

CALIFORNIA'S WILDFIRE AND FOREST RESILIENCE ACTION PLAN



**A Comprehensive Strategy
of the Governor's
Forest Management
Task Force**

January 2021

California's Wildfire and Forest Resilience Action Plan

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Thank you to the
numerous federal, state and local agencies and
non-governmental organizations who
contributed to this plan.



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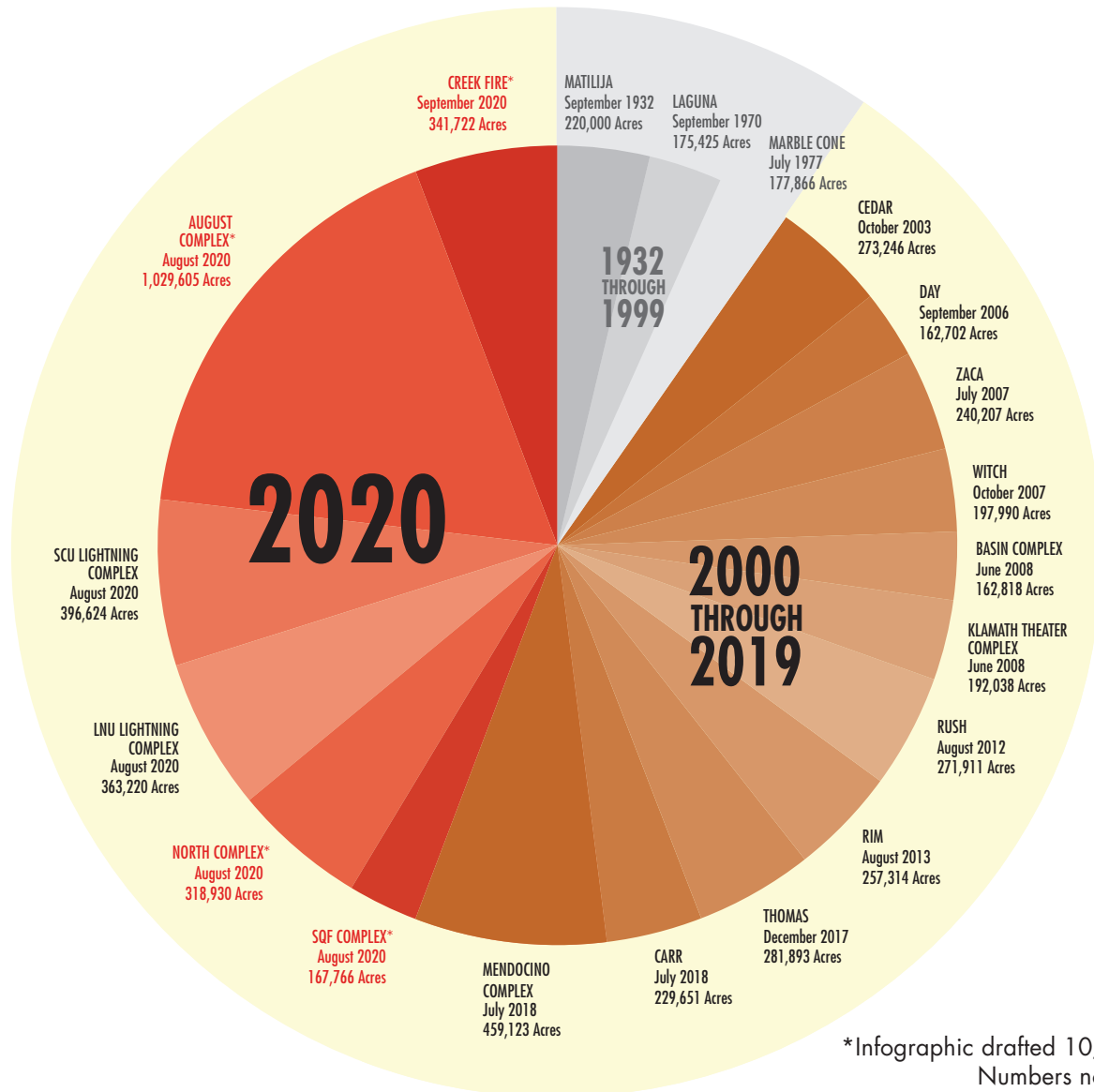


CALL TO ACTION

California is facing a growing forest and wildfire crisis. Decades of fire suppression, coupled with the increasing impacts of climate change, have dramatically increased wildfires' size and intensity throughout the state.

The 2020 fire season broke numerous records. Five of California's six largest fires in modern history burned at the same time, destroying thousands of buildings, forcing hundreds of thousands of people to flee their homes, and exposing millions of residents to dangerously unhealthy air. More than 4 million acres burned across the state, double the previous record.

TOP 20 LARGEST CALIFORNIA WILDFIRES



Building on important work started during the previous administration, state policymakers and agencies have bolstered efforts and expanded investments in unprecedented ways over the past two years to address this crisis. Despite this progress, bolder action is required to address the key drivers of catastrophic fires, significantly increase the pace and scale of forest management, and improve the resilience of increasingly threatened communities.

First, we recognize that climate change increases the frequency and severity of catastrophic wildfires. More than 100 peer-reviewed studies published since 2013 demonstrate a strong consensus that climate change extends the periods of wildfire risk and enhances the likelihood of fires. Land use and forest management practices are also contributing factors but cannot fully explain the magnitude of wildfires in recent years.

Second, California's diverse landscapes and communities require regionally tailored strategies and actions. Protecting California's communities and natural places from the impacts of catastrophic wildfire cannot be achieved through a "one size fits all" solution. Different types of vegetation and landscapes—from redwoods to chaparral to desert—require different approaches. State investments and programs must recognize and enable regionally and locally-driven solutions in partnership with groups and leaders from these regions.

Third, we recognize that building California's resilience to catastrophic wildfires means restoring the health of our forests and diverse landscapes across the state and strengthening wildfire preparation within our communities. While the Task Force started with a focus on forest management, we recognize that an effective strategy to address growing wildfire risk must also emphasize actions we can take in our homes, neighborhoods and communities.

Fourth, we recognize the scientific consensus that frequent, low-intensity fire can be a positive force in improving forest health and biodiversity and forested communities' safety. We must draw upon the practices of Native Americans, ranchers, and rural communities to rapidly expand the use of prescribed fire and bring these best practices to state lands.

Fifth, we recognize and commit to strengthening the linkages between the ecological health of forests and the economic and social health of rural communities. Successful environmentally sustainable forest management and wood products sectors are vital to enabling prosperity in forested rural economies.

Sixth, since landscapes at risk of wildfire cross multiple ownerships, we recognize the need for strong partnerships among federal, state, local and tribal entities and private organizations. In August 2020, Governor Newsom and Vicki Christiansen, Chief of the United States Department of Agriculture's Forest Service (USFS), announced a historic Agreement for Shared Stewardship of California's Forest and Rangelands to improve the health of California's forests and reduce wildfire risk across the state. Complementary partnerships at the local level through tribal governments, cities and counties, fire safe councils, regional collaboratives, resource conservation districts, and others will continue to protect our forested landscapes and at-risk communities.

And finally, we recognize that state government must play a leadership role in bringing these interests together to align and integrate activities, coordinate investments, and help to shape a resilient future for communities and natural places. The Wildfire and Forest Resilience Action Plan provides a framework and strategy to improve wildfire resilience and forest health throughout the state.

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EXECUTIVE SUMMARY

The Wildfire and Forest Resilience Action Plan is designed to strategically accelerate efforts to:

- » Restore the health and resilience of California forests, grasslands and natural places;
- » Improve the fire safety of our communities; and
- » Sustain the economic vitality of rural forested areas.

To meet these goals, the following will need to be achieved:

Scale-up forest management to meet the state and federal 1 million-acre annual restoration target by 2025.

- » The Department of Forestry and Fire Protection (CAL FIRE) and other state entities will expand its fuels management crews, grant programs, and partnerships to scale up fuel treatments to 500,000 acres annually by 2025;
- » California state agencies will lead by example by expanding forest management on state-owned lands to improve resilience against wildfires and other impacts of climate change; and
- » The USFS will double its current forest treatment levels from 250,000 acres to 500,000 acres annually by 2025.



Significantly expand the use of prescribed fire across the state:

- » CAL FIRE will expand its fuels reduction and prescribed fire programs to treat up to 100,000 acres by 2025, and the California Department of Parks and Recreation (State Parks) and other state agencies will also increase the use of prescribed fire on high-risk state lands;
- » The USFS, in partnership with CAL FIRE, tribal governments, and other agencies will seek to establish a Prescribed Fire Training Center to provide training opportunities for prescribed burn practitioners and focus training efforts on western ecosystems;
- » CAL FIRE will also establish a new tribal grants program, increase support for workforce development and training programs, and evaluate options to address liability issues for private landowners seeking to conduct prescribed burns;
- » The USFS will significantly expand its prescribed fire program to attain its 500,000-acre target for forest treatments by 2025.

Reforest areas burned by catastrophic fire:

- » The USFS will develop a restoration strategy for wildfire impacted federal lands and CAL FIRE will partner with the California Office of Emergency Services (Cal OES) and other federal, state, and local agencies to develop a coordinated strategy to prioritize



and rehabilitate burned areas and affected communities. These ecologically-based strategies will focus on silvicultural practices that increase carbon storage, protect biodiversity, and build climate resilience.

Support communities, neighborhoods, and residents in increasing their resilience to wildfire:

- » CAL FIRE will significantly expand its defensible space and home hardening programs and launch a new program building upon the Governor's 35 Emergency Fuel Break Projects by developing a list of 500 high priority fuel breaks across the state. This list will be continuously updated.

Utilize a statewide network of regional plans to ensure coordinated, comprehensive action across the state:

- » The California Natural Resources Agency (CNRA) will expand its Regional Forest and Fire Capacity (RFFC) Program to all high-risk areas throughout the state and increase local and regional governments' capacity to build and maintain a pipeline of forest health and fire prevention projects.

Develop a comprehensive program to assist private forest landowners, who own more than 40 percent of the state's forested lands:

- » CAL FIRE will coordinate the implementation of several grants and technical assistance programs for private landowners through a unified Wildfire Resilience and Forestry Assistance Program.

Create economic opportunities for the use of forest materials that store carbon, reduce emissions, and contribute to sustainable local economies.

- » The Governor's Office of Planning and Research (OPR) is leading the development of a comprehensive framework to expand the wood products market in California and will partner with CAL FIRE, the Governor's Office of Business and Economic Development (GoBiz), the USFS, and the California Infrastructure and Economic Development Bank (iBank) to draft a market development roadmap and catalyze private investment into this sector.

Improve and align forest management regulations:

- » The Board of Forestry and Fire Protection (BOF) is leading the expansion of a new online permitting tool and permit synchronization initiative to provide a one-stop shop for permits from several agencies and will use the California Vegetation Treatment Program (CalVTP) to streamline project planning and environmental review.

Spur innovation and better measure progress:

- » CAL FIRE and the USFS, in coordination with the USDA California Climate Hub, the California Air Resources Board (CARB), and other agencies, will seek to establish a Forest Data Hub to coordinate and integrate federal, state, and local reporting on forest management and carbon accounting programs, and serve as a clearinghouse for new and emerging technologies and data platforms.

This strategy will also be integrated into the state's efforts to combat climate change through the following actions:

1. Scale-up forest thinning and prescribed fire efforts to reduce long-term greenhouse gas emissions and harmful air pollution from large and catastrophic wildfires;
2. Integrate science-based climate adaptation and resiliency strategies into the emerging statewide network of regional forest and community fire resilience plans;
3. Drive forest management, conservation, reforestation and wood utilization strategies that stabilize and increase the carbon stored in forests while preserving biodiversity and revitalizing rural communities;
4. Improve electricity grid resilience; and
5. Promote sustainable land use.



INTRODUCTION



The California Forest Management Task Force (Task Force) was established in 2018 to introduce a more holistic, integrated approach toward effective forest management. The Task Force's purpose has been to develop a framework for establishing healthy and resilient forests that can withstand and adapt to wildfire, drought and a changing climate.

The Task Force grew out of the state's Tree Mortality Task Force, which was established during California's recent drought in response to the massive die-off of trees across the state. It was specifically charged with implementing the California Forest Carbon Plan of 2018 and Executive Order B-52-18. The Task Force also drew upon the mandates and recommendations of a broad range of state, federal, local, and tribal governments and private organizations.

Over the past two years, the Task Force has convened more than two dozen interagency and stakeholder-led workgroups to develop the recommendations presented in this Wildfire and Forest Resilience Action Plan (Action Plan). This Action Plan will also serve as a roadmap for implementing the Agreement for Shared Stewardship of California's Forest and Rangelands (Shared Stewardship Agreement) with the United States Forest Service (USFS) under the United States Department of Agriculture (USDA), and for aligning the state's efforts with other federal, local, tribal, regional and private organizations.

This strategy integrates recommendations from existing state and federal plans that tackle

various aspects of the state's forest health and wildfire crisis. California's natural and working lands have also been analyzed by several commissions, task forces, legislative hearings and reports, scientific conferences, workshops, and papers.¹ A common theme of these reports and recommendations is that the state needs "an unprecedented action plan" to effectively respond to the forest health and wildfire crisis.²

This Action Plan responds to that challenge by integrating key findings and recommendations from these various plans, studies, and assessments into a single coordinated and comprehensive strategy.

The entities responsible for implementing this strategy and its actions are committed to doing so in a manner that advances California's goals to achieve carbon neutrality, build climate resilience, improve equity, and foster economic prosperity. Many of these actions will inform other upcoming state agency plans, including the Natural and Working Lands Climate Smart Strategy (October 2021); State Adaptation Strategy (2021); 30 by 30 Pathways Document (February 2022); and Climate Change Scoping Plan (2022).

¹ [Strategic Fire Plan](#) (2018), [Forest Carbon Plan](#) (2018), [Governor's Office of Planning and Research's \(OPR\) updated Fire Hazard Planning Technical Advisory](#) (2020), [AB 32 Scoping Plan](#) (2017), [Forest and Range Assessment](#) (2017), [Safeguarding California Plan](#) (2018), [California Biodiversity Initiative](#) (2018), [Fourth California Climate Change Assessment](#) (2018), [California Water Resilience Portfolio](#) (2020), [State Wildlife Action Plan](#) (2015), [Sierra Nevada Watershed Improvement Program](#), [Lake Tahoe Forest Action Plan](#) (2019), [The National Cohesive Wildland Fire Management Strategy](#), [The USFS Region 5 Leadership Intent for Ecological Restoration](#).

² [Little Hoover Commission](#) (2018), [Legislative Analyst's Office](#) (2018 and 2019), [Public Policy Institute of California](#) (2018), [California Economic Summit](#) (2019), [The National Cohesive Summit](#) (2019), [Governor's Strike Force](#) (2019), [The Joint Institute for Wood Products Innovation](#) (2020), [California Council on Science and Technology](#) (2020)



The focus of this Action Plan is increasing the pace and scale of forest management and wildfire resilience efforts by 2025 and beyond. The Action Plan sets state and federal attainment goals and describes a number of activities to work towards achieving these goals. These actions will be implemented to the extent resources are available.

Building Upon Recent Progress

This Action Plan builds on the state's significant progress and accomplishments in tackling California's forest health and wildfire crisis. First and foremost, the Administration and the Legislature have prioritized budgetary resources to provide CAL FIRE and other agencies with the resources needed to more effectively fight uncontrolled fires and protect vulnerable communities:

» **Hired Additional Seasonal Firefighters:**

Additional seasonal firefighters were added during the 2019 and 2020 fire seasons to enhance CAL FIRE's firefighting surge capacity, given increased fire risk, including 393 seasonal firefighters in 2019 and 858 new seasonal firefighters in 2020.

» **Relief Staffing and Additional Surge**

Capacity: The 2020 Budget included \$85.6 million ongoing funding for additional firefighting resources to provide CAL FIRE with operational flexibility throughout the peak fire season and beyond as fire conditions dictate.

» **Purchased Additional Fire Engines:** The 2019 Budget Act included \$67.5 million for enhanced fire suppression resources, including funding to purchase and staff new year-round fire engines and for heavy equipment fire support (e.g., fire bulldozing operations).

» **Modernization of Firefighting Aircraft:**

Recent budgets have included resources to enhance CAL FIRE'S aviation fleet with new aircraft equipped to meet the challenges associated with more severe wildfire activity, including seven C-130 air tankers and 12 Black Hawk helicopters for nighttime firefighting operations.

» **Innovation Procurement Sprint:** The 2020 Budget added ongoing funding to enable CAL FIRE to implement the new, pioneering wildfire prediction and modeling technology that was procured through the Innovation Procurement Sprint process, which was initiated through Executive Order N-04-19.

» **Investments in Detection Technology:** The 2019 Budget Act added ongoing funding to install, operate, and maintain an additional 100 infrared fire monitoring cameras to help dispatchers and firefighters identify and confirm wildfire locations.

» **Pre-positioning Resources for Critical Fire Weather:**

To boost California's wildland firefighting ranks during critical fire weather, the 2018-19 Budget added \$25 million annually to fund city and county firefighting engines and crews to be able to pre-deploy in strategic locations and respond to breaking fires.

» **Building Wildfire Community Preparedness:**

In 2019, Governor Newsom launched a \$50 million emergency preparedness campaign to connect vulnerable populations with culturally and linguistically competent support and build resiliency in vulnerable communities at high risk for wildfires and other disasters.

In addition to these investments, Governor Newsom has issued several executive orders and initiatives to protect communities, restore forest health, and build wildfire and climate resilience.

» **Executive Orders:** On his first full day in office, Governor Newsom issued an Executive Order directing CAL FIRE to identify areas at high risk from wildfire and develop recommendations to better protect these vulnerable communities, which resulted in the CAL FIRE Community Wildfire Prevention and Mitigation Report.

» **Recently-Chaptered Legislation:** The California Legislature has passed several state laws, as described throughout this Action Plan and summarized in Appendix C, to establish new programs to restore forest health and protect communities.

» **Strike Force Report:** In April 2019, the Governor's Strike Force Report set forth a series of steps the state could take to reduce the incidence and severity of wildfires and maintain the state's commitment to clean energy.

» **35 Priority Fuel Reduction Projects:** CAL FIRE designed and implemented 35 fuel reduction projects in 2019 to protect more than 200 of California's most wildfire-vulnerable communities, facilitated by a State of Emergency Declaration issued by the Governor. These projects were highly effective in preventing fires and modifying fire behavior during the 2020 fire season.

» **Utility-Related Wildfire Risk:** The California Public Utilities Commission (CPUC) established a new Wildfire Safety Division and developed a strategy and roadmap for reducing utility-related wildfire risk.

» **Regulatory Streamlining:** State agencies have improved the planning and regulatory process for forest management, including accelerating the environmental review timeline for fire-prevention activities from several years to several months through the California Vegetation Treatment Program (CalVTP) and moving the timber harvest permitting system online through a new transparent platform called the California Timber Regulation and Environmental Evaluation System, or CalTREES.

» **Shared Stewardship Agreement:** In August 2020, Governor Newsom signed a Shared Stewardship Agreement with the USFS that establishes unprecedented coordination between state and federal agencies to each meet a goal of treating 500,000 acres annually by 2025 (total of 1 million acres).

» **Climate and Biodiversity:** Governor Newsom issued Executive Order N-82-20 in October 2020, directing state agencies to accelerate actions to combat climate change, protect biodiversity, and build resilience nature-based solutions, including improved forest management.

» **Investments in Forest Management:** The state has invested \$1.4 billion in California Climate Investments (CCI) projects that provide climate mitigation or adaptation benefits and contribute to forest health and fire protection.

