

Introduction

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Fifteen of the twenty largest California wildfires, and thirteen of the twenty most destructive, have occurred since 2000. This explosive growth in fire activity and accompanying destruction reflects environmental and demographic trends in California over the same period – increasing global temperatures and an increasing human population have played direct roles in increasing the fire threat in California. Rising temperatures have reduced the Sierra snowpack, leading to a prolonged drought. These increasing temperatures and dry vegetation, when met with high wind events, have brought unprecedented fire activity out of California’s wildlands and wildland-urban interface (WUI) and into dense residential development. As California’s population has increased, so has land conversion from open space to residential development and its supportive infrastructure (powerlines, commercial activity, etc.). As open space, that land might have slowed or stopped a wildfire or performed other ecosystem services that would have slowed the advent of “megafires,” i.e., through carbon sequestration.

California’s Fourth Climate Change Assessment (2018) predicts the average annual maximum daily temperature will increase by 5.6 to 8.8 degrees Fahrenheit by 2100, and the water available from snowpack will decline by two thirds by 2050. If greenhouse gas emissions continue to rise, the frequency of extreme wildfires will increase, and the average area burned statewide will increase by 77% by 2100. The State’s Forest Carbon Plan (2018) is specifically called out by the Fourth Assessment for its focus on increasing forest restoration and treatment as tools to reduce these impacts.

The need for increasing the pace and scale of forest restoration and vegetation management projects is also apparent in the United Nations’ Intergovernmental Panel on Climate Change (IPCC) special report “Global Warming of 1.5 °C” (2018). According to the report, fostering forestry and land use policies that focus on maintaining healthy forests and landscapes as carbon sinks are crucial to keeping the global temperature rise to less than 1.5 °C by 2030.

This increase in extreme wildfires is both a result of climatic change and a contributor to the greenhouse gas emissions causing such change. As such, it is imperative the Board develop policies to effectively minimize the likelihood of extreme wildfires and to limit their damage to ecosystems and property. These policies serve several functions to achieve the Board’s goals outlined in the 2018 Strategic Fire Plan, to fulfill the Board’s legislative mandates to develop a fire protection and response system for the state, and to reduce the impacts of global climate change.

Fire Plan

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Since the 1930s, and pursuant to **PRC 4114**, the Board has adopted a strategic fire plan to provide direction to the department in their fire prevention and protection activities. Over nearly a century, the shape and content of these plans has evolved to reflect changes in California wildlands’ environmental, social, and economic landscapes. The most recent plans in 2010 and 2018 moved away from including fine-grain detail on vegetation types, personnel and equipment assignments, and budget information. Instead, they provide broad, strategic direction to CAL FIRE regarding the goals the Board would like to see achieved via the department’s prevention and suppression activities. These plans require the department to report to the Board annually on their progress toward these goals.

The *2018 Strategic Fire Plan for California* reflects CAL FIRE's focus on (1) fire prevention and suppression activities to protect lives, property, and ecosystem services; and (2) natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. Additionally, the continued inclusive collaboration among local, state, federal, tribal, and private partners remains paramount to effectively manage a more fire resilient wildland-urban interface and natural environment. The Plan defines "collaboration" very broadly, from working together to implement a single fuel break, cooperating to develop a Community Wildfire Protection Plan (CWPP), to developing and administering the statewide, multi-agency California Fire Management Agreement.

This collaboration is reflected in the Unit or Contract County Fire Management Plans, which detail the local organizations, neighborhoods, or communities performing fire prevention work and the specific projects each Unit plans to implement in order to meet the goals of the *Strategic Fire Plan*. This is where specific data on calls responded to, assets, staffing, fire activity, law enforcement, defensible space inspections, and other metrics are outlined. Unit plans provide a look at past and currently ongoing vegetation treatment projects, public education campaigns, other projects going on in the Unit (i.e., evacuation planning), and proposes future projects.

