazing, recreational, forest and woodlands, and their intrinsic ecosystem services.

- Strategic recommendations and findings

- Challenges facing Sonoma county and the region

- Work completed by project task

- An appendix

Strategic Recommendations and Findings

Sonoma and other North Bay counties have been at the forefront in developing integrated natural resource programs that address a combination of economic, social and environmental objectives. The county has seen the development of a number of governmental, non-profit, business and citizen programs to address environmental protection and natural resource management. The opportunity now is to build on this foundation and take the next step in response to the damaging wildfires, evidence of deteriorating forest and landscape health, and the growing effects of climate change and other stressors. The following recommendations provide guidance for further policy development and successful adaptation:

Strategic

1.1. Make the goal of natural and working land resilience a more explicit county and region wide priority

- Sonoma County’s Recovery and Resiliency Framework is a call to action for the county as a whole. The Framework’s natural resource goals and objectives appropriately identify several key initial actions and pilots as a place to start. But an explicit overall strategic intent for the entire geographic area must also be identified—as the threats, resource conditions, and the need for a programmatic response are current and county wide. These actions focus on the lands beyond and between structures, and are in addition to efforts for home hardening and creation of defensible space around property.
- The Framework positions the County as a leader working with other governments, the private and nonprofit sectors, and individuals to develop an adaptation strategy for the region’s natural and working lands. Leadership will require adequately framing the challenges, acting at scale and with urgency, and focusing on the primacy of landscape resilience—a forward-looking goal that recognizes the interdependencies across people, nature and infrastructure.

1.2. Develop an organizational model that has the on-going financial and operational basis to attract public and private investments, compensate landowners and members, charge for services, attract employees and contractors, and create new wealth and economic returns for the region.

- Finding a way to create an organization or infrastructure that provides the necessary and sufficient conditions to support scale, county-wide management activity is a substantial challenge. But without such a system in place only incremental, place-by-place actions are likely to occur. Managing fuels, reducing forest stocking, utilizing prescribed fire, recovering and restoring degraded properties, protecting and conserving ecosystem and economic assets, all take money, equipment, knowledge and coordination across ownerships and among jurisdictions. A comprehensive institutional environment must be in place to create the synergies among these elements to gain the scale and wherewithal to do the job.

1.3. Empower landowners to implement solutions through a formal structure or organization—with membership available to other partners and collaborators

- Private and public forest and woodlands occupy more than half the county area, approximately 514,000 acres. Of this area, 87% is in about 16,000 relatively small private or NGO parcels (Figure 9). Public owners, primarily the County, are owners of the remaining area. To respond at scale to the job of building resiliency into these landscapes, both classes of owners must have the means to work together to address common management objectives, gain economies of scale and make the overall collective financially self-sustaining

Organizational

1.4. Explore various County options to establish a formal forest or landscape health organization

- Sonoma County’s approach to managing natural resource and environmental systems has benefited greatly from innovative organizational models. Special district examples include the Agricultural Preservation and Open Space District and the Gold Ridge and Sonoma Resource Conservation Districts (RCDs). Formation of a district specifically focused on forest and landscape health goals could be an innovative conservation solution. Additional organizational and governance candidates include a coordinated network, a joint power authority, a legislatively created ‘entity,’ a marketing order, or a cooperative. All these options need to be evaluated against a set of operational principles including organizing, governance, financial management, value chain development, monetization of goods and services, public program and service delivery, regulatory compliance and bundling, best available science and expertise and staff.

1.5. Work to channel the delivery of public policies, programs and regulations through the organization

- There is a long-held understanding of the effectiveness of delivering public programs through so-called ‘intervening structures.’ Such structures are generally aggregations of constituents, clients, residents, or landowners. As noted, there are several key local natural resource and environmental organizations and civic groups that are helping with communication, implementation and feedback on the variety of land use, forest practice, environmental compliance and incentive programs. Leveraging public grant and incentive programs through these groups of can be beneficial both to for the agencies and the landowners. Pooling responsibilities for planning and permitting can allow greater flexibility and greater participation within the landowner community.
- Some of the policy changes in newly passed SB 901 build on this approach. Currently under Board of Forestry forest practice regulations, smaller landowners can qualify for nonindustrial timber harvest and working forest harvest plans that can streamline environmental approval. CALFIRE has also led pilot ‘programmatic’ CEQA reviews for vegetation management and forest health improvement projects across scale geographies.

1.6. Recognize that organizational effectiveness and sustainability must rest on a solid financial foundation

- There is an opportunity to establish a member organization that can generate the revenue required to underwrite the costs to landowners and to the broader community of supporting the treatment regimes. To be sustaining and develop a sufficient resource base, the organization must try to position itself to attract private and public investments, charge for services, underwrite landowner and member initiatives, attract employees and contractors, and create new wealth and economic returns for the region.

Treatments/Environmental Science

1.7. Develop a set of wildfire and climate-adaptive treatment regimes to guide local projects, experimentation and research

- Managing landscapes to improve resilience entails an understanding and review of a broad number of potential treatments, including a mosaic of landscape uses, open space and fuel breaks, house hardening and defensible space, managing forest stocking through thinning and prescribed fire, restoration and other environmental improvement practices.
- There is much to learn about which combination of treatments will create a resilient landscape. The end point is relatively clear—a landscape that is wildfire and climate adaptive and provides the goods and services that people want and need—but the path to get there will be one of trial and error and experimentation. The best approach is to move forward with a science-based, learn-and-improve process relying on monitoring, evaluation and timely decision-making and adaptive response.

1.8. Ensure that all programs and actions meet evolving environmental standards

- Threats to environmental health are largely human caused and solutions must address human and organizational behavior over time and their impacts on environmental quality. Current laws and regulations offer important protections, but most put an emphasis on minimizing short-term environmental impacts and at a project-by-project scale. This makes it difficult to pursue longer-term resilience goals on a programmatic basis over larger areas and multiple ownerships. Consideration of cumulative beneficial or adverse outcomes are less readily addressed in project-level environmental reviews.
- Even with the current level of governmental regulatory intervention, Sonoma county's forests are not thriving, and changes are needed to make them more resilient to drought, insects, disease and to raise their level of environmental quality. Forest volume has roughly tripled in the past five decades resulting in high-density, overstocked stands that are more susceptible to large and damaging wildfire and less productive in terms of forest growth, carbon sequestration and provision of watershed values.

- Science is crucial to evaluating past and current conditions and informing decisions about how to foster a healthy and resilient landscape. Quality decision making is advanced by research on biological and physical processes as well as of socio-cultural systems and decision-frames. Such research on adaptive management forms the foundation for treatments on the landscape and how these treatments are linked to organizational and individual behavior.

Economics/Financial

1.10. Embrace the opportunity to develop a green enterprise sector providing jobs, capitalizing projects and creating new wealth throughout rural areas and the region

- Managing the landscape actively requires new green infrastructure to appropriately plan, harvest, move and process large amounts of vegetation and manage a planned landscape mosaic of natural and production lands. A work force with the necessary know-how and economic incentives needs to be developed to do the continuing work on the landscape. Natural resource and small business educational opportunities need to be enhanced to develop the needed labor force in sectors that have not been active for decades. Roads and bridges need upgrades to improve access. This new infrastructure will drive additional value to the ecosystem goods and services provided by rural landowners, enhancing the economic vitality of rural communities.

1.11. Find innovative ways to attract private capital to develop an appropriate infrastructure including facilities, technologies, equipment, expertise and labor

- Private capital will be needed to purchase equipment, expand physical and technological infrastructure, and to build and operate new processing capacity. Both institutional and impact investors are seeking to place money in projects that yield positive environmental (as well as financial) benefits. However, any organizational solution chosen will need to demonstrate sufficient scale and consistent flow of ecosystem services to attract and retain private investors.

- While economic research can provide compelling evidence for the value of ecosystem services, all too often such goods and services are not priced by the market, making it difficult for landowners to be fairly compensated for what they provide. Value chains exist already for ecosystem goods and services such as agricultural products, traditional wood products and carbon credits. Additional work must be done to develop market-based values for other goods and services such as: biomass, biodiversity, water quality and quantity, recreation and avoided costs (e.g., fire suppression, fire-fighting, damages from fire or flood).

Challenges

The recent series of severe, damaging wildfires in Sonoma and adjacent counties have made paramount the need to address the health and resilience of the region's natural and working lands. Various governmental agencies understand this challenge and are adopting programs designed to make these lands more climate and wildfire adaptive. Fortunately, a sizeable number of non-governmental organizations, businesses, universities and individuals have also prioritized activity focused on landscape health. Perhaps most importantly with the memories of the Sonoma and Mendocino Complex fires still fresh, private landowners and members of the general public are increasingly aware of the connection between their safety and well-being and environmental conditions and threats.

Yet even with all this attention, a successful strategy to mitigate and adapt to the various drivers of landscape vulnerability and health is challenging to develop. Several dynamics have contributed to this situation, some historical, some projected, all needing to be considered when building solutions. Over the last 50 years the forest lands portion of the land area has been relatively stable (Figure 1). During this period, harvest has fallen significantly, and forest inventory has increased dramatically (Figure 2).

Historic inventory and harvest patterns

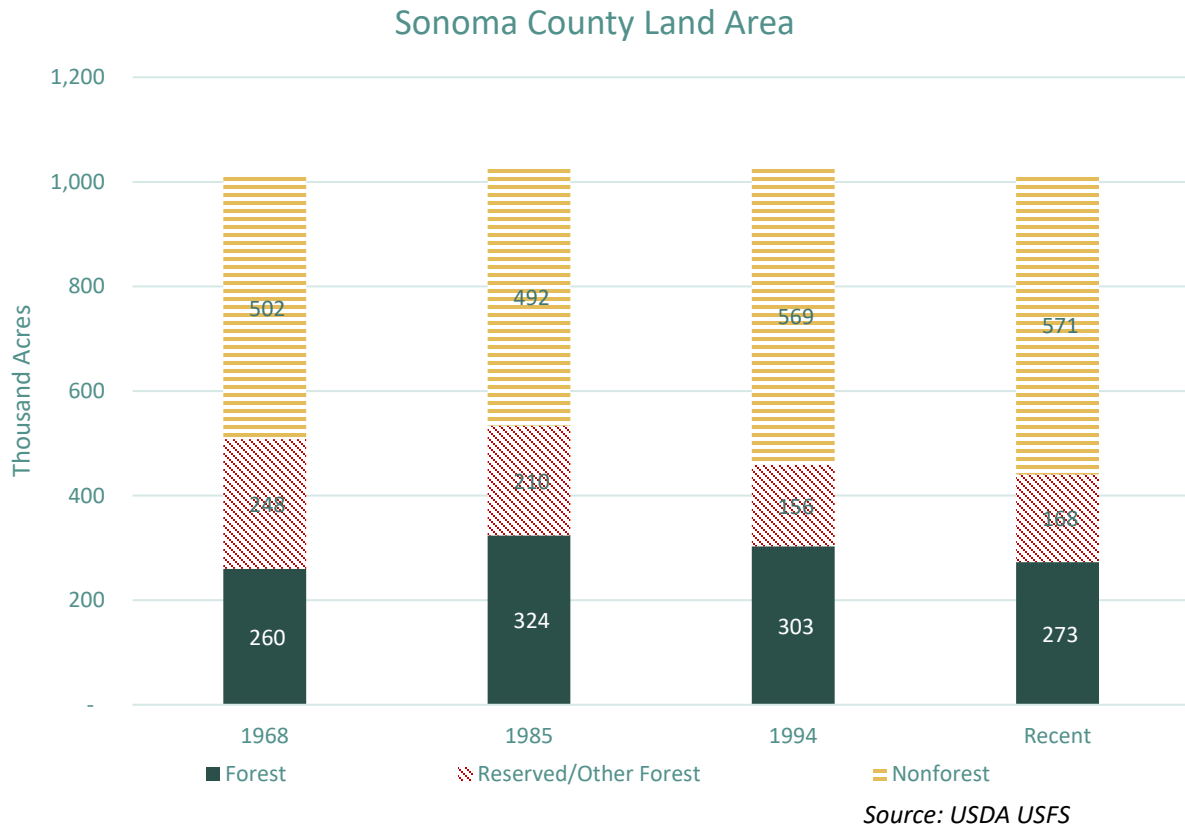


Figure 1. Sonoma County Land Area

Sources: (Metcalf, 1972) (Lloyd, 1986) (Waddell, 1996) (USDA Forest Service, 2017)

Sonoma County Harvest and Inventory Volume History: 1968 to Present

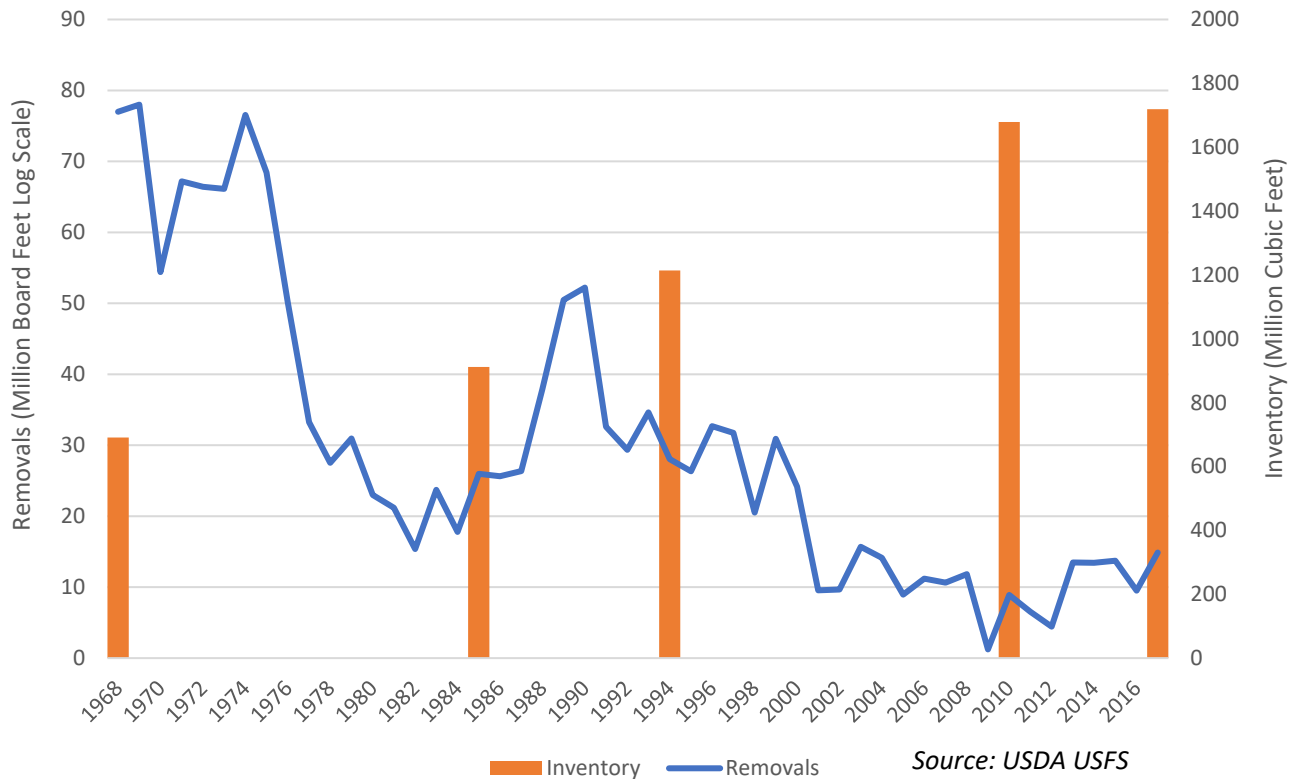


Figure 2. Sonoma County Harvest and Inventory Volume History: 1968 to Present (Metcalf, 1972) (Lloyd, 1986) (USDA Forest Service, 2017)

Sources: (Metcalf, 1972) (Lloyd, 1986) (Waddell, 1996) (USDA Forest Service, 2017)

Parcelization and Wildland Urban Interface

The small size of many privately-owned forest properties in Sonoma County and elsewhere creates unique management challenges. Such landowners acting alone are not in a strong position to move forward with plans to thin out unwanted vegetation or to engage in either traditional timber harvesting or conservation and restoration practices that require scale operations. As a result, forests on many properties can remain too densely stocked and less resistant to drought, insects, and wildfire. In this condition they increase potential hazards for their owners and neighbors. Continued development pressure in the WUI creates additional challenges in promoting forest health and resilience.

Fire suppression and primacy of human life and structural protection

Over the last 100 years, the well-intentioned policy of protecting human life and property by fire suppression has contributed to the build-up of fuel loads, large areas of stressed and dying forests and catastrophic wildfires. It will take some time to prioritize and restore forest lands to a more wildfire-adapted state, using tools such as fuel breaks, thinning and prescribed burning.

Homeowners also need to create defensible space and harden their homes against fire in order to limit the loss of life and property to the extent possible.