GOAL 1: INCREASE THE PACE AND SCALE OF FOREST HEALTH PROJECTS

The state must significantly increase the pace and scale of forest health projects to meet the goals of the Forest Carbon Plan and Shared Stewardship Agreement, which call for federal and state agencies to each meet a goal of treating 500,000 acres annually by 2025. The Shared Stewardship Agreement also commits the state and the United States Department of Agriculture's Forest Service (USFS) to develop a coordinated 20-year plan updated at five-year intervals for forest and vegetation management. This Action Plan, developed in coordination with the USFS and a broad and diverse coalition of agencies and key stakeholders, serves as the first five-year plan to advance the Shared Stewardship Agreement's goals.

The overarching goal of this state-federal agreement is to improve the health and resilience of the state's forested landscapes. While forest health can have multiple definitions, for the purposes of this Action Plan, healthy forests include woodlands, grasslands, chaparral, shrublands, and related vegetation types that yield both ecological and community benefits. Healthy vegetation improves climate resilience, reduce the risk of catastrophic wildfire, safeguard water and air quality, protect fish and wildlife habitat, enhance biodiversity, sequester carbon, improve recreational opportunities, and generate job and economic opportunities. However, as shown below, each of these vegetation types provides unique benefits, face different risks, and therefore require different management strategies.



FOREST

- » 100+ years of fire suppression = fire scarcity
- » Accumulation of fuels/dense undergrowth
- » Ladder fuels contribute to severe canopy fires
- » Prescribed fire, ecological thinning, and sustainable timber harvest are needed
- » Rare plants and species diversity must be protected when "clearing" forest floors



GRASSLAND & WOODLANDS

- » Home of super blooms, vernal pools, often intermixed with woodlands
- » Often targeted for development because they look weedy and bare for much of the year
- » Prone to fast-moving fires
- » Fires increased in severity due to the presence of invasive species and humans (witness Santa Rosa)
- » Especially vulnerable to type conversion (other plants taking over) that increase fire risk and fire return intervals
- » Community and home hardening and building restrictions are key



CHAPARRAL & SHRUBLANDS

- » Found statewide but primarily in Southern California and along the coast
- » Also found in lower elevations of the Sierra Nevada, adding complexity to forest regimes
- » Chaparral habitats require fire for health, but the fire is happening too frequently
- » At risk of type conversion, which increases fire risk
- » Hardening and building restrictions are key

Accelerate Restoration Across All Lands

With California's landscape divided among multiple ownerships, coordinated stewardship is essential. Strengthening wildfire resilience is a shared responsibility of federal, state, and private landowners.

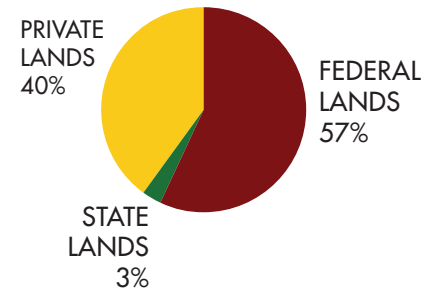
INCREASE TREATMENTS ON FEDERAL LANDS

Federal agencies own and manage about 57 percent of the state forested lands. The USFS Pacific Southwest Region manages 20.8 million acres across 18 National Forests in California. The Bureau of Land Management (BLM) owns 1.2 million acres of forest and woodlands, and the National Park Service (NPS) manages approximately 1.6 million acres.

These federal agencies have significantly increased the scale of their forest fuels reduction projects in recent years. For example, the USFS has increased its targets for acres treated from 167,000 acres in 2016 to 235,000 acres in 2019 and 2020.

As described below, the USFS is also working to increase its use of prescribed and managed wildland fire significantly. As its National Forest land and resource management plans are revised, the USFS will encourage broader prescribed fire use on the landscape when conditions permit and complement mechanical and other vegetation treatments.

Forest Lands Ownership in California



Key Actions:

1.1 Treat 500,000 Acres of USFS Land Annually by 2025: Consistent with the Shared Stewardship Agreement, the USFS intends to treat a total of 500,000 acres annually by increasing the pace-and-scale of restoration treatments over the next five years.

1.2 Increase Sustainable Timber Harvest: The USFS will seek to increase its annual timber harvest from 400 million board feet (MBF) to 500 MBF annually, accounting for a third of the current industry capacity of 1.5 billion board feet annually.



1.3 Identify Strategic Fire Management Zones: In 2021, the USFS will identify Strategic Fire Management Zones to expand its use of managed wildland fire while protecting public and community health and safety.

1.4 Expand Agreements: The USFS will seek to expand its use of Good Neighbor Authority and Shared Stewardship Agreements and other mechanisms to partner with state, local and tribal governments to accomplish fuels reduction projects on federal land more efficiently.

1.5 Manage 175,000 Acres of NPS Lands by 2025: NPS will utilize a combination of mechanical and prescribed fire to treat 75,000 acres and managed wildfires to treat another 100,000 acres to meet ecological objectives and reduce the risk and impact of high severity wildfires.

1.6 Treat 10,000 to 15,000 acres of BLM Land Annually by 2025: BLM will increase its pace and scale to meet its goal of treating approximately 9,000 acres a year to 10,000 to 15,000 acres a year.

RESTORE STATE AND PRIVATE LANDS

The State of California is responsible for fire and resource protection on nearly 13.3 million acres of private and state-owned forested lands. The state owns about 1.1 million acres of these lands, and 12.2 million acres of lands are under private ownership. In the past several years, forest management has significantly expanded on these lands. CAL FIRE has increased its forest thinning and prescribed fire activities from about 30,000 acres in 2016 to more than 50,000 acres in 2020. Partners receiving state-funded grants treated more than 30,000 acres in 2020. Private landowners currently actively manage 250,000-300,000 acres through fuels reduction, mechanical thinning, and timber harvest projects.

California plans to scale up its efforts to meet its 500,000-acre target by 2025 through:

- » Expanding assistance to private landowners;
- » Implementing forest health and resiliency projects on state-owned land; and
- » Continuing sustainable timber harvest projects.

ENHANCE SUSTAINABLE TIMBER HARVEST

Private companies that harvest timber own nearly 14 percent of California's forestlands. These companies have harvested about 1.5 billion board feet per year for the past seven years at a \$370 million market value. Ecologically and financially sustainable timber harvest in California helps rural economies, reduces transportation emissions from imported lumber, limits forestland conversion to development, improves air and water quality, enables carbon sequestration, conserves biodiversity and reduces wildfire risk.

As noted above, private landowners currently contribute 250,000-300,000 acres to the state's 500,000-acre fuels reduction goal. Private timber operators have also partnered with the USFS, the Department of Forestry and Fire Protection (CAL FIRE), California Department of Parks and Recreation (State Parks), California Department of Fish and Wildlife (CDFW), the Sierra Nevada Conservancy, the National Fish and Wildlife Foundation and other partners to develop a Fuels Reduction Memorandum of Understanding (MOU) to conserve the California spotted owl and other wildlife while coordinating wildfire risk reduction measures on California's federal, state and private lands.



Key Actions:

1.7 Increase Incentives for Timber Harvests that Improve Forest Resilience: In coordination with the state agencies biodiversity initiative, the state will develop a set of incentives to increase ecologically and financially sustainable timber harvest and associated infrastructure, which may include improved permitting, landscape-scale projects across multiple ownerships, and incentives for multi-age stands, increased carbon storage, and biodiversity

1.8 Implement Fuels Reduction MOU: CAL FIRE and the USFS will seek to implement and expand participation in the Fuels Reduction MOU among key agencies and partners.

INCREASE ASSISTANCE TO SMALL PRIVATE LANDOWNERS

Significantly increasing the pace and scale of forest management across the state can only be achieved through significant contributions from small private landowners. Family-owned forest lands make up about 20 percent of California's forests, approximately 7 million acres. Nearly 90 percent of this acreage is comprised of parcels that are 50 acres or less in size. Almost 60 percent of the state's 200,000 non-industrial private forest landowners (NIPFs) are 65 years and older, and only nine percent derive income from their forest land.

The state offers various assistance programs to NIPFs, including the California Forest Improvement Program (CFIP), Forest Stewardship Program, and Wildfire Resilience Program. However, limited state funding generates competition among small landowners, and the lack of a common framework or shared goals poses further challenges to expanding forest management across private lands. Accordingly, CAL FIRE is partnering with the USFS, the USDA Natural Resources Conservation Service (NRCS), the American Forest Foundation, The Nature Conservancy (TNC), and UC Cooperative Extension (UCCE) to create a comprehensive program to assist small landowners with forest assessments, thinning, prescribed fire and rapid recovery after wildfires.

Key Actions:

- 1.9 Develop Implementation Strategy:** By December 31, 2021, CAL FIRE will develop an implementation strategy for a Wildfire Resilience and Forest Assistance Program targeted to small private landowners. The implementation strategy will also include information related to meeting the California State Water Resources Control Board (Water Board) permitting and CDFW regulatory requirements as needed.
- 1.10 Maintain Forest Stewardship Education Program:** CAL FIRE will maintain its Forest Stewardship Workshop program to help forest landowners develop management plans and implement stewardship projects. Workshop locations will be based on CAL FIRE's fire-risk and priority landscape map and the 2019 Community Wildfire Prevention and Mitigation Report.
- 1.11 Increase Technical Assistance:** The state, through contracts with cooperators, will assist landowners with Forest Management Plans, Burn Plans, archeological and biological surveys, project field design, and other support from forestry and other natural resource professionals.
- 1.12 Improve Outreach:** State agencies will partner with the Forest Landowners of California and other organizations to more efficiently target outreach efforts, guide assistance planning, and track project implementation.
- 1.13 Support Forest Health and Maintenance Treatments:** CAL FIRE will provide funding for initial fuels treatments and follow-up maintenance with landowners contributing at least 10 percent of costs. CAL FIRE will prioritize funding of NIPF projects within locally coordinated forest management and post-fire restoration projects that benefit broader landscapes across multiple ownership types.
- 1.14 Establish Emergency Forest Restoration Teams:** CAL FIRE and other state agencies will explore the potential for developing emergency forest restoration teams to assist small landowners impacted by wildfires with funding and expertise to restore their properties and help prevent further damage to life, property and natural resources. This program would complement the NRCS Environmental Quality Incentives Program (EQIP) and the Emergency Forest Restoration Program (EFRP).
- 1.15 Provide Seedlings for Restoration:** CAL FIRE will expand its nursery and seed bank to deliver seeds and seedlings to small landowners whose properties are affected by wildfire or diseases. Experts will focus on using native seed selections that are best suited to current and future landscapes. The Placerville USFS nursery will expand its capacity to grow approximately 15 million seedlings per year.
- 1.16 Expand Lumber Certifiers:** Expand Lumber Certifiers: BOF will assist in establishing additional small-scale forest product infrastructure, such as portable sawmills, and will explore the potential for Registered Professional Foresters to become third-party certified as Lumber Graders.



EXPAND FOREST MANAGEMENT ON STATE LANDS

The state of California owns and manages 3 percent (approximately 3 million acres) of land in the state. These parcels contain many of the state's most valuable natural areas, such as State Parks, CAL FIRE's network of demonstration forests, and CDFW-managed wildlife areas. Up to a third of these lands, covering a million acres, are at high risk from uncontrolled wildfire. By restoring and protecting these lands, the state can deliver on its goals related to forest health, fire prevention, climate resilience, carbon neutrality, biodiversity and outdoor access for all.

As described below, CNRA will partner with State Parks, CDFW, the Tahoe Conservancy, and other state land-owning agencies to execute a comprehensive strategy for restoring and maintaining forested state lands. The strategy will include: (1) scaling-up prescribed fire and fuel reduction programs; (2) expanding collaboration with neighboring landowners and agencies to promote resilient and healthy forests at a landscape scale; (3) increasing outreach and education to share best practices that support ecosystem services; and (4) implementing an effective monitoring program to gather information on the ecological benefits of these practices.

Key Actions:

1.17 Execute Strategy for Forested State Lands: CNRA will partner with State Parks, CDFW, the Tahoe Conservancy, and other agencies that own state land to execute a comprehensive strategy to expand forest management and improve the health and resilience of forested state lands.

Increase the Use of Prescribed Fire

Fire has a long history as a vegetation management tool in California used by Native Americans, ranchers, and rural communities. Prescribed fire, or the use of fire under safe conditions, is now well-recognized as one of the most versatile and cost-effective tools available to reduce fuels buildup in forests and the risk of catastrophic wildfires while increasing climate resilience. Controlled burns also support native plants, boost soil health and increase ecosystem function. Fire is among the most critical ecological treatment methods for maintaining a myriad of functions that collectively contribute to maintaining healthy and resilient forests.

While prescribed fire has been used in many California locations, several factors have limited its widespread use, especially in more populated areas, including resource availability, liability issues and public acceptance of fire and smoke. Federal, state and local agencies, tribal governments, non-governmental organizations and landowners understand the urgency in overcoming these barriers to increase the use of prescribed fire. These entities are actively collaborating to get more “good” fire on the ground. Where possible, CAL FIRE and the USFS are also seeking to support and expand California Tribes’ ability to burn culturally.

Key Actions:

1.18 Develop Prescribed Fire Strategic Action

Plan: By the spring of 2021, CAL FIRE, CARB, USFS and other federal, state, local and tribal governments will develop and issue a Prescribed Fire Strategic Action Plan to coordinate and guide prescribed fire activities, and to address the key barriers to its widespread use in California.

1.19 Utilize All Fuels Reduction Methods to Treat up to 100,000 Acres by 2025:

Plan: CAL FIRE will use all fuels reduction methods, including prescribed fire, to expand its fuels reduction program to treat 100,000 acres of its 500,000-acre target.



1.20 Establish a Grant Program to Support Cultural Burning: CAL FIRE will establish a new program to provide direct funding for tribal governments to support cultural burning and other traditional forest health practices.

1.21 Establish a National Prescribed Fire Training Center: The USFS, in partnership with CAL FIRE and local and tribal governments, will seek to establish a National Prescribed Fire Training Center to provide training opportunities for prescribed burn practitioners and focus its efforts on western U.S. ecosystems.

1.22 Explore Strategies to Address Liability Issues: Insurance is no longer available for most private landowners and organizations seeking to conduct prescribed fire projects. In 2021, the state will explore the development of alternative strategies to increase insurance availability for these projects.

1.23 Modify Suppression Tactics on State Lands: CAL FIRE will continue to expand its use of modified suppression tactics on state lands to allow a wildfire to burn under predetermined and carefully prescribed conditions to reduce forest fuels and provide ecological benefits. These tactics will follow predetermined plans that consider property and life safety issues.

1.24 Develop an Automated Prescribed Burn Permit: By 2021, CAL FIRE will develop and deploy an automated system for prescribed burn permits.

1.25 Provide Training and Technical Assistance: State agencies will partner with local governments and nonprofit organizations to establish sustained, multi-year funding for regional vocational training, community college curricula, and technical assistance programs for professional fire service, conservation, tribal and other fire practitioners.



1.26 Improve Workforce Development: CAL FIRE will quantify current and projected unmet needs for forestry-related workers by job type (vocational and professional) and location to inform its investments in training and vocational programs. This assessment is coordinated with the statewide assessment in Action 3.11.

1.27 Develop an Annual Reporting System: CAL FIRE, in coordination with state and federal partners, will develop an annual reporting system to consolidate and report relevant data for prescribed fires in California.

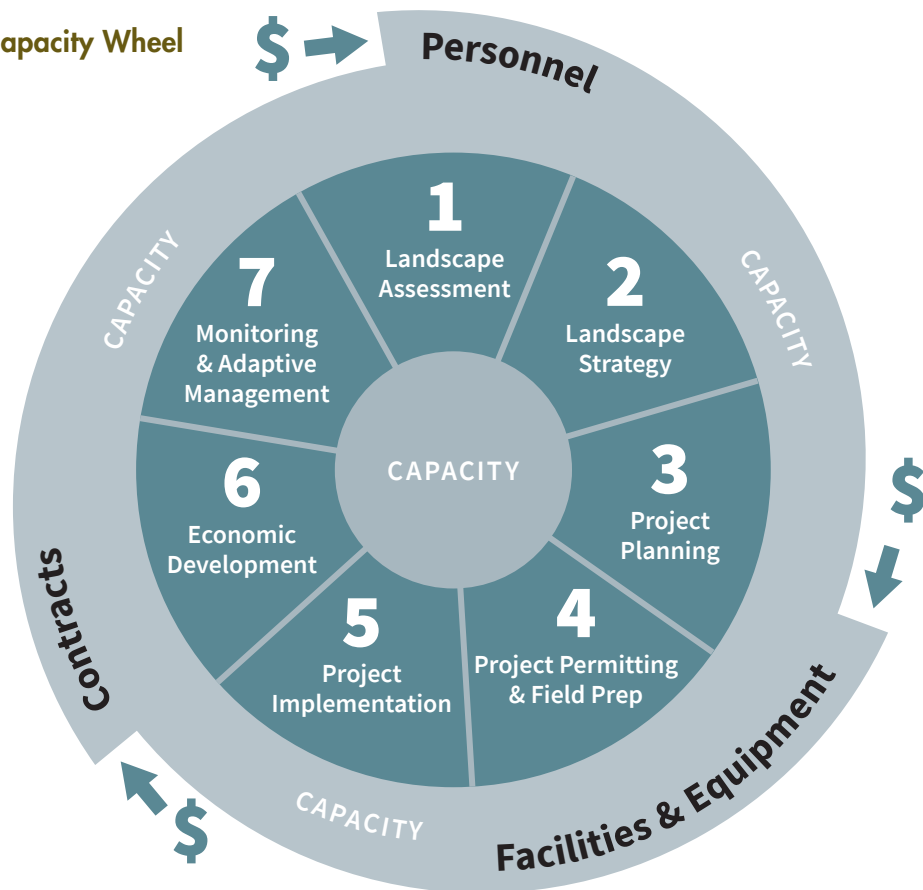
Mobilize Regional Action Plans

A central recommendation of the state's Forest Carbon Plan and the National Forest Planning Rule is to build and maintain regional approaches to improve the health and resilience of forested landscapes. The Forest Carbon Plan highlighted the growing network of regional forest collaboratives in California, where diverse local, regional, and tribal governments and stakeholders jointly develop forest health and wildfire resilience plans and projects.

The key benefits of a regional approach include:

- » Building a workforce and the capacity to develop an ongoing pipeline of projects;
- » Fostering alignment of state and federal goals and mandates ranging from forest health and resilience, climate adaptation, watershed protection, biodiversity and outdoor recreation;
- » Facilitating multi-benefit and multi-jurisdictional projects;
- » Providing a vehicle for new, more flexible contracting authorities, such as Good Neighbor and Master Stewardship Agreements;
- » Building capacity to develop regional wood utilization strategies;
- » Empowering local governments and collaboratives to set priorities and integrate forest resilience and sustainable development programs; and
- » Focusing state and federal investments on the unique risks and wildfire resilience priorities of each region.