The Board has established the following policies regarding the development of strategic fire plans:

- The integration of policies and priorities developed at the statewide level into Unit-level planning is imperative to executing the *Strategic Fire Plan for California*.
- The Board and CAL FIRE cannot accomplish a fire safe California on their own. The input of community organizations such as Fire Safe Councils, Homeowners Associations, Resource Conservation Districts; local government and fire districts; federal and tribal partners; and private citizens are valuable contributions to CAL FIRE strategic planning documents.

Fire Prevention in the State Responsibility Area

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Fire is a primary driving force that has shaped California's ecosystems for millennia, recurring at varying intervals in virtually all vegetation types. It is estimated that between 4.5 and 12 million acres burned annually prior to Euro-American settlement, although there was significant variability in pre-settlement fire regimes across vegetation types and regions. Wildfire activity always has been closely connected to climate and continues to be an endemic part of natural systems of much of the state.

Ignitions have been on the rise since 2007 after decades of reductions (*2018 Strategic Fire Plan*), highlighting the continued need for a robust fire prevention program. The average number of acres has increased as well – annually since 2000, the average annual acres burned in California has been more than double the average of the 1960s (*California's Forest and Rangeland Assessment, CAL FIRE FRAP, 2017*). Forests sequester and store significant amounts of atmospheric carbon, helping to check greenhouse gas impacts such as rising mean temperatures. However, both the increasing number and nature of wildfires have caused significant reductions in sequestered carbon.

When suppression resources are available, they are now often committed to year-round fire prevention activities. These crews perform vegetation management projects that can help slow or stop a wildfire, and they also conduct defensible space inspections and public education programs. These projects embed fire service personnel in local communities year-round, increasing the importance of fire safety, planning, and preparedness in the public consciousness.

Pursuant to Public Resources Code 4125-4128, every five years the Board classifies the areas of the state in which the financial responsibility of preventing and suppressing wildfires is primarily the responsibility of the state. This area is known as the State Responsibility Area (SRA). In 2011, the Legislature assessed a fee on each habitable structure in the SRA. This fee was essential to the successful introduction and implementation of many fire prevention programs. Since 2017, the fee has no longer been assessed and these programs are now funded with California Climate Investment funds.

Although the state is responsible for the land in the SRA, individual landowners, homeowners, and communities share wildfire protection and prevention responsibilities with federal, state, tribal, and local fire protection agencies. Homeowners and landowners must work together to plan and implement fire prevention measures, such as education programs, fuel treatment projects, and evacuation planning, and incorporate new defensible space strategies and housing material technological innovations as they are developed. The holistic combination of all these actions will reduce the impacts of wildfires.

In order to respond to California's growing wildfire impacts, fire prevention and fire suppression activities must be deeply integrated. This integration requires a shift in the way California's fire service moves forward. Creating a single integrated fire protection model composed of fire prevention, natural resource management, and fire suppression strategies is a primary intent of the *2018 Strategic Fire Plan*.

To accomplish the *2018 Strategic Plan's* goal of a single integrated fire protection model, the Board has established the following policies:

- Fire prevention and suppression activities are interrelated and interdependent; fire protection agencies in California need to provide both services. Prevention includes, among other tools, fuel reduction, defensible space inspections, public education, and data collection and analysis.
- Carbon stability plays a central role in forest policy. The Board supports the development of state, regional, and local policy documents that improve forest health and resiliency and promote long-term carbon stability, uptake, and storage. A key tool to achieving carbon stability is supporting larger, healthy trees, which are also more resistant to fire and other ecosystem disturbances.
- Fire protection in the form of vegetation management, including prescribed fire, enhances the long-term carbon trends and ecosystem health across the state.
- Successful fire prevention projects reduce fire suppression costs and economic losses due to wildfires, and the Board supports permanent funding mechanisms for and increasing the funding amounts available for fire prevention work, whether undertaken by government agencies, nongovernmental organizations, or private individuals.
- The leading cause of structure ignition during wildfires is ember intrusion. When Californians choose to live in the wildland-urban interface, they take on the primary responsibility for the creation and maintenance of defensible space around the structures on their property. Fire service agencies protect communities via landscape-level fuel reduction projects. The Board encourages individuals in the SRA and the WUI to implement ember protection projects on their property in the Home Ignition Zone (HIZ).