Work Completed by Project Task

California's Forest Management Task Force

The California Forest Management Task Force was created by the Governor's Executive Order B-52-18 to provide a high-level, unified focus to wildfire and forest health issues. The purpose is to drive collaboration across relevant agencies on wildfire, climate, public health and safety, ecosystems, water quality, land use, bioenergy and wood products—by addressing more specific management goals:

- Implement the recommendations of the California Forest Carbon Plan
- Strategically coordinate the state's investments in forest management to enhance forest health
- Minimize regulatory barriers for prescribed fire, forest health, and fuels reduction
- Expand the use of prescribed fire across public and private ownerships.
- Increase public education and awareness of the importance of forest health and resiliency to achieving California's long-term climate, watershed, wildlife, economic, and public health
- Encourage capacity building in forested communities to support implementation.
- Incentivize innovations in the forest product and building industries to utilize material from forest health and fuel reduction

The Task Force structure and organization is modeled closely on the Tree Mortality Task Force and the lessons learned from that group. Strategies related to wildfires, forest health and watershed management are being drawn largely from recent Brown Administration policy reports. The new Administration has issued EO N-09-15 directing CAL FIRE to lead the planning efforts. Key policy reports and advice to the new Governor are contained in the following reports: *California's Fourth Climate Change Assessment*; *Safeguarding California*; *California Forest Carbon Plan*; Legislative Analyst Office's *Improving California's Forest and Watershed Management*; Public Policy Institute of California's *Improving the Health of California's Headwater Forests*. Commonalities the reports emphasize:

- California is currently experiencing climate change and its effects will increase over the coming decades. These climate effects along with impacts from other human-driven activities include more wildfires of greater severity, a reduction in watershed functionality, and a decline in forest health and resilience.
- The State has adopted an impressive and reasonably comprehensive set of adaptation policies and programs to prepare for and respond to changing conditions and to attempt to build resilience into human, natural and infrastructure systems. However, the scale and pace of actions recommended is substantial and progress must be carefully assessed and accordingly adjusted and augmented.

- There is recognition that a successful overall strategy must include actions at the state, regional, and local levels. Many of the programs to build resilience in people, communities and natural systems will need to be implemented by local government decision makers.
- A number of federal and state regulatory; cost-share, grant and incentive; technical assistance; and market development and infrastructure investment programs are available to local government entities. However, the competition, time to process, and bureaucracy associated with each program create a significant barrier to effective deployment.
- Strong endorsement for the use of prescribed burning, managed wildfire, and mechanical thinning of overstocked stands as means to improve forest health, make forest more climate-adaptive, and lessen the risk of catastrophic wildfire.
- The importance of collaborative organizational structures to deal with multi-jurisdictional, scale, funding and associated requirements are lightly touched on. The PPIC report does recommend consideration of public/private organizations such as special districts.

In addition, the State Legislature has given specific direction to CALFIRE and the State Board of Forestry to advance currently mandated policies for land use, fire protection and forest practice regulation. The most important directives are in SB 901.

- Clarification in statute that multiple landowners may participate in a single working forest management plan that is located within a single watershed. But the acres of a single WFMP is reduced from 15,000 to 10,000 acres and a revision to timing of disclosure for certain types of erosion control sites
- Clarification that multiple owners may participate in a single nonindustrial timber management plan and that a single plan may not exceed 2,500 acres.
- Revised statute to effectively increase the pace and scale of fuel hazard reduction efforts on state and private lands through providing regulatory relief to small timberland owners and substantially revised forest fire prevention exemption.
- Expands the Board of Forestry’s existing regulatory framework for State Responsibility Area to Very High Fire Severity zones within Local Responsibility Areas. Requires the Board to update regulations for greenbelts and fuelbreaks to increase community perimeters and increase protection from wildland fire
- Requires the Board to develop criteria for and develop list of ‘fire risk reduction communities.’

Currently under Board of Forestry forest practice regulations, smaller landowners can qualify for nonindustrial timber harvest and working forest harvest plans that streamline environmental approval. CALFIRE has also led a few pilot ‘programmatic’ CEQA reviews for vegetation management and forest health improvement projects. If these provisions could be extended to a county-wide association of landowners, the ability to treat lands effectively would be enhanced.

Discussions have been held with a number of individuals knowledgeable about and committed to finding solutions to Sonoma’s forest health challenges. Talked with County and State officials and staff; representatives from landowner groups, wine sector, farm bureau and real estate; professional foresters; researchers, scientists and journalists; and members of non-profit, special district and environmental groups.

Outreach with Key Regional Leaders

Table 1: Key Leaders

NAME	AFFILIATION
David Ackerly	UC, Berkeley
Henry Alden	Gualala Redwoods (retired)
Bob Anderson	Consultant
Harold Appleton	Consultant
Kim Bachelder	Sonoma Open Space District
Roger Burch	Redwood Empire
Tosha Comendant	Pepperwood Preserve
Bob Cooley	Landowner
Caitlin Cornwall	Sonoma Ecology Center
Anne Crealock	Sonoma County Water Agency

Arthur Dawson	
Steve Dutton	Dutton Ranch
Helge Eng	Cal Fire
Fred Euphrat	Landowner
Karen Gaffney	Sonoma Open Space District
James Gore	County Supervisor
Matt Greene	Forester
Caryl Hart	Public Official
Susan Haydon	Sonoma County Water Agency
Russ Henley	CA Resources Agency
Lynda Hopkins	County Supervisor
Jay Jasperse	Sonoma County Water Agency
CJ Johnson	Landowner
William Keene	Sonoma Open Space District
Nick Kent	Redwood Empire
Walter Kieser	Economic and Planning Systems
Tony Korman	Consultant
Karissa Kruse	Sonoma County Winegrowers
Stephanie Larson	UC Cooperative Extension
Alan Levine	Coast Action Group
Brian Ling	Sonoma County Alliance
Lisa Micheli	Pepperwood Preserve
Ben Nicholls	CALFIRE
Christy Pichel	Center for Effective Philanthropy
Jennifer Potts	Audubon Canyon Ranch
Valerie Quinto	Sonoma Resource Conservation District
David Rabbit	County Supervisor
Peter Rumble	Santa Rosa Metro Chamber
Carleone Safford	Fire Safe Sonoma
Bill Stewart	UC, Berkeley
Cordel Stillman	Sonoma Clean Power
Steven Swain	UC Cooperative Extension
Genevieve Taylor	Ag Innovations
Dennis Thibeault	Mendocino Redwoods
Jennifer Gray Thompson	Rebuild North Bay
Carolyn Wasem	Jackson Family Wines
Nick Wobbrock	Blue Forest Conservation

Some preliminary learnings:

- There is strong support for a scale, comprehensive solution for forest and landscape resiliency but there is recognition that the odds of making it happen are long and the right path forward is in question.
- Many people want to first try to expand the mandate and operations of existing entities, districts and programs. Yet when leaders from these organizations are asked about such expansions, their answers are generally that they are not equipped to take on the full range of functions.
- Recognition that leadership is necessary to better align myriad efforts to get on top of forest sustainability. There is openness to and understanding of necessity of building a large and diverse (government, citizen, environmentalist, business, non-profit) coalition.
- Some discomfort in jumping immediately to forest health district solution. Encouragement to first work with open space and resource conservation districts and others.
- Differences of opinion in how best to intervene in natural and working forest systems— i.e., use of timber harvesting, fuels management, aggressive restoration programs, ‘fuel break mosaics,’ and prescribed fire to create a climate-adaptive forest landscape. Important to work through options, benefits and consequences and to thoroughly address criticisms and questions.

Organizing Options for Key Partners and Private Landowners

Several dozen national, state and regional agencies and organizations have become involved with efforts to support mitigation and adaptation plans for Sonoma and adjoining counties. Effectively engaging these entities is critical in building a successful strategy. In addition, given that roughly 85 percent of Sonoma’s forestland base is owned privately by more than 16,000 landowners, any successful strategy must empower broad landowner response and actions. These landowners, and the organizations and agencies that serve them, need to act cooperatively to successfully address opportunities and threats operating at larger scales and across property and jurisdictional boundaries. The County can look to a number of organizational and governance models that can improve longer-term landscape planning approaches. Potential options for consideration include a coordinated network, a joint power authority, a special district, a legislatively credit ‘entity,’ a marketing order or a landowner and partner-based cooperative.

To judge potential effectiveness and fit, these options need to be evaluated against a set of operational principles or criteria, including:

- effective organizing,
- governance,
- financial management,
- monetization of ecosystem goods and services,
- attraction of private investment and capital
- public program and service delivery,

- founded on best available science, and
- regulatory compliance and bundling

Coordinating Network

There is already a good deal of coordination and joint planning and delivery of programs in Sonoma county. The County Office of Recovery and Resiliency is designed to have a lead organizing role and progress is being made with significant movement in terms of pilot project initiation and development of information systems. The Office has recently kicked off a comprehensive campaign to increase the pace, scale and effectiveness of management on public and private forestland to reduce wildfire hazards, benefit life and safety, improve ecosystem services, and generate landscape resiliency. The intent is to foster a ‘network of networks’ pursuing aligned and connected efforts at local and regional scales.

This effort will be foundational to any more formal organizational effort. But it can only go so far to address the full range of operational requirements. First, the campaign is primarily relying on a set of traditional tools--regulation, incentives, extension, training and education—that have had important but limited success over time. Second, this approach alone does not meet the requirements of attracting private capital and investment, bundling of services and regulatory compliance, monetization of ecosystem goods and services, nor substantially lowering operational costs for individual landowners.

Joint Power Authority

One step the County could take to advance the operational platform for improving landscape health and reducing the risk of damaging wildfire is to form a new Joint Power Authority (JPA). This was an approach taken to form Sonoma Clean Power, Sonoma County Waste Management Agency and Sonoma County Library Commission. Such a move could provide more focus, additional resources and a clarity effort to the job.

The Joint Exercise of Powers Act governs the establishment and operation of JPAs. Agencies can only form a new entity that are common to the member agencies, so it becomes critical to determine exactly what service needs the JPA would address. But importantly, a JPA can charge for services, operate like a business, issue revenue bonds, and develop alternate financing mechanisms. And federal and state government units and federally recognized Indian tribes may voluntarily agree to participate in activities of a JPA. The JPA establishment document sets out the governance structure of the new entity including the size and composition of a governing board. Typically, the board consists of officials from the member agencies, but there is no strict requirement regarding board composition and no requirement that board members be elected officials.

Special District

Sonoma County's approach to managing natural resources and environmental systems has benefited greatly from four special districts: the Agricultural Preservation and Open Space District, the Sonoma Resource Conservation District, the Gold Ridge Resource Conservation District, and the Sonoma County Water Agency. Formation of a district specifically focused on forest and landscape health goals could provide an innovative solution to the many natural resource management and protection challenges Sonoma faces.

Such districts can function in a manner similar to a utility or similar district: land is privately owned, but decision making can be shared and supported among all landowners in the district. This model could be used to bring public, private, and other landowners and managers together to set and pursue forest health and resilience goals at larger scales. All parties would benefit from economies of scale that come from planning forest management over larger spatial areas. Planning for larger areas can cost much less on a per unit basis than developing forest management plans for smaller areas. Likewise, stand thinning and tree removal activities may be more profitable when plans can be developed over larger areas, and are more likely to attract necessary investments in infrastructure and processing or biomass plants. Equally important, wildfire and insect outbreaks could be collectively addressed across property boundaries, overcoming the common problem that poor management by one landowner may have adverse impacts on neighboring landowners as well, while good management will bring benefits. Forest health districts could help ensure that all landowners are in a position to deploy the best practices for improving watershed management, linking habitats across ownerships and creating fire safe corridors and fuel breaks.

Special districts are local government agencies that provide public infrastructure and essential services, including but not limited to, water, fire protection, recreation and parks, and garbage collection. Since California became a state in 1850, voters have established over 2,000 independent special districts to meet their local needs. Special districts can serve large regions or small neighborhoods based on need, and they are governed by board members elected from their local communities or appointed by other voter-approved local bodies. They have corporate powers, so they can hire employees, enter into contracts, and acquire property. Within constitutional limits, they can also issue bonds, impose special taxes, levy benefit assessments, and charge service fees.

There are two basic types of special districts—non-enterprise and enterprise districts. Non-enterprise districts are funded primarily through property taxes and assessments. They provide services that do not lend themselves to fees. For example, fire protection services are provided to all residents and benefit the community as a whole. Enterprise districts are funded primarily through fees for services. For example, water districts charge their constituents fees for water delivery and health care districts, which can operate hospitals, charge patients for room fees.

Enterprise districts rely less on property tax revenue as compared with non-enterprise districts. However, property tax revenue is often an important source of funding for enterprise districts.

Likewise, non-enterprise districts may derive some revenue from fees. For example, a recreation and park district may charge a fee for joining a district-run soccer league.

A great deal of work and resources are required to form a special district and entering into this process should not be done lightly. The long-term success and sustainability of a district requires careful, detailed planning and purposeful execution. Each community deserves the best possible quality of service, delivered in the most efficient manner at the most affordable cost. Once a district is formed, it is up to its board, its staff, and the public to ensure its success.

Forest health districts seem likely to be able to be established under existing state law authorizing special district formation. In the absence of state action, it may be possible for individual landowners to form a cooperative that brings some of the same benefits. Establishing such a cooperative can be challenging from within the landowner community alone. Support from outside groups such as NGOs and other agents can be very helpful to a formation effort.

Legislatively Created ‘Entity’

There is a question as to whether current statutory authority exists to authorize formation of a forest health district. State legislation may be needed to authorize the County and property owners to move forward with such a plan. In addition, there is discussion in Sacramento about the need for the State to create the authority for establishment of a legal structure or organization of some form to meet forest health and wildfire management requirements California-wide.

Marketing Order

Another suggested organizational model that may be available for forestry application is a marketing order. California marketing orders are authorized by the California Agricultural Marketing Act of 1937. The provision has been extensively used by the state’s agriculture community for a wide range of commodities. Permitted are programs for advertising and promotion, research, the prohibition of unfair trade practices, product inspection, stabilization pools and the regulation of grades and standards. An order must be approved by a majority of the producers within a sector. Once established, an order is binding on all producers.

Marketing orders have never been deployed for forest products but may be worth consideration. Such an entity could provide scale and the ability to jointly market forest products across individual landowners and producers. Even more challenging would be to expand the definition of forest products to include new wood products and the full range of ecosystem goods and services—but this could be a mechanism for bundling and pooling watershed values, carbon credits, easements and various resiliency benefits.

Landowners Cooperative

Structured cooperation among private landowners could address the majority of requirements facing the larger landowner community. In the absence of, or in lieu of, governmental action, an independent landowner-based organization has merit. It may be possible for individual landowners to form a cooperative that brings some of the same benefits. Establishing such a cooperative can be challenging from within the landowner community alone and as a result the inclusion of other partners and stakeholders would be key.

The cooperative model has been successful in agricultural sector by increasing the achievement of individual goals while maximizing benefits in the marketplace and on landowners' properties. But historically this model has had very limited success in forest because the landowner objectives are most often individualistic and diverse and products coming off the forest happen over years and not annually.

A cooperative is an organization that is owned and controlled by members, who use products, supplies and services. Cooperatives can vary in particular purpose, but share a common fact: Cooperatives are formed to meet specific member objectives, and adapt structurally to the changing needs of members. Co-op benefits may include better prices for goods and services, improved services, and dependable sources of inputs and markets for outputs. Most cooperatives also realize annual net profits, all or part of which are returned to members in proportion to their patronage (thus, they are aptly called patronage refunds). Cooperatives can also return a portion of their profits as dividends on investment. In the United States, however, federal and most state statutes set an 8 percent maximum on annual dividend payments. The purpose of these limits is to assure that the benefits of a cooperative accrue to those who use it most rather than to those who may have the most invested.

Members join cooperatives to get services otherwise not available, to get quality supplies at the right time, to have access to markets or for other mutually beneficial reasons. Acting together gives members the advantage of economies of size and bargaining power. They benefit from having these services available, in proportion to the use they make of them. Members also benefit by sharing the earnings on business conducted on a cooperative basis. When cooperatives generate margins from efficient operations and add value to products, these earnings are returned to members in proportion to their use of the cooperative. Without the cooperative, these funds would go to other middlemen or processors.

Initial Fit Analysis

Adoption of any of these organizing models could add capacity to County programs designed to accomplish resiliency goals. Most programs currently focus on landowners one-by-one and generally are only in contact with landowners who ask for assistance, or have complaints lodged against them. By orienting program outreach through a district or cooperative structure, the County has the potential to reach many landowners with a single contact. On the regulatory

compliance side, a programmatic option for compliance through an organizational structure would be less costly for individual landowners and add administrative efficiencies.

Table 2 summarizes the relative fit of the various models against several criteria:

- A coordinating network would be foundational to the establishment of the other models but functionally would be limited to a traditional set of programs. It would do little to help landowners with costs and would be unlikely to attract any additional private capital investment.
- A JPA would allow the County to provide specific services to landowners by acquiring land treatment equipment, investing down the value chain, and bundling projects to provide scale benefits.
- Special districts, depending on how they were structured, could raise the importance of forest health as a County goal and public a good. The district could also generate improved services and economies of scale.
- A landowner cooperative or marketing order would allow landowners the most control over their collective activities and satisfy the highest number of functional requirements.
- From a value generation and cost control perspective, the more ‘business-like’ organizational structures would provide the largest benefits.

	Leader(s) and Key Members	Landowner Involvement	Ease of Formation	Functions	Public Policy Role	Private Investment and Business	Revenue and Cost Economies
Coordinating Network	County, CALFIRE	Low	High	3 -	Low	Low	Low
Joint Powers Authority	Agencies	Low	Medium	3 -	Medium-Low	Low	Medium – Low ?
Special District	District	Medium	Medium-High	6 +	Medium	Medium	Medium -High
Legislative-Created ‘Entity’	?	?	Low	?	?	?	?
Marketing Order	Landowners, Producers	High	Medium	6 +	Medium - Low	Medium - High	Medium - High
Cooperative	Landowners	High	Low	7	Medium	Medium-High	Medium - High

Table 2. Relative Fit of Organizational Structures

Note: Qualitative evaluation based on discussion with stakeholders in Sonoma county. A “low” rating suggests less favorable circumstances while a “high” rating indicates more favorable circumstances.

