THE BOARD OF FORESTRY AND FIRE PROTECTION



**ANNUAL REPORT *2021***

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***California State Board of Forestry and Fire Protection Mission***

*The mission of the Board is to lead California in developing policies and programs that serve the public interest in environmentally, economically, and socially sustainable management of forest and rangelands and a fire protection system that protects and serves the people of the state*.

# Board Background and Organization

The California State Board of Forestry and Fire Protection (Board) is a Governor-appointed body within the California Department of Forestry and Fire Protection (CAL FIRE). Members are appointed on the basis of their professional and educational qualification and their general knowledge or interest in problems that relate to watershed management, forest management, wildland fire management, fish and wildlife, range improvement, forest economics, or land use policy. Of its nine members, five are chosen from the public, three from the forest products industry, and one from the range-livestock industry.

The Board is responsible for developing the general forest policy for the State, determining the guidance policies of CAL FIRE, and representing the State's interests in federal land located within California. Together, the Board and CAL FIRE work to carry out the California Legislature's mandate to protect and enhance the State's unique forest and wildland resources.

#### Committees of the Board

#### Committees Required by Statute

Range Management Advisory Committee

Professional Foresters Examining Committee

Soquel Advisory Committee

#### Internal Standing Committees

1. Forest Practice: The mission of the Forest Practice Committee is to evaluate and promote an effective regulatory system which ensures the continuous growth and harvest of commercial forests and protects soil, air, fish, wildlands, and water resources.
2. Resource Protection: The mission of the Resource Protection Committee is to develop and promote a policy and regulatory program that implements fire safe land use planning and effective vegetation management, pursues a fire prevention program in alignment with the State Fire Plan, and improves forest and rangeland health in California.
3. Management: The mission of the Management Committee is to evaluate and promote long-term, landscape-level planning approaches to support natural resource management on California’s non-federal forests and rangelands and to evaluate State Forest management plans.

#### External Advisory Committees

1. Effectiveness Monitoring Committee
2. California Forest Pest Council and the California Oak Mortality Task Force
3. Jackson Advisory Group
4. Joint Institute for Wood Products Innovation

#### Committee Updates

#### Range Management Advisory Committee

The Range Management Advisory Committee (RMAC) primarily conducted its activities virtually in 2021 due to the COVID-19 pandemic. The Committee hosted seven public meetings in 2021; hosted a series of three virtual workshops on contract grazing on public lands for fire prevention; and formed a sub-committee to develop grazing license and grazing management templates for use on public lands, along with guidance for navigating the bidding, implementation, and assessment process. The following is a more detailed summary of RMAC activities and progress made in 2021:

* The RMAC hosted seven open, virtual public forums to conduct committee business, and a quorum was reached at six of these meetings. Meeting activities included approval of meeting minutes; membership updates, recruitment, and seat appointments; legislative and partner organization updates; public education and outreach presentations by representatives from State Demonstration Forests, the Pacific Policy Group, U.S. Forest Service, U.C. Cooperative Extension (UCCE), State Water Resources Control Board, National Forests, and contractors for the California Vegetation Treatment Program (CalVTP) on issues related to rangeland resources, grazing, and livestock production.
* In compliance with Public Resources Code (PRC) § 741, the RMAC solicited agency priorities from the Board, California Natural Resources Agency, the California Environmental Protection Agency, and the California Department of Food and Agriculture for review and integration into the priorities and goals of the RMAC.
* In partnership with the California Fire Science Consortium and California State University, San Luis Obispo, the RMAC provided a free 3-day virtual workshop series to discuss the use of prescribed livestock grazing as a tool to support sustainable fuel reduction and environmental management in multi-use landscapes, entitled “Sustainable Management of CA’s Fire-Prone Landscape: Grazing for Community Resilience”. This series focused on the intricacies of contract grazing on public and private lands in the wildland-urban interface and other at-risk communities. Sheep, goat, and cattle producers across the Northern, Central, and Southern regions of California shared their experiences conducting grazing projects to manage fuels in a variety of landscapes and contexts. Over two dozen speakers presented on topics including barriers and challenges to contract grazing, tools to improve outcomes, grazing for fuels management, implications of livestock species on outcomes, multi-species grazing, and co-management with prescribed fire. Contracting entities presented on experiences implementing grazing projects, and included representatives from the California Department of Fish and Wildlife, UCCE, Ojai Valley Community Supported Grazing Program and local Fire Safe Council, and the Land Trust of Napa County. Over 150 members of the public registered for the series. Captioned recordings were made available to the public via weblinks on the RMAC webpage, CA FSC webpage, and YouTube. The strong public response to these meetings and the fact that local conservation organizations—like the RCD of Greater San Diego County and regional UCCE programs, as well as state-wide organizations such as the California Cattlemen’s Association and the California Farm Bureau Federation—have begun holding similar events on parallel themes, is a testament to the growing interest in the service grazing topic.
* At the direction of the Board, the RMAC initiated a new project to develop a service agreement template (i.e., grazing license and grazing management plan) for the application of prescribed herbivory on state lands to support fuels management and other environmental improvement objectives. The RMAC also intends to provide guidelines for navigating the process of service agreements, including the development of assessments and management objectives on state lands, which would then inform site-specific grazing plans referenced by the service agreement.
* Due to term expirations, retirements, and other reasons, several RMAC positions and seats opened in 2021, or will open in early 2022. The Committee re-appointed the Chair and Vice-chair; re-appointed one member to a 4-year term public seat; and is presently reviewing applications to fill four additional seats.