Figure 1: Forest and Fire Capacity Wheel



(Source: Watershed Center, Tahoe Fire and Fuels Team)

Figure 2: Current Regions

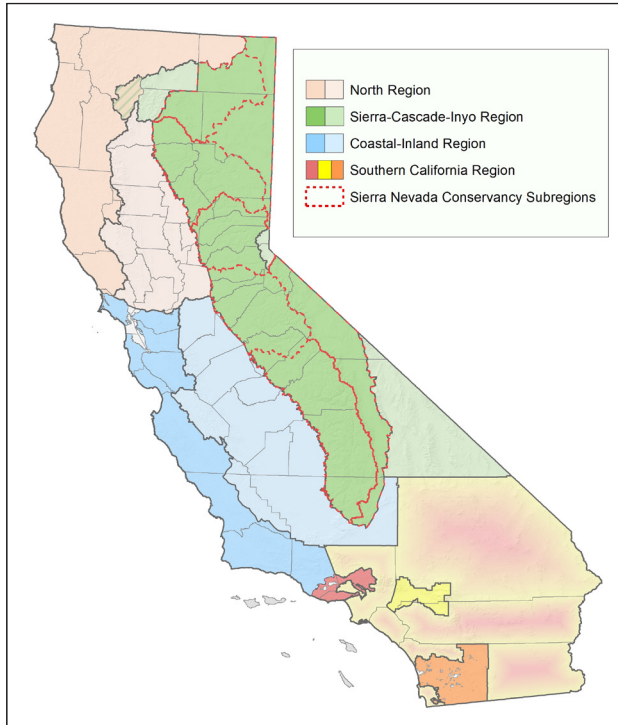
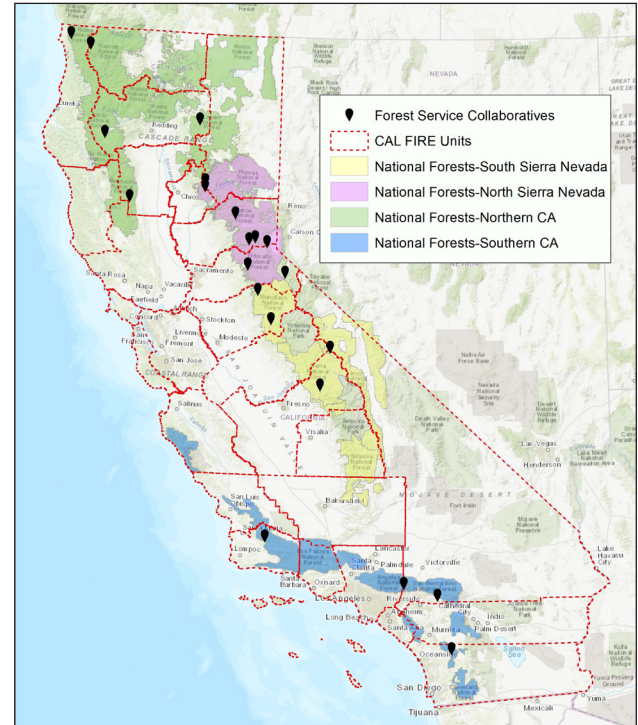


Figure 3: Future Regions and Subregions



At the federal level, the USFS is moving toward a regional framework of coordinated management and shared resources, in which national forest units are grouped into “zones” of four to six national forests, where individual work plans and resources are increasingly integrated. Furthermore, with a renewed national prioritization of Shared Stewardship Agreements, the USFS continues to support collaborative forest management with California and stakeholders across all lands at increasingly large landscape scales.

In partnership with the National Fish and Wildlife Foundation (NFWF), the USFS supports Shared Stewardship coordinators in its four regions through CAL FIRE funding. NFWF will work closely with USFS and CAL FIRE Units, local collaboratives, and the Department of Conservation’s (DOC) watershed coordinators to better align and implement federal, state, and local priorities and projects.

Despite this progress, many of the newly established collaboratives lack guidance on assessing risk and developing landscape-scale strategies. They also lack dedicated funding to sustain their efforts and build a pipeline of projects. To fill this gap, in 2019, DOC launched a Regional Fire and Forestry Capacity (RFFC) program to build the capacity of regional collaboratives through a common framework of regional forest and community resilience plans.

However, the RFFC program does not cover all high-risk areas of the state, and not all forested areas are covered within existing regional initiatives. Figure 2 identifies current USFS, CAL FIRE, FMTF boundaries, and related forest collaboratives.

Figure 3 displays the regional boundaries of the RFFC program. The darker shades represent current RFFC block grantee jurisdictions, lighter shades represent areas that do not currently have block grantees, and diagonal lines represent a shared area. The Sierra Nevada

Conservancy's watershed-based subregions are also displayed as examples of how regions are self-organizing into sub-regions.

Key Actions

1.28 Expand RFFC Program: In 2021, DOC will develop draft guidelines to expand the RFFC Program to all high-risk areas statewide. DOC will collaborate with CAL FIRE, the USFS, and other state and regional agencies and stakeholders to develop the draft guidelines.

1.29 Develop Network of Regional Forest and Community Fire Resilience Plans: As part of its updated guidelines, the RFFC Program will seek to provide a common but highly flexible framework for the development of Regional Forest and Community Fire Resilience Plans that can be tailored to a variety of regional governance structures and risks and priorities.

1.30 Develop Pipeline of Local and Regional Shovel-Ready Projects: DOC will develop a regional pipeline of shovel-ready projects and investment strategies that provide dedicated ongoing funding for implementation. Regional plans will guide project pipeline development and investment strategies and be developed in partnership with the USFS, CAL FIRE, and other key regional stakeholders. The Sierra Nevada, Tahoe, Coastal, and Santa Monica Mountains Conservancies will also play a lead role in allocating these funds.

Conserve Working Forests

The California and federal Forest Legacy Conservation Programs and funding from the Wildlife Conservation Board (WCB) are powerful tools for conserving private working forestlands. By funding working conservation easements and acquisitions across forests with wildfire risks, these programs reduce wildfire risks and help protect natural landscapes threatened with conversion to other uses, promote sustainable and resilient forest practices, and encourage long-term land stewardship.

While CAL FIRE, the USFS, the WCB, and other agencies already partner to fund projects through their respective competitive grant programs, a targeted and integrated approach will more efficiently and effectively achieve these programs' goals.

Key Actions:

1.31 Develop Consolidated Forest Conservation Program: In 2021, CAL FIRE and the WCB, in coordination with partner state agencies, will develop a consolidated program and grant application process for forest conservation and will align federal conservation programs to the extent feasible.

1.32 Align Forest Conservation Programs with Climate, Biodiversity, and Outdoor Access Programs: CAL FIRE and the WCB will adopt guidelines for this consolidated program aligned with the development and implementation of the Climate Smart Strategy and Biodiversity initiatives outlined in EO N-82-20.



Reforest Burned Areas

Recent catastrophic wildfires have damaged critical wildlife habitat, imperiled fisheries, watersheds, municipal water sources, threatened public safety due to mudslides and impacted rural, tourism-based economies. These events also threaten the long-term productivity of forest soils through erosion and changes in soil properties.

An average of about 35,000 acres has been reforested each year over the past decade, mainly following timber harvests. The USFS recently estimated that approximately 274,000 acres need to be reforested, and the recent 2020 wildfires have significantly increased this deficit.

The vast majority of recent wildland fires have occurred on federal lands. The USFS, in a partnership with American Forests, has made significant progress in restoring areas burned with high-intensity fire. Still, the remaining need is large and growing. In addition to carbon sequestration and water supply benefits, reforestation activities boost job creation. For every \$1 million invested in rural reforestation and vegetation management, approximately 17.3 jobs (13.5 direct and 3.8 indirect) are generated.

Key Actions:

1.33 Develop Restoration Strategy for Federal Lands: Given the recent fires, including 2020's unprecedented fire year, 650,000 to one million acres of federal land need some degree of reforestation. In spring 2021, the USFS, in partnership with American Forests and key stakeholders, will develop a strategy to restore its highest priority areas. This ecologically-based strategy will focus on silvicultural practices to increase carbon

storage, protect biodiversity, and build climate resilience.

1.34 Develop Coordinated State Restoration Strategy: CNRA will partner with Cal OES, OPR, and other federal, state, and local agencies to develop a coordinated strategy to prioritize and restore non-federal burned areas and communities as part of the state's overall long-term recovery and resilience strategies.

Improve Regulatory Efficiency

California landowners are faced with a complex set of regulations related to timber harvesting, reforestation, vegetative fuels treatment, and ongoing management and conservation of their lands. Among other actions, Senate Bill 901(2018) amended the Forest Practices Act to require state agencies to pursue opportunities to streamline the Forest Practice Act and associated rules and regulations to expedite forest health and fire prevention projects while preserving the resource protection functions.

In recent years, state agencies have completed several initiatives to coordinate better and streamline forest planning and the regulatory process. Two notable examples are the CalVTP, which conducted an environmental review on more than 20 million acres of fire-prone landscapes to streamline permitting of projects in the State Responsibility Area (SRA), and a new online timber harvest permitting system known as CalTREES.

These efforts are aligned with the administration's Cutting Green Tape Initiative, a collaborative effort led by CNRA to improve regulatory processes to increase the pace and scale of ecological restoration and stewardship.

Key Actions:

1.35 Complete Permit Synchronization

Workplan: By December 2021, BOF, working with the AB 1492 Leadership Team, will complete its permit synchronization work plan. Permit synchronization intends to align permitting

under the Forest Practice Act and Forest Practice Rules with the BOF and CDFW permitting and regulatory requirements, including waste discharge requirements and lake and streambed alteration permit issuance timelines.



1.36 Complete Timber Harvesting Plan

Guidance Documents: By 2022, CAL FIRE, in coordination with the Water Board, California Geographical Survey (CGS), and CDFW, will complete a series of permitting guidance documents to help small landowners and others navigate the timber harvesting process. Guidance will include how to efficiently file a Timber Harvest Plan (THP) for review and approval, and how to meet Water Board permitting and CDFW regulatory requirements, including waste discharge requirements and lake and streambed alteration permits.

1.37 Improve and Expand CalTREES:

CalTREES will be finalized and operational by 2022. Once fully operational, CalTREES will be improved to include the integration of a Geographical Information System (GIS) mapping platform, improved search functionality, and a one-stop platform for timber-related permits and notifications. Where appropriate, CalTREES shall also be built to interface with or include CDFW's Environmental Permit Information Management System, and a Water Board permit tracking and submission system for necessary timber harvest permits.

1.38 Enhance CalVTP Implementation:

BOF will provide statewide web-based training on utilizing the CalVTP and other permitting processes. Working collaboratively with the California Coastal Commission and the Water Board, the BOF will also identify additional permitting processes that may need to be incorporated into the CalVTP process. To ensure consistent execution of CalVTP, BOF will oversee the first round of Project Specific Analysis in various landscapes and geographies to ensure future projects have a consistent and high-quality template to follow.

1.39 Update Prescribed Fire Information

Reporting System: By December 2021, CNRA will collaborate with CARB to update its Prescribed Fire Information Reporting System (PFIRS), which is designed to capture statewide details on prescribed fires and enable estimations of smoke pollution. Under the goals of SB 1260, CARB will enhance PFIRS to improve data collection and ease-of-use by local air districts and burn managers to expand the safe application of prescribed fire. CARB will also lead an interagency analysis of prescribed fire smoke data to document public health impacts compared with wildfire smoke exposure.

1.40 Help Landowners Conserve Northern

Spotted Owls: CAL FIRE and CDFW, in collaboration with the U.S. Fish and Wildlife Service (USFWS), will develop tools to assist timber landowners with conserving northern spotted owls and their habitat.

- » CAL FIRE and CDFW will enroll eligible timberland owners in the Eastside Spotted Owl Resource Plan (ESORP). The ESORP is a regional and programmatic agreement between CAL FIRE and landowners that avoids taking of the northern spotted owl while conducting timber harvest operations.
- » CAL FIRE will work with the USFWS and CDFW to develop a northern spotted owl federal Safe Harbor Agreement (SHA) to facilitate land management and fuel reduction activities for non-industrial landowners. CDFW has the authority to issue a consistency determination based on a federal SHA.
- » CDFW, BOF, and CAL FIRE shall develop a strategy to incorporate the management of barred owl intrusion into spotted owl habitat.

GOAL 2: STRENGTHEN PROTECTION OF COMMUNITIES

More frequent, larger, high-severity wildfires threaten communities throughout California. A broad range of communities are threatened, from small isolated towns in rural areas to major metropolitan areas along the coast. Threats to these communities are compounded by population growth, local land-use decisions, and a longer annual fire season due to climate change. This confluence of factors has worsened loss to human life, property damage and destruction.

It is important to note that California's wildfire vulnerable communities are located across a range of landscapes with diverse vegetation types. While better forest management will reduce wildfire risk in California's forested regions, different strategies are required to protect much of the state's population that lives in cities and towns outside of forests. Building resilience in many of these communities relies on hardening homes, buildings and infrastructure, increasing defensible space and fuel breaks, and strengthening community planning and preparedness.

Historically, California's efforts to protect communities from wildfire focused primarily on suppressing fires, but the state's approach has been evolving in recent decades. The 2018 Strategic Fire Plan, which addressed wildfire threats across California communities, lays out eight goals, including advancing fire-resilient natural environments, fire-resistant buildings and infrastructure, and greater awareness of wildfire threats. It also called for local, state, federal, tribal, and private partnerships to achieve these goals. The Key Actions in this Action Plan are consistent with those eight goals.

The state will partner with federal and local agencies to significantly increase fire prevention, preparedness, and mitigation efforts, reduce community wildfire risk and create fire-adapted and resilient communities throughout the state.

Support Community Risk Reduction and Adaptation Planning

CAL FIRE and other state agencies will increase their assistance programs and partnerships with local communities to reduce risk, improve preparedness, and foster resilience. While each community has a unique set of needs, values, risks, and capacities, CAL FIRE, the USFS, and key stakeholders will develop a common framework to facilitate comprehensive local plans, as shown in the figure below. Building on this common framework, state agencies will partner with the California Fire Safe Council (CFSC), the California State Association of Counties (CSAC), the Rural Counties Representatives of California (RCRC), the Watershed Center, and other local and regional organization to expand and integrate these efforts into creating fire-adapted communities.

Key Actions:

2.1 Assess Statewide Risk to Vulnerable Communities: CAL FIRE will work with other state and federal agencies to improve and refine quantitative wildfire risk assessments across all lands and

ownerships, focusing on identifying the most vulnerable communities and populations. The assessment results will be coordinated with related efforts by OPR's Integrated Climate Adaptation

and Resiliency program and integrated into statewide and regional risk-based planning efforts and grant programs.

2.2 Develop Performance Measures: CAL FIRE will work with the Watershed Research and Training Center (WRTC) and other partners to identify performance measures for community wildfire risk reduction and adaptation.

2.3 Develop and Implement New Fire Hazard Severity Zones: CAL FIRE will update the scientific factors that determine the

hazard ratings, including new local climate data and improved fire spread modeling. CAL FIRE will work with local jurisdictions and submit Local Responsibility Area maps to respective jurisdictions.

2.4 Update the Fire Hazard Planning Technical Advisory: Consistent with SB 901 (2018) and AB 2911 (2018), OPR will finalize its update to the Fire Hazard Planning guidance document in early 2021 to assist local governments in

Figure: Elements of Fire Adapted Communities (courtesy Watershed Research and Training Center)



developing effective fire hazard policies and programs in the general plan and other implementing plans, codes, standards, and programs.

2.5 Develop WUI Best Practices Inventory:

OPR, in collaboration with CAL FIRE and the Water Board, will prepare an inventory of best practices for planning, zoning, development review, and code enforcement to address and reduce wildfire hazards and risks related to planning and development activities in the Wildland Urban Interface (WUI). The inventory will serve as a complement to OPR's Fire Hazard Planning Technical Advisory (recently updated pursuant to SB 901 and AB 2911) and will inform local governments on how best to develop and implement plans, codes, standards, and enforcement activities within the WUI. OPR will publish the results of the inventory and best practices on the Adaptation Clearinghouse.

2.6 Develop CWPP Best Practices Guide:

In coordination with the CFSC, WRTC and other organizations, CAL FIRE will develop and make available a best practice guide for new and updated Community Wildfire Protection Plans (CWPP's), including data standards to facilitate integration with other plans at the county, regional and statewide level.

2.7 Increase Information Sharing:

DOC will coordinate an organized peer networking effort that will meet virtually through an interactive forum to share information monthly or quarterly to facilitate learning and preserve institutional knowledge of wildfire-mitigation planning across disciplines.

2.8 Develop Defensible Space and Home Hardening Curriculum:

CAL FIRE will develop a formal defensible space and home hardening inspections curriculum to ensure statewide consistency and implementation

Increase Fuel Breaks

Fuel breaks in and around communities and across the landscape represent a critical link between efforts to create healthy, resilient forests and reduce communities' risks to catastrophic wildfires.

Building on the success of past fuel reduction work, including the 35 priority projects implemented in 2019, CAL FIRE is pivoting to a model of continuously developing and maintaining a list of more than 500 fuel break projects across the state. CAL FIRE is now working on multiple projects simultaneously and starting new projects as soon as existing projects are complete. These projects are vital to slow the spread of fires in the WUI and provide anchor points for fire personnel.

Key Actions

2.9 Develop and Maintain 500 Fuels

Management Projects: Using a science-based approach to identify priority areas for treatment, CAL FIRE will create a dynamic matrix of newly developed fuel break projects. These projects are described in CAL FIRE's Unit Fire Plans, including assessments of threats

to vulnerable communities identified in the Community Wildfire Prevention and Mitigation Report.

2.10 Link with Landscape Scale Projects:

When developing the 500 projects, CAL FIRE will identify fuel breaks and landscape restoration projects created by federal land managers, timber companies, non-

governmental organizations (NGOs), and other land managers, and seek opportunities to fill gaps and leverage project efforts. These efforts will link continuous fuel breaks and forest resilience projects across landscapes at the lowest possible cost.

2.11 Maintain Fire Prevention Grants: CAL FIRE will coordinate with other state agencies and organizations to allocate fire prevention grants to the highest priority areas and projects.

Protect Wildfire-Prone Homes and Neighborhoods

To address the long-term trend of more people living in the WUI, it is critical to increase vulnerable communities' resilience to uncontrolled wildfires. As described in OPR's Fire Hazard Planning Technical Advisory, developments in the WUI increase the number of ignitions, the likelihood that wildfires become urban conflagrations, putting many homes and structures at risk of being damaged or destroyed by a wildfire, and constrain fuel-management activities.

Key Actions:

2.12 Extend Defensible Space Programs: In 2021, CAL FIRE, through a public process, will assist BOF in updating defensible space regulations to meet AB 3074 (2020), which requires a five-foot ember-resistant zone around homes. CAL FIRE and BOF will also develop and implement a widespread public information campaign and update the Ready for Wildfire program to explain the revised requirements.





2.13 Expand Assistance Programs: CAL FIRE will look at ways to expand program assistance for the elderly, low-income, and/or people with disabilities to comply with defensible space requirements.

2.14 Increase Defensible Space Inspections: In 2021, CAL FIRE will expand its inspection program to meet AB 38 (2020) requirements, which requires CAL FIRE to conduct defensible space inspections year-round on the sale of real property in the SRA.

2.15 Improve Defensible Space Compliance: CAL FIRE will work with stakeholders to increase defensible space compliance by developing a cooperative defensible space strategy. This effort will provide education and assistance to homeowners to improve defensible space effectiveness. CAL FIRE will expand its support for creating new National Fire Protection Association Firewise USA recognized communities.

2.16 Create a Model Defensible Space Program: CAL FIRE is developing a model defensible space program that will be available to cities and counties to enforce defensible space provisions, as required by SB 190 (2019).

2.17 Expand Home Hardening Programs: Cal OES, in coordination with other state agencies, will expand home hardening programs through the development of a statewide program as described in AB 38 (2019) for cost-effective structure hardening and retrofitting to create fire-resistant homes, businesses, and public buildings.

2.18 Develop Home Hardening Guidance: CAL FIRE will continue to work with the Insurance Institute for Business and Home Safety, National Institute for Standards and Technology, and other partners to develop home hardening guidance.