Application of Ecosystem Service Economic Values and Metrics

Ecosystem Goods and Services

The UN Millennium Ecosystem Assessment provides a useful means to categorize and measure ecosystem services. The 4 major types of ecosystem services (with examples) are:



Figure 3. Types of Ecosystem Services

These ecosystem services support the health and well-being of the residents of Sonoma county.

1. The Sonoma County Ag + Open Space District estimates the total benefits from all ecosystem services in Sonoma county to be between \$2.2 and \$6.6 billion/year (Sonoma County Ag + Open Space, 2018).
2. A landowner-based organization could plausibly generate about \$25 million/year from private forest lands, if values in addition to standing timber (biomass, carbon credits, watershed values and avoided costs) are monetized.

Ecosystem Service Valuation Framework

Ecosystem services can be difficult to define and measure. The Ag + Open Space District in Sonoma county has estimated that the value of all ecosystem services ranges from \$2.2-\$6.6 billion annually. Their methodology uses the “benefit transfer method”, similar to a comparable sales approach in real estate valuations.

The focus of this work will be narrower. We will begin with an inclusive framework to illustrate the range and diversity of goods and services, and then confine our discussion to the forest and woodlands of Sonoma County as an initial case for monetizing in relation to forest fuel management. The focus areas are outlined by the box in the figure below.

Natural and Working Land Use Types	Product/Service								Land Value
	Ag	Wood Products	Bio-mass	Carbon	Watershed	Recreational/Cultural	Easements	Avoided Cost	
Conifer: Douglas-fir		X	X	X	X	X	X	X	X
Conifer: Redwood		X	X	X	X	X	X	X	X
Conifer: Other			X	X	X	X	X	X	X
Deciduous Woodland: Oak	X		X	X	X	X	X	X	X
Evergreen Woodland: Tanoak/Laurel	X		X	X	X	X	X	X	X
Woodland: Other			X	X	X	X	X	X	X
Agriculture	X		X	X	X	X	X	X	X
Vineyard	X			X	X	X	X	X	X
Grassland	X			X	X	X	X	X	X
Chaparral/Shrubland			X	X	X	X	X	X	X
Urban/Suburban				X	X	X	X	X	X

Figure 4. Ecosystem Service Valuation Framework

Value Propositions

Value propositions identify clear, measurable and demonstrable benefits consumers get when buying a particular product or service. In the case of ecosystem goods services, some are priced in the market, while others are not. For a forest landowner, the value of standing timber depends upon the size, species and quality of the timber to the buyer, and their timber competes against other available supply. Other ecosystem goods and services, e.g., forest biomass, do not have an active market in Sonoma county, and are thus difficult to price. Enhancing landscape resilience requires us to adjust how we consume and pay for ecosystem services.

Value Chain

The value chain is a concept which deconstructs the value of goods and services into their component parts. For example, construction demand drives the demand for lumber which determines how much a sawmill can pay for logs, and thus how much a logger can pay the landowner for standing timber. As noted above, ecosystem goods and services do not often have market values. There is not an active market for biomass, watershed values, outdoor recreational values or for the costs of avoiding catastrophic fires.

Economics of Forest Lands

Sonoma County contains some 400,000 acres of privately held forest lands. The section describes the likely economic values that can be realized from these lands.

A landowner-based organization could generate about \$25 million/year from private forest lands, if values in addition to standing timber (e.g., biomass, carbon credits, watershed values and avoided costs) are monetized. The contribution from each good/service is shown below.

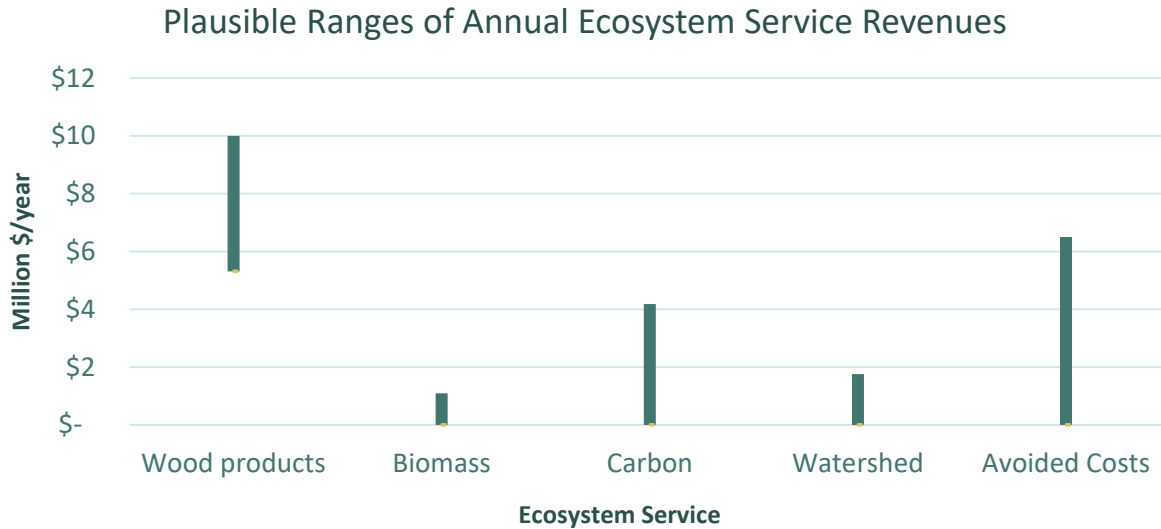
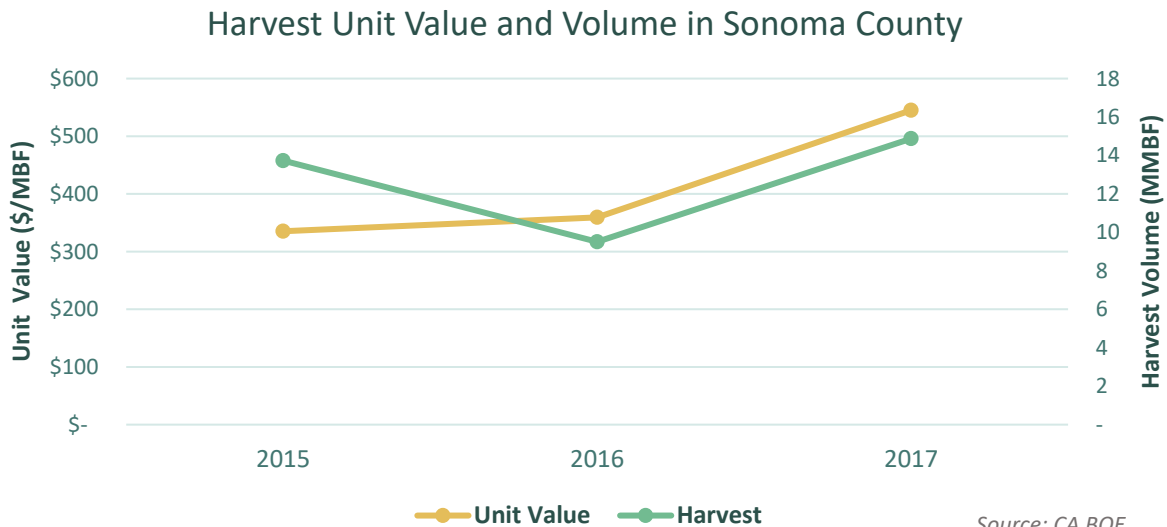


Figure 5. Plausible Ranges of Annual Ecosystem Service Revenues

Traditional Wood Products

Harvest for traditional wood products (logs) in Sonoma county has varied between 10-15 million board feet (MMBF) annually over the past few years. Prices for logs vary with the market. Recent prices for standing trees have been \$450-\$550/MBF on average.



Source: CA BOE

Figure 6. Harvest Value and Volume in Sonoma County

More harvest for wood products is possible in Sonoma county. Volume growth far exceeds current levels of removal. If removals were to double from recent levels (still well below current growth), assuming a price of \$400/MBF, more than \$5 million/year in additional revenue would be generated, totaling some \$10 million/year.

Biomass

Much of the woody material in the forest is not suitable for use in solid wood product processing facilities (tree tops, branches, parts of stems not meeting merchandising specifications). Such material is typically referred to as biomass. Biomass does have potential to serve as a feedstock for energy products, such as liquid transportation fuel, wood pellets, material for direct combustion or for biochar. For example, biomass is used to generate electricity in Sweden.

The demand for biomass will be driven by the end-use products which can be made from biomass e.g., electricity, liquid transportation fuel or biochar.

The economics of using biomass for energy products is challenging. Biomass products must compete with other energy alternatives (e.g., fossil fuels, wind, solar). The costs of producing electricity from combustion using biomass have been higher than the alternatives and may well require some subsidy in order to incent customers to purchase these products. In addition, it would require private capital investment in a facility, in equipment, infrastructure.

Microwave assisted pyrolysis is a technology under development which holds promise. This technology produces liquid transportation fuels from biomass, and the processing equipment can be mounted onto a mobile trailer, greatly reducing the production carbon footprint. The technology and the economics of production are still under development.

The market size for biochar is unknown, but likely to be at too small of a scale to be of consequence.

There are substantial volumes of tanoak in Sonoma County. There is no current local commercial use for wood from tanoak at scale. The risk of wildfire in forests can be reduced by thinning out the volume and reducing fuel loads. According to the US Forest Service data, volumes in tanoak forest types are increasing by about the equivalent of 150,000 bone dry tons (BDT) of biomass per year. By taking only about 50% of that volume, or 87,500 BDT/year, one could source a 10 MW electrical generation facility. At a delivered cost of \$50/BDT, after accounting for harvest and transport costs, the biomass raw material used to source the facility could generate \$875,000/year for a landowner-based organization. Several significant challenges, including securing customers for the electrical power at potentially above market rates, capital for the facility, attracting contractor capacity and road upgrades would need to be overcome for this to be a success.

Carbon Credits

The private forests of Sonoma County contain a substantial amount of carbon, some 17-18 million tons aboveground (USDA Forest Service, 2017).

Carbon credits currently do have an active market in California. Recent data indicates prices at about \$13/ton CO₂e (1 ton C = ~ 3.67 tons CO₂e). Realizing the value from carbon credits is challenging due the way carbons credits are calculated. Typically, a ton of carbon is recognized a creditworthy if it is considered “additional.” That is, it needs to be created by managing your forest differently from a “business as usual” case, so the owner must do something in addition to business as usual to achieve recognition for that incremental ton. Carbon accounting is challenging and complex, so any estimate of value will contain many assumptions. Just to dimension what might be possible, we assume here that 0.5% of the carbon inventory generates credits. At \$13/ton CO₂e, that generates about \$4 million/year.

Watershed

The private forests of Sonoma County provide substantial ecosystem services through watershed protection, water supply and water quality, and preservation of biodiversity. Work by the Ag + Open Space District in Sonoma County suggests this could be worth between \$44 million and \$297 million per year (Sonoma County Ag + Open Space, 2018). About 40% of the land in Sonoma County is private forest. By pro-rating the benefit by the land area, and assuming that private forestland owners could realize \$0.05 on the dollar of benefit, that yields about \$1-\$6 million per year to landowners.

Avoided Costs

By managing the forest for health and resilience, landowners should be reducing the wildfire risk to forest lands in the county. Examples of benefits to be accrued by a landowner-based organization over time include the values of lower fire suppression costs, reduced fire-response costs and lower insurance rates (associated with less property loss pay-outs).

The costs resulting from the October 2017 Tubbs fire provides a way to dimension the avoided costs. Property loss was estimated at \$1.2 billion. Fire suppression costs were estimated at \$100 million. If such a fire were to occur every 40 years, that works out to \$32.5 million/year. Thus, if managing land differently avoids the losses from such a fire, a \$32.5 million/year benefit is realized. If the landowner organization received 10% of the annual benefit, \$3.25 million of funding would be made available.

Summary

The private forest lands of Sonoma County can plausibly provide \$25+ million/year in compensation to a landowner-based organization from ecosystem goods and services. Several challenges remain in enabling the realization of the values.

Appendix

Baseline Forestland Inventory and Product/Service Flow Potential

Sonoma County has over 1 million acres of land area, about 52% of that is forest.

Land Use	Acres
Forest: Douglas-fir	112,586
Forest: Redwood	104,168
Forest: Oak	187,428
Forest: Tanoak	42,001
Forest: Other Conifer	19,013
Forest: Other Hardwood	76,376
Grassland	280,290
Shrubland	42,161
Urban/Suburban	70,508
Vineyard	62,930
Other Ag/Other	50,712
Total	1,048,173

Table 3. Sonoma County Land Area by Land Use Type (Tukman, 2018)

Forestland Inventory

The vast majority of the forestland acres and volume in Sonoma County are privately owned.

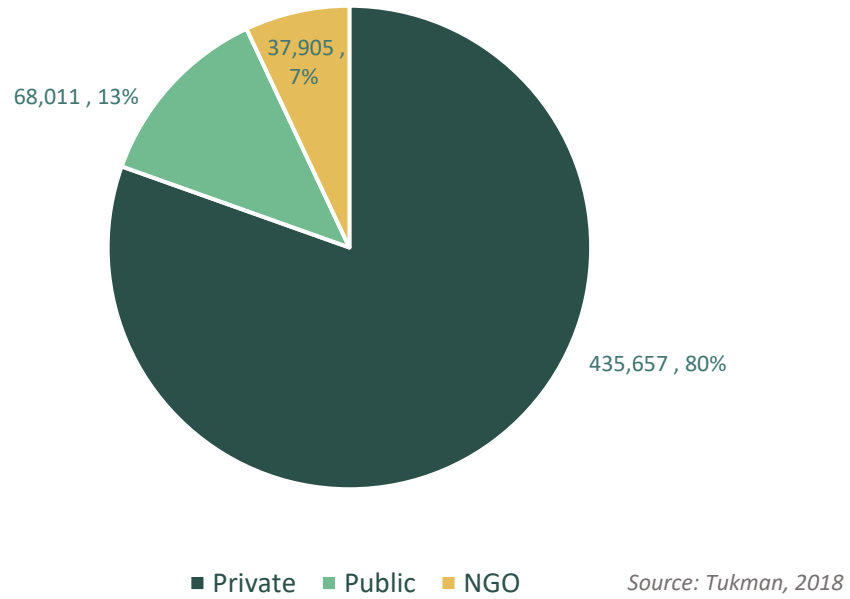


Figure 8. Forestland Acres in Sonoma County by Owner Type

Forestland Volume (f3) in Sonoma County by Owner Type

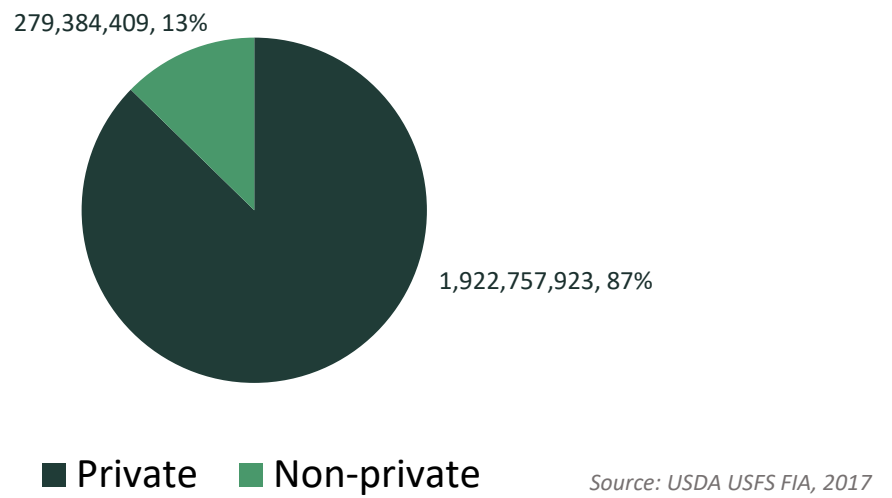


Figure 9. Forestland Volume in Sonoma County by Owner Type

Most of the forestland volume on private land occurs in 4 major forest types:

1. Douglas-fir
2. Redwood
3. Oak
4. Tanoak/laurel

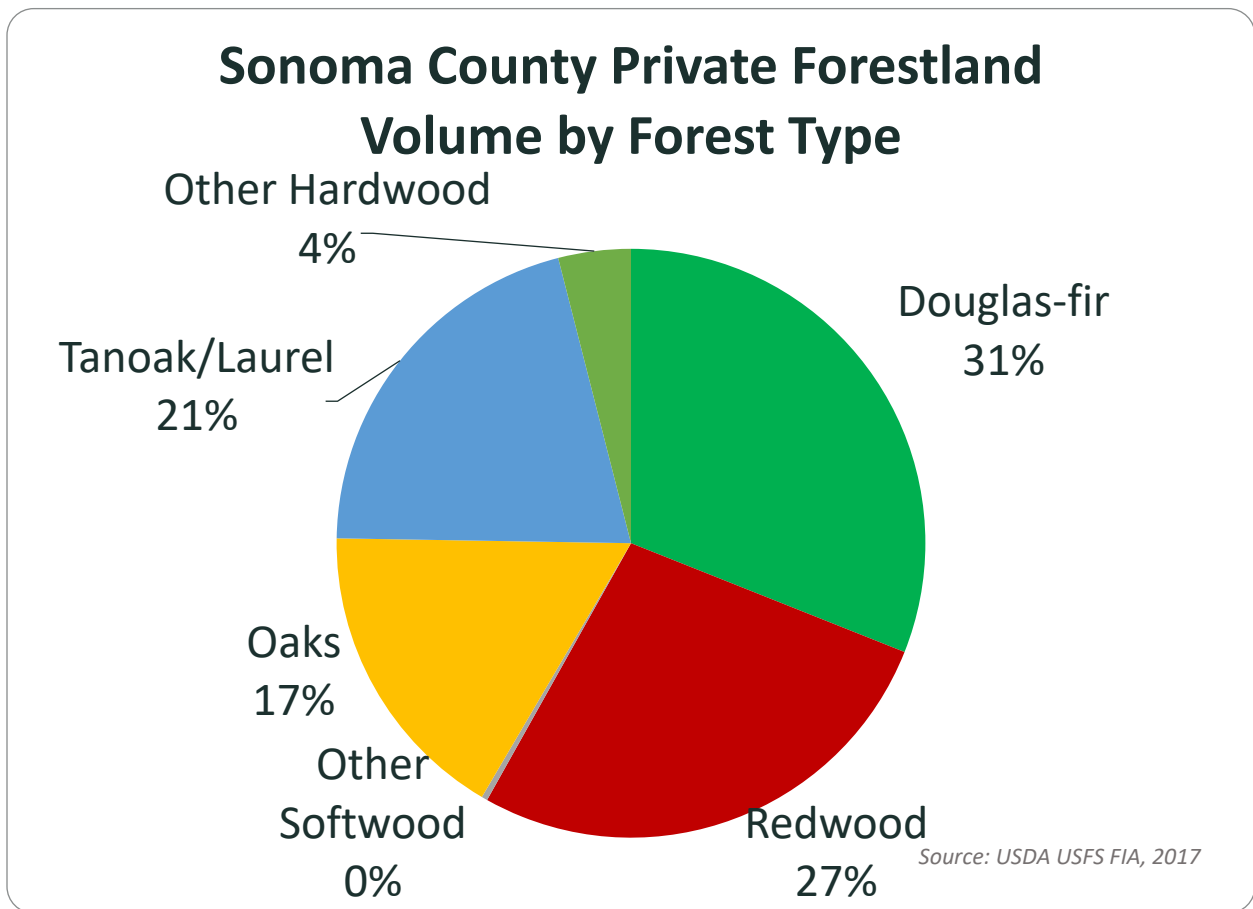


Figure 10. Sonoma County Private Forestland Volume by Forest Type

Carbon Inventory

The vast majority of the carbon inventory in Sonoma County private forestlands exhibit a pattern similar to the inventory volume.