#### Professional Foresters Examining Committee

In 2021, the Professional Foresters Examining Committee (PFEC) and the Office of Professional Foresters Registration completed review and updates to several documents including the 2013 guidance document, Role of the Registered Professional Forester, the 2007 PFEC Policy documents, and the 1994 Certified Rangeland Manager (CRM) Independent Program for Certification. Both the April and October 2021 Registered Professional Forester (RPF) and Certified Rangeland Manager (CRM) examinations were carried out at three different locations employing CDC and State Guidelines for preventing COVID transmission. In total, eighty-four RPF applicants and three CRM applicants sat for these exams. For the April 2021 exams, thirty one percent passed the RPF exam and no applicants passed the CRM exam with only one sitting. For the October 2021 exam, completion of grading and presentation of exam results will occur in January 2022.

* “Licensing Fee Amendments, 2020” went into effect in April 2020 increasing the biennial renewal fee for RPFs from $190 to $350 and for Certified Specialists from $70 to $130. To address RPF retirements and incentivize RPF license retention, the new discounted biennial fee of $250 was implemented for RPFs with 30 years or more in the registry. In 2021, the full registry has now paid these new fees and the registry numbers have declined from 2019 totals by nineteen (19) RPFs. The number of CRM licenses dropped by eight (8). Despite these registry losses, the fees have kept the licensing fund in a positive condition. However, inflationary and administrative costs continue to increase and without increasing registry numbers the licensing fund will be projected to be back in the red again by 2024.
* The Board of Forestry’s Office of Professional Foresters Registration continues to perform outreach to increase awareness of careers in forestry in California and the licensing requirements for foresters. Outreach in the first part of 2021 were done remotely to universities and community colleges. Later in the year, outreach efforts were once again conducted in person. Outreach opportunities have been expanded through a new licensing outreach contract made available through funds from the State of California to the Board. A three-year outreach contract was awarded to Forestry Educators Incorporated (FEI). FEI is the parent NGO for the California Forestry Challenge founded by Diane Dealey Neill, a former Francis H. Raymond Award winner. Diane and RPF Robert Little will provide our licensing outreach message to multiple Society of American Forester (SAF) accredited forestry programs in California, Washington, Oregon, Idaho, Montana, Utah, New Mexico, Nevada and Arizona as well as to annual SAF conventions over the next three years.
* Other items for PFEC consideration in 2021 include:
  + 1) Review of recommendation item 1.16 in the California Wildfire and Forest Resilience Action Plan. This recommendation is for the Board to assist in establishing additional small-scale forest product infrastructure, such as portable sawmills, and to explore the potential for Registered Professional Foresters to become third-party certified as Lumber Graders.
  + 2) The PFEC set priorities for 2022 meetings. Items for upcoming consideration include:
    - A) Consideration of an Apprentice Professional Forester (APF) program to create an alternative pathway to qualifying for the RPF exam.
    - B) Consideration for providing RPF and CRM examinations utilizing computerized testing terminals/centers.
    - C) Consideration of new specialty certificates to assist in prescribed fire.
    - D) Consideration of SAF Certification as additional criteria per the 1992 USFS/Board MOU in meeting the requirements of a Qualified Exempt Supervisor.
    - E) Consideration of arboriculture as conditionally qualifying experience under 14 CCR §1621.1 (b)(3) Forest Protection. This could provide up to two years toward the experience requirement to qualify for the RPF exam.

Reconsideration of Continuing education (CE) requirements for RPFs.