2.19 Develop WUI Fire Safety Training
Material: CAL FIRE will develop a WUI Fire Safety Building Standards Compliance training manual for local building officials, builders, and fire service personnel, and make it available on its department website to meet the requirements of SB 190 (2019).

2.20 Develop Insurance MOU: The California Department of Insurance will continue to work with CAL FIRE and Cal OES to develop an MOU and implement the provision of SB 824 (2017) regarding residential property insurance in wildfire-affected areas under a declaration of a state of emergency.

Improve Utility-Related Wildfire Risk

Utility-related wildfires have led to some of the most catastrophic wildfires in state history. From 2017-2018, utility sparked wildfires that killed 109 people and destroyed 20,000 structures, with additional investigations underway for damaging and deadly wildfires in 2020. In response, the state initiated several actions, including establishing a new Wildfire Safety Division (WSD) in January 2020 within the California Public Utilities Commission (CPUC).

As described in Reducing Utility-related Wildfire Risk: Utility Wildfire Mitigation Strategy and Roadmap for the Wildfire Safety Division, the WSD is charged with driving oversight and enforcement of electrical corporations' compliance with wildfire safety regulations. By July 1, 2021, the WSD will transition into the Office of Energy Infrastructure Safety (OEIS) under CNRA.

Key Actions:

2.21 Review Wildfire Mitigation Plans: The new OEIS will work collaboratively with CAL FIRE and other agencies to review and comment on the investor-owned utility Wildfire Mitigation Plans.

2.22 Coordinate Utility-Related Wildfire Mitigation Initiatives: Through the OEIS and the Utility Wildfire Mitigation Steering Committee, the state will continue to reduce wildfire risk, including assuring compliance with commitments from electrical corporations to reduce utility-related ignitions that can cause catastrophic wildfires while protecting natural resources and biodiversity.

2.23 Expand USFS Master Special Use Permits:

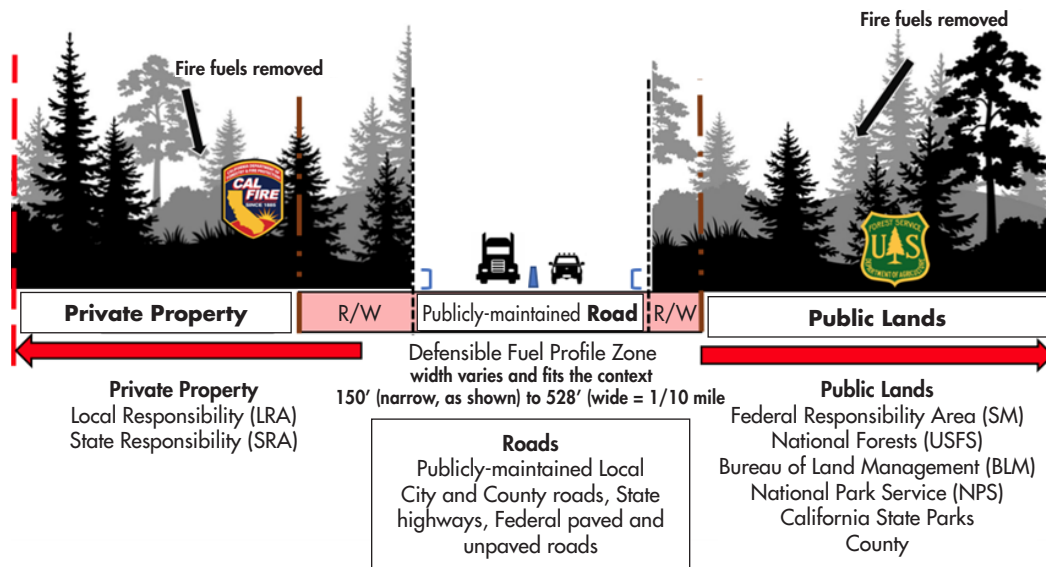
In 2019, the USFS signed a 30-year Master Special Use Permits with Pacific Gas and Electric (PG&E) and Southern California Edison (SCE) to streamline permitting of hazard tree removals and other routine maintenance activities along powerline corridors, and will seek to expand the use of these permits to other utilities throughout the state.



Create Fire-Safe Roadways

A fire-safe state highway system is vital to reducing wildfire ignitions and ensuring emergency evacuation routes. According to the California Department of Transportation (Caltrans), 2,600 centerline miles of California's highway system needs defensible space within and alongside the Caltrans-owned right of way.

Figure 4: Public roads with “defensible fuel profile zone.”



As shown in the figure, defensible space must be wide enough to function as a fuel break or fire control line. In many cases, the thinning of vegetation along road corridors will cross federal, state, or local boundaries. Accordingly, Caltrans works with a broad range of adjacent landowners to develop and implement forest thinning and maintenance projects.

Key Actions:

2.24 Identify Subdivision Secondary

Emergency Access: BOF, in consultation with CAL FIRE, shall survey subdivisions in the SRA and very high fire hazard severity zones without a secondary egress route that are at significant fire risk, consistent with the requirements of AB 2911 (2018). In consultation with CAL FIRE and the impacted local government, BOF shall develop recommendations to improve the subdivision's fire safety.

2.25 Develop Framework for Safe Road

Corridors: Through workshops with key agencies and stakeholders, Caltrans is

establishing a framework for collaborative fuels reduction projects to protect roadway travelers, communities along highways and to reduce roadside ignitions along primary and secondary emergency evacuation routes. Caltrans will identify highway corridors most in need of defensible space and develop a strategy in the spring of 2021 while seeking to align funding and crew resources.

2.26 Assist with General Plans: Caltrans will assist cities and counties in updating their general plan safety elements under AB 747 (2019), which requires that safety elements be updated to address

evacuation routes and their capacity, safety, and viability under a range of emergency scenarios. OPR will also work with Caltrans to update the General Plan Guidelines to include guidance for meeting AB 747 requirements for safety elements.

2.27 Expand Highway Treatments: CAL FIRE and Caltrans will seek to partner with adjacent landowners to treat priority areas along its 2,600 miles of high-risk roadways.

2.28 Develop Good Neighbor Agreement:

Recognizing that there are more than 3,000 miles of road crossing federal lands, Caltrans will work with the USFS to develop a statewide Good Neighbor Agreement to allow Caltrans to treat adjacent federal lands.

2.29 Expand Messaging Campaign: Caltrans will partner with CAL FIRE to expand its public outreach efforts to include graphics and messages that align with emergency evacuation messaging, such as Ready, Set, Go!, FEMA's Ready.gov, and the 5 Minute Plan.

Reduce Health Impacts of Smoke

By some measures, increased wildfire smoke has reversed gains in air quality created by improved emission in transportation and other sectors in parts of California. Evidence also suggests that smoke's public health effects are even more significant than the tragic burns and deaths caused directly by wildfire in California. The state has responded to this increase in wildfire smoke by creating programs to better monitor smoke, increase public awareness, create clean air shelters, and research smoke health effects. In addition, state and federal efforts to significantly increase thinning and prescribed fire will decrease the spread, severity, and smoke impacts of large uncontrolled fires.

Key Actions

2.30 Launch Smoke Ready California

Campaign: Through the interagency Smoke Communications Working Group, which includes more than 15 federal, state, and local agencies and stakeholders, CARB is developing a Smoke Ready California campaign ahead of the 2021 wildfire season that will provide coordinated messaging and content to help Californians plan for and protect themselves from smoke impacts.

2.31 Release California Smoke Spotter App:

CARB, with support from partners, is developing a California Smoke Spotter app to provide the public with information on nearby prescribed fires, hourly data gathered from permanent and portable air monitors, as well as personalized alerts. It will also offer a 24-hour smoke forecast, information on wildfires, and

educational content to help people prepare for possible smoke impacts. The app's public release is expected to be in early 2021, with more enhancements planned in the coming years.

2.32 Enhance Prescribed Fire Reporting:

CARB will pursue significant enhancements in data collection and reporting for PFIRS, a platform for aggregating data from air districts, fire management agencies, and burners. The enhancements will enable more efficient reporting and analysis of the effects of prescribed fire and smoke.

GOAL 3: MANAGE FORESTS TO ACHIEVE THE STATE'S ECONOMIC AND ENVIRONMENTAL GOALS

Healthy forests provide a range of benefits, boosting climate resilience, increasing carbon sequestration, protecting water supply, improving air quality, cooling communities, providing habitat for wildlife, and supporting local economies. Accordingly, California's forested landscapes are a key component of the state's strategy to combat climate change, promote biodiversity, and support rural economic development.

Integrate Forest Management into State Climate and Biodiversity Strategies

In October 2020, Governor Newsom signed Executive Order N-82-20, directing state agencies to accelerate actions to combat climate change, protect biodiversity, and build resilience through nature-based solutions.

The executive order elevates the role of natural and working lands as a key pillar of California's climate change strategy, committing the state to immediate actions to increase carbon removal and enhance resilience in the state's forests, wetlands, agricultural soils, urban greenspaces, and land conservation efforts. The executive order directs state agencies to create a Natural and Working Lands Climate Smart Strategy to help meet the state's carbon neutrality goal and build climate resilience, and to consider this strategy in the development of an updated target for the natural and working lands sector in the 2022 Climate Change Scoping Plan Update (Scoping Plan Update).

Pursuant to the order, CNRA has launched the California Biodiversity Collaborative to develop an equitable statewide approach to protecting the state's natural richness.

The order also establishes a state goal of conserving at least 30 percent of California's land and coastal waters by 2030 to address the biodiversity and climate crisis. CNRA and other state



agencies, in consultation with the Collaborative, are directed to develop and report strategies to the Governor no later than February 1, 2022, to achieve the 30 by 30 goal.

In addition, the legislature has enacted several bills related to climate and natural and working lands, including SB 1386 (2016), which states that the protection and management of natural and working lands, including forests, is an essential strategy in meeting the state's greenhouse gas reduction goals, and requires all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.

For the state's forested landscapes, state agencies will promote landscape-scale forest management that supports migration corridors and biodiversity, safely reintroduces fire back on the landscape, supports native species that depend upon fire to thrive, and acquire and protect working forests, mountain meadows, and other significant areas. Mountain meadows, for example, cover less than two percent of the Sierra/Cascade landscape, but their unique functions add resiliency to the hydrologic and ecological processes that sustain California's headwaters, particularly during drought years, which experts predict will be more common as the climate warms.

Increased ecologically appropriate forest thinning and prescribed fire will also be important elements of the Climate Smart Strategy and Scoping Plan Update. Although these treatments will decrease forest carbon pools in the near term, in the long run, they will reduce forest density, promote the growth of larger, more fire-resistant trees, and create a mosaic of forests that are less vulnerable to uncontrolled wildfire and climate change. Significant reforestation investments will also be essential to meet the state's long-term carbon storage targets for the forest sector.

Finally, the state will also continue to invest in forest management through the CCI program. The state has invested \$1.4 billion in CCI projects that provide climate mitigation or adaptation benefits and contribute to the Forest Carbon Plan goals, including forest thinning and prescribed fire, urban tree planting, land conservation, and mountain meadow restoration.

Key Actions:

3.1 Develop Natural and Working Lands

Climate Smart Strategy: Consistent with Executive Order N-82-20, CNRA will coordinate the development and release of a Natural and Working Lands Climate Smart Strategy by October 2021.

3.2 Develop 2022 Climate Change Scoping Plan Update:

CARB, in partnership with CNRA and other agencies, will build upon the Natural and Working Lands Climate Smart Strategy and other science-based data in updating the strategies and targets for natural and working lands in the 2022 Climate Change Scoping Plan.

3.3 Establish Biodiversity Collaborative:

CNRA, in coordination with the California

Department of Food and Agriculture (CDFA), California Environmental Protection Agency (CalEPA), and other state agencies, has launched the California Biodiversity Collaborative and will bring together experts, leaders, and communities from across California to advance a unified, comprehensive approach to protecting the state's biodiversity.

3.4 Develop Biodiversity Strategy:

CNRA and other relevant state agencies, in consultation with the Collaborative, will develop and report strategies to meet the goal of conserving at least 30 percent of California's land and coastal waters by February 2022.

Create a Sustainable Wood Products Market in California

Government agencies alone cannot hope to adequately reduce fire risk and preserve healthy and sustainable forest lands. State and federal policies must attract private sector investments into a vibrant wood products market that advances the state's sustainable forest management strategy. Facilitating expanded economic activity in this sector will increase the value of woody biomass and help meet our state's sustainable forest management goals.

Several studies have concluded that expanding confidence in feedstock availability is the single most crucial factor in developing a thriving wood utilization sector. Other barriers include limited access to private capital and limited capacity in forested communities to engage in forest product market development. In the absence of a clear market for non-merchantable woody feedstock, more than half of all woody materials derived from forest management projects are piled and opened burned, emitting considerable amounts of carbon and hazardous air pollutants.

For the past few years, the Rural Economic Development Steering Committee/ Wood Utilization Work Group of the Task Force has been leading a collaborative effort to create a sustainable wood products market in California. More recently, OPR has led an interagency team to build on this work in developing a comprehensive framework to align the state's wood utilization policies and priorities to fulfill the state's climate change and economic development goals. Lastly, BOF's Joint Institute for Wood Products Innovation (Institute) brought together finance, wood utilization, nonprofit, bioenergy, forestry, and feedstock experts to work in conjunction with the Institute Advisory Council to develop its Joint Institute Recommendations to Expand Wood and Biomass Utilization in California (Institute Recommendations).



Key Actions:

- 3.5 Complete State Framework:** In 2021, OPR, in collaboration with other state agencies, will complete the development of its comprehensive framework to align the state's wood utilization policies and priorities.
- 3.6 Develop Market Roadmap:** Building upon OPR's framework and Joint Institute recommendations, GoBiz will partner with OPR, CAL FIRE, BOF, and other key agencies and stakeholders in developing a focused market strategy by December 2021.
- 3.7 Establish Metrics:** The OPR framework will also include a comprehensive set of metrics to evaluate biomass availability, usage, investments, and workforce levels.
- 3.8 Launch Catalyst Fund Forest Investments:** In 2021, the state's iBank will partner with CAL FIRE and other agencies to advance forest-related applications to the Catalyst Fund, building on work to date, which will accelerate with the passage of the state budget. The fund will (1) provide loans, loan guarantees and other credit support to encourage the development of businesses that utilize wood and forest biomass; (2) encourage private-sector innovations in technology, business models, infrastructure, and supply chains in the woody biomass markets; and (3) promote optimization of state grant funds in the sector by leveraging the maximum amount of private capital possible for each public dollar provided.
- 3.9 Develop X-Prize for Wood Product Innovation:** By December 2021, OPR will coordinate the development and execution of an X-Prize for wood product innovation. The competition will be designed to showcase California's commitment to becoming the hub of wood product innovation and leverage state investments to bring philanthropic and private capital into the competition.
- 3.10 Address Feedstock Barriers through Pilot Projects:** OPR will develop five pilot projects to test new mechanisms for developing long-term feedstock contracts. Information and templates from the pilot projects will be shared broadly to provide a menu of broader adoption options.
- 3.11 Develop Statewide Forest and Wood Products Workforce Assessment:** OPR, in coordination with the Labor and Workforce Development Agency and other key agencies and stakeholders, including CAL FIRE, the Community College System, and the Sierra Business Council, will lead the development of a statewide Forest and Wood Products Workforce Assessment by December 2021.
- 3.12 Maintain and Develop Removal Incentives:** As required by SB 901 (2018), CAL FIRE will provide transportation incentives to offset a portion of the cost to move forest byproducts to end-user facilities. In addition, as described in the Joint Institute recommendations, CAL FIRE will evaluate the potential for the development of incentive programs to reduce the costs to forest landowners to remove woody biomass.

Sustain and Expand Outdoor Recreation on Forestland

Outdoor recreation is a significant economic sector in California, responsible for 691,000 jobs, \$92 billion in economic benefits, and an essential economic driver in rural forested communities. From wilderness excursions, hunting and fishing, rock climbing, and snow sports to motorized and nonmotorized activities, the recreational economy for the Sierra Nevada range, for example, is valued at \$3 to \$5 billion annually.

By enacting the federal Great American Outdoors Act (GAOA), significant new federal funding sources will provide new opportunities for partnerships with state, local, and tribal governments. GAOA will provide up to \$285 million a year to the states for five years. Much of this work will be implemented through partnerships with state, local, and tribal governments, NGOs, and others as part of the Shared Stewardship framework.

Key Actions:

3.13 Update Statewide Comprehensive Outdoor Recreation Plan (SCORP): In 2021, CNRA, in coordination with State Parks, will update the Statewide Comprehensive Outdoor Recreation Plan (SCORP). The SCORP will provide a comprehensive framework and investment strategy, emphasizing equitable access to underserved communities and rural recreation-dependent communities.

3.14 Develop Joint Strategy to Improve Access to Sustainable Recreation: In accordance with the Shared Stewardship Agreement, the USFS will coordinate the development of a joint strategy to improve access to sustainable recreation.





Protect and Expand Urban Canopy and Forests

Establishing and maintaining urban forests improves Californians' quality of life and the quality of urban natural resources. Trees provide energy conservation, reduce stormwater runoff, extend the life of surface streets, improve local air, soil and water quality, reduce atmospheric carbon dioxide, improve public health, provide wildlife habitat, and increase property values.

CAL FIRE's Urban and Community Forestry Program provides grants, technical assistance, education, and policy advice to local governments, nonprofits, private sector organizations, and the public to advance urban forestry efforts under the Forestry Act of 1978. The program also works with CAL FIRE's Fire Prevention Program in advocating fire-safe landscaping for homeowners and communities. Local communities have planted more than 80,000 trees through this program since 2015, primarily in disadvantaged communities.

Key Actions:

3.15 Increase Urban Canopy: By 2030, CAL FIRE will seek to significantly increase California's urban tree canopy, targeting disadvantaged and low-income communities and low-canopy areas.

3.16 Establish Regional Targets: CAL FIRE will also seek to work with local and regional agencies to establish local tree canopy cover goals.

3.17 Identify High Priorities: CAL FIRE will help local governments identify optimal green infrastructure locations and increased tree canopy cover in high-priority areas described in CAL FIRE's 2017 Forest and Rangeland Assessment.

GOAL 4: DRIVE INNOVATION AND MEASURE PROGRESS

California is renowned as the land of innovation and has a history of building new industries, inventing cutting-edge technologies, and experimenting with novel policies. Our forests and the communities that depend upon them face exceptional risk from climate change and wildfires, and the state's best hope for reducing these threats is to use this proven capacity to innovate.

Utilize Best Available Science and Accelerate Applied Research

Science improves understanding of cause and effect relationships in ecosystems. Understanding the dynamics of forest management and forest health outcomes is more important than ever as California aims to increase investment in land management to deliver on broader state goals.

In the last two fiscal years, CAL FIRE distributed approximately \$2.5 million annually in forest health research grants to evaluate the efficacy of forest management actions, improve model predictions, and improve research capacity in the state.

Key applied research topics include evaluating:

- » Total cost of uncontrolled wildfire, including the health costs of increased air pollution, loss of economic output, lost school days, environmental damages, and other impacts;
- » Effectiveness and trade-offs between alternative management strategies to reduce wildfire risk, increase carbon storage, improve biodiversity, improve water and air quality, and provide regional economic benefits;
- » Human health impacts of smoke from prescribed and uncontrolled fires;
- » Public perceptions of risk, wildfire, prescribed and managed fire, and smoke;
- » Influence of extreme weather conditions on fire behavior;
- » Environmental factors that influence post-fire regeneration;
- » Drought impacts on forests and expected wildfire behavior; and
- » Factors that affect fire spread and behavior within the WUI.