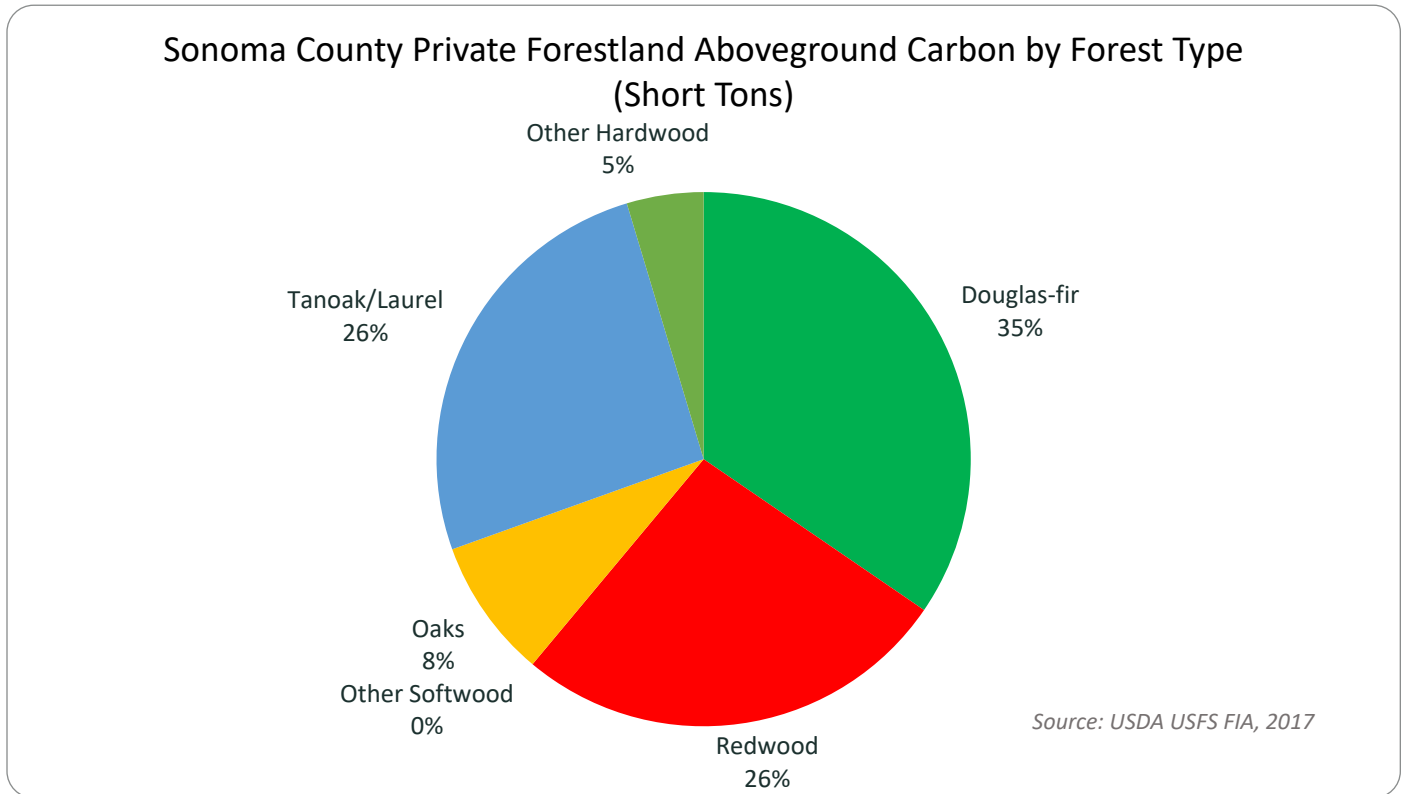


Figure 11. Sonoma County Private Forestland Carbon Inventory by Forest Type

Product/Service Flow Potential

There are 7 basic potential product/service flows used for estimating economic values of lands:

1. Volume flow for wood products
2. Biomass volume flow
3. Carbon credit services
4. Watershed health services
5. Recreational/Cultural
6. Easements
7. Avoided cost services (e.g., fire suppression, insurance, etc.)

For the purposes of this analysis, there are 6 forest/land use type to consider:

1. Douglas-fir
2. Redwood
3. Other Conifer
4. Oak

5. Tanoak/laurel
6. Other hardwood

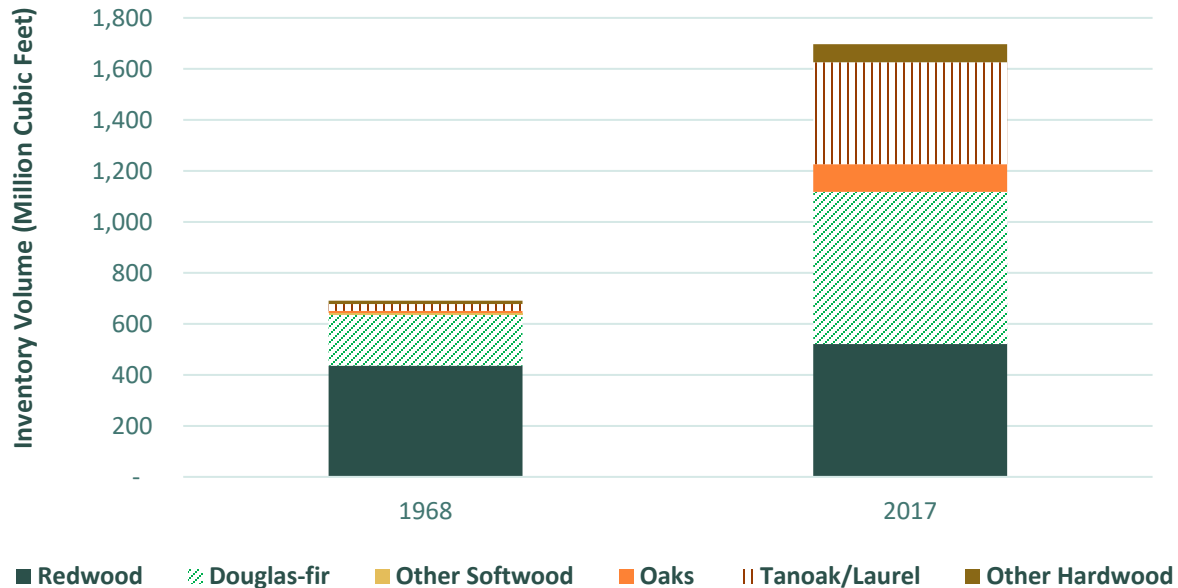
The different forest and land use types have varying opportunities to provide products and services as shown below:

Natural and Working Land Use Types	Product/Service								Land Value
	Ag	Wood Products	Bio-mass	Carbon	Watershed	Recreational/Cultural	Easements	Avoided Cost	
Conifer: Douglas-fir		X	X	X	X	X	X	X	X
Conifer: Redwood		X	X	X	X	X	X	X	X
Conifer: Other			X	X	X	X	X	X	X
Deciduous Woodland: Oak	X		X	X	X	X	X	X	X
Evergreen Woodland: Tanoak/Laurel	X		X	X	X	X	X	X	X
Woodland: Other			X	X	X	X	X	X	X
Agriculture	X		X	X	X	X	X	X	X
Vineyard	X			X	X	X	X	X	X
Grassland	X			X	X	X	X	X	X
Chaparral/Shrubland			X	X	X	X	X	X	X
Urban/Suburban				X	X	X	X	X	X

Figure 12. Product and Services by Forest and Land Use Type (source: EBAlive)

Volume flow for wood products

Sonoma County Inventory Volume on Private Lands by Forest Type



Source: USDA USFS

Figure 7. Sonoma County Inventory Volume on Private Land by Forest Type

While volume increment has remained similar between 1968 and the present, the composition of forest growth since 1968 has changed from primarily redwood types to Douglas-fir and tanoak types. This corresponds to the annual growth by forest type (Figure 12).

Managing the growth and inventory volumes on Sonoma forests to promote forest health and resilience will require more and different processing capacity than currently exists. Douglas-fir is a common species used for structural lumber, and current manufacturing capacity is insufficient to process more Douglas-fir at scale volumes. Currently, tanoak has limited commercial options. The most likely scale opportunity would be for biomass feedstock. Development of processing at scale would be required to handle volumes removed.

Sonoma County: Net Volume Increment on Private Land by Forest Type

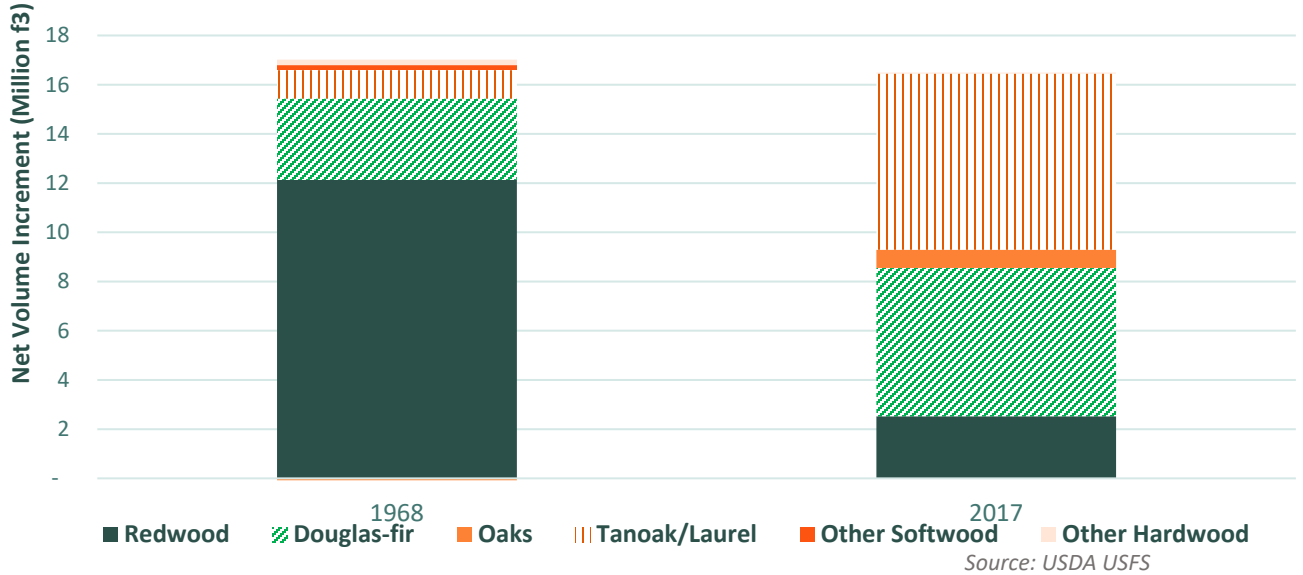


Figure 8. Sonoma County: Net Volume Growth on Private Land by Forest Type

Due to past harvest patterns, much of Sonoma County’s conifer stands were established 60+ years ago. Most of the growth in conifer stands occurs on that age class.

Sonoma County: Net Volume Increment on Private Land

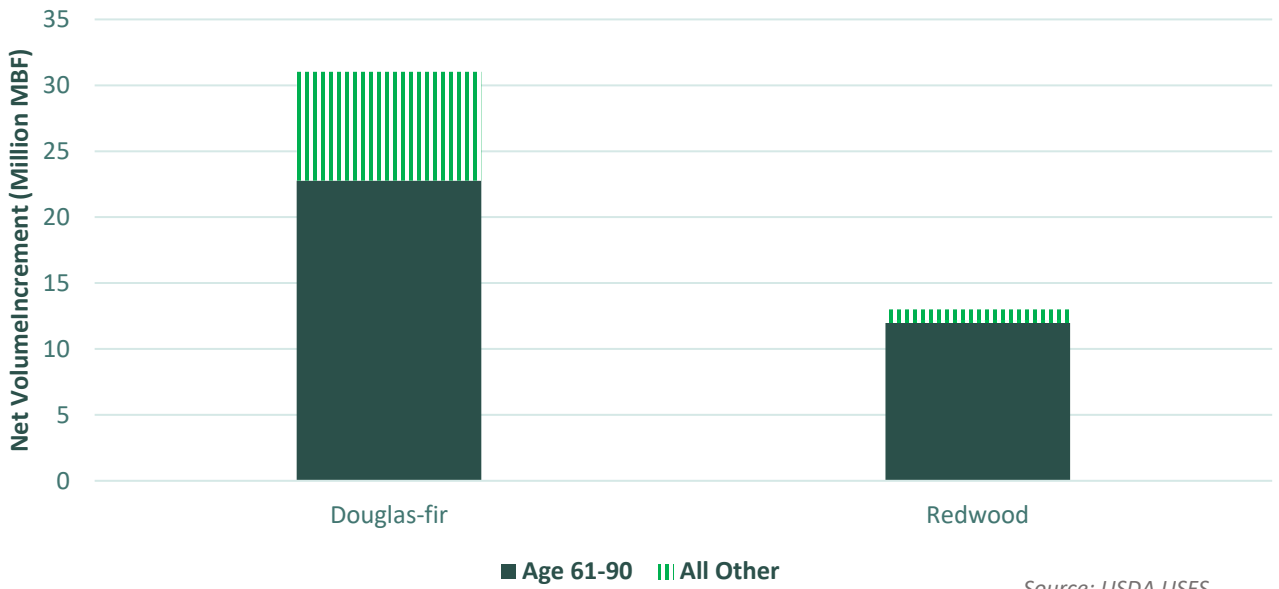


Figure 9. Sonoma County Net Volume Increment on Private Land

The notion of age classes is associated with even-aged forest management. While such management may have been practiced in the past, it is likely that uneven-aged management of conifers is the future. Over time, the forest will transition to state where there is a continuum of tree ages and sizes in a forest stand, rendering the notion of age classes moot.

Commercial harvest volume is only about 26% of estimated volume increment on Douglas-fir and Redwood forest types on private lands. It is not known how much of the volume growth that owners would want to make available, or how much of available volume would be economic.