Forest Health and Defensible Space

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The wildlands of California are naturally fire prone. The natural plant and animal communities in the state have adapted to natural fire conditions over millennia, but historic fire suppression, increasing

urbanization, and drought and climate change have brought significant changes to California's vegetation types. Many of these changes have brought nonnative species that are less resistant to fire and overstocked forests that can increase the severity of a wildfire. Some of these species and forest conditions are "hazardous fuels" - live and dead vegetation that increases the likelihood of unusually large wildland fires. When fire encounters areas of heavy fuel loads (continuous brush, downed vegetation or small trees) it can burn these surface and ladder fuels and may quickly move from a surface fire into a crown fire. Forest and fuel treatments are intended to lower the risk of high severity wildfires by managing vegetation to modify and/or reduce hazardous fuels. The goal of forest and fuel treatment projects is to modify fire behavior to reduce environmental damage and aid in suppressing wildfires.

According to the 2018 California Forest Carbon Plan, California's forests and shrubs are the largest land-based carbon sink in the state. The Governor's Executive Order B-52-18 (May 2018) recognized the link between degraded forest health and the potential to lose these lands as a carbon sink if extreme wildfires continue to burn. To that end, the Governor ordered the Natural Resources Agency to increase the rate of forest treatments to 500,000 acres a year in the next 5 years.

To reduce the environmental damage and the life and property loss caused by high severity wildfires, the Board establishes the following policies:

- To meet the Executive Order's goal of increasing forest treatments, the Board supports streamlined programs that balance the protection of California's diverse environments with a need to reduce hazardous fuel conditions.
- Grant and cost-share programs empower local government and nongovernmental organizations to lead appropriate fire prevention projects, including forest health and fuel treatment, in their communities.
- Fire behavior can be affected near and around homes by vegetation treatment. It is the policy of the Board to adopt and regularly review and revise regulations for defensible space for structures, pursuant to its authority in **PRC 4291**. It is the landowner's responsibility to perform vegetation work around their property to comply with these regulations, as necessary.

Land Use Planning

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The prevention of wildfires is a matter of statewide concern. Fires ignore civil boundaries, and preventative measures are necessary for the preservation of the public peace, health, and safety. The Board has a legislative mandate to ensure local jurisdictions incorporate fire protection measures in their land use planning decisions and to develop minimum standards for fire safe development in the SRA and Very High Fire Hazard Severity Zones (VHFHSZ)s.

Fire regimes in many California ecosystems have been altered by land use and other anthropogenic factors since the beginning of the 19th century. Fire suppression and land use conversions have resulted in a buildup of fuels in some coniferous forest types, and human activities have also increased ignitions and fire frequency in some chaparral vegetation types in comparison to natural fire regimes.

Wildfire risk in California is most acute in the wildland-urban interface (WUI), where housing losses have increased significantly during the past three decades. This problem is expected to grow; modeling scenarios suggest that housing within VHFHSZs will increase from 640,000 to 1.2 million units by the year 2050. Mounting structure losses due to wildfire – over 10,000 structures in state DPA and LRA in 2017 alone – have brought land use planning for fire hazard reduction to the forefront of public attention.

It is against this backdrop of increasing WUI threats and losses that the Board has endeavored to implement their legislative mandate to engage in local land use planning to its fullest extent. This mandate approaches fire safe land use planning from two perspectives:

- **PRC 4290 and 4291** require the Board to establish standards for fire safety standards for development and defensible space, including road standards, street and building signage, water supplies, and fuel breaks and greenbelts.
- **GOV 65302.5** requires the Board to review General Plan Safety Elements for the protection of life, property, and natural resources in SRA or VHFHSZs from unreasonable risks associated with wild land fires.