Key Actions:

4.1 Complete Applied Research Plans: In coordination with the Science Advisory Panel of the Task Force and other leading scientists, BOF and CAL FIRE's Forest and Resource Assessment Program (FRAP) will develop and issue an applied research plan by June 2021.

4.2 Forest Research Grants: Based on the applied research plan results, CAL FIRE will expand its forest research grant program to address key management questions and priorities.

Expand and Improve Monitoring, Reporting, and Decision-Support Tools

The state continues to invest in inventory and monitoring programs to understand the status of and trends within forests and other natural lands. Data gathered from these efforts are key inputs into modeling efforts that provide an understanding of the past, present, and future of forests, fire, and climate in California.

In addition, emerging technologies transform our ability to assess wildfire risk, forest health, and watershed resilience and rapidly put that knowledge to use in guiding management, planning, and finance decisions. These tools help prioritize and assess trade-offs among forest management objectives while providing transparent and defensible information to the public. For example, CNRA and CalEPA will develop a landscape-scale prioritization tool that may serve as a model for a more consistent statewide approach.

Figure: the Pillars of Resilience



Source: Tahoe Conservancy

The USFS, Sierra Nevada and Tahoe Conservancies, and other partners will also develop prioritization and scenario planning tools on the Stanislaus National Forest and in the Tahoe-Central Sierra region, as well as a comprehensive set of indicators to measure forest health and resilience. The 10 Pillars of Resilience (see figure) provide a framework for assessing progress under the environmental, social, and economic goals of landscape-scale forest management projects and programs. These efforts will complement related programs established under AB 1492 (2019) and CAL FIRE's Forest and Range Assessment and inform broader state and federal climate resilience strategies.

Despite this progress, state, federal, and local agencies and land managers have developed their own data sets to track, report, and evaluate progress on forest management activities and priorities. Aligning these efforts is essential to develop a comprehensive assessment and strategy for improving the health and resilience of the state's forested lands. The development of new databases, assessment tools, and related efforts in this Action Plan will be coordinated with other federal, state, and local agencies to improve coordination and ensure consistency with the agencies' statutory requirements.



Key Actions:

4.3 Establish Forest Data Hub: CAL FIRE and the USFS, in collaboration with the USDA California Climate Hub and other agencies, will seek to establish a Forest Data Hub (Hub) to serve as a multi-institutional information clearinghouse. The Hub's goal will be to support, integrate, evaluate, and synthesize ongoing reporting and monitoring efforts conducted by state and federal agencies, universities, and non-governmental organizations. For example, the Hub could develop standard protocols for field-based monitoring, expand data sharing, and require annual reporting into a common data repository. These coordinated information products would be rapidly and reliably made available to land managers and decision-makers. The Hub would be initially staffed by an interagency team of CAL FIRE, CARB, the University of California, and the USFS.

4.4 Establish Ecological Planning Tool: By January 2023, CalEPA and CNRA will develop a landscape-scale planning tool for state, local, and federal partners and tribes to establish forest management and restoration priorities.

4.5 Develop Statewide Forest Ecosystem Monitoring System: CNRA will continue to lead a long-term statewide forest ecosystem monitoring and assessment initiative to analyze how forest management and timber harvest practices impact forest health. By integrating interagency data and remote sensing from state and federal resource programs, CNRA will establish a spatially explicit, consistent approach to track forest ecosystem conditions over time at a watershed scale. The work has now been linked directly to AB 2551 (2017) to develop a spatial assessment and priority plan in northeastern California that will extend statewide.



4.6 Integrate and Expand Forest Carbon Inventories: CARB and CAL FIRE staff will continue to coordinate improvements to the Natural and Working Lands and AB 1504 (2009) forest carbon inventories to ensure that the state has a detailed and comprehensive understanding of forest carbon dynamics.

4.7 Develop State-of-the-Science Models: CARB and CAL FIRE are developing state-of-the-science models to map fuels and simulate the future of California's Natural and Working Lands, including interactions between climate, fire, carbon and water in forests. This effort will utilize CAL FIRE's recent investment in better field-based inventory data. This modeling will inform CARB's modeling effort to determine management strategies to deliver on the state's climate change goals while providing other valuable ecosystem services.

4.8 Develop Consistent Reporting Tools:

Through the proposed Forest Data Hub, CNRA, CAL FIRE, CARB, and the USFS will develop reporting tools that allow for consistent reporting on acres treated, prescribed fire, reforestation, carbon accounting, fire intensity, land cover change, and other key information.

4.9 Establish Clearinghouse: The Science Advisory Panel of the Task Force is collecting, reviewing, and organizing information on new and emerging technologies and data platforms designed to inform forest management practices at multiple scales. This effort will be coordinated with the state's Adaptation Planning Clearinghouse and the development of the Forest Data Hub.

4.10 Improve Coordination of Climate and Fire Research:

Despite substantial investments by several agencies, the state lacks a focused, coordinated approach to improve our understanding of the complex impacts of climate change on wildfire regimes. The Science Advisory Panel will convene a planning effort to better coordinate the ongoing and future actions of state and federal agencies, academic institutions, and the private sector to develop the knowledge and tools necessary to advance predictions of wildfire on multiple timescales, and to inform management decisions that prevent further catastrophic damage to the state's ecosystems and economy.



MOVING FORWARD: MAINTAIN PROGRESS AND PARTNERSHIPS

California's forest management and wildfire prevention programs are led by a broad and diverse set of state, federal, local, tribal, and private organizations, often facing competing and overlapping mandates. Therefore, the Task Force's key goal has been to coordinate and integrate these disparate efforts into a comprehensive state framework.

Despite this progress, however, several of the more than two dozen Task Force workgroups are addressing similar goals and mandates and overlap with existing interagency programs and workgroups. To maintain momentum and track the progress of this Action Plan, the Task Force itself will be streamlined into a more focused governance structure.

Key Actions:

Streamline Task Force: The Task Force will be streamlined to focus on oversight and coordinate implementation of this Action Plan. The key roles of the Task Force will be:

- » Providing regular reports on progress towards the goals and milestones of this Action Plan;
- » Coordinating and aligning state, federal, local, tribal, academic, and private forest management programs and projects;
- » Establishing and maintaining strong working relationships among the agencies and key stakeholders;
- » Developing coordinated investment programs that leverage state, federal, and local funding programs; and
- » Establishing a strategic vision for protecting and maintaining the health and resilience of the state's forested landscapes and communities.

The following groups will also aid the Task Force:

- » Working Groups: The Task Force will continue to oversee a much smaller number of interagency and stakeholder-led workgroups to align agency activities and identify and resolve issues.
- » Science Advisory Panel: The Task Force Science Advisory Panel will continue to support science-based decision making, translate scientific findings related to agency programs, and identify research gaps to inform future forest health projects.
- » Forest Data Hub: The Forest Data Hub will support innovation, align annual state and federal reporting of forest management activities and serve as a clearinghouse for new and emerging scientific findings, data platforms, and technology.



APPENDIX A

Summary of Actions

GOAL 1: INCREASE THE PACE AND SCALE OF FOREST HEALTH PROJECTS

Accelerate Restoration Across All Lands

- 1.1 Treat 500,000 Acres of USFS Land Annually by 2025:** Consistent with the Shared Stewardship Agreement, the USFS intends to treat a total of 500,000 acres annually by increasing the pace-and-scale of restoration treatments over the next five years.
- 1.2 Increase Sustainable Timber Harvest:** The USFS will seek to increase its annual timber harvest from 400 million board feet (MBF) to 500 MBF annually, accounting for a third of the current industry capacity of 1.5 billion board feet annually.
- 1.3 Identify Strategic Fire Management Zones:** In 2021, the USFS will identify Strategic Fire Management Zones to expand its use of managed wildland fire while protecting public and community health and safety.
- 1.4 Expand Agreements:** The USFS will seek to expand its use of Good Neighbor Authority and Shared Stewardship Agreements and other mechanisms to partner with state, local and tribal governments to accomplish fuels reduction projects on federal land more efficiently.
- 1.5 Manage 175,000 Acres of NPS Lands by 2025:** NPS will utilize a combination of mechanical and prescribed fire to treat 75,000 acres and managed wildfires to treat another 100,000 acres to meet ecological objectives and reduce the risk and impact of high severity wildfires.
- 1.6 Treat 10,000 to 15,000 acres of BLM Land Annually by 2025:** BLM will increase its pace and scale to meet its goal of treating approximately 9,000 acres a year to 10,000 to 15,000 acres a year.
- 1.7 Increase Incentives for Timber Harvests that Improve Forest Resilience:** In coordination with the state agencies biodiversity initiative, the state will develop a set of incentives to increase ecologically and financially sustainable timber harvest and associated infrastructure, which may include improved permitting, landscape-scale projects across multiple ownerships, and incentives for multi-age stands, increased carbon storage, and biodiversity.
- 1.8 Implement Fuels Reduction MOU:** CAL FIRE and the USFS will seek to implement and expand participation in the Fuels Reduction MOU among key agencies and partners.
- 1.9 Develop Implementation Strategy:** By December 31, 2021, CAL FIRE will develop an implementation strategy for a Wildfire Resilience and Forest Assistance Program targeted to small private landowners. The implementation strategy will also include information related to meeting the California State Water Resources Control Board (Water Board) permitting and CDFW regulatory requirements as needed.

- 1.10 Maintain Forest Stewardship Education Program:** CAL FIRE will maintain its Forest Stewardship Workshop program to help forest landowners develop management plans and implement stewardship projects. Workshop locations will be based on CAL FIRE's fire-risk and priority landscape map and the 2019 Community Wildfire Prevention and Mitigation Report.
- 1.11 Increase Technical Assistance:** The state, through contracts with cooperators, will assist landowners with Forest Management Plans, Burn Plans, archeological and biological surveys, project field design, and other support from forestry and other natural resource professionals.
- 1.12 Improve Outreach:** State agencies will partner with the Forest Landowners of California and other organizations to more efficiently target outreach efforts, guide assistance planning, and track project implementation.
- 1.13 Support Forest Health and Maintenance Treatments:** CAL FIRE will provide funding for initial fuels treatments and follow-up maintenance with landowners contributing at least 10 percent of costs. CAL FIRE will prioritize funding of NIPF projects within locally coordinated forest management and post-fire restoration projects that benefit broader landscapes across multiple ownership types.
- 1.14 Establish Emergency Forest Restoration Teams:** CAL FIRE and other state agencies will explore the potential for developing emergency forest restoration teams to assist small landowners impacted by wildfires with funding and expertise to restore their properties and help prevent further damage to life, property and natural resources. This program would complement the NRCS Environmental Quality Incentives Program (EQIP) and the Emergency Forest Restoration Program (EFRP).
- 1.15 Provide Seedlings for Restoration:** CAL FIRE will expand its nursery and seed bank to deliver seeds and seedlings to small landowners whose properties are affected by wildfire or diseases. Experts will focus on using native seed selections that are best suited to current and future landscapes. The Placerville USFS nursery will expand its capacity to grow approximately 15 million seedlings per year.
- 1.16 Expand Lumber Certifiers:** Expand Lumber Certifiers: BOF will assist in establishing additional small-scale forest product infrastructure, such as portable sawmills, and will explore the potential for Registered Professional Foresters to become third-party certified as Lumber Graders.
- 1.17 Execute Strategy for Forested State Lands:** CNRA will partner with State Parks, CDFW, the Tahoe Conservancy, and other agencies that own state land to execute a comprehensive strategy to expand forest management and improve the health and resilience of forested state lands.

Increase Prescribed Fire

- 1.18 Develop Prescribed Fire Strategic Action Plan:** By the spring of 2021, CAL FIRE, CARB, USFS and other federal, state, local and tribal governments will develop and issue a Prescribed Fire Strategic Action Plan to coordinate and guide prescribed fire activities, and to address the key barriers to its widespread use in California.
- 1.19 Utilize All Fuels Reduction Methods to Treat up to 100,000 Acres by 2025:** CAL FIRE will use all fuels reduction methods, including prescribed fire, to expand its fuels reduction program to treat 100,000 acres of its 500,000-acre target.

- 1.20 Establish a Grant Program to Support Cultural Burning:** CAL FIRE will establish a new program to provide direct funding for tribal governments to support cultural burning and other traditional forest health practices.
- 1.21 Establish a National Prescribed Fire Training Center:** The USFS, in partnership with CAL FIRE and local and tribal governments, will seek to establish a National Prescribed Fire Training Center to provide training opportunities for prescribed burn practitioners and focus its efforts on western U.S. ecosystems.
- 1.22 Explore Strategies to Address Liability Issues:** Insurance is no longer available for most private landowners and organizations seeking to conduct prescribed fire projects. In 2021, the state will explore the development of alternative strategies to increase insurance availability for these projects.
- 1.23 Modify Suppression Tactics on State Lands:** CAL FIRE will continue to expand its use of modified suppression tactics on state lands to allow a wildfire to burn under predetermined and carefully prescribed conditions to reduce forest fuels and provide ecological benefits. These tactics will follow predetermined plans that consider property and life safety issues.
- 1.24 Develop an Automated Prescribed Burn Permit:** By 2021, CAL FIRE will develop and deploy an automated system for prescribed burn permits.
- 1.25 Provide Training and Technical Assistance:** State agencies will partner with local governments and nonprofit organizations to establish sustained, multi-year funding for regional vocational training, community college curricula, and technical assistance programs for professional fire service, conservation, tribal and other fire practitioners.
- 1.26 Improve Workforce Development:** CAL FIRE will quantify current and projected unmet needs for forestry-related workers by job type (vocational and professional) and location to inform its investments in training and vocational programs. This assessment is coordinated with the statewide assessment in Action 3.11.
- 1.27 Develop an Annual Reporting System:** CAL FIRE, in coordination with state and federal partners, will develop an annual reporting system to consolidate and report relevant data for prescribed fires in California.

Mobilize Regional Action Plans

- 1.28 Expand RFFC Program:** In 2021, DOC will develop draft guidelines to expand the RFFC Program to all high-risk areas statewide. DOC will collaborate with CAL FIRE, the USFS, and other state and regional agencies and stakeholders to develop the draft guidelines.
- 1.29 Develop Network of Regional Forest and Community Fire Resilience Plans:** As part of its updated guidelines, the RFFC Program will seek to provide a common but highly flexible framework for the development of Regional Forest and Community Fire Resilience Plans that can be tailored to a variety of regional governance structures and risks and priorities.
- 1.30 Develop Pipeline of Local and Regional Shovel-Ready Projects:** DOC will develop a regional pipeline of shovel-ready projects and investment strategies that provide dedicated ongoing funding for implementation. Regional plans will guide project pipeline development and investment strategies and be developed in partnership with the USFS, CAL FIRE, and other key regional stakeholders. The Sierra Nevada, Tahoe, Coastal, and Santa Monica Mountains Conservancies will also play a lead role in allocating these funds.

Conserve Working Forests

1.31 Develop Consolidated Forest Conservation Program: In 2021, CAL FIRE and the WCB, in coordination with partner state agencies, will develop a consolidated program and grant application process for forest conservation and will align federal conservation programs to the extent feasible.

1.32 Align Forest Conservation Programs with Climate, Biodiversity, and Outdoor Access

Programs: CAL FIRE and the WCB will adopt guidelines for this consolidated program aligned with the development and implementation of the Climate Smart Strategy and Biodiversity initiatives outlined in EO N-82-20.

Reforest Burned Areas

1.33 Develop Restoration Strategy for Federal Lands: Given the recent fires, including 2020's unprecedented fire year, 650,000 to one million acres of federal land need some degree of reforestation. In spring 2021, the USFS, in partnership with American Forests and key stakeholders, will develop a strategy to restore its highest priority areas. This ecologically-based strategy will focus on silvicultural practices to increase carbon storage, protect biodiversity, and build climate resilience.

1.34 Develop Coordinated State Restoration Strategy: CNRA will partner with Cal OES, OPR, and other federal, state, and local agencies to develop a coordinated strategy to prioritize and restore non-federal burned areas and communities as part of the state's overall long-term recovery

Improve Regulatory Efficiency

1.35 Complete Permit Synchronization Workplan: By December 2021, BOF, working with the AB 1492 Leadership Team, will complete its permit synchronization work plan. Permit synchronization intends to align permitting under the Forest Practice Act and Forest Practice Rules with the BOF and CDFW permitting and regulatory requirements, including waste discharge requirements and lake and streambed alteration permit issuance timelines.

1.36 Complete Timber Harvesting Plan Guidance Documents: By 2022, CAL FIRE, in coordination with the Water Board, California Geographical Survey (CGS), and CDFW, will complete a series of permitting guidance documents to help small landowners and others navigate the timber harvesting process. Guidance will include how to efficiently file a Timber Harvest Plan (THP) for review and approval, and how to meet Water Board permitting and CDFW regulatory requirements, including waste discharge requirements and lake and streambed alteration permits.

1.37 Improve and Expand CalTREES: CalTREES will be finalized and operational by 2022. Once fully operational, CalTREES will be improved to include the integration of a Geographical Information System (GIS) mapping platform, improved search functionality, and a one-stop platform for timber-related permits and notifications. Where appropriate, CalTREES shall also be built to interface with or include CDFW's Environmental Permit Information Management System, and a Water Board permit tracking and submission system for necessary timber harvest permits.

- 1.38 Enhance CalVTP Implementation:** BOF will provide statewide web-based training on utilizing the CalVTP and other permitting processes. Working collaboratively with the California Coastal Commission and the Water Board, the BOF will also identify additional permitting processes that may need to be incorporated into the CalVTP process. To ensure consistent execution of CalVTP, BOF will oversee the first round of Project Specific Analysis in various landscapes and geographies to ensure future projects have a consistent and high-quality template to follow.
- 1.39 Update Prescribed Fire Information Reporting System:** By December 2021, CNRA will collaborate with CARB to update its Prescribed Fire Information Reporting System (PFIRS), which is designed to capture statewide details on prescribed fires and enable estimations of smoke pollution. Under the goals of SB 1260, CARB will enhance PFIRS to improve data collection and ease-of-use by local air districts and burn managers to expand the safe application of prescribed fire. CARB will also lead an interagency analysis of prescribed fire smoke data to document public health impacts compared with wildfire smoke exposure.
- 1.40 Help Landowners Conserve Northern Spotted Owls:** CAL FIRE and CDFW, in collaboration with the U.S. Fish and Wildlife Service (USFWS), will develop tools to assist timber landowners with conserving northern spotted owls and their habitat.

GOAL 2: STRENGTHEN PROTECTION OF COMMUNITIES

Support Community Risk Reduction and Adaptation Planning

- 2.1 Assess Statewide Risk to Vulnerable Communities:** CAL FIRE will work with other state and federal agencies to improve and refine quantitative wildfire risk assessments across all lands and ownerships, focusing on identifying the most vulnerable communities and populations. The assessment results will be coordinated with related efforts by OPR's Integrated Climate Adaptation and Resiliency program and integrated into statewide and regional risk-based planning efforts and grant programs.
- 2.2 Develop Performance Measures:** CAL FIRE will work with the Watershed Research and Training Center (WRTC) and other partners to identify performance measures for community wildfire risk reduction and adaptation.
- 2.3 Develop and Implement New Fire Hazard Severity Zones:** CAL FIRE will update the scientific factors that determine the hazard ratings, including new local climate data and improved fire spread modeling. CAL FIRE will work with local jurisdictions and submit Local Responsibility Area maps to respective jurisdictions.
- 2.4 Update the Fire Hazard Planning Technical Advisory:** Consistent with SB 901 (2018) and AB 2911 (2018), OPR will finalize its update to the Fire Hazard Planning guidance document in early 2021 to assist local governments in developing effective fire hazard policies and programs in the general plan and other implementing plans, codes, standards, and programs.