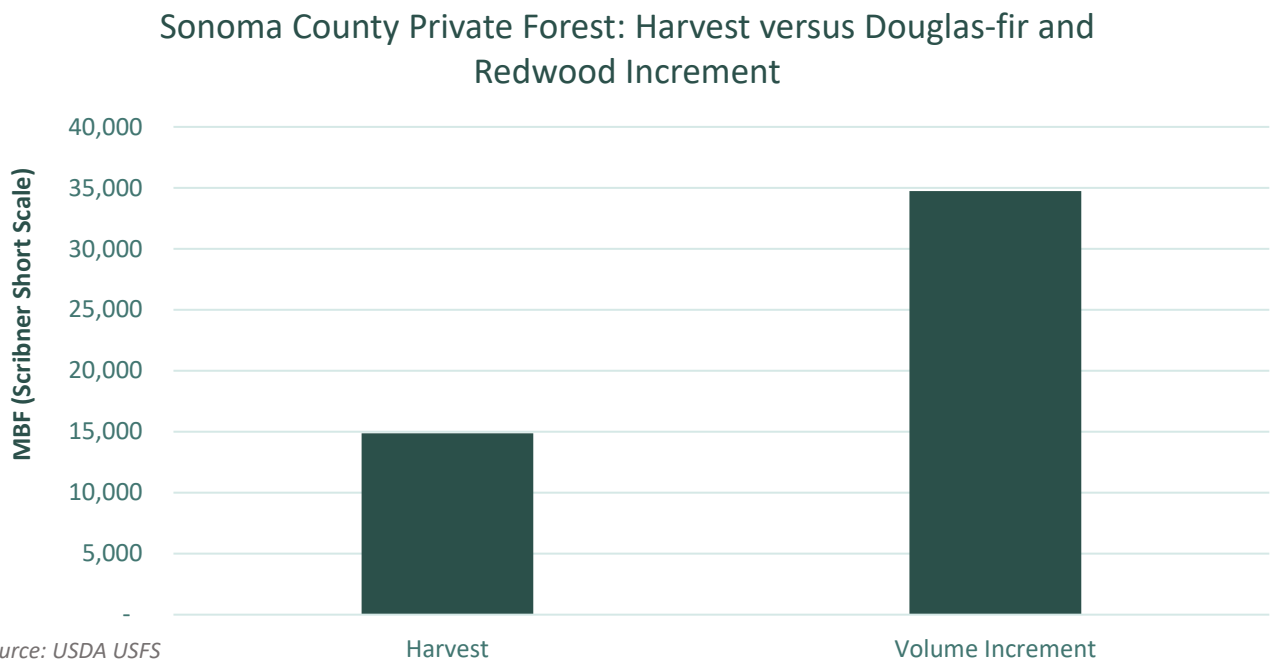


Figure 10. Sonoma County Private Forest: Harvest versus Douglas-fir and Redwood Increment

Commercial thinning in conifer stands in this age class would reduce fuel loads and concentrate volume on fewer, larger stems. There would need to be a marked increase in certified harvesting and processing infrastructure in order increase commercial thinning to anywhere near the current physical volume growth.

Biomass volume flow

Work done by the California Biomass Collaborative (Williams, 2015) indicates about 338,000 BDT/year of forest residues are available in Sonoma County. This number represents a physical, not necessarily an economic volume availability, and thus should be viewed as a maximum.

Assuming the current level of commercial harvest volume of 14,875 MBF/year assumed above, the amount of tanoak “come along” volume (volume that “comes along” with the commercial

softwood harvest) could be assumed at 20%. This would produce about 11,600 BDT/year of tanoak biomass volume (Table 1).

Commercial Harvest	Percent Tanoak Come along	GT/MBF	Tanoak			
			Green Tons/year	Green Tons per Dry Ton	BDT/year	MW
14,875	2,500	7.81	23,235	2	11,617	1.3
44,000	8,800	7.81	68,728	2	34,364	3.9

Table 4. Estimated Tanoak Come Along Biomass Volume

Assuming 8,750 BDT are needed to produce one MW of electricity, current harvest would yield about 40% of what would be needed for a small-scale (3 MW) biomass electrical generation facility, while harvesting current growth would provide 130% of the raw material needs for a 3 MW facility.

Using average tanoak stocking of about 4,800 f³/acre, and assuming 33% thinning removal to reduce fuel loads (1,600 f³/acre), about 275 acres/year would need to be thinned to provide for 1 MW. Assuming a 10 MW facility, an additional 2,500 acres/year would need to be thinned. In order to harvest growth, about 5,000 acre/year would need to be thinned, providing enough raw material for an 18 MW facility.

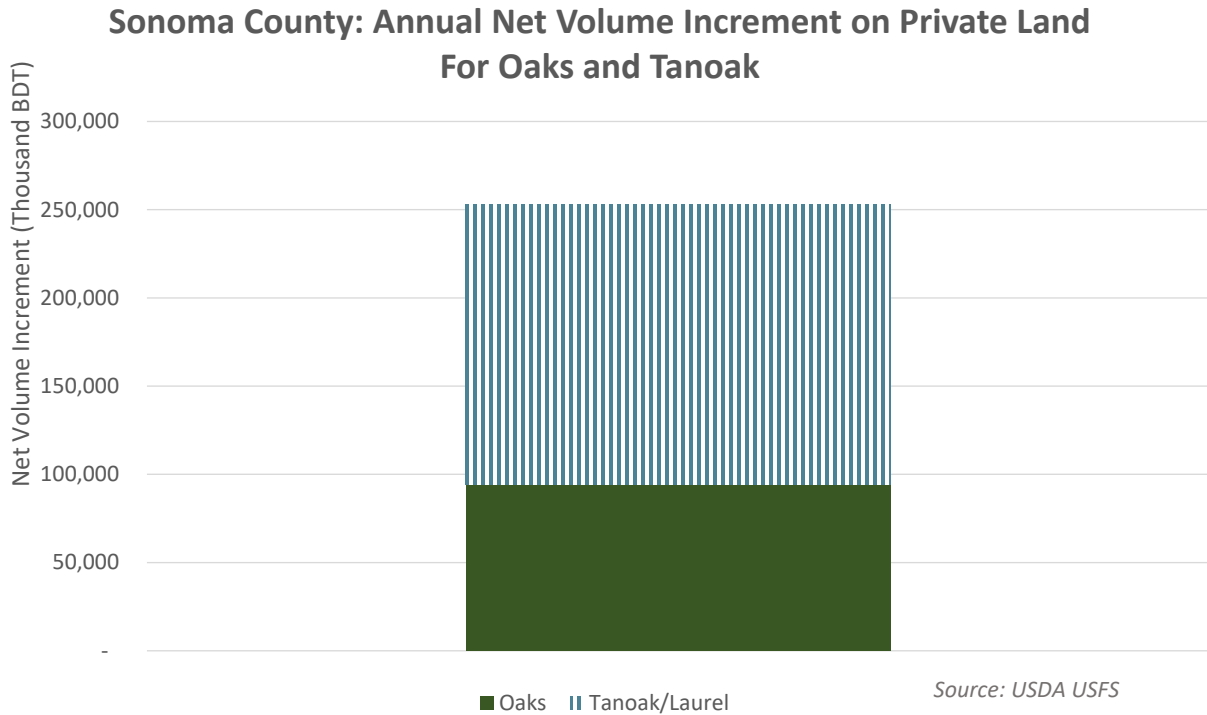


Figure 11. Sonoma County: Net Volume Increment on Private Land for Oak and Tanoak

Biochar is another option. The economics and logistics of scale biochar operations would be challenging, and were not quantified in this report.

Carbon credit services

Forest carbon accounting is a difficult and complex subject. This section will describe carbon credit services at a very simple, high level perspective.

Aboveground C (tons)	17,559,882			
Aboveground CO ₂ e	64,386,234		3.6667	
% realized by landowner organization	321,931		0.50%	
	\$ 4,185,105	\$	13.00	\$/ton

Table 5. Estimated Carbon Benefit

Note that recent prices for CO₂ were about \$15/ton (CARB, 2019)

Watershed health services

Maintaining a healthy forest cover improves watershed health by such services as reducing soil erosion, increasing infiltration and storage of stormwater, to name a few. Ag + Open Space estimates the annual values between \$44 and \$297 million (Sonoma County Ag + Open Space, 2018).

	Low	High
Water Supply and Quality	\$ 9,000,000	\$ 180,000,000
Wastewater Treatment	\$ 35,000,000	\$ 117,000,000
Total	\$ 44,000,000	\$ 297,000,000
% Private Forest		
40%	\$ 17,600,000	\$ 118,800,000
% Realized by Landowner Organization		
5%	\$ 880,000	\$ 5,940,000
Optimistic	\$ 5,940,000	
Pessimistic	0	

Table 6. Estimated Watershed Health Benefits

Avoided Cost Services

Tubbs Fire Example.

Acres	36,807	\$/acre	Annualized
Property loss	\$ 1,200,000,000	\$ 32,602	\$ 815.06
Suppression costs	\$ 100,000,000	\$ 2,717	\$ 67.92
Total	\$ 1,300,000,000		\$ 882.98
Annual	\$ 32,500,000	40	Fire cycle years
			% Realized by landowner organization
Benefit	\$ 3,250,000	10%	

Table 7. Estimated Avoided Cost Benefit

Sources: (Nelson, 2017), (Ortiz, 2018)

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Veg Mgmt meetings and stakeholders

Marin County Parks

Lake County Fire Protection District

Clear Lake Environmental Research Center for Lake County Risk Reduction Authority

Matt Greene Forestry & Biological Consulting

Pepperwood Preserve

Gold Ridge RCD

Sonoma RCD

Fire Safe Sonoma County, including:

- Sonoma RCD
- Gold Ridge RCD
- State Parks
- CalFIRE
- Gold Ridge Fire District Fire Safe Council
- Fire Safe Occidental, Sonoma Ecology Center
- SRJC
- Sonoma Land Trust
- Circuit Rider (Center for Social & Environmental Stewardship)
- Natural Resource Conservation Service (USDA)
- Taking Action for Living Systems
- Sonoma County Fire
- Audubon Canyon Ranch
- North Bay Conservation Corps
- Fire Safe Sonoma
- Laguna Foundation

D1, D3, D4 block captains

Fire Safe Occidental

Russian River MAC

Coast MAC

Springs MAC

Grove Street Fire Safe Council

Upper Mark West Fire Safe Council

Mayacamas Fire Safe Council

North Valley MAC

Coast Ridge Community Forest

Sonoma Land Trust

Jenner Headlands Preserve

Kashia tribal leadership

Santa Rosa Junior College

Landpaths

Raizes Collective

Latino Service Providers

Sonoma Clean Power

Veg Mgmt meetings and stakeholders

Conservation Corps North Bay

Circuit Rider (Center for Social & Environmental Stewardship)

Youth Ecology Corps (through Sonoma Water)

Sonoma Safe Agriculture Safe Schools

County departments and agencies

- Permit Sonoma
- Water Agency
- TPW
- GSD
- Office of Equity
- Ag + Open Space
- UCCE

The current *Sonoma County CWPP* was adopted by the board in 2016, before Sonoma County's wildfire landscape was forever changed in 2017. Permit Sonoma applied for and received HMGP funding to develop a Multi Jurisdiction Hazard Mitigation Plan (MJLHMP), and at the same time, update the CWPP to include new and more robust risk analysis and GIS data, and to annex it as the "Wildfire Chapter" of the MJLHMP.

CWPP Update: Permit Sonoma expects to have preliminary GIS Hazard Index data (which will identify areas where wildfire is likely to be damaging to human or ecological communities) by March of 2021. Risk and Values Indices, which incorporate stakeholder input as well as hard data, will follow. Steering Committee meetings are being scheduled for December 2020, with community stakeholder outreach to follow beginning in January, 2021. The final draft update will be complete and ready for annexation into the Multi-Jurisdiction Hazard Mitigation Plan by 03/18/22.

The Healthy Forest Restoration Act defined **three requirements for a Community Wildfire Protection Plan (CWPP)**:

- (1) Collaboration:** *Collaboratively developed with input from a large variety of stakeholders including but not limited to: community members, non-profit and other group cooperators, local agencies, state agencies, and federal agencies*
- (2) Prioritized Fuel Reduction:** *Identifies areas for hazardous fuel reduction and recommends types and methods of treatment*
- (3) Measures to Reduce Structural:** *Recommends measures to reduce the ignitability of structures*

- The collaborative CWPP process will allow for stakeholders to participate in the planning and prioritization of wildfire hazard risk reduction projects that can help our county adapt to wildfire.
- The CWPP will provide science-based assessments & GIS modeling to increase understanding of wildfire hazards across landscapes and communities.
- Provides opportunities for a variety of stakeholders to share views, concerns, define community assets, allowing for stakeholders to participate in the planning and prioritization of wildfire hazard risk reduction projects.
- Collaboration brings greater community and agency buy in
 - Builds robust relationships
 - Increases resource sharing and cooperation
 - Empowers communities to move forward to reduce risk
- Many wildfire grant programs give preference to projects that are listed in a CWPP. The CWPP will also help compiling data useful for grant writing.

Wildfire Mitigation Project Ranking Tool, Sonoma County CWPP, 2016. Project Example.

PROJECT NAME	Example	DATE	
Project Location	Sonoma County Hills	9.09.2019	
CONTACT NAME	Chainsaw Suzie		
Group or Agency	Hilly Fire Safe Council		
ADDRESS		<i>RANKING</i>	<i>30</i>
CITY, STATE ZIP		<i>APPROVED</i>	<i>YES</i>
PHONE		<i>APPROVED BY</i>	
EMAIL			

Fire History within 3 miles of project area	Number of Fires	Point Value
10 to 100 acre fires within the past 60 years:	1	1
More than 100 acre fires within the past 60 years:	2	4
Has project area been threatened (but not burned) by a major (>100 Ac.) fire within the past 60 years?	1	2
FRAP Fire Threat	Fire Threat	Point Value
	High	4
Response Times to project area	Response Time	Point Value
	21 to 30 min	4
Project area proximity to "Communities at Risk" to a wildfire	Number of communities	Point Value
At-Risk communities within 3 miles of project area	2	2

Fuels Reduction Efforts		Point Value
Will the project help Wildland-Urban Interface residents reduce wildfire risks directly within the 100' defensible space zone of homes, and along important egress and access routes?	Yes	1
Will the project indirectly protect homes near the project area?	Yes	1
Community Collaboration		Point Value
Are local Residents/groups involved?	Yes	1
Are Local Agencies involved?	Yes	1
Are State Agencies involved?	Yes	1
Are Federal Agencies involved?	No	0

Unique Local Criteria		Point Value
Does the project reduce structural ignitability through education or retrofit?	Yes	1
Does the project educate residents about fire, fire risks, vegetation management, ecosystem and forest health, structural vulnerability, and how to most efficiently reduce risks?	Yes	1
Does the project increase community safety through planning?	Yes	1

Wildfire Mitigation Project Ranking Tool, Sonoma County CWPP, 2016. Project Example.

Does the project include strategic fuel breaks that will protecting homes, communities and natural resources?	Yes	1
Does the project consider demographic trends of residents, such as age and language and handicaped individuals?	Yes	1
Will the project help large land holding managers and nearby residents to achieve mutually acceptable strategies for fuels management?	No	0
Will the project improve conditions and health in fire-prone ecosystems, especially in areas impacted by tree diseases, pathogens or insects, or in areas where native species are at risk because of changing conditions?	Yes	1
Will the project address management of fire-prone invasive plant species?	Yes	1
Will the project make use of woody biomass and other emerging technologies?	No	0
Does the project support and aid fire agencies in achieving their missions?	Yes	1

TOTAL RANKING: 30

Ranking	Priority
60-30	1
29-20	2
19-1	3

Comprehensive Fire Risk-Reduction Decision Support Program for Sonoma County

Background

In 2017 and 2018, Sonoma Water worked with Ag Innovations to reach out to public and private stakeholders, including UCCE, Northern Sonoma County Fire, CalFire, RCDs, Tribes, USACE, local landowners, and others, to begin planning for fire risk reduction in the Lake Sonoma watershed, a critical source of drinking water for over 600,000 residents of Sonoma and Marin counties. This program, called FireSmart Lake Sonoma, inspired partners, including UCCE, to request and receive funding through CALFIRE for various activities to reduce fire risk in the Lake Sonoma area as well as lands around Geyserville and Dry Creek. One of the findings of the FireSmart program was the need to have a way to identify where to apply limited resources to achieve the most benefit in terms of fire risk reduction. Through this effort, UCCE led the development of a decision support tool (DST) to help with a part of this need. The UCCE DST is intended to help landowners plan for and implement fuels reduction at the parcel scale within the Lake Sonoma Watershed as a pilot location. UCCE partnered with Pepperwood and Tukman Geospatial to enhance this tool and begin expanding it to the entire county.

Need for Comprehensive Decision Support Program

The UCCE DST represents good progress in supporting science-based decision making on a parcel level basis so that property owners will understand what type of vegetation management is most feasible and the planning level costs for mitigation measures. The DST does not, however, evaluate which areas on a watershed basis are of highest priority to protect built and natural assets. The proposed comprehensive program would build on UCCE's work and include the following elements that work together to support objective and transparent decision making for allocating public funds for watershed-scale fire risk reduction:

- Landscape-Level Decision Support: This component of the program will prioritize locations for vegetation treatment actions and analyze the future benefits of proposed treatment. This component will evaluate areas of high fire risk against built (e.g., roads, WUI density, water supply systems, telecommunications, etc.) and natural assets (e.g., streams, habitat, sensitive species).
- Parcel-Level Decision Support: This component provides for the outreach, training for use of the existing UCCE DST expanding coverage to incorporate the entire county.
- Stakeholder Process: Stakeholder engagement. Outreach and support to land managers and landowners.

Goals and Vision

Goals: Promote and accelerate effective vegetation management at the landscape and parcel scales through the use of decision support tools to: (1) ensure limited resources are directed towards projects that will advance the highest level fire risk reduction; (2) provide transparency in decisions regarding allocation of public funds; and (3) enable leveraging of local funds with third parties and grant funding opportunities.

Vision: Working in conjunction with the County's updated Community Wildfire Protection Plan, Local Hazard Mitigation Plan, and other related plans, the landscape-scale tool proposed would help identify locations within specified areas, watersheds, or Supervisorial Districts for vegetation management that would provide maximum fire risk reduction and other ecosystem services. The parcel-level tool would help landowners make site-specific management plans for fuels reduction based on appropriate techniques, costs, potential cost-share funding, and potential partners for carrying out the work. Together these tools provide a powerful pathway needed for decision-making from the regional scale down to the individual parcel scale to focus scarce resources for maximum benefits needed for community resilience.

The comprehensive decision support program proposed below includes both a landscape-level and a parcel-level decision support tool, coupled with a stakeholder process, to help prioritize areas for treatment; predict fire risk reduction resulting from those treatments; track treatment completed to reduce duplication of efforts; and help property owners (public and private) plan, fund, and implement projects on their properties.