In light of these mandates, the Board has developed the following policies:

- The review of General Plan Safety Elements is a priority point-of-contact for the Board's voice in fire safe land use planning, and the Board uses this opportunity to review General Plan Safety Elements for compliance with fire safe development and relevant planning statutes and regulations.
- It is of the utmost importance that the Board engage in collaborative planning with local governments and provide expert information on fire safe regulations, policies, and tools that reduce the risk of wildfire to a community in order to create fire safe communities across California.
- Consistency among land use plans, hazard mitigation plans, natural resource protection plans, and other relevant plans improves the ability of a jurisdiction to prepare for, respond, and recover from wildfires.
- A regular review and update to the Fire Safe Development Regulations in Title 14 provides for consistency with the California Fire Code & other relevant regulations, scientific validity, and social changes.
- Utilize evolving and emerging sources of data on fire risk, population growth, housing density, and natural resources to focus land use planning on areas of high risk, or areas of high population or population growth.
- The Board supports increasing funding for the affordable retrofit of buildings constructed prior to the implementation of the WUI building code and other fire safe design features in the California Fire and Building Codes.

Data

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Thorough research, data collection, and analysis informs all aspects of prevention and suppression. As the Board and CAL FIRE become more adept at integrating these efforts, fire protection and mitigation will be more successful. New technology allows more rapid and expansive data collection and analysis across the state in pre-, during-, and post-fire environments.

To facilitate the use of this data, the Board establishes the following policies:

- Accurate, timely, and validated data collected and shared among and between agencies builds a strong foundation for the Board and CAL FIRE as they implement their vision for a natural environment that is more fire resilient; buildings and infrastructure that are more fire resistant; and a society that is more aware of and responsive to the benefits and threats of wildfire.

- The Board expects Unit Fire Plans will, where necessary, establish new programs and projects to collect, analyze, and apply new data in pursuit of a more fire safe California.
- As a monitoring mechanism, CAL FIRE will report to the Board annually on progress toward meeting the 2018 Plan's goals, provide an aggregation of the Unit Fire Plans, and identify opportunities for adaptive management.
- It is the intention of the Board for this collected data to inform adaptive management, where the Board and CAL FIRE's policies, regulations, priorities, and programs are adjusted based on the data's indicated successes and failures.

Fire Protection

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CAL FIRE has established itself as the state wildfire fighting agency over decades of experience in forestry and forest fires. However, human population growth into the wildlands has shifted the demands on CAL FIRE, and local government faced with budgetary pressures increasingly rely on CAL FIRE to provide services. CAL FIRE is now an "all hazards" agency, trained to respond to a wide variety of emergency situations and to implement a fire protection system that includes fire prevention projects, law enforcement, and forestry health. CAL FIRE's primary mission is wildfire protection on SRA, but the Department also responds to structural, vehicle and vegetation fires in and adjacent to its direct protection areas when there is a threat of those fires spreading to wildlands.

Population increases are usually characterized by an increase of fire occurrence and a corresponding increased risk to the natural vegetation. The construction of structures on land classified as SRA has increased the threat of fire to life, property and resource values.

The Board provides direction for, and CAL FIRE operates, a fire protection system under a number of legislative mandates:

- **PRC 4111** requires the Board to make and enforce such regulations as are necessary and proper for the organization, maintenance, government, and direction of the fire protective system for the prevention and suppression of forest fires.
- **PRC 4129** allows a county to assume responsibility for fire prevention and suppression of all fires on lands in the county, including lands within the SRA, upon a decision by the board of supervisors and approval of the Director, in accordance with criteria adopted by the Board ("contract counties").
- **PRC 4141** allows CAL FIRE to enter into cooperative agreements with any person, firm, association, or cooperation that owns or controls land with flammable vegetation, or with the federal government, to prevent and suppress wildfires.
- **PRC 4142** allows the Department to enter into cooperative agreements to prevent and suppress forest fires, or other fires in any lands within a county, city, or district, that makes an appropriation for such purpose ("Schedule A contracts").
- **PRC 4143 and 4144** allow the Department, in accordance with policies and standards provided by the Board, to enter into cooperative structural fire protection agreements with cities, counties, special districts, or other political subdivision that requests such an agreement ("Amador agreements").
- **PRC 4170 and 4170.5** provide both CAL FIRE and local authorities the ability to control and extinguish any uncontrolled fire.