**Effectiveness Monitoring Committee**

* The Board formed the Effectiveness Monitoring Committee (EMC) in 2014 to develop and implement a monitoring program to address both watershed and wildlife concerns and to provide a more effective feedback loop to policymakers, managers, agencies, and the public. Effectiveness monitoring is necessary to assess whether management practices are achieving the resource goals and objectives set forth in the California Forest Practice Rules (FPRs) and other natural resource protection statutes and regulations. This kind of monitoring is a key component of adaptive management. Effectiveness monitoring is also a crucial component for complying with the “ecological performance” reporting requirements outlined in AB 1492 (2012). The EMC and the Board developed a suite of critical monitoring questions based on input from a variety of stakeholders and organized them into 11 themes. The EMC uses these themes and critical questions as guidance to solicit and evaluate monitoring projects with the goal of developing a process-based understanding of the effectiveness of the FPRs and associated regulations in maintaining and enhancing water quality and aquatic and wildlife habitats.

The following is a summary of EMC activities in 2021:

* The EMC issued a call for proposals in July of 2021 for funding in fiscal year 2021/22. Three initial project proposals were received. The committee evaluated the proposals at its October meeting and requested full proposals for two of the projects. The full proposals will be evaluated at the December EMC meeting.
* The EMC received an allocation of $425,000 for the 2021/22 fiscal year from the Timber Regulation and Forest Restoration Fund. Of the 2021/22 fiscal year allocation, $154,472 will be applied to previously awarded projects, and the remaining $270,528 will be available to projects awarded in the 2021/22 fiscal year.
* Board staff continues to work on the details of a grant program as a means of distributing funds starting in the 2022/2023 fiscal year.
* The EMC established a liaison program to connect individual EMC members with Principal Investigators for each project and facilitate improved communications regarding project status, funding, and receipt of project deliverables.
* The EMC developed a format for summarizing completed research and translating results of scientific research and implications for related policies and forestry practices to the Board (i.e., a Completed Research Assessment).
* A Completed Research Assessment was prepared for the Class II Large Watershed Study (EMC-2015-001) and was forwarded to the Board for consideration by the Forest Practice Committee.

#### Joint Institute for Wood Products Innovation

The Joint Institute for Wood Products Innovation (Institute) is an advisory committee to the California Board of Forestry and Fire Protection. The Institute is committed to supporting sustainable forestry and forest restoration and funds forest wood and biomass research to help retain and establish related industries in the state.

The Institute currently has four projects underway. ‘Cross-Laminated Timber Layup Tests Using Western Wood Products Association White fir Species Group’ with the TallWood Design Institute produced 2 different product layups using white fir species. Findings will help incentivize industry on the sidelines about mass timber in California as it is the first step in the PRG 320 process for using white fir as a mass timber species. The report is due in December 2021. ‘Opportunities for Low-Carbon and Carbon-Negative Fuels from Non-Merchantable Forest Biomass in California,’ is an Institute project with UC Berkeley. Objectives include assessing the attitudes of low-carbon fuel producers towards use of forest biomass, identifying perceived benefits and barriers to adopting forest biomass, and developing solutions to barriers. The final report is due in March 2022. ‘Cellulose Nanocrystals (CNCs) as a Value-Based Additive for Low Carbon Footprint Concrete with Limestone’ with Oregon State University is focused on utilizing CNCs as an additive that can aid in mixture modifications that reduce concrete's carbon footprint. The use of CNCs from sustainably sourced wood fiber can aid in forest management and restoration. This work's stretch goal will be to determine if CNCs can be used to design systems that reduce the embodied carbon content by 50 - 70%. A field trial will document the findings. The final report is anticipated in March 2023. ‘Forest Biomass Pile Data Collection’ with Clere, Inc is working to quantify the number of forest biomass piles in the state that have accumulated from 2018 – 2021, including the area treated to create a given pile; composition, volume, and locations of the piles; and the planned vs actual fate of each pile. It will also provide an inventory of forest biomass pile material potentially available for wood and biomass utilization. The final report is due by March 2024.

The Institute has a new Biochar Subgroup (holdover from the Forest Management Task Force reorganization) and, at the request of the Wildfire and Forest Resilience Task Force, is working to coordinate and track the efforts of agencies leading the Wildfire and Forest Resilience Action Plan wood utilization work.

At the request of the Forest Management Task Force, the Institute also developed “[Joint Institute Recommendations to Expand Wood and Biomass Utilization in California](https://bof.fire.ca.gov/media/qjha01sc/final-board-approved_joint-institute-wood-and-biomass-utilitization-recommendations-_11-4-20_ada.pdf).” It was approved by the Board in November 2020 and provided to the Forest Management Task Force.