Elements of Comprehensive Decision Support Program

Landscape-level Decision Support

This landscape-level tool would incorporate new modeling with existing data from local plans and other sources to create an interactive, updatable web-based tool for agencies and individuals to prioritize locations for treatments according to a wide range of criteria (public safety, forest health, transportation, utilities, water resources, habitat), identify treatment types, and track current vegetation management activities. Local agencies and land managing entities would be able to propose vegetation management treatments by location and compare benefits among them, enabling a science-based, justifiable decision-making process for allocating resources for the greatest benefit. This helps entities identify the biggest "bang for the buck" activities and locations for their projects. This tool would be developed to complement and work in conjunction with the Sonoma County Community Wildfire Protection Plan, Local Hazard Mitigation Plan, and other local planning efforts.

Project Lead: Sonoma Water

Partners: County, UCCE, Ag+OS, Conservation Biology Institute, Pepperwood, Tukman Geospatial

Estimated Cost: \$1M

Parcel-Level Decision Support

This parcel-level tool enables private and public landowners to build a vegetation management prescription for their parcels, including potential treatments, locations, costs, and funding sources from partners, such as the Natural Resources Conservation Service. This tool is near completion by the UCCE for the Lake Sonoma watershed, as funded by a CAL FIRE Fire Prevention Grant in cooperation with Sonoma Water's FireSmart Program, UCCE will conduct outreach to Lake Sonoma watershed, working with several landowners to pilot test the tool. Due to a partnership with Pepperwood, the extent of the mapper tool has been extended to all parcels greater than 2 acres throughout Sonoma County. However, additional funding is needed to expand outreach to landowners beyond the Lake Sonoma Watershed. This effort would include property owner outreach, training, and technical assistance to help property owners plan, fund, and implement projects on their land.

Project Lead: UC Cooperative Extension

Partners: Pepperwood, NRCS, Conservation Biology Institute, Tukman Geospatial, Circuit Rider, Santa Rosa Junior College

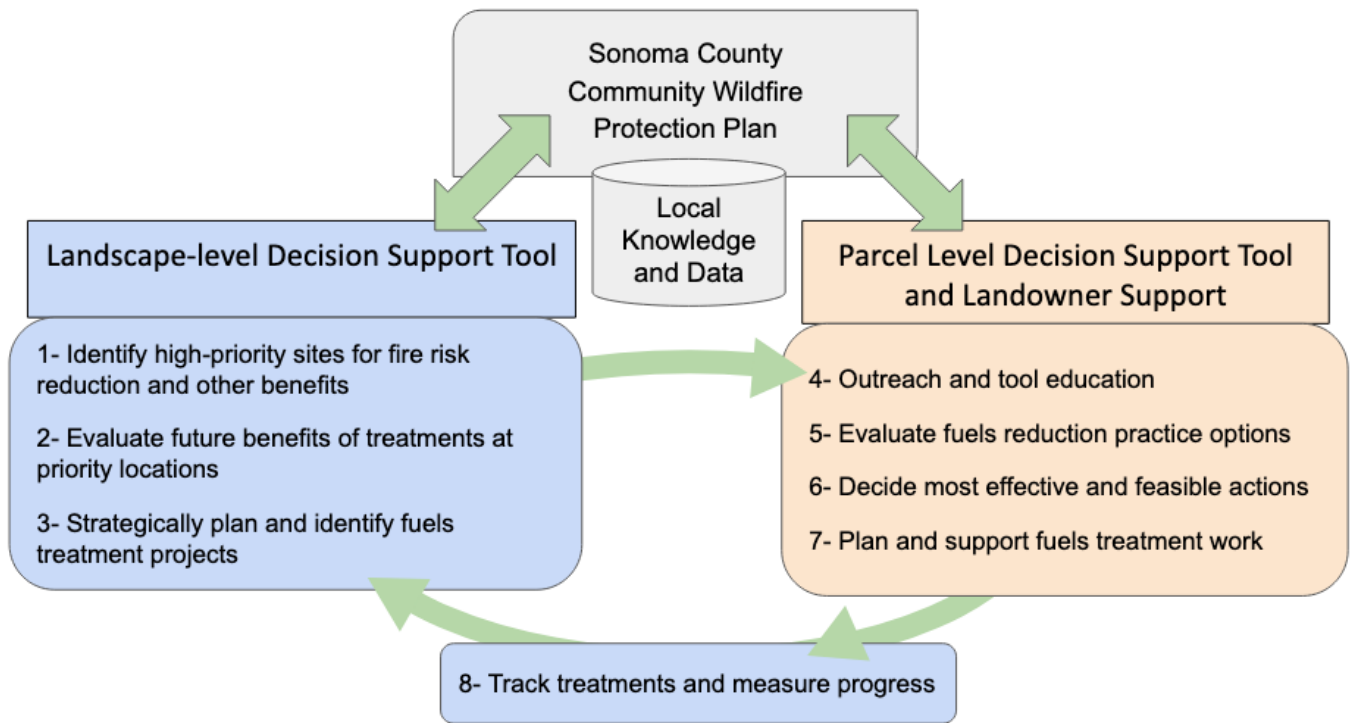
Estimated Cost: \$600,000 for 3 years

Stakeholder Process

A collaborative and inclusionary stakeholder process is an important element to comprehensive decision support program. Input from stakeholders and community will be incorporated with emphasis on local knowledge and data to develop prioritization criteria in the tool-building phase. An extensive outreach and training effort will be conducted by UCCE and partners to enable use.

Benefits and Linkages

- CWPP Implementation: Program provides decision support to implement CWPP recommendations. (see graphic below)
- Science and Data: Designed to be updatable; based on best-available science and data.
- Agency and Partner Coordination: Incorporates local knowledge and stakeholder priorities through collaborative program for integration, consistency, and to avoid duplication of effort.
- Tracking: History of activities and tracking features for measuring efforts and effectiveness.
- Community & Stakeholder Involvement: Robust community education and outreach is afforded through the development and use of common shared tools. These tools reflect stakeholder input and criteria, priorities also prioritize actions to guide community involvement and expansion of workforce development.



The two proposed tools, along with UCCE’s coordination with landowners to help implement vegetation management projects, provide a science-based pathway from planning to implementation.

Para: Junta de Supervisores del Condado de Sonoma

Nombre(s) del departamento(s)/agencia: Oficina del Administrador del Condado

Nombre del personal y número de teléfono: Christel Querijero 565-70, Yvonne Shu, 565-1739

Requisito de voto: Mayoría

Distrito de supervisión: Todos

Título:

Actualización de la asignación del manejo de la vegetación de los fondos del acuerdo de PG&E y recomendaciones iniciales

Acción recomendada:

Reciba información actualizada sobre el manejo de la vegetación y las recomendaciones iniciales para la asignación

Resumen ejecutivo

El 6 de octubre de 2020, la Junta de Supervisores asignó \$ 25 millones del acuerdo de PG&E para el manejo de la vegetación. Con más de la mitad del área del condado (514,000 acres) ocupada por tierras arboladas y bosques públicos y privados, años de sequía más frecuentes y una temporada de incendios más larga, identificando cómo priorizar este financiamiento único limitado para una necesidad interminable como la vegetación la gestión requerirá la consideración de proyectos de implementación a corto plazo versus un enfoque medido para proyectos futuros. Este artículo proporciona una actualización sobre el manejo de la vegetación en general y un breve resumen de las reuniones realizadas durante las últimas seis semanas con las partes interesadas de la comunidad y del departamento / agencia del condado. Finalmente, se discute un enfoque propuesto para la asignación de estos fondos.

Discusión:

Antecedentes

Acuerdo de conciliación

El litigio de la Junta de Supervisores del Condado de Sonoma contra Pacific Gas & Electric para recuperar los daños relacionados con los Incendios del 2017 conocidos como Sonoma Complex Fires, 2017) resultó en una asignación de \$149'3 millones de dólares. El 11 de agosto de 2020, su Junta recibió información de los antecedentes sobre el impacto fiscal y los daños en los que incurrieron las entidades del condado de Sonoma a raíz de los incendios de 2017. Como parte de esta discusión, su Junta ordenó al personal que aceptara las opiniones de la comunidad y que retroalimentaran a la Junta para considerar la asignación de los fondos del acuerdo en categorías de gastos generales. El 6 de octubre de 2020, el personal presentó un resumen de los comentarios de la comunidad para consideración de la Junta. En la reunión del 6 de octubre ^{su} Junta asignó \$ 25 millones de dólares del acuerdo, para los esfuerzos en el manejo de la vegetación. Desde entonces, el

personal se ha reunido con una amplia gama de partes interesadas, desde organizaciones no gubernamentales (ONG), grupos comunitarios y departamentos / agencias del condado para comprender el trabajo actual de manejo de la vegetación y obtener prioridades.

Descripción general: gestión de la vegetación

El Condado de Sonoma y su población continúan enfrentándose al riesgo de incendios forestales, debido, por ejemplo, a casas construidas sin materiales y prácticas de construcción resistentes al fuego, insuficiente espacio defendible, uso de suelo residencial en áreas silvestres y combustibles vegetativos excesivos dentro y cerca de áreas residenciales y en bordes de carreteras. CAL FIRE designa tres tipos de clases de Interfaz Urbana-Rural (WUI por sus siglas en inglés), que se definen por ciertas condiciones donde se construyen las viviendas, con la siguiente distribución estimada en el condado de Sonoma (Anexo 1):

Clase WUI	Población incorporada / ciudad	Condado de Sonoma aledaño
Interfaz Urbana-Rural: viviendas densas adyacentes a la vegetación que pueden quemarse en un incendio forestal	22,111	9,577
Mezcla intermedia Urbana-Rural: desarrollo de viviendas intercaladas en un área dominada por vegetación forestal sujeta a incendios forestales	8,130	19,329
Zona de influencia de incendios forestales: vegetación susceptible a incendios forestales hasta 1,5 millas de Interfaz Urbana-Rural o Mezcla intermedia Urbana-Rural	25,683	73,436

Los bosques y tierras arboladas públicos y privados ocupan más de la mitad del área del condado, o 514,000 acres; el 87% de esa tierra son pequeñas parcelas privadas o de ONG, y el 13% restante en manos de propietarios públicos (informe *EB Alive*, Anexo 2). Los patrones de uso y desarrollo de la tierra facilitados por la regulación y la política del uso de la tierra han colocado una extensa infraestructura residencial en lugares que los incendios recientes han puesto en grave riesgo, y se espera que este riesgo continúe y aumente en el futuro. Además, se espera que el cambio climático cambie la frecuencia y extensión de los incendios, debido a los años de sequía más frecuentes y las temporadas de incendios más prolongadas.

El manejo de la vegetación es la alteración intencional de la vegetación con el fin de reducir el riesgo de incendio y facilitar la capacidad de controlar que un incendio se propague de un área a otra. El manejo de la vegetación también se realiza con fines de seguridad y extinción de incendios, como el mantenimiento de rutas seguras para las

evacuaciones y el acceso de vehículos de emergencia. Finalmente, el manejo de la vegetación puede ocurrir por razones no relacionadas con los incendios, como la restauración ecológica, el manejo de la madera, agricultura y la horticultura. Es un componente clave para reducir el riesgo de incendio, pero funciona junto con otras medidas, como las medidas de seguridad en los hogares.

Más específicamente, la gestión de material combustible se lleva a cabo para reducir la intensidad y la propagación de los incendios, de algunas formas principales como:

- El “manejo de material combustible cerca del hogar” dentro de los 100 pies de los hogares (espacio defendible) se realiza para reducir la probabilidad de que la quema de árboles, arbustos y otros materiales combustibles no propaguen el fuego desde las áreas circundantes hasta el hogar.
- El "manejo de material combustible a escala de paisaje" ocurre en bosques, matorrales u otras áreas más grandes, donde el propósito principal es reducir este material para reducir la intensidad, limitar el potencial de propagación de incendios forestales y aumentar la posibilidad de que los bomberos puedan apagar un incendio si éste comienza. Otro propósito de este tipo de manejo es mejorar la salud forestal, el hábitat y los “valores naturales” (por ejemplo, la calidad y retención del agua) que proporcionan los paisajes silvestres. Los proyectos a gran escala suelen utilizar una serie de métodos de tratamiento.
- El manejo de material combustible en la carretera mantiene la visibilidad y la seguridad vial. Los árboles se eliminan porque representan un riesgo de caer en la calle o porque están impactando la superficie de la calle de alguna manera. El manejo de material combustible en las carreteras es especialmente importante para reducir el riesgo de ignición en las carreteras y para proporcionar acceso a la seguridad pública en caso de evacuación.

El manejo de la vegetación generalmente se logra con uno o más de los siguientes métodos:

1. Alteración mecánica. Cortar, cavar, segar, despejar con herramientas manuales o equipo mecanizado para eliminar físicamente la vegetación de un área, por ejemplo, cortar pastizales para eliminar el material combustible fino, eliminar mecánicamente los arbustos y árboles del sub-dosel (combustibles de "escalera"), etc. Esto incluye los descansos sombreados de material combustible, que son franjas de bosque a las que se les ha tratado extensamente el sotobosque y el dosel para eliminar todo menos la mínima cantidad de vegetación para conservar la sombra. Estos descansos pueden ralentizar considerablemente la trayectoria de los incendios forestales y proteger hogares o comunidades enteras. Este método se utiliza con frecuencia para el manejo de espacios defendibles, dentro de los 100 pies de las casas.
2. Prácticas de gestión de la madera. Es un subconjunto de alteración mecánica, pero incluye varias prácticas de manejo de la madera, como la tala selectiva, la liberación de árboles y diferentes enfoques y técnicas de manejo forestal para tipos de bosques o especies forestales particulares. Un manejo forestal sostenible, que equilibra las

necesidades ambientales, de vida silvestre y de la comunidad, incluye el manejo de la madera.

3. Fuego prescrito. Introducir o reintroducir incendios prescritos (intencionales y gestionados) en una comunidad vegetal en particular para reducir las cargas de material combustible, mantener un tipo de comunidad beneficiosa, por ejemplo, un bosque abierto frente a un bosque denso con exceso de existencias, etc. Este método es generalmente más rentable cuando se realiza a mayor escala.
4. Pastoreo prescrito. Introducir o reintroducir el pastoreo prescrito (intencional y administrado), generalmente por especies no nativas como ganado, ovejas o cabras, en una comunidad vegetal en particular, generalmente para reducir o manejar el material combustible fino.
5. Conversión de tipo permanente. Es otro subconjunto de alteración mecánica, pero el propósito es reemplazar un tipo de vegetación por otro, por ejemplo, convertir pastizales naturales a un uso agrícola menos inflamable como pastos irrigados o viñedos; crear y mantener áreas de descansos en suelo desnudo, etc.

Modelos de financiación

El manejo de la vegetación requiere una inversión continua, ya que la vegetación volverá a crecer independientemente de las limitaciones de financiación. Los diferentes enfoques para un modelo de financiación sostenible se analizan brevemente a continuación.

Autoridad de Prevención de Incendios Forestales de Marin. Los residentes del Condado de Marin aprobaron un impuesto a las parcelas en marzo de 2020 para financiar una nueva autoridad de poderes conjuntos (JPA por sus siglas en inglés), la Autoridad de Prevención de Incendios Forestales de Marin (MWPA por sus siglas en inglés). El impuesto especial a las parcelas, que requirió dos tercios de los votos, proporcionará alrededor de \$20 millones de dólares anuales a la organización, compuesta por 17 agencias y formada para apoyar el desarrollo e implementación de una iniciativa integral de prevención de incendios forestales y preparación de emergencias. Específicamente, los ingresos se designan de la siguiente manera:

- 60%: manejo de vegetación, detección de incendios forestales, planes y alertas de evacuación, subvenciones y educación pública;
- 20%: evaluaciones de espacios defendibles y estructuras resistentes al fuego, mitigación de amenazas de incendio de los mismos
- 20% de esfuerzos de prevención de incendios forestales específicos a nivel local
- 10%: costes administrativos

La tasa del impuesto a las parcelas para el año fiscal 2020-21 es de \$0.10 centavos por pie cuadrado de edificio para la mayoría de los tipos de edificios, \$75.00 dólares por unidad para edificios residenciales multifamiliares de tres o más unidades, y \$25.00, \$100.00 o \$150.00 dólares para tarifas de parcelas no mejoradas, según el tamaño de la parcela. El impuesto máximo por año para cada tipo de propiedad se ajustará para reflejar cualquier aumento en el Índice de Precios al Consumidor (IPC) más allá del primer año fiscal. El

aumento será el menor del tres por ciento del IPC, calculado desde febrero del año inmediatamente anterior hasta febrero del año en curso.

Autoridad de Reducción de Riesgos Comunitarios del Condado de Lake. La Autoridad de Reducción de Riesgos de la Comunidad del Condado de Lake, otra JPA, fue creada bajo el Código del Gobierno de California en 2018 y modificada en 2019 para "mejorar la protección del hogar y la propiedad para los residentes del Condado de Lake y para apoyar el desarrollo continuo de la resiliencia local a través de mejores recursos, herramientas y información para asistir a entidades públicas y privadas". Sus agencias participantes incluyen múltiples distritos de protección contra incendios y un distrito de protección de cuencas. Sin embargo, a diferencia del condado de Marin, la Autoridad de Reducción de Riesgos de la Comunidad del Condado de Lake busca apoyar sus objetivos a través de subvenciones, donaciones y posibles alianzas con organizaciones como la Autoridad de Terremotos de California, la Comisión Blue Ribbon y organizaciones locales. Las funciones de la Autoridad de Reducción de Riesgos de la Comunidad del Condado de Lake incluyen:

- Desarrollo de recursos de bajo costo o sin costo para reducir los riesgos de incendio por vegetación peligrosa, terremotos y causas ambientales;
- Desarrollo de mejoras de infraestructura comunitaria;
- Desarrollo de programas de inspección de propiedades y herramientas de calificación y evaluación para priorizar el nivel de riesgo individual y comunitario;
- Desarrollo y gestión de las fuentes de financiación necesarias para los programas de reducción de riesgos de la Autoridad;
- Desarrollo de herramientas educativas y de capacitación para ayudar a las autoridades, el público y las agencias gubernamentales no miembros a descubrir, evaluar y reducir los riesgos asociados con incendios y otros desastres, y mitigar los impactos potenciales.