To provide the highest level of service to the citizens of California, and particularly those in the SRA, the Board and the Department shall adhere to the policies below, in addition to any applicable regulations adopted by the Board.

- The Director will maintain an aggressive program of forest and fire law enforcement, in accordance with legal principles and authority, to require compliance with the forest and fire laws, to pursue violators through applicable judicial systems and, as appropriate, to report violations of those laws. CAL FIRE will coordinate and cooperate with local agencies on or adjacent to the SRA and shall encourage and assist capable and willing local agencies to actively pursue and enforce forest and fire laws.
- CAL FIRE is a partner in the statewide mutual aid system and responds to requests for assistance from other fire agencies if personnel and equipment are available.
- Life and property protection is primarily the responsibility of the local citizens and their local government agencies. They must develop their own capabilities to provide year-round life and property protection, including emergency medical services (EMS).
- Where the frequency of EMS responses adversely affects the primary mission of wildfire control, the Department will actively encourage alternative means for the community to supply emergency medical services. The Department will not schedule, locate, or budget personnel and equipment for the sole purpose of providing emergency medical response.
- The Department and local fire protection organizations in SRA have overlapping fire protection responsibilities. Cooperation, communication, coordination, and clear policy direction are required to avoid unnecessary duplication of services as well as maximize administrative efficiency during fire control operations.

When CAL FIRE enters into a contract with a county that has assumed responsibility for SRA protection within the county, they shall adhere to the following policies:

- Fire protection services provided to SRA by the county shall be at least equivalent to service provided directly by the state in comparable areas.
- The state shall fund the annual operation of contract county fire protection pursuant to PRC 4132 and any applicable regulations.
- When the budget for fire protection for SRA directly protected by the Department is adjusted, the budget levels for fire protection provided by the county for SRA shall be adjusted proportionately.

Where no local fire protection forces exist, it is the policy of the Board that:

- CAL FIRE should provide leadership and assistance in developing local protection forces designed to meet local protection needs. As local fire organizations provide service that equals or exceeds existing service, any cooperative fire agreements should be reviewed and terminated in accordance with PRC 4143 and 4144.
- The Department will respond to declared disasters and to mutual aid requests as the availability of personnel and equipment permit. The availability of personnel and equipment will be commensurate with the ability to meet the Department's primary mission of wildfire protection. Department fire stations will not be staffed to provide emergency protection on an initial response basis unless under contract in accordance with PRC 4143 and 4144.

Where local fire protection forces exist, the Board establishes the following policies:

- CAL FIRE will respond as necessary to structural fires, vehicle fires, and other potential fire emergencies where there is a threat of fire to natural resources. CAL FIRE may assist local agencies if there is no threat to the natural resources.
- Mutual aid and automatic aid agreements with local fire protection organizations operating on and adjacent to SRA shall be developed to maximize coordination and cooperation; avoid unnecessary duplication of forces sent to an incident; and promote a better understanding of the Department's role in providing fire protection services to SRA.

Where the Department endeavors to engage in mutual fire protection with federal agencies, the Board establishes the following policies:

- The plan for the protection of these lands shall be included in the fire plan of the Director in the same manner as for other SRA lands.
- SRA lands which can reasonably be protected and administered by state fire protection forces should not be contracted with federal agencies for protection.
- Protection by CAL FIRE of federal lands intermingled with or adjacent to SRA is encouraged, provided that the state is compensated for this service. The level of service provided to these Federal Responsibility Areas should be equivalent to that provided to adjacent SRA. Fire protection services provided to the SRA by the federal government be at least equivalent to those provided directly by the state to comparable areas.
- In determining which agency should provide protection, consideration shall be given to existing facility locations and their initial attack areas. The establishment of duplicate or overlapping facilities is discouraged.
- When the budget for fire protection in SRA lands protected by the Department is adjusted, the budget request for fire protection provided by the federal government to the SRA should be adjusted proportionately.