- 2.5 Develop WUI Best Practices Inventory:** OPR, in collaboration with CAL FIRE and the Water Board, will prepare an inventory of best practices for planning, zoning, development review, and code enforcement to address and reduce wildfire hazards and risks related to planning and development activities in the Wildland Urban Interface (WUI). The inventory will serve as a complement to OPR's Fire Hazard Planning Technical Advisory (recently updated pursuant to SB 901 and AB 2911) and will inform local governments on how best to develop and implement plans, codes, standards, and enforcement activities within the WUI. OPR will publish the results of the inventory and best practices on the Adaptation Clearinghouse.
- 2.6 Develop CWPP Best Practices Guide:** In coordination with the CFSC, WRTC and other organizations, CAL FIRE will develop and make available a best practice guide for new and updated Community Wildfire Protection Plans (CWPP's), including data standards to facilitate integration with other plans at the county, regional and statewide level.
- 2.7 Increase Information Sharing:** DOC will coordinate an organized peer networking effort that will meet virtually through an interactive forum to share information monthly or quarterly to facilitate learning and preserve institutional knowledge of wildfire-mitigation planning across disciplines.
- 2.8 Develop Defensible Space and Home Hardening Curriculum:** CAL FIRE will develop a formal defensible space and home hardening inspections curriculum to ensure statewide consistency and implementation.

Increase Fuel Breaks

- 2.9 Develop and Maintain 500 Fuels Management Projects:** Using a science-based approach to identify priority areas for treatment, CAL FIRE will create a dynamic matrix of newly developed fuel break projects. These projects are described in CAL FIRE's Unit Fire Plans, including assessments of threats to vulnerable communities identified in the Community Wildfire Prevention and Mitigation Report.
- 2.10 Link with Landscape Scale Projects:** When developing the 500 projects, CAL FIRE will identify fuel breaks and landscape restoration projects created by federal land managers, timber companies, non-governmental organizations (NGOs), and other land managers, and seek opportunities to fill gaps and leverage project efforts. These efforts will link continuous fuel breaks and forest resilience projects across landscapes at the lowest possible cost.
- 2.11 Maintain Fire Prevention Grants:** CAL FIRE will coordinate with other state agencies and organizations to allocate fire prevention grants to the highest priority areas and projects.

Protect Wildfire-Prone Homes and Neighborhoods

- 2.12 Extend Defensible Space Programs:** In 2021, CAL FIRE, through a public process, will assist BOF in updating defensible space regulations to meet AB 3074 (2020), which requires a five-foot ember-resistant zone around homes. CAL FIRE and BOF will also develop and implement a widespread public information campaign and update the Ready for Wildfire program to explain the revised requirements.
- 2.13 Expand Assistance Programs:** CAL FIRE will look at ways to expand program assistance for the elderly, low-income, and/or people with disabilities to comply with defensible space requirements.

- 2.14 Increase Defensible Space Inspections:** In 2021, CAL FIRE will expand its inspection program to meet AB 38 (2020) requirements, which requires CAL FIRE to conduct defensible space inspections year-round on the sale of real property in the SRA.
- 2.15 Improve Defensible Space Compliance:** CAL FIRE will work with stakeholders to increase defensible space compliance by developing a cooperative defensible space strategy. This effort will provide education and assistance to homeowners to improve defensible space effectiveness. CAL FIRE will expand its support for creating new National Fire Protection Association Firewise USA recognized communities.
- 2.16 Create a Model Defensible Space Program:** CAL FIRE is developing a model defensible space program that will be available to cities and counties to enforce defensible space provisions, as required by SB 190 (2019).
- 2.17 Expand Home Hardening Programs:** Cal OES, in coordination with other state agencies, will expand home hardening programs through the development of a statewide program as described in AB 38 (2019) for cost-effective structure hardening and retrofitting to create fire-resistant homes, businesses, and public buildings.
- 2.18 Develop Home Hardening Guidance:** CAL FIRE will continue to work with the Insurance Institute for Business and Home Safety, National Institute for Standards and Technology, and other partners to develop home hardening guidance.
- 2.19 Develop WUI Fire Safety Training Material:** CAL FIRE will develop a WUI Fire Safety Building Standards Compliance training manual for local building officials, builders, and fire service personnel, and make it available on its department website to meet the requirements of SB 190 (2019).
- 2.20 Develop Insurance MOU:** The California Department of Insurance will continue to work with CAL FIRE and Cal OES to develop an MOU and implement the provision of SB 824 (2017) regarding residential property insurance in wildfire-affected areas under a declaration of a state of emergency.

Improve Utility-Related Wildfire Risk

- 2.21 Review Wildfire Mitigation Plans:** The new OEIS will work collaboratively with CAL FIRE and other agencies to review and comment on the investor-owned utility Wildfire Mitigation Plans.
- 2.22 Coordinate Utility-Related Wildfire Mitigation Initiatives:** Through the OEIS and the Utility Wildfire Mitigation Steering Committee, the state will continue to reduce wildfire risk, including assuring compliance with commitments from electrical corporations to reduce utility-related ignitions that can cause catastrophic wildfires while protecting natural resources and biodiversity.
- 2.23 Expand USFS Master Special Use Permits:** In 2019, the USFS signed a 30-year Master Special Use Permits with Pacific Gas and Electric (PG&E) and Southern California Edison (SCE) to streamline permitting of hazard tree removals and other routine maintenance activities along powerline corridors, and will seek to expand the use of these permits to other utilities throughout the state.

Create Fire-Safe Roadways

- 2.24 Identify Subdivision Secondary Emergency Access:** BOF, in consultation with CAL FIRE, shall survey subdivisions in the SRA and very high fire hazard severity zones without a secondary egress route that are at significant fire risk, consistent with the requirements of AB 2911 (2018). In consultation with CAL FIRE and the impacted local government, BOF shall develop recommendations to improve the subdivision's fire safety.
- 2.25 Develop Framework for Safe Road Corridors:** Through workshops with key agencies and stakeholders, Caltrans is establishing a framework for collaborative fuels reduction projects to protect roadway travelers, communities along highways and to reduce roadside ignitions along primary and secondary emergency evacuation routes. Caltrans will identify highway corridors most in need of defensible space and develop a strategy in the spring of 2021 while seeking to align funding and crew resources.
- 2.26 Assist with General Plans:** Caltrans will assist cities and counties in updating their general plan safety elements under AB 747 (2019), which requires that safety elements be updated to address evacuation routes and their capacity, safety, and viability under a range of emergency scenarios. OPR will also work with Caltrans to update the General Plan Guidelines to include guidance for meeting AB 747 requirements for safety elements.
- 2.27 Expand Highway Treatments:** CAL FIRE and Caltrans will seek to partner with adjacent landowners to treat priority areas along its 2,600 miles of high-risk roadways.
- 2.28 Develop Good Neighbor Agreement:** Recognizing that there are more than 3,000 miles of road crossing federal lands, Caltrans will work with the USFS to develop a statewide Good Neighbor Agreement to allow Caltrans to treat adjacent federal lands.
- 2.29 Expand Messaging Campaign:** Caltrans will partner with CAL FIRE to expand its public outreach efforts to include graphics and messages that align with emergency evacuation messaging, such as Ready, Set, Go!, FEMA's Ready.gov, and the 5 Minute Plan.

Reduce Health Impacts of Smoke

- 2.30 Launch Smoke Ready California Campaign:** Through the interagency Smoke Communications Working Group, which includes more than 15 federal, state, and local agencies and stakeholders, CARB is developing a Smoke Ready California campaign ahead of the 2021 wildfire season that will provide coordinated messaging and content to help Californians plan for and protect themselves from smoke impacts.
- 2.31 Release California Smoke Spotter App:** CARB, with support from partners, is developing a California Smoke Spotter app to provide the public with information on nearby prescribed fires, hourly data gathered from permanent and portable air monitors, as well as personalized alerts. It will also offer a 24-hour smoke forecast, information on wildfires, and educational content to help people prepare for possible smoke impacts. The app's public release is expected to be in early 2021, with more enhancements planned in the coming years.
- 2.32 Enhance Prescribed Fire Reporting:** CARB will pursue significant enhancements in data collection and reporting for PFIRS, a platform for aggregating data from air districts, fire management agencies, and burners. The enhancements will enable more efficient reporting and analysis of the effects of prescribed fire and smoke.

GOAL 3: MANAGE FORESTS TO ACHIEVE THE STATE'S ECONOMIC AND ENVIRONMENTAL GOALS

Integrate Forest Management into State Climate and Biodiversity Strategies

- 3.1 Develop Natural and Working Lands Climate Smart Strategy:** Consistent with Executive Order N-82-20, CNRA will coordinate the development and release of a Natural and Working Lands Climate Smart Strategy by October 2021.
- 3.2 Develop 2022 Climate Change Scoping Plan Update:** CARB, in partnership with CNRA and other agencies, will build upon the Natural and Working Lands Climate Smart Strategy and other science-based data in updating the strategies and targets for natural and working lands in the 2022 Climate Change Scoping Plan.
- 3.3 Establish Biodiversity Collaborative:** CNRA, in coordination with the California Department of Food and Agriculture (CDFA), California Environmental Protection Agency (CalEPA), and other state agencies, has launched the California Biodiversity Collaborative and will bring together experts, leaders, and communities from across California to advance a unified, comprehensive approach to protecting the state's biodiversity.
- 3.4 Develop Biodiversity Strategy:** CNRA and other relevant state agencies, in consultation with the Collaborative, will develop and report strategies to meet the goal of conserving at least 30 percent of California's land and coastal waters by February 2022.

Create a Sustainable Wood Products Market in California

- 3.5 Complete State Framework:** In 2021, OPR, in collaboration with other state agencies, will complete the development of its comprehensive framework to align the state's wood utilization policies and priorities.
- 3.6 Develop Market Roadmap:** Building upon OPR's framework and Joint Institute recommendations, GoBiz will partner with OPR, CAL FIRE, BOF, and other key agencies and stakeholders in developing a focused market strategy by December 2021.
- 3.7 Establish Metrics:** The OPR framework will also include a comprehensive set of metrics to evaluate biomass availability, usage, investments, and workforce levels.
- 3.8 Launch Catalyst Fund Forest Investments:** In 2021, the state's iBank will partner with CAL FIRE and other agencies to advance forest-related applications to the Catalyst Fund, building on work to date, which will accelerate with the passage of the state budget. The fund will (1) provide loans, loan guarantees and other credit support to encourage the development of businesses that utilize wood and forest biomass; (2) encourage private-sector innovations in technology, business models, infrastructure, and supply chains in the woody biomass markets; and (3) promote optimization of state grant funds in the sector by leveraging the maximum amount of private capital possible for each public dollar provided.
- 3.9 Develop X-Prize for Wood Product Innovation:** By December 2021, OPR will coordinate the development and execution of an X-Prize for wood product innovation. The competition will be designed to showcase California's commitment to becoming the hub of wood product innovation and leverage state investments to bring philanthropic and private capital into the competition.

- 3.10 Address Feedstock Barriers through Pilot Projects:** OPR will develop five pilot projects to test new mechanisms for developing long-term feedstock contracts. Information and templates from the pilot projects will be shared broadly to provide a menu of broader adoption options.
- 3.11 Develop Statewide Forest and Wood Products Workforce Assessment:** OPR, in coordination with the Labor and Workforce Development Agency and other key agencies and stakeholders, including CAL FIRE, the Community College System, and the Sierra Business Council, will lead the development of a statewide Forest and Wood Products Workforce Assessment by December 2021.
- 3.12 Maintain and Develop Removal Incentives:** As required by SB 901 (2018), CAL FIRE will provide transportation incentives to offset a portion of the cost to move forest byproducts to end-user facilities. In addition, as described in the Joint Institute recommendations, CAL FIRE will evaluate the potential for the development of incentive programs to reduce the costs to forest landowners to remove woody biomass.

Sustain and Expand Outdoor Recreation on Forestland

- 3.13 Update Statewide Comprehensive Outdoor Recreation Plan (SCORP):** In 2021, CNRA, in coordination with State Parks, will update the Statewide Comprehensive Outdoor Recreation Plan (SCORP). The SCORP will provide a comprehensive framework and investment strategy, emphasizing equitable access to underserved communities and rural recreation-dependent communities.
- 3.14 Develop Joint Strategy to Improve Access to Sustainable Recreation:** In accordance with the Shared Stewardship Agreement, the USFS will coordinate the development of a joint strategy to improve access to sustainable recreation.

Protect and Expand Urban Canopy and Forests

- 3.15 Increase Urban Canopy:** By 2030, CAL FIRE will seek to significantly increase California's urban tree canopy, targeting disadvantaged and low-income communities and low-canopy areas.
- 3.16 Establish Regional Targets:** CAL FIRE will also seek to work with local and regional agencies to establish local tree canopy cover goals.
- 3.17 Identify High Priorities:** CAL FIRE will help local governments identify optimal green infrastructure locations and increased tree canopy cover in high-priority areas described in CAL FIRE's 2017 Forest and Rangeland Assessment.

GOAL 4: DRIVE INNOVATION AND MEASURE PROGRESS

Utilize Best Available Science and Accelerate Applied Research

- 4.1 Complete Applied Research Plans:** In coordination with the Science Advisory Panel of the Task Force and other leading scientists, BOF and CAL FIRE's Forest and Resource Assessment Program (FRAP) will develop and issue an applied research plan by June 2021.
- 4.2 Forest Research Grants:** Based on the applied research plan results, CAL FIRE will expand its forest research grant program to address key management questions and priorities.

Expand and Improve Monitoring, Reporting, and Decision-Support Tools

- 4.3 Establish Forest Data Hub:** CAL FIRE and the USFS, in collaboration with the USDA California Climate Hub and other agencies, will seek to establish a Forest Data Hub (Hub) to serve as a multi-institutional information clearinghouse. The Hub's goal will be to support, integrate, evaluate, and synthesize ongoing reporting and monitoring efforts conducted by state and federal agencies, universities, and non-governmental organizations. For example, the Hub could develop standard protocols for field-based monitoring, expand data sharing, and require annual reporting into a common data repository. These coordinated information products would be rapidly and reliably made available to land managers and decision-makers. The Hub would be initially staffed by an interagency team of CAL FIRE, CARB, the University of California, and the USFS.
- 4.4 Establish Ecological Planning Tool:** By January 2023, CalEPA and CNRA will develop a landscape-scale planning tool for state, local, and federal partners and tribes to establish forest management and restoration priorities.
- 4.5 Develop Statewide Forest Ecosystem Monitoring System:** CNRA will continue to lead a long-term statewide forest ecosystem monitoring and assessment initiative to analyze how forest management and timber harvest practices impact forest health. By integrating interagency data and remote sensing from state and federal resource programs, CNRA will establish a spatially explicit, consistent approach to track forest ecosystem conditions over time at a watershed scale. The work has now been linked directly to AB 2551 (2017) to develop a spatial assessment and priority plan in northeastern California that will extend statewide.
- 4.6 Integrate and Expand Forest Carbon Inventories:** CARB and CAL FIRE staff will continue to coordinate improvements to the Natural and Working Lands and AB 1504 (2009) forest carbon inventories to ensure that the state has a detailed and comprehensive understanding of forest carbon dynamics.
- 4.7 Develop State-of-the-Science Models:** CARB and CAL FIRE are developing state-of-the-science models to map fuels and simulate the future of California's Natural and Working Lands, including interactions between climate, fire, carbon and water in forests. This effort will utilize CAL FIRE's recent investment in better field-based inventory data. This modeling will inform CARB's modeling effort to determine management strategies to deliver on the state's climate change goals while providing other valuable ecosystem services.
- 4.8 Develop Consistent Reporting Tools:** Through the proposed Forest Data Hub, CNRA, CAL FIRE, CARB, and the USFS will develop reporting tools that allow for consistent reporting on acres treated, prescribed fire, reforestation, carbon accounting, fire intensity, land cover change, and other key information.
- 4.9 Establish Clearinghouse:** The Science Advisory Panel of the Task Force is collecting, reviewing, and organizing information on new and emerging technologies and data platforms designed to inform forest management practices at multiple scales. This effort will be coordinated with the state's Adaptation Planning Clearinghouse and the development of the Forest Data Hub.

4.10 Improve Coordination of Climate and Fire Research: Despite substantial investments by several agencies, the state lacks a focused, coordinated approach to improve our understanding of the complex impacts of climate change on wildfire regimes. The Science Advisory Panel will convene a planning effort to better coordinate the ongoing and future actions of state and federal agencies, academic institutions, and the private sector to develop the knowledge and tools necessary to advance predictions of wildfire on multiple timescales, and to inform management decisions that prevent further catastrophic damage to the state's ecosystems and economy.

APPENDIX B

Executive Orders

Executive Department
State of California

EXECUTIVE ORDER B-52-18

- WHEREAS** California's 33 million acres of forestland and 1,256 square miles of urban forest canopy capture and clean our water supply, provide rich biodiversity, support local economies, provide recreational and educational opportunities, and serve as spiritual and cultural centers for indigenous and local communities across the state; and
- WHEREAS** forested lands are the largest land-based carbon sink in California with trees and shrubs drawing carbon from the atmosphere and storing it in their cellulosic structure and in forest soils; and
- WHEREAS** consistent with California's greenhouse gas emissions goals the state's forests should be maintained as a net sink rather than a source of greenhouse gas and black carbon emissions; and
- WHEREAS** long-term human intervention, including the practice of excluding fire in fire-dependent ecosystems, has resulted in a deterioration of forest health statewide and, in some cases, loss of forest cover; and
- WHEREAS** these conditions, coupled with drought and the stressors associated with a warming climate, have dramatically increased the size and intensity of wildfires, exposed millions of urban and rural residents to unhealthy air, and led to more than 129 million dead and dying trees since 2010, primarily in the Sierra Nevada; and
- WHEREAS** recent wildfires have been the largest, deadliest, most destructive and costliest in state history; and
- WHEREAS** water supply for the State Water Project and other municipal and agricultural systems has been impacted by increased sediment and accelerated snow melt caused by wildfire and tree mortality; and
- WHEREAS** the current pace and scale of prescribed fire, fuel reduction, and thinning of overly dense forests average approximately 250,000 acres per year and are far below levels needed to restore and maintain forest health; and
- WHEREAS** the diversity of California's forests and tree species and unique climates require regionalized strategies to identify the areas that pose the greatest threat to forest health and offer the best solutions; and

WHEREAS there is a need to incentivize innovation in the California forest product and building industries in order to improve the ecological and economic sustainability of California forests; and

WHEREAS the Forest Carbon Plan has been developed by state agencies to provide consensus forest practices that will achieve resilient forests that can withstand and adapt to wildfire, drought and a changing climate, safeguard the state's water supply, and ensure the state's forests operate as a carbon sink.

NOW, THEREFORE, I, EDMUND G. BROWN JR., Governor of the State of California, in accordance with the authority vested in me by the Constitution and statutes of the State of California, do hereby issue the following orders to become effective immediately:

Improving Forest Management and Restoration

1. The Department of Forestry and Fire Protection shall work with all relevant federal, state and local agencies, California Native American tribes, and other affected parties to implement the forest practices called for in the Forest Carbon Plan.
2. The Natural Resources Agency shall take all necessary steps to double the total statewide rate of forest treatments within 5 years to at least 500,000 acres per year. To accomplish this goal the Agency will work with the Department of Forestry and Fire Protection, the Department of Parks and Recreation, the Department of Fish and Wildlife, the State Water Resources Control Board, State Conservancies, and all other relevant agencies.
3. The Department of Forestry and Fire Protection shall increase new landowner agreements and memoranda of understanding, such as Good Neighbor Authority agreements, to accelerate forest restoration thinning and prescribed fire projects across jurisdictions, and shall integrate fire prevention activities into landscape forest restoration efforts in and near Wildland Urban Interface areas.
4. The Department of Fish and Wildlife shall integrate the goals of this Executive Order in its restoration programs, mitigation-related land conservation, and conservation planning.