Prevención de incendios forestales del Condado de Sonoma, operaciones de alerta y respuesta de emergencia y ordenanza de impuestos sobre el uso. Su Junta respaldó una medida de impuestos sobre las ventas por incendio (Medida G) que se incluyó en la boleta electoral de marzo de 2020, que habría establecido un impuesto sobre las ventas del medio por ciento para proporcionar fondos para servicios de desastres y incendios y mejoras en el Condado de Sonoma. Lamentablemente la medida perdió un 1,83%. La medida del Condado había identificado 3.74% de los ingresos específicamente para el manejo de la vegetación, equivalente a \$1.5 millones de dólares anuales. Durante las audiencias presupuestarias de este año, su Junta asignó \$ 500,000 para explorar la viabilidad en el condado de Sonoma de un impuesto a las ventas para la boleta de otoño de 2021, que incluiría algunos fondos para el manejo de la vegetación.

Defensa legislativa y subvenciones. Otro enfoque de financiamiento para el manejo de la vegetación es buscar subvenciones o presionar a los legisladores, los cuales requieren que el personal lo haga de manera consistente. Si bien el condado de Sonoma ha logrado obtener fondos del Programa de subvenciones para mitigación de peligros (HMGP) de la Agencia Federal para el Manejo de Emergencias (FEMA), el ciclo de vida de una

subvención requiere muchos recursos y requiere una consideración cuidadosa de la capacidad del personal antes de buscar financiamiento externo.

Se encargó un informe llamado: "Guía para la planificación de recuperación y resiliencia en los ecosistemas forestales del condado de Sonoma" (Anexo 2), y EB Alive cita varias opciones de organización, incluidos distritos especiales y la creación de un distrito de salud forestal. Un distrito especial no empresarial se financia principalmente a través de impuestos sobre la propiedad y evaluaciones, mientras que un distrito especial empresarial se financia principalmente a través de tarifas por servicio. Sería necesario aclarar si existe la autoridad legal para autorizar la formación de un distrito de salud forestal.

Un fondo de dotación para el manejo de la vegetación, aunque atractivo en concepto como una fuente de financiamiento perpetua, se ve obstaculizado por la ley de California que restringe las opciones de inversión del condado que producen tasas de rendimiento generalmente bajas. Por ejemplo, a una tasa de interés del 1%, el retiro máximo de una inversión de \$20 millones sería de \$140 000 dólares por año.

Gestión de la vegetación en la comunidad

Durante las últimas seis semanas, el personal ha celebrado 31 reuniones discretas, que han incluido aproximadamente 120 partes interesadas que representan a más de 35 entidades (Anexo 3). Muchas de estas reuniones fueron sesiones de escucha para comprender los tipos de actividades y necesidades de manejo de la vegetación que existen en la comunidad. En términos generales, estos grupos y organizaciones comunitarias representan a los consejos locales y de vecindario, organizaciones de desarrollo de equipos de trabajo / vocacionales y de conservación / investigación. Numerosas organizaciones de la comunidad participan en actividades para manejar la vegetación y representan una oportunidad para desarrollar la capacidad para abordar la gestión de la vegetación en el condado.

Comunidad

A menudo, en colaboración con Fire Safe Sonoma, los consejos comunitarios de seguridad contra incendios (p. Ej., *Occidental, Grove Street, Upper Mark West*) y los consejos asesores municipales (p. Ej., *Coast MAC, Springs MAC*), organizan e involucran a sus respectivas comunidades para que conozcan y se preparen en caso de incendios forestales. *Fire Safe Sonoma*, en su capacidad de recurso de información y educación sobre prevención y seguridad contra incendios, sirve como un paraguas organizador para muchos de estos grupos. A través de subvenciones principalmente, estos grupos persiguen iniciativas que tienen un vínculo directo con sus vecindarios, como el desarrollo de planes comunitarios hiperlocales de protección de la vida silvestre o programas de divulgación.

Mientras que muchos residentes están tomando medidas proactivas para reducir los peligros de la vegetación en sus propiedades, otros no lo hacen y esta falta de acción afecta la seguridad general de un vecindario. De acuerdo a estos grupos de vecinos, se necesita más cumplimiento en las propiedades que presenten condiciones peligrosas, así como saber a quién llamar si hay problemas.

Un factor que contribuye puede ser la falta de conocimiento de las normas existentes; una orientación clara y coherente sobre el manejo de la vegetación y la comunicación eficaz de la orientación se citan como una necesidad a nivel local y comunitario. Se necesitan adicionales alcances y educación para ayudar al cumplimiento tanto de los rezagados, como a aquellos que no saben por dónde empezar con el manejo de la vegetación.

Algunos grupos comunitarios tienen equipos voluntarios que abordan proyectos de manejo de la vegetación de forma regular, pero afirman que podrían beneficiarse de la orientación general al respecto. También consideran que la disponibilidad del servicio de astillado es fundamental para sus esfuerzos para reducir los peligros de la vegetación. Otras prioridades para estos grupos locales son mantener las rutas de entrada/salida, y el establecimiento y mantenimiento cuidadosos de los descansos sombreados de material combustible. Con una mayor parte de personal voluntario, estos grupos a menudo tienen los recursos humanos para solicitar la financiación de subvenciones, pero no los recursos financieros para dichas subvenciones requeridas. Algunos grupos también expresaron su interés en comprar equipos que podrían ayudar a eliminar la biomasa leñosa (es decir, extremidades, agujas, hojas y partes leñosas más pequeñas de los árboles.)

Desarrollo de la fuerza de trabajo

Santa Rosa Junior College (SRJC) ofrece actualmente cuatro programas de desarrollo de la fuerza laboral (reducción y prevención de incendios, recursos naturales, ciencia animal, diseño de paisajes/construcción de paisajes y mantenimiento) enfocados en mitigar los incendios forestales y proteger los hogares a través de la gestión de la vegetación y el paisajismo resistente al fuego. Los programas abordan las diversas estrategias para la mitigación de incendios forestales a través de la gestión de la vegetación: paisajismo resistente al fuego y la creación de espacio defendible; pastoreo de ganado; arboricultura; reducción de material combustible tipo escalera; hidrología de cuencas hidrográficas; mejorar la salud del suelo y de las plantas; preparación para las quemadas prescritas; erradicación de especies invasoras; y la restauración ecológica. Con fondos adicionales, SRJC podría aumentar sus programas de fuerza de trabajo para capacitar a 300 estudiantes durante los próximos tres años, aprovechando sus asociaciones con organizaciones que sirven a residentes desfavorecidos del condado de Sonoma para reclutar nuevos estudiantes en el programa. SRJC también ha iniciado conversaciones con el Campo de Libertad Condicional del Condado de Sonoma sobre futuras asociaciones en capacitación en manejo de la vegetación.

La oficina de libertad condicional del Condado de Sonoma, cuyas cuadrillas de adultos supervisadas (SAC por sus siglas en inglés), han proporcionado el manejo de la vegetación

para el transporte y las obras públicas, parques regionales, la Agencia de Agua del Condado de Sonoma, la ciudad de Windsor, la ciudad de Santa Rosa y CalTrans, está en la fase exploratoria de la integración de la formación profesional y el desarrollo de la fuerza laboral en SAC o sus campamentos de libertad condicional.

Organizaciones como *Conservation Corps North Bay*, *Circuit Rider* (también conocido como el Centro de Administración Social y Ambiental) y el Cuerpo de Ecología Juvenil del Condado de Sonoma, se asocian con agencias de gestión de tierras, como Sonoma Water y Regional Parks, para proporcionar experiencia laboral remunerada a los jóvenes adultos a través del manejo de la vegetación y el trabajo ambiental. Los proyectos incluyen la creación de espacios defendibles y descansos sombreados de material combustible, corte de hierbas estacionales, eliminación de especies invasoras, reducción de incendios y actividades de mitigación de inundaciones y restauración de arroyos, entre muchas otras. Estas organizaciones proporcionan valiosa capacitación laboral, servicios de apoyo, habilidades de preparación para el trabajo y posibles trayectorias profesionales a los jóvenes locales, incluidos los jóvenes en riesgo. Además, están ayudando a desarrollar una futura fuerza laboral que pueda satisfacer la creciente demanda de servicios de gestión de vegetación en el condado. Con contratos consistentes de desarrollo de la fuerza de trabajo, estas organizaciones podrían proporcionar más capacitación y experiencia a aquellos que podrían beneficiarse más de estas oportunidades.

Conservación/Investigación

Los Distritos de Conservación de Recursos (RCD, por sus siglas en inglés) proporcionan asistencia en las necesidades de conservación basadas en la tierra. A nivel local, los RCD Gold Ridge y Sonoma proporcionan asistencia técnica forestal, desarrollo de planes de manejo forestal y educación sobre manejo forestal. Sin un plan de manejo forestal, los propietarios generalmente no califican para el financiamiento de costo compartido del Departamento de Agricultura de los Estados Unidos (USDA) y CAL FIRE. El plan de manejo forestal está escrito por un guardabosque profesional registrado, y actualmente Gold Ridge y Sonoma RCD comparten un guardabosque.

Más recientemente, la Fundación *Rebuild North Bay* se ha asociado con cinco distritos de conservación de recursos en los condados de Sonoma, Mendocino, Lake y Napa para desarrollar e implementar un programa regional de incentivos para los propietarios, el Programa de Mejora forestal de North Bay (NBFIP). Su intención es ayudar a los pequeños propietarios forestales no industriales con menos de 500 acres a llevar a cabo tratamientos de material combustibles y proyectos de restauración forestal en sus propiedades. Como una nueva iniciativa que se espera que crezca para satisfacer la demanda local, NBFIP podría extender sus incentivos a más propietarios con más financiamiento. Se espera que el programa comience en enero de 2021 y se ejecute durante tres años.

Pepperwood Preserve se basa en la ciencia y es un socio para muchas organizaciones de conservación y gestión de la tierra en el condado. *Pepperwood* administra una reserva

biológica de 3.200 acres, que es el hogar de más de 900 especies de plantas y vida silvestre. Utilizando los datos recopilados en la reserva, son capaces de rastrear y recopilar datos sobre los bosques y el clima, por ejemplo. La Extensión Cooperativa de la Universidad de California (UCCE) y Sonoma Water se están asociando actualmente con *Pepperwood Preserve* para expandir el programa piloto del mapeador de datos de combustibles a todo el condado.

Actividades de Manejo de Vegetación dirigidas por el Condado

Múltiples departamentos y agencias del Condado trabajan en diferentes aspectos del manejo de la vegetación:

- *Permit Sonoma*: para astillar cerca de casas y carreteras; inspecciones y reducción de propiedades que no cumplen con requisitos; coordinar proyectos de gestión de combustibles con los miembros de la comunidad; educación y divulgación
- Transporte y Obras Públicas: gestión de la vegetación en carretera
- *Ag + Open Space District*, Parques Regionales, Sonoma Water: gestión de combustibles y proyectos de mejora de servicios ecosistémicos en y cerca de tierras silvestres y cuencas hidrográficas; divulgación y educación
- UCCE: programa de pastoreo, herramienta de apoyo a la toma de decisiones del mapeador de material combustible, divulgación y educación

En 2020, el condado actualizó la ordenanza de incendios del condado para mejorar el Programa de Manejo de Vegetación con incentivos, protocolos de inspección y reducción, y fondos apropiados. Además, el condado continuó fomentando la conciencia y la comprensión de la comunidad sobre nuestro paisaje adaptado al fuego y el valor de convertirse en una comunidad resiliente adaptada al fuego utilizando los resultados de la supervisión e investigación post-incendio. Las acciones clave en 2020 incluyen:

- Aumentar el programa anual de Inspección y Reducción de Vegetación Peligrosa y Material Combustible mediante la actualización de la ordenanza de combustibles peligrosos. La actualización del Capítulo 13A fue adoptada el 9 de junio de 2020.
- Ampliación del programa anual de astilladoras de 6 meses a 11 meses por año.
- Actualización de materiales educativos y de notificación a través de socios *Sonoma Ecology Center* y *Fire Safe Sonoma* para la temporada de inspección 2020.
- En marzo de 2020, el Condado recibió la Fase 1 (fase de planificación) de una subvención de \$6.8 millones de dólares del Programa Federal de Subvenciones de Mitigación de Peligros de la Agencia Federal para el Manejo de Emergencias (HMGP, por sus siglas en inglés) para un programa de Seguridad en los Hogares Adaptados a Incendios y Espacio Defendible. Bajo el programa de subvenciones, las inspecciones espaciales defendibles se llevarán a producir en áreas designadas del condado, seleccionadas para la subvención en función de la densidad de población, proximidad a zonas de alta/muy alta gravedad del incendio, áreas que no se habían quemado recientemente (debido al componente espacial defendible) y examinadas por jefes de bomberos locales. Más tarde, estos propietarios pueden recibir asistencia financiera para hacer las mejoras necesarias a través del programa de subvenciones mediante la contratación con un contratista con

licencia identificado en la fase 1. (Dos de las áreas seleccionadas se han quemado posteriormente desde la concesión de la subvención, y *Permit Sonoma* está trabajando actualmente con CalOES para determinar cómo proporcionar beneficios de subvención a las comunidades que han perdido un número significativo de hogares.) Se estima que la implementación del espacio defendible incluye 550 paquetes a un costo promedio máximo por paquete de \$3,750, por un costo total de \$2,062,500 dólares. Los incentivos de cuota de costos se ofrecerán "por orden de llegada, con un monto máximo que se otorgará por área geográfica para proporcionar una distribución justa de la financiación a aquellos cuyas propiedades son las últimas en ser inspeccionadas".

- *Permit Sonoma* presentó una solicitud completa al programa de subvenciones de Infraestructura Resiliente para Edificios y Comunidades (BRIC) de FEMA en diciembre de 2020, después de la aceptación de su aviso de Intención para solicitar en noviembre. Bajo la solicitud, el condado está solicitando la cantidad máxima de \$50 millones de dólares (requiriendo una coincidencia de subvención local del 25%, o \$12.5 millones) para construir sobre el trabajo de la subvención HMGP previamente descrita. El objetivo de la subvención BRIC es aplicar una variedad de estrategias de reducción de riesgos a una o tres grandes áreas del proyecto, donde la vulnerabilidad de las existencias de viviendas al fuego se ve exacerbada por las zonas silvestres adyacentes. Las estrategias de reducción utilizarán estrategias tanto de "casa", como la educación pública, la evaluación e incentivos de espacio defendible / seguridad estructural, como estrategias de "tierras silvestres", que utilizarán una variedad de técnicas de gestión de combustibles para moderar el comportamiento de incendios cerca de los hogares. Cada proyecto será una demostración de cómo aplicar y mantener un enfoque sistémico para la reducción de riesgos, implementando estrategias a la escala de miles o decenas de miles de acres. Este enfoque de paisaje multivariable ayudará a los residentes a avanzar hacia un cambio generacional en la forma en que los hogares y las tierras silvestres se adaptan a futuros incendios forestales. El aviso de selección previa a la adjudicación se prevé en junio de 2021. La Junta debe considerar reservar \$12.5 millones de dólares adicionales de los fondos del Acuerdo de PG&E para cumplir con la lucha de la subvención local, en caso de que el Condado reciba la subvención.

Por último, el Condado está considerando datos científicos sobre la condición, vulnerabilidad de incendios e impactos relativos de los incendios de 2017 en tierras naturales y de trabajo durante las actualizaciones de las políticas, planes y regulaciones de uso de la tierra.

- El Plan Comunitario de Protección contra Incendios Forestales del Condado (CWPP, por sus siglas en inglés) se está actualizando con fondos FEMA HMGP y pasará a formar parte del Elemento de Seguridad del Plan General del Condado. La actualización de CWPP proporcionará mayores datos sobre combustibles y estrategias de mitigación para las zonas silvestres. Más información sobre el CWPP se incluye a continuación.

- UCCE, en asociación con *Sonoma Water* y *Pepperwood Preserve*, están desarrollando un Mapeador de Material Combustible Forestal que evalúa los elementos del paisaje que afectan el comportamiento del fuego y determinan el peligro de incendio en parcelas individuales de dos acres de más. Un proyecto piloto se pondrá en marcha en el área del lago Sonoma tan pronto como en enero de 2021, y se espera que la extensión de los datos en todo el condado esté completa en abril de 2021. Esta herramienta ayudará a los propietarios a entender qué técnicas de mitigación abordarán mejor la vegetación de su propiedad.
- La Junta ha asignado fondos para que *Permit Sonoma* apoye el desarrollo y la ejecución de proyectos de reducción de combustibles a gran escala, incluido el apoyo a los componentes de cumplimiento ambiental. Debido a la complejidad de implementar proyectos de tratamiento de combustibles de gran escala, especialmente en lo que respecta a los permisos y la revisión ambiental, es imperativo que los proyectos sean de alto valor tanto para la resiliencia comunitaria como para la restauración del hábitat nativo. Cuando los datos de modelado de combustible estén suficientemente disponibles, *Permit Sonoma Fire Prevention* comenzará la selección de proyectos y trabajará con socios, como los distritos de conservación de recursos, CAL FIRE y otros socios para comenzar a planificar proyectos a gran escala.