# Chaptered Legislation with Future Regulatory Action by the Board

**AB 1291, State bodies: open meetings**

The Bagley-Keene Open Meeting Act requires that meetings of a state body be open and public and that all persons be permitted to attend, with certain exceptions. Existing law provides that, subject to certain exceptions and reasonable regulations, the state body shall provide members of the public an opportunity to directly address the state body on agenda items. Existing law authorizes the state body to limit the amount of time allotted for each member of the public to speak but specifies that members of the public who use translators shall be given twice that allotted amount of time. This bill would also require a state body, when it limits time for public comment, to provide at least twice the allotted time to a member of the public who utilizes translating technology to address the state body.

## *AB 431,* Forestry: timber harvesting plans: defensible space: exemptions.

The Z’berg-Nejedly Forest Practice Act of 1973 prohibits a person from conducting timber operations, as defined, unless a timber harvesting plan prepared by a registered professional forester has been submitted to, and approved by, the Department of Forestry and Fire Protection. The act authorizes the State Board of Forestry and Fire Protection to exempt from some or all of those provisions of the act a person engaging in specified forest management activities, as prescribed, including, only until January 1, 2022, the cutting or removal of trees on the person’s property in compliance with specified defensible space requirements, as provided.

This bill would extend to January 1, 2026, the board’s authorization to exempt a person engaging in the cutting or removal of trees on the person’s property in compliance with the specified defensible space requirements as provided.

## SB 709, timber harvesting plans: extensions.

The Z’Berg-Nejedly Forest Practice Act of 1973 prohibits a person from conducting timber operations, as defined, unless a timber harvesting plan prepared by a registered professional forester has been submitted to, and is approved by, the Department of Forestry and Fire Protection. Existing law requires a timber harvesting plan that is approved by the department on or after July 1, 2012, to be effective for a period of not more than 5 years, unless extended for 2 years, as provided. Existing law allows for a timber harvesting plan that is approved by the department from January 1, 2010, to August 31, 2012, inclusive, to be extended for 2 years, and up to a total of 4 years, if certain conditions are met. This bill would eliminate extensions for timber harvesting plans approved by the department from January 1, 2010, to August 31, 2021, inclusive, and instead allow for a timber harvesting plan that is approved by the department from January 1, 2014, to December 31, 2016, inclusive, to be extended for an additional 2 years if certain conditions are met.

## AB 642, Wildfires

Existing law requires the Director of Forestry and Fire Protection to identify areas of the state as very high fire hazard severity zones, as provided. Existing law requires a local agency, within 30 days of receiving a transmittal from the director that identifies very high fire hazard severity zones, to make the information available for public review.

This bill would require the director to identify areas in the state as moderate and high fire hazard severity zones.

The bill would additionally require the director classify areas into fire hazard severity zones based on additional factors including possible lightning caused ignition.

The bill would require a local agency, within 30 days of receiving a transmittal from the director that identifies fire hazard severity zones, to make the information available for public comment. Because the bill would impose additional duties on local agencies, this bill would impose a state-mandated local program.

## *SB 63,* Fire prevention: vegetation management: public education: grants: defensible space: fire hazard severity zones.

Existing law requires the Director of Forestry and Fire Protection to identify areas of the state as very high fire hazard severity zones based on specified criteria. Existing law requires a local agency, within 30 days after receiving a transmittal from the director that identifies very high fire hazard severity zones, to make the information available for public review, as provided.

This bill, among other things, would also require the director to identify areas of the state as moderate and high fire hazard severity zones and would require a local agency to make this information available for public review and comment, as provided. By expanding the responsibility of a local agency, the bill would impose a state-mandated local program.

## *SB 332,* Civil liability: prescribed burning operations: gross negligence.

Existing law makes a person who negligently, or in violation of the law, sets a fire, allows a fire to be set, or allows a fire kindled or attended by the person to escape onto any public or private property liable for the fire suppression costs incurred in fighting the fire, the cost of providing rescue or emergency medical services, the cost of investigating and making any reports with respect to the fire, and the costs relating to accounting for the fire and the collection of specified funds.This bill would provide that no person shall be liable for any fire suppression or other costs otherwise recoverable for a prescribed burn if specified conditions are met, including, among others, that the burn be for the purpose of wildland fire hazard reduction, ecological maintenance and restoration, cultural burning, silviculture, or agriculture, and that a certified burn boss review and approve a written prescription for the burn. The bill would provide that any person whose conduct constitutes gross negligence shall not be entitled to immunity from fire suppression or other costs otherwise recoverable, as specified.

## SB 456, Fire prevention: wildfire and forest resilience: action plan: reports.

Existing law establishes in the Natural Resources Agency the Department of Forestry and Fire Protection, and requires the department to be responsible for, among other things