Providing Regulatory Relief

5. The Natural Resources Agency, the Department of Forestry and Fire Protection, the State and Regional Water Boards, the Department of Fish and Wildlife, and the California State Air Resources Board shall reduce barriers to entry for forest health and fuels reduction projects, including working with the California Coastal Commission to facilitate permitting in the coastal zone, reducing liability exposure for landowners, and providing financial and permitting assistance for landowners of under 5,000 acres.
6. The Natural Resources Agency, the Board of Forestry and Fire Protection, the Department of Forestry and Fire Protection, the Department of Fish and Wildlife, State and Regional Water Boards, and the Department of Conservation shall have in operation by October 1, 2018 a new online timber harvest permitting system, and shall synchronize and expedite the regulatory review of permits under the Forest Practice Act and related timber harvest permitting processes.
7. All relevant state agencies shall make cultural and biological resources data readily accessible online to accelerate the implementation and environmental review of fuels reduction projects.

Reducing Barriers for Prescribed Fire

8. The California Air Resources Board with assistance from local air districts and the Department of Forestry and Fire Protection shall increase the opportunities for prescribed fire projects through coordinating staff and equipment availability, accelerate prescribed fire projects that are permit-ready, identify weather conditions suitable for prescribed fire, and institute a real-time air quality and smoke monitoring program for prescribed and wildland fires.
9. The Department of Forestry and Fire Protection and the California Air Resources Board shall develop a publicly available online clearinghouse for permitting of prescribed fire projects on all non-federal lands, which shall include an automated system for prescribed fire project permit submission and approval. Boosting Education and Outreach to Landowners
10. The Department of Forestry and Fire Protection shall provide educational programs and outreach to private landowners and other interested parties on forest restoration, fuels reduction project development, and permitting.
11. The Department of Forestry and Fire Protection shall develop a training program to educate and certify government, tribal, academic, and nongovernment organization staff to increase the number of qualified individuals available to implement prescribed fire projects.
12. The Labor and Workforce Development Agency shall work with relevant state agencies and local workforce development boards to develop pilot training programs in forest thinning and biomass processing in areas where there is inadequate labor capacity to support such activities.

Supporting Wood Products Innovation

13. The Office of the State Fire Marshal, the Department of Housing and Community Development, the Division of the State Architect, the California Building Standards Commission, and the Office of Statewide Health Planning and Development shall review the approved Tall Wood Building Proposal of the International Code Council's Ad Hoc Committee on Tall Wood Buildings and shall consider proposing its adoption into the California Building Standards Code in the subsequent intervening code cycle.
14. The Department of General Services, in collaboration with other state agencies, shall identify at least three building projects in which to utilize manufactured wood products as both structural and aesthetic components.
15. The Board of Forestry and Fire Protection, working with the University of California and California State University, shall establish a Joint Institute for Wood Products Innovation to perform wood products research, development, and testing; and shall accelerate research, development and adoption of advanced forest management and wood products manufacturing.
16. The California Public Utilities Commission is requested to review and update its procurement programs for small bioenergy renewable generators to ensure long-term programmatic certainty for investor-owned utilities and project developers, as well as benefits to ratepayers.

IT IS FURTHER ORDERED that agencies under my direct executive authority cooperate in the implementation of this Order, and it is requested that entities of State government not under my direct executive authority assist in its implementation as necessary.

This Executive Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 10th day of May 2018.




EDMUND G. BROWN, JR.
Governor of California

ATTEST:



ALEX PADILLA
Secretary of State

Executive Department
State of California

EXECUTIVE ORDER N-05-19

- WHEREAS**, California experienced the most destructive wildfire season in State history in 2018, enduring over 7,600 wildfires that burned 1,846,445 acres in total;
- WHEREAS**, the 2018 Camp Fire was both the deadliest fire in State history, claiming the lives of 86 people, as well as the most destructive, destroying 18,804 structures - a tragedy from which impacted communities will take years to recover;
- WHEREAS**, six of the top ten most destructive fires in State history have occurred in just the past two years, including the Camp, Tubbs, Woolsey, Carr, Nuns, and Thomas Fires;
- WHEREAS**, the reality of climate change - persistent drought, warmer temperatures, and more severe winds - has created conditions that will lead to more frequent and destructive wildfires;
- WHEREAS**, historically, fires lit by Native Americans and lightning strikes cleared the forest of surface fuels on a regular cycle to manage vegetation;
- WHEREAS**, California arrived at our present emergency condition through the combined factors of fire exclusion, forest management policies that created overgrown and overcrowded forests, a rapidly changing climate, and a historic drought with accompanying bark beetle epidemics;
- WHEREAS**, fuels reduction, which encompasses a range of forest management activities, including thinning, treating surface fuels with prescribed fire, mechanical methods, manual methods, and grazing, can reduce potential fire intensity;
- WHEREAS**, the State has invested significant resources into proactive forestland health maintenance through a number of programs, including direct land management by the California Department of Forestry & Fire Protection (CAL FIRE) and California Conservation Corps crews, and through grants to landowners and other private entities that perform management projects on their own property or on sections of forestland in their communities;
- WHEREAS**, a significant infusion of funding from the Greenhouse Gas Reduction Fund will make available \$1 billion over the next five years, beginning this year, for the purpose of active forestland management;
- WHEREAS**, in addition to the aforementioned \$1 billion in forestland management funding, the Governor's proposed 2019-2020 budget will also include significant enhancements for more year-round fire crews, as well as investments in greater use of technology and equipment for the purpose of preventing and fighting wildfires;
- WHEREAS**, to maximize the efficacy of these historic investments, the State endeavors to implement management strategies more rapidly and in a manner that is environmentally sustainable, and to prevent or contain to the greatest extent possible future destructive fires such as those that ravaged California in 2018;
- WHEREAS**, in order to prioritize the most at-risk communities, the State must consider two coequally important factors of vulnerability: scientific and social. California must access the best

available science about dangerous fuel conditions, wind patterns, fire behavior, and other scientific indicators. But of equal importance are social vulnerability factors including social isolation, poverty, language barriers, and other access and functional needs challenges. Communities with high preponderance of physical fire danger and high indicators of social vulnerability deserve the State's highest attention; and

WHEREAS, the people of the State of California expect that their government will take all possible actions to protect life, property, and forests from deadly megafires, and will do so with an urgency that matches the scope of the threat.

NOW, THEREFORE, I, GAVIN NEWSOM, Governor of the State of California, by virtue of the power and authority vested in me by the Constitution and statutes of the State of California, do hereby issue this Order and direct as follows:

1. Within 45 days of the issuance of this Executive Order, CAL FIRE, in consultation with other State agencies and departments, shall provide a written report to the Governor with recommendations of the most impactful administrative, regulatory, and policy changes or waivers the Governor can initiate that are necessary to prevent and mitigate wildfires to the greatest extent possible, with an emphasis on environmental sustainability and protection of public health.
2. CAL FIRE shall be the lead department in the convening of state agencies and in the production of this report. Other agencies and departments shall cooperate and support CAL FIRE in the researching and writing of this report, including but not limited to the Governor's Office of Emergency Services, the California National Guard, the California Government Operations Agency, the Office of Planning and Research, and the Department of Finance.
3. CAL FIRE shall lead stakeholder engagement to inform the report, including consultations with local fire chiefs, local elected officials, Fire Safe Councils, and other impacted stakeholders, as necessary.
4. In preparing the report, CAL FIRE shall include recommendations to the Governor for immediate, medium-term, and long-term recommended actions that will have the greatest impact in preventing the impact of destructive, deadly wildfires. These recommendations should include, but not be limited to:
 - a. Methods to most quickly deploy personnel and resources onto the landscape for the purpose of performing fuels management.
 - b. Policy changes, including but not limited to procurement or permitting waivers that will allow for more rapid and effective fuels management treatments, especially for projects accomplishable before the peak of fire season later this year.
 - c. Methodology to assess which communities are at greatest risk from wildfire and the projects within/nearby areas that would reduce the threat of a catastrophic wildfire if completed. In this context, CAL FIRE shall consider not only the best available science when identifying high-hazard communities, but also socioeconomic factors and vulnerable populations that exacerbate the human toll of wildfires. This scoping shall be done in consultation with local impacted stakeholders, experts, and academics.

5. As CAL FIRE identifies communities at greatest risk from wildfire, per directive 4c herein, CAL FIRE shall share this assessment to guide the Governor's Office of Emergency Services as they scope and execute the "California for All" community resiliency public education and preparedness campaign proposed in the Governor's 2019-2020 budget. This effort will include local grants and will focus on community engagement and public education in high-risk areas with an emphasis on public health and safety.

IT IS FURTHER ORDERED that State Agencies shall cooperate in the implementation of this Order. Other entities of State government not under my direct executive authority, including the University of California and California State University, are requested to assist in its implementation.

This Order is not intended to, and does not, create any rights or benefits, substantive or a procedural, enforceable at law or in equity, against the State of California, its departments, agencies, or other entities, its officers or employees, or any other person.

IT IS FURTHER ORDERED that soon as hereafter possible, this Order shall be filed with the Office of the Secretary of State and that widespread publicity and notice shall be given to this Order.

WITNESS WHEREOF I have hereunto set my hand and caused the Great seal of the State of California to be affixed this 8th day of January 2019.



GAVIN NEWSOM
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State

Executive Department
State of California

EXECUTIVE ORDER N-82-20

- WHEREAS** the well-being of our communities and California’s economic sustainability are interconnected with our natural and cultural resources; and
- WHEREAS** the State’s long-term vitality is threatened by the loss of biodiversity - the variety and variability of plant and animal life in our State - and the impacts of climate change; and
- WHEREAS** California’s natural and working lands – our forests, rangelands, farms, wetlands, coast, deserts, and urban greenspaces – sustain our economy, support our unique biodiversity, contribute to the global food supply, support outdoor heritage and provide clean water and air; and
- WHEREAS** since time immemorial, California Native Americans have stewarded, managed and lived interdependently with the lands that now make up the State of California; and
- WHEREAS** California is home to more species of plants and animals than any other state, and this biodiversity accounts for about one third of all species found in the nation; and
- WHEREAS** soils are home to more than a quarter of the world’s biodiversity and California boasts more than 2,500 different soil types; and
- WHEREAS** California’s rich biodiversity is increasingly threatened by loss of habitat, spread of invasive species, decreasing water supplies, and increasingly frequent and severe climate impacts; and
- WHEREAS** the climate change crisis is happening now, impacting California in unprecedented ways including intensifying wildfires, mud slides, floods and drought, sea level rise and extreme heat, that threaten our economy, communities, public safety, and cultural and natural resources; and
- WHEREAS** as we work to mitigate greenhouse gas emissions, we must also accelerate actions to enable the State to adapt and become more resilient to the impacts of climate change, including expanding nature-based solutions – the use of sustainable land management practices to tackle environmental, social and economic challenges; and
- WHEREAS** national, subnational and indigenous leaders across the globe are coming together to accelerate implementation of nature-based solutions to our climate and extinction crises, improve the way land is managed to absorb carbon pollution from the atmosphere, build resilience by protecting communities and natural places from climate-driven disasters, and restore healthy ecosystems; and
- WHEREAS** addressing the biodiversity crisis and accelerating nature-based solutions requires inclusive partnerships and collaboration among federal, state and local governments, California Native American tribes, local communities, businesses, investors, labor, conservationists, outdoor enthusiasts, academia, land managers, and other stakeholders.
- NOW, THEREFORE, I, GAVIN NEWSOM**, Governor of the State of California, in accordance with the authority vested in me by the Constitution and statutes of the State of California do hereby issue the following Order to become effective immediately to combat the climate and biodiversity crises:

IT IS HEREBY ORDERED THAT:

1. To combat the biodiversity and climate crises, the California Natural Resources Agency, in consultation with the California Department of Food and Agriculture, the California Environmental Protection Agency and other state agencies, is directed to establish the California Biodiversity Collaborative (Collaborative) to bring together other governmental partners, California Native American tribes, experts, business and community leaders and other stakeholders from across California to protect and restore the State's biodiversity. State agencies will consult the Collaborative on efforts to:
 - a. Establish a baseline assessment of California's biodiversity that builds upon existing data and information, utilizes best available science and traditional ecological knowledge, and can be updated over time.
 - b. Analyze and project the impact of climate change and other stressors on California's biodiversity.
 - c. Inventory current biodiversity efforts across all sectors and land managers and highlight opportunities for additional action to preserve and enhance biodiversity.
 - d. Expand the communication and use of information, indicators and tools to monitor, track and protect California's biodiversity and natural resources.
 - e. Advance multi-benefit, voluntary and cooperative approaches that protect and restore biodiversity while stewarding natural and working lands, building climate resilience, and supporting economic sustainability.
 - f. Engage stakeholders across California's diverse communities, including academic and research institutions; local and federal governments; California Native American tribes; outdoor recreation and access groups; fishing and hunting organizations; farmers, ranchers and other private landowners and land managers; environmental advocates and investors; housing and land use developers; educators; philanthropy, and others.
2. To support the global effort to combat the biodiversity and climate crises, it is the goal of the State to conserve at least 30 percent of California's land and coastal waters by 2030. The California Natural Resources Agency and other relevant state agencies, in consultation with the Collaborative, are directed to develop and report strategies to the Governor no later than February 1, 2022 to achieve this goal in a manner that:
 - a. Safeguards our State's economic sustainability and food security.
 - b. Protects and restores biodiversity.
 - c. Enables enduring conservation measures on a broad range of landscapes, including natural areas and working lands, in partnership with land managers and natural resource user groups.
 - d. Builds climate resilience, reduces risk from extreme climate events and contributes to the State's effort to combat climate change.

- e. Expands equitable outdoor access and recreation for all Californians.
3. To advance efforts to conserve biodiversity, the California Natural Resources Agency is directed to take the following actions within existing authority and resources:
 - a. Strategically prioritize investments in cooperative, high-priority actions that promote biodiversity protection, habitat restoration, wildfire-resilient, sustainably managed landscapes and other conservation outcomes.
 - b. Implement actions to increase the pace and scale of environmental restoration and land management efforts by streamlining the State's process to approve and facilitate these projects.
 - c. Collaborate with federal and state research institutions to utilize innovative scientific observation technology and with tribal partners to incorporate tribal expertise and traditional ecological knowledge to better understand our biodiversity and threats it faces.
 - d. Participate in regional, national and international efforts to advance biodiversity protection and help to stem extinctions across the planet.
 4. To advance efforts to conserve biodiversity, the California Department of Food and Agriculture is directed to take the following actions with existing authority and resources:
 - a. Coordinate with other relevant state agencies and private partners to reinvigorate populations of pollinator insects across the State, which restore biodiversity and improve agricultural production.
 - b. Implement strategic efforts to protect California's native plants and animals from invasive species and pests that threaten biodiversity and economic activities.
 - c. Enhance soil health and biodiversity through the Healthy Soils Initiative.
 5. The California Natural Resources Agency, the California Department of Food and Agriculture, the California Environmental Protection Agency, the Governor's Office of Planning and Research, and other state agencies, shall use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged and vulnerable communities.
 6. Within one year of this Order, the California Natural Resources Agency, in consultation with the California Environmental Protection Agency, the California Department of Food and Agriculture, the California Air Resources Board, Governor's Office of Planning and Research, the California Strategic Growth Council and other state agencies, shall develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advances the State's carbon neutrality goal and builds climate resilience.

In developing this Strategy, agencies shall be guided by the following principles:

- a. Promote healthy lands that provide multiple benefits including improved air quality, reliable water supply, thriving communities, and economic sustainability.
 - b. Advance equity and opportunity for all regions of California.
 - c. Support pathways for sectors such as agriculture and forestry to participate in the transition to a carbon neutrality economy.
 - d. Inform policies through public feedback gathered through extensive outreach to and equitable engagement with stakeholders including, but not limited to, land managers, federal, tribal and local governments, communities, environmental justice leaders, businesses, investors, non-governmental organizations, scientists and universities.
 - e. Align policies, programs, and funding mechanisms across state government, while identifying opportunities to catalyze and accelerate private investment and actions that contribute to the State's carbon neutrality goal.
7. As part of the next Scoping Plan process, the California Air Resources Board, in coordination with relevant state agencies, shall take into consideration the Natural and Working Lands Climate Smart Strategy and science-based data to update the target for the natural and working lands sector in achieving the State's carbon neutrality goal.
 8. The California Department of Food and Agriculture shall work with agricultural stakeholders to identify farmer- and rancher-led solutions to inform the next Scoping Plan process.

IT IS FURTHER ORDERED that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given to this Order.

This Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable of law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be offered this 7th day of October 2020.



GAVIN NEWSOM
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State

APPENDIX C

Forest and Wildfire Action Plan Guiding Legislation

AB 1504 (Skinner, Ch. 534, Stats 2010) *Forest resources: carbon sequestration.* Requires CAL FIRE, in consultation with the ARB, by March 1, 2011, to assess the capacity of its forest and rangeland regulations to meet or exceed the state's greenhouse gas reduction goals, pursuant to the California Global Warming Solutions Act of 2006.

SB 1241 (Kehoe, Ch. 311, Stats 2012) *Land use: general plan: safety element: fire hazard impacts.* Requires cities and counties to address fire risk in SRA and VHFHSZ in the safety element of their general plans upon the next revision of the housing element, and requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative map or parcel map.

AB 1492 (Budget Cmte, Ch. 289, Stats 2012) *Forest resource management.* Limits the amount an agency may recover for damages caused by an escaping fire from private to public lands. Extends the period of a timber harvesting plan from three years to not more than five years, with one two-year extension. Creates an assessment on the sale of lumber products sold at retail in the state.

SB 1386 (Wolk, Ch. 545, Stats 2016) *Resource conservation: working and natural lands.* Creates a state policy declaring that the protection and management of natural and working lands is an important strategy to meet the State's greenhouse gas emission reduction goals. Also requires state agencies to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria related to the protection and management of natural and working lands.

AB 1954 (Patterson, Ch. 207, Stats 2018) *Timber harvest plans: exemption: reducing flammable materials.* Extends the sunset date for an exemption from timber harvest plan requirements for defensible space surrounding a habitable structure from January 1, 2019, to January 1, 2022.

AB 1956 (Limon, Ch. 632, Stats 2018) *Fire prevention activities: local assistance grant program.* Requires CAL FIRE to establish a local assistance grant program for fire prevention activities in and nearby fire threatened communities.

AB 2518 (Aguilar-Curry, Ch. 637, Stats 2018) *Innovative forest products and mass timber.* Requires the Forest Management Task Force, established pursuant to Executive Order B-52-18 (Brown), or its successor entity, to develop recommendations for the siting of additional wood product manufacturing facilities, including at least one mass timber facility, in the state.

AB 2551 (Wood, Ch. 638, Stats 2018) allows the Director of CAL FIRE to enter into agreements with landowners to conduct joint prescribed burning operations, and requires CAL FIRE to provide advances to landowners of the Department's cost share for work agreed to through the California Forest Improvement Program.

AB 2911 (Friedman, Ch. 641, Stats 2018) *Fire safety.* Makes various changes to fire safety planning efforts, defensible space requirements, and electrical transmission or distribution lines' vegetation clearance requirements with the intent to improve the fire safety of California communities.

SB 824 (Lara, Ch. 616, Stats 2018) *Insurers: declared disaster: homeowners' insurance policies.* Prohibits an insurer from canceling or refusing to renew a homeowners' insurance policy for one year from the date of a declaration of a state of emergency and requires admitted insurers with at least \$10 million in written premiums in California to biennially report to the California Department of Insurance (CDI) specified fire risk information on residential property policies.

SB 901 (Dodd, Ch. 626, Stats 2018) *Wildfires.* Addresses forestry and landscape level fuels management, utility fire prevention and planning, and utility cost recovery related to wildfires. Directs that \$165 million be made available to CAL FIRE from the GGRF through Fiscal Year 2023-24 for healthy forest and fire prevention programs, along with \$35 million from the GGRF through Fiscal Year 2023-24 for prescribed fire and other fuel reduction projects.

SB 1079 (Monning, Ch. 622, Stats 2018) *Forest resources; fire prevention grants: advance payments.* Authorizes CAL FIRE, until January 1, 2024, to make advance payments to grantees from specified grants it administers and limits these payments to 25% of the total grant award.

SB 1260 (Jackson, Ch. 624, Stats 2018) *Fire prevention and protection: prescribed burns.* Authorizes federal, state, and local agencies to engage in collaborative forestry management, creates new opportunities for public and private land managers to mitigate wildfire risks, and enhances CAL FIRE's role in identifying wildfire hazards as local governments plan for new housing and neighborhoods.

AB 747 (Levine, Ch. 681, Stats 2019) *Planning and zoning: general plan: safety element.* Requires cities and counties in the safety element of the general plan to identify evacuation routes and their capacity, safety, and viability under a range of emergency scenarios.

AB 836 (Wicks, Ch. 393, Stats 2019) *Wildfire Smoke Clean Air Centers for Vulnerable Populations Incentive Pilot Program.* Establishes a grant program, to be administered by CARB, to provide funding to retrofit ventilation systems to create a network of clean air centers to mitigate adverse health impacts due to wildfires and other smoke events. Requires CARB to prioritize applications where the project is located in an area with a high cumulative smoke exposure burden.

SB 190 (Dodd, Ch. 404, Stats 2019) *Fire safety: building standards: defensible space program.* Requires the OSFM to develop a model defensible space program, as specified; requires the OSFM to develop and make available a WUI Fire Safety Building Standards Compliance training; and, requires the OSFM to develop a WUI Products listing of products and construction assemblies that comply with the WUI Fire Safety building standards.

AB 38 (Wood, Ch. 391, Stats 2020) *Fire safety: low-cost retrofits: regional capacity review: wildfire mitigation.* Requires, on or before July 1, 2021, CNRA, in consultation with the Office of the State Fire Marshal (OSFM) and the Forest Management Task Force to review the regional capacity of each county that contains a very high fire hazard severity zone to improve forest health, fire resilience, and safety. Requires Cal OES to enter into a joint powers agreement with CAL FIRE to administer a comprehensive wildfire mitigation and assistance program to encourage cost-effective structure hardening and facilitate vegetation management, contingent upon appropriation by the Legislature.

AB 3074 (Friedman, Ch. 259, Stats 2020) *Fire prevention: wildfire risk: defensible space: ember-resistant zones.* Establishes, upon appropriation, an ember-resistant zone within five feet of a structure as part of the defensible space requirements for structures located in specified high fire hazard areas. Requires removal of material from the ember-resistant zone based on the probability that vegetation and fuel will lead to ignition of the structure by ember.



Regional Profiles

2020

Prepared by the Regional Forest
and Fire Capacity Program for the
Forest Management Task Force

Coastal Inland

REGIONAL PROFILE

13.4M

Californians live in this region

21

Counties are represented
in this region

11.8%

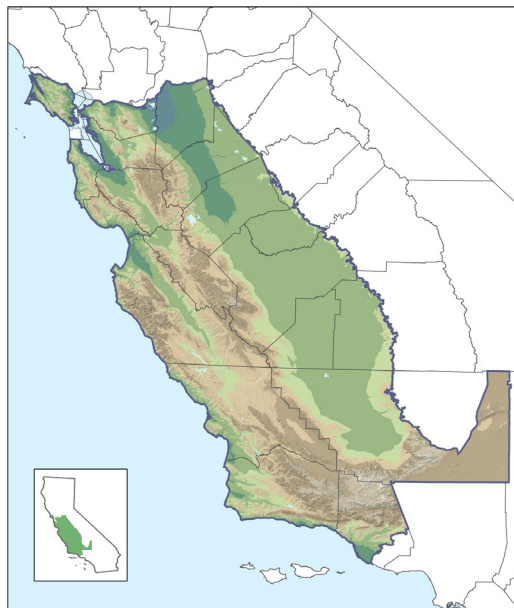
of the state's forest carbon
sinks are located in this
region (6)**

BIOREGIONS AND ECOSYSTEMS

- » This diverse region includes the Central Coastal and Central Valley bioregions.
- » The coastal portion is predominately grasslands, chaparral and coastal scrub, with redwood and other conifer forests near the ocean.(1)
- » The inland region is relatively flat and agricultural, and includes the Delta Region.(1)
- » This region includes a mix of federal, state and locally managed public lands and a combination of dense population centers,dispersed communities in wildland urban interfaces, and heavy recreation use.



Photo by Marin County Parks



Counties: Alameda, Contra Costa, Fresno*, Kern*, Kings, Madera*, Marin*, Mariposa*, Merced, Monterey, San Benito, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Stanislaus, Tulare*, Ventura*. Counties marked with an (*) contain areas in another region as well.

KEY RESOURCES AND ACTIONS

- » Biodiversity, agriculture, recreation, tourism.
- » Community and watershed fire resilience through vegetation management,community organizing, invasive species control, prescribed fire, and grazing.

FIRE HISTORY AND VARIABLES

- » Fire history and behavior are highly variable across this region, and there is high likelihood that fire in one area will have negative impacts on other areas as people evacuate, water supplies are threatened, and air quality is impacted.
- » Human and lightning-caused fires were common prior to the 20th Century. Fire suppression, selective overstory thinning, grazing, invasive species, pests, drought, extreme wind events, and changing temperatures have combined with human population growth and steep topography to shape fire regimes today. (7, 8)
- » Evacuation routes, regional fire coordination, and shelters have become community essentials.
- » Until 2020, much of the coastal redwood forests had not burned in decades.



Photo by Marin County Parks

CLIMATE CHANGE AND OTHER RISKS

- » Climatic impacts on this region's fire regime are complex. Although temperatures are expected to increase, a decrease in precipitation may lead to lower fuel loads (2). Late summer winds drive severe fire spread. Future changes to wind patterns are unknown (3).
- » Fire frequency and severity are expected to increase as population continues to increase in the region (3).
- » Bark beetle infestations are expanding as winters warm, creating large stands of dead and dry vegetation (4).
- » 2020 was a record smoke year, especially in the Central Valley. Researchers are concerned about the permanent combined effects of wildfire smoke (5).

REGIONAL AND LOCAL LEADERS

- » In this region, forest and fire practitioners work for a variety of entities, ranging from state and regional park districts, tribes, nonprofits, fire safe councils, resource conservation districts, and more.
- » Several entities are advancing landscape-scale fire resilience, including those currently participating in the State Coastal Conservancy's Regional Forest and Fire Capacity Program, such as the Tamalpais Lands Collaborative ("OneTam"), the Santa Cruz Mountain Stewardship Network, coastal county resource conservation districts, and the Amah Mutsun Land Trust. The Sierra Nevada Conservancy plays important regional organizing roles for forest management inland.
- » Projects and approaches in this region range from sub-regional prioritization planning, county-wide vegetation mapping, prescribed fire planning and implementation, fuel break development, vegetation management projects along evacuation routes, chipper programs, and landowner forest management plans.

Sierra-Cascade-Inyo

REGIONAL PROFILE

4.1M

Californians live in this region

30M

Californians rely on this region's headwaters

44.6%

of the state's forest carbon sinks are located in this region (6)**

BIOREGIONS AND ECOSYSTEMS

Many scientists and agencies divide this region into two bioregions. To the south, there is the Sierra Nevada, which is comprised of a number of vegetation types, often associated with the large range of elevations present in the region. This includes valley grasslands, woodlands, chaparral-covered slopes, montane coniferous forests, and alpine meadows. Further north lies the Southern Cascade Range/Modoc Plateau bioregion, which is primarily dominated by high desert flora, and forests. This bioregion includes flats, basins, valleys, lava flows, and mountains (1).

KEY RESOURCES AND ACTIONS

- » Water supply, forestry, biodiversity, recreation. The headwaters for two-third's of the state's water supply.
- » Increasing all vegetation management practices—prescribed fire, forest thinning, tree mortality mitigation, grazing, and all things encompassing community and wildland fire resilience.

FIRE HISTORY AND VARIABLES

The fire regime in this area has been tied to a combination of lightning strikes and human ignitions since time immemorial. Like much of the state, this region experienced significant application of cultural burning by First Nations until about 1860 (3).

As Indigenous people were forcibly removed from their homelands and cultural burning practices were criminalized, the region saw a decrease in low-to-moderate fire intensity, which over time has been attributed to an increase in fire intensity due to vegetation build-up (3). Additional vegetation has accumulated with the decline of the timber industry.



Counties: Alpine, Amador, Butte*, Calaveras, El Dorado, Fresno*, Inyo, Kern*, Lassen, Madera*, Mariposa*, Modoc*, Mono, Nevada, Placer*, Plumas, Shasta*, Sierra, Siskiyou*, Tehama*, Trinity*, Tulare*, Tuolumne, Yuba*. Counties marked with an (*) contain areas in another region as well.



Photo by Sierra Nevada Conservancy

CLIMATE CHANGE AND OTHER RISKS

- » The size of wildfires in this region is expected to sizably increase (by as much as 240%) with climate change. This is expected to lead to type conversion and more shrub-dominated landscapes in some areas, which will have important ecological, economic, and cultural impacts (3). |
- » Climate scientists anticipate that this region will receive an increase in both large storms and drought, both of which can lead to increased fire behavior. (Wetter years can lead to increased fuel loads in grass-dominated landscapes, while droughts are associated with beetle kill and therefore more fire-prone forests(3).
- » Population growth in this region has led to an increase in unintentional fire ignitions, and an increased number of structures at risk (3).
- » Fire exclusion in this region has coupled with other positive feedback loops to make the region increasingly at risk to drought, beetle kill, and disease (3).



Photo by Sierra Nevada Conservancy

REGIONAL AND LOCAL LEADERS

- » This region is home to more than fifty tribes, who have cared for these lands since time immemorial. It also has a very active group of forest health practitioners, including 21 Resource Conservation Districts and dozens
- » of Fire Safe Councils. Nonprofit organizations such as the Sierra Business Council, the Sierra Institute for the Community and the Environment, and the Sierra Nevada Alliance provide special programs and services to the Region.
- » These regional organizations have joined with state and federal agencies to create successful partnerships and collaboratives. More than 35 different collaborative groups are working in the Sierra Nevada.
- » Several are working to advance landscape-scale restoration, such as the Tahoe-Central Sierra Initiative, the Amador-Calaveras Consensus Group, the Burney-Hat Creek Collaborative, the Yosemite-Stanislaus Solutions, and the Dinkey Creek Collaborative. Several of these have received the Collaborative Forest Landscape Restoration (CFLR) funding and other prestigious federal resources.
- » The Sierra Nevada Conservancy (SNC), a state agency, provides funding, capacity-building and technical assistance with collaboration development to the majority of the region except parts of the Cascades and Inyo County, primarily through its core initiative, the Sierra Nevada Watershed Improvement Program. It also provides leadership in forest-based workforce development and biomass utilization. The SNC has used its RFFCP block grant to promote local planning, capacity-building, and project development in seven subregions.

Northern

REGIONAL PROFILE

4.5M

Californians live in this region

21

Counties are represented in this region

41.8%

of the state's forest carbon sinks are located in this region (6)**

EXCEPTIONAL DIVERSITY

The northern region of California hosts an exceptional diversity of terrestrial systems ranging north to south, and from the coast to the interior of the state. Extensive mixed Douglas fir and coastal redwood forests, spotted with prairies, dominate the coast. The north coast is also considered a “hotspot” for biological diversity, and is home to some of the state’s last viable salmonid runs. The inland portions contain a complex mosaic of oak-woodland savanna and chaparral, exceptionally diverse mixed evergreen and conifer forests. This region also includes portions of the semi-arid intermountain desert and agricultural, rural parts of the Sacramento Delta (1).

FIRE REGIMES

The region’s fire regimes are as diverse as its ecological settings, ranging from areas dominated by coastal fog and over 55 inches of annual precipitation to under 20 inches. Regardless, every system has a summer-long dry period during which fire probability increases dramatically. Historic fire return intervals range from 1-5 years in prairies and woodlands, to 10-25 years across much of the interior coast ranges, to 50-250 years in certain subalpine forests and other zones of fire refugia.

While lightning is a predominant driver of ignitions of fire, as well as power lines and road-related incidents, nearly all the region’s ecosystems co-evolved with extensive Indigenous cultural burning regimes, which have been substantially diminished since European colonization.



Counties: Butte*, Colusa, Del Norte, Glenn, Humboldt, Lake, Marin*, Mendocino, Modoc*, Napa, Placer*, Sacramento, Shasta*, Siskiyou*, Solano, Sonoma, Sutter, Tehama*, Trinity*, Yolo, Yuba*. Counties marked with an (*) contain areas in another region as well.

KEY RESOURCES AND ACTIONS

Carbon, water, biodiversity, forestry, recreation, tourism, agriculture, critical salmon and steelhead habitat.

Increasing all vegetation management practices — including prescribed fire, forest thinning, grazing, and all things encompassing community and wildland fire resilience. Water quality protection.

CLIMATE CHANGE AND OTHER RISKS

In the face of a warming climate with increased weather extremes, communities will be substantially affected by the increased flooding, water supply scarcity, sea level rise, hotter summers, increased drought, and wildfire (3).

Unintentional human-caused ignitions coupled with more frequent wind events pose the greatest risks to life and property, while already-frequent lightning caused fires are expected to increase as well.

The increasing probability of ignitions, coupled with drier vegetation, hotter temperatures, and longer fire seasons, will increase the potential for larger and more severe wildfires.



Prescribed fire in Whiskey Town Recreation in a mixed conifer forest. Photo by Lenya Quinn-Davidson, Fire Adapted Communities Learning Network

REGIONAL AND LOCAL LEADERS

The region's low population and limited economic base makes it difficult to secure local funding for fire adaptation and landscape resilience work. Nevertheless, novel community-based efforts, involving partnerships between state and federal agencies, local and regional governments, tribes, resource conservation districts and nonprofits are implementing a variety of innovative and locally-adapted landscape resilience strategies.

The North Coast Resource Partnership (NCRP) is a long term, innovative and successful collaboration among Northern California Tribes, counties, and diverse stakeholders. The NCRP region covers over 19,000 square miles – 12% of the California landscape – and includes the Tribal lands and the counties of Del Norte, Humboldt, Trinity, Siskiyou, Modoc, Mendocino and Sonoma. Since 2004, the partnership has engaged in collaborative, integrated planning and project implementation, investing over \$85 million in hundreds of projects that benefit the North Coast Region's communities and watersheds. Planning and implementation rely on the best available science as well as local expertise to enhance forests and watersheds, increase resiliency to fires, floods, drought and climate change, and ensure community health, safety and economic vitality. The NCRP is leading the development of a regional strategy and plan for landscape fire resilience through the RFFC program.

The region is a well-spring of community-led prescribed fire initiatives, from the state's first Prescribed Burn Association in Humboldt to the Good Fire Alliance in the North Bay, with nearly every county and landscape hosting a local burning partnership.

Southern

REGIONAL PROFILE

22.4M

Californians live
in this region

1 in 4

Residents face high, very
high, or extreme fire
threat. (8)

1.8%

of the state's forest
carbon sinks are located
in this region (6)**

FOUR BIOREGIONS, FOUR FIRE BEHAVIORS

Many scientists characterize this region as containing four bioregions: the Mojave Desert, the Sonoran Desert, the Colorado desert, and the coastal plains. (1) Countless ecosystems exist within each of these bioregions, meaning that fire behavior and the variables that most influence varies throughout the region.

FIRE REGIME

Seasonal Santa Ana winds dominate fire behavior along the coast, and mountainous areas. Other wind patterns also impact fire spread inland. There is not consensus on how climate change will impact these winds and related fire spread and severity (3).

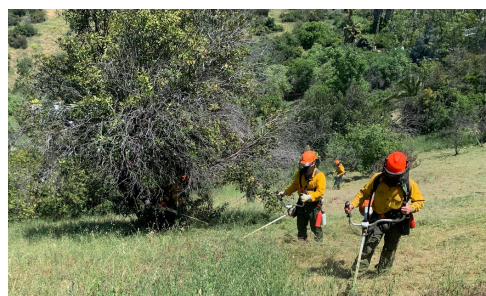
Inland, vegetation type and density have the greatest impact on fire patterns, many of these fuels are fine (such as grasses, chaparral, and shrubs), meaning that they ignite easily and burn hot, and quickly. As climate change brings drier, hotter seasons, this will impact vegetation and therefore fire behavior accordingly (3).

Other important fire behavior variables include elevation, slope, and distance from the coast(3).

Climate change is expected to increase both wildfire risk and wildfire intensity in much, if not all, of this region (3).



Counties:
Imperial,
Los Angeles,
Orange,
Riverside, San
Bernardino,
San Diego,
Ventura*.
Counties
marked with
an (*) contain
areas in
another region
as well.



MRCA Fire Division clearing brush.
Photo by: MRCA Fire Division

KEY RESOURCES AND ACTIONS

- » Recreational landscapes close to concentrated populations, tourism, biodiversity, water supply
- » Ignition prevention, community resilience, home hardening, invasive species control, focused vegetation management.

IGNITIONS AND RISKS

- » Wildfire ignitions have increased in recent years, and nearly all are human-caused, especially along primary roadways and from equipment and power lines. This increase is attributed to development and population increases in the region (3).
- » The more dense housing and development is, the greater the wildfire risk. Structure density and associated urban conflagration are of great concern in much of this region (10).
- » Post-wildfire debris and mud flows are also a major threat to human safety, natural resources, and the economy (3).



IERCD staff performing GSOB surveys. Photo by IERCD

REGIONAL AND LOCAL LEADERS

- » A diverse range of practitioners and organizations are advancing forest and fire issues in their local communities in this region. These leaders work for a variety of entities beyond state government, including Tribes, nonprofits, fire safe councils, and resource conservation districts.
- » Several regional and local leaders are advancing fire-resilient landscapes in this region, including three Regional Forest and Fire Capacity Program grantees: the Resource Conservation District of Greater San Diego County, the Inland Empire Resource Conservation District (IERCD), and the Santa Monica Mountains Conservancy. These groups are also working on outreach, home hardening and defensible space projects.
- » These organizations are assuming leadership roles in priority planning in forested and chaparral ecosystems, organizing Goldspotted Oak Borer response, increasing regional fire safe council capacity, expanding LiDAR availability, advancing reforestation, and protecting San Diego's remaining mixed-conifer forests.
- » Other local groups such as the Irvine Ranch Conservancy are facilitating a broad network of stakeholders under the County of Orange Area Safety Task Force, which plays an active role in ignition prevention, public outreach and strategies regarding home hardening and infrastructure upgrades.

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**Forest carbon stocks from counties present in multiple regions are equally divided into each region.

Cover photo by Marin County Parks





fmtf.fire.ca.gov
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