Plan Comunitario de Protección contra Incendios Forestales

El Plan Comunitario de Protección contra Incendios Forestales (CWPP) está definido por la Ley de Restauración de Bosques Saludables de 2003, con la intención de mejorar la colaboración entre las partes interesadas de las agencias federales, estatales y locales y los grupos comunitarios en la búsqueda de soluciones a los problemas de incendios forestales de la Interfaz Salvaje/Urbana (WUI). Hay tres requisitos para un CWPP: 1) que se desarrolle en colaboración con las aportaciones de los organismos y miembros de la comunidad; 2) que se identifique y priorice las áreas de tratamiento, estrategias de mitigación y tratamientos; y 3) que recomienden medidas para reducir la inflamabilidad de las estructuras.

El CWPP 2016 es la última versión aprobada por la Junta hoy en día; sin embargo, el Condado recibió una subvención HMGP para actualizar el CWPP, y *Permit Sonoma espera* que la actualización se complete en la primavera de 2021. El 2016 CWPP está disponible en <https://www.firesafesonoma.org/wp-content/uploads/cwpp-final.pdf> y una visión general de una página de la CWPP se incluye como archivo adjunto 4.

La CWPP contiene una lista de prioridades de reducción de peligros que pretende formar parte de un sistema de clasificación para evaluar los proyectos de reducción de riesgos para la interfaz urbana-rural (WUI). Las prioridades de la CWPP son las siguientes y no se enumeran en orden de clasificación:

- Proyectos que ayudan a los residentes de la Interfaz Urbana-Rural a reducir los incendios por material combustible en la zona espacial defendible de los hogares, y a lo largo de importantes rutas de salida y acceso.
- Proyectos que ayudan a los residentes a reducir la inflamabilidad estructural.
- Proyectos que sirven para educar a los residentes sobre incendios, riesgos de incendio, manejo de la vegetación, salud de los ecosistemas y bosques, vulnerabilidad estructural y cómo reducir de manera más eficiente los riesgos.
- Proyectos que aumentan la seguridad de la comunidad a través de la planificación.
- Zonas estratégicas de amortiguación de combustible que pueden ayudar a los bomberos a detener el avance de los incendios forestales, protegiendo así los hogares, las comunidades y los recursos naturales. Además de reducir las amenazas a los incendios forestales, estas zonas también deben servir para mejorar la salud de los ecosistemas.
- Proyectos que ayudan a grupos comunitarios altamente motivados y organizados a alcanzar sus objetivos de seguridad contra incendios.
- Proyectos que tienen en cuenta las tendencias demográficas de los residentes, como la edad, el idioma y las discapacidades.
- Proyectos que permiten a los grandes administradores de tenencia de tierras y a los residentes cercanos lograr estrategias mutuamente aceptables para el manejo de material combustible.
- Proyectos que mejoran las condiciones y la salud en una variedad de ecosistemas propensos al fuego, especialmente en áreas afectadas por enfermedades de los

árboles, patógenos o insectos, o en áreas donde las especies nativas están en riesgo debido a las condiciones cambiantes.

- Proyectos que abordan especies vegetales invasoras propensas al fuego, incluyendo pero no limitado a tojo, ginesta y eucalipto.
- Proyectos que hacen uso de biomasa leñosa y otras tecnologías emergentes.
- Proyectos que apoyan y ayudan a las agencias de bomberos en el logro de sus misiones.

A pesar de que estas prioridades se desarrollaron antes de la serie de incendios forestales que han devastado el condado desde 2017, siguen siendo relevantes hoy en día. Se espera que la CWPP actualizada contenga prioridades similares y proporcionará más datos sobre material combustible y las estrategias de mitigación de las zonas silvestres.

Una herramienta de clasificación de CWPP (véase el ejemplo, Anexo 4), desarrollada para la CWPP 2016, es una manera de proporcionar estándares de evaluación consistentes a proyectos cercanos a la comunidad o a escala silvestre a través de un sistema basado en puntos y basado en las prioridades. Esta herramienta incluye preguntas organizadas por historial de incendios, esfuerzos de reducción de material combustible y criterios locales únicos. Mediante el uso de la herramienta existente como base, se pueden crear herramientas de clasificación actualizadas para proyectos cercanos a la comunidad y a escala horizontal. La herramienta de clasificación también se utiliza cuando las comunidades locales, por lo general a través de consejos de seguridad contra incendios, escriben sus propios CWPP (por ejemplo, *Mill Creek, Upper Mark West, Grove Street, Fort Ross, Fitch Mountain*) y desean que sus proyectos se anexionen y se enumere como parte de la CWPP del condado.

Discusión del condado

Los departamentos y agencias del condado se reunieron varias veces para discutir la asignación por parte de la Junta de \$25 millones de dólares para el manejo de la vegetación. *Sonoma Water, Permit Sonoma, Servicios Generales, Manejo de Emergencias, Abogado del Condado, Parques Regionales, Transporte y Obras Públicas, Ag + Open Space District y UC Cooperative Extension* fueron todos parte de la discusión y serán referidos colectivamente como el "grupo de trabajo" para efectos de este resumen.

El grupo de trabajo identificó tres áreas de tensión potencial que requerirían un compromiso al considerar los \$25 millones para el manejo de la vegetación:

- *House out versus wildland in*: "House out" se centra en la estructura y su espacio defendible inmediato (100 pies), mientras que "wildland in" analiza el manejo de la vegetación más allá del perímetro de 100 pies para complementar y apoyar el esfuerzo de "house out"
- Implementar ahora versus un enfoque "planificado" a más largo plazo
- Gastar ahora versus ahorrar para el futuro

Además, el grupo de trabajo acordó un conjunto de principios de trabajo a seguir mientras discutían posibles proyectos:

- Utilice la lista de prioridades del CWPP de 2016 para orientar las decisiones (reconociendo que se está realizando una actualización con nuevos datos)
- La vida y la propiedad como prioridad
 - Acción a corto plazo en áreas que ya se han quemado, para aprovechar el manejo de la vegetación que se ha producido naturalmente durante los incendios.
 - Utilizar la información para áreas no quemadas
- Enfoque a escala de paisaje para proteger la mayor proporción de infraestructura residencial
- Abordar tanto terrenos públicos como privados, incluidas grandes parcelas
- Sanidad de los bosques
- Enseñanza y difusión
- Aprovechar la financiación de subvenciones
- Aprovechar el trabajo de manejo de la vegetación de todos los socios, por ejemplo, trabajo de campo, capacitación

Recomendaciones iniciales

Como se describió anteriormente, existe una tensión implícita entre la necesidad de hacer un progreso inmediato en las acciones de manejo de la vegetación versus un enfoque sostenible a largo plazo. Hay consideraciones de tiempo para los proyectos que pueden demostrar un progreso apreciable antes de la temporada de incendios de 2021, y la necesidad de adoptar un enfoque a largo plazo para el manejo de la vegetación en general. La asignación de PG&E es una cantidad significativa de dinero que idealmente debería aprovecharse para sostener el manejo de la vegetación a largo plazo, a pesar de las muchas necesidades inmediatas a las que podría aplicarse.

Inicialmente, el personal recomienda recabar comentarios de líderes externos que puedan proporcionar orientación de políticas a largo plazo para el manejo de la vegetación antes de realizar asignaciones específicas de los \$25 millones, así como continuar con el alcance, el apoyo y la expansión de la herramienta de asignación de combustible de UCCE y *Sonoma Water*. El personal recomienda que estas dos acciones se financien con dinero adicional de PG&E, de modo que los \$25 millones estén disponibles para su consideración. Se proporciona más información sobre cada uno de la siguiente manera:

Apoyo a la planificación de políticas (\$ 70,000)

El personal recomienda utilizar un recurso externo para proporcionar un plan para la consideración y aplicación a largo plazo de los fondos del acuerdo, con énfasis en la identificación de estrategias para aprovechar estos fondos durante muchos años. Con su aprobación, el Centro de Derecho, Energía y Medio Ambiente de Berkeley Law (CLEE por sus siglas en inglés), puede convocar de dos a tres discusiones en grupos pequeños con líderes financieros, académicos y del sector público, junto con partes interesadas y

expertos locales, para identificar un conjunto de acciones para -financiamiento, políticas y acciones para el manejo de la vegetación a plazo. Se espera que este proceso valide lo que el personal ha escuchado durante las últimas seis semanas y presente nuevas construcciones para enmarcar las necesidades de manejo de la vegetación del Condado. Los resultados de estas discusiones, que se espera que se entreguen en marzo de 2021, complementarán los comentarios recibidos de la comunidad y los departamentos / agencias del condado y proporcionarán un contexto más amplio en el que tomar decisiones de asignación.

Expansión de la herramienta de apoyo a la toma de decisiones del mapeador de material combustible a escala de paisaje y la divulgación y educación para el despliegue de la herramienta a escala de parcela en todo el condado \$1, 600,000

El personal escuchó de los grupos comunitarios que necesitan más difusión y educación para el manejo de la vegetación. Muchos grupos tienen voluntarios que están listos para hacer el trabajo pero desean más orientación ("reglas claras y amigables") y capacitación antes de continuar. Los propietarios individuales también quieren hacer lo correcto y priorizar sus recursos.

Al comprender esta necesidad, UCCE y *Sonoma Water* lideraron el desarrollo de una herramienta de apoyo a la toma de decisiones (DST) para ayudar a identificar dónde aplicar recursos limitados para lograr el mayor beneficio de las actividades de manejo de la vegetación. El DST está destinado a ayudar a los propietarios de parcelas de más de dos acres a planificar e implementar la reducción de material combustibles en la escala de parcelas dentro de la cuenca del lago Sonoma, la ubicación piloto del proyecto. Esta herramienta ayudará a analizar la vegetación en una parcela determinada, proporcionará acciones de mitigación recomendadas y conectará a los propietarios con recursos para los próximos pasos. UCCE se asoció con *Pepperwood Preserve* para expandir los datos a todo el condado, pero se necesitan fondos para expandir el alcance y la asistencia técnica en todo el condado.

Sonoma Water está proponiendo una expansión de la herramienta a nivel de parcela para escala de paisaje soporte de decisiones de gestión de vegetación, priorizando ubicaciones para acciones de tratamiento de vegetación y analizando los beneficios futuros del tratamiento propuesto. Este componente evaluará áreas de alto riesgo de incendio contra construidas (por ejemplo, carreteras, densidad de WUI, sistemas de suministro de agua, telecomunicaciones, etc.) y activos naturales (por ejemplo, arroyos, hábitat, especies sensibles). Se incorporarán las aportaciones de las partes interesadas y la comunidad, con énfasis en el conocimiento y los datos locales para desarrollar criterios de priorización en la fase de construcción de herramientas. Esta herramienta complementaría y funcionaría en conjunto con el Plan de protección contra incendios forestales de la comunidad del condado de Sonoma, el Plan de mitigación de peligros locales y otros esfuerzos de planificación local.

Ideas destacadas

Los siguientes elementos surgieron como pioneros y serán parte de la revisión de los materiales que se considerarán cuando CLEE convoque a los grupos de opinión.

Contratar a un consultor de CEQA (Ley de Calidad Ambiental de California) para desarrollar un programa de todo el condado Informe de Impacto Ambiental (EIR por sus siglas en inglés) \$1, 500,000

La ordenación de la vegetación y / o los bosques a gran escala requiere una revisión exhaustiva de los posibles impactos ambientales en una serie de categorías, incluidos los recursos biológicos, los recursos culturales, las emisiones de gases de efecto invernadero y la hidrología. Un programa EIR analiza los impactos potenciales de una serie de actividades o geografías similares de manejo de la vegetación, de manera que las revisiones ambientales posteriores se puedan simplificar o evitar. Debido a que un programa EIR puede llevar un tiempo considerable en completarse, es importante comenzar este proceso tan pronto como sea posible.

Implementar proyectos de vegetación en áreas recientemente quemadas

Aprovechar el terreno que ya ha sido quemado brinda la oportunidad de continuar con el manejo de la vegetación de esa área en particular, lo que incluye reducir el potencial de una reaparición severa y garantizar la regeneración de árboles. Minimizar la erosión y retener suficiente estructura forestal para la vida silvestre son preocupaciones adicionales de las áreas recientemente quemadas, que han ocurrido en los Parques Regionales del Condado y en las tierras *Ag + Open Space*.

Expandir la capacidad de trituración del condado

El servicio de trituración o desbrozar de espacios defendibles residenciales del condado se basa en las solicitudes de servicio de los propietarios; El personal escuchó constantemente de las partes interesadas de la comunidad que les gustaría ver una mayor capacidad de para triturar o desbrozar, ya que el programa suele estar sobrecargado. Un camión adicional, una desbrozadora/trituradora y el mantenimiento asociado ayudarían a expandir el programa. Además, Parques Regionales necesita una trituradora de orugas autopropulsada para manejar de manera efectiva los escombros de árboles de sus parques.

Financiamiento para equipos de jóvenes

Sonoma Water, Regional Parks, Transportation & Public Works y UC Cooperative Extension han contratado equipos de jóvenes para llevar a cabo el manejo de la vegetación a través de organizaciones como *Youth Ecology Corps* (administrado a través del Departamento de Servicios Humanos), *Conservation Corps North Bay* y *Circuit Rider* (Center para la administración social y ambiental). Estos programas brindan experiencia laboral remunerada y un camino para pasar a trabajos regulares en el condado o en empresas locales.

Difusión y educación

Es necesaria una orientación clara y coherente sobre el manejo de la vegetación y la comunicación efectiva de esa orientación como una necesidad a nivel de la comunidad local.

Programa de evaluación de necesidades especiales de manejo de vegetación

Este nuevo programa brindaría asistencia a los dueños de propiedades discapacitados y ancianos para que cumplan con los requisitos de espacio defendible.

Compra de paquetes para cortes verdes

Esta iniciativa con visión de futuro implica trabajar con vendedores dispuestos a comprar parcelas adecuadas para la integración en cortes ecológicos de múltiples beneficios, un enfoque a gran escala para la mitigación de incendios. Este es el artículo n. ° NR 2.2.8 del Marco de recuperación y resiliencia.

Subvenciones comunitarias para el manejo de la vegetación

Las organizaciones comunitarias han proporcionado una amplia gama de sugerencias sobre cómo podrían utilizar los fondos para usos relacionados con el manejo de la vegetación, incluida la asignación de subvenciones, la mejora de los programas educativos y de capacitación vocacional y la creación de capacidad (por ejemplo, contratando a otro forestal). Esta asignación podría dedicarse específicamente a organizaciones comunitarias.

Personal

Finalmente, una de las principales recomendaciones del grupo de trabajo es establecer una unidad que sirva como líder de manejo de vegetación del Condado. Un solo punto de coordinación y recursos fue un tema común en las diversas sesiones de escucha y reuniones durante las últimas seis semanas. Este líder proporcionaría coordinación central, divulgación y educación, y liderazgo de iniciativas de manejo de vegetación en todos los departamentos / agencias y en coordinación con socios comunitarios, como *Sonoma RCD o Fire Safe Sonoma*. Esta división principal también sería responsable de los esfuerzos legislativos y de cabildeo para las prioridades de manejo de la vegetación del condado y de solicitar los fondos relacionados. Los recursos de personal y la estructura organizacional deberán ser considerados cuando la Junta Directiva considere los hallazgos de las discusiones del grupo CLEE.

Siguientes pasos

El personal regresará en marzo de 2021 con los resultados de las discusiones de grupos pequeños de CLEE para la consideración de su Junta, ya que su Junta determina cómo priorizar la asignación de manejo de vegetación para el corto plazo y el futuro.

Acciones previas de la junta:

6/10/20 Comentarios de la comunidad y asignación preliminar de los fondos del acuerdo de PG&E

8/11/20 Discusión preliminar de los Fondos del Acuerdo de PG&E

Gastos	Año fiscal 20-21 Adoptado	Año fiscal 21-22 Proyectado	año fiscal 22-23 Proyectado
Gastos presupuestados	1, 670,000		
Apropiación adicional solicitada			
Total de gastos	1,670,000		
Fuentes de financiación			
Fondo General / WA GF			
Estatad / Federal			
Honorarios/otros	1,670,000		
Uso del saldo del fondo			
Contingencias			
Todas las fuentes	1,670,000		

Narrative Explanation of Fiscal Impacts:

La Oficina del Administrador del Condado está solicitando asignaciones de \$1, 670,000 de la asignación del acuerdo de PG&E, con \$70,000 para el apoyo a la planificación de políticas, \$600,000 para la divulgación y educación de la herramienta de apoyo a la toma de decisiones del mapa de combustible a nivel de parcela y \$ 1, 000,000 para la expansión de la herramienta para mapear el material combustible a la escala del paisaje.

Impactos en el personal:			
Título del puesto (Clasificación de nómina)	Rango de salario mensual (paso A-I)	Adiciones (número)	Eliminaciones (número)

1. Mapa de la Interfaz Urbana-Rural
2. Informe *EB Alive*
3. Lista de organizaciones con las que se habló en preparación para este artículo
4. Descripción general de CWPP
5. Ejemplo de herramienta de clasificación CWPP
6. Resumen de la herramienta de apoyo a la toma de decisiones del mapa de combustible

Related Items “On File” with the Clerk of the Board:

Haga clic o presione aquí para ingresar el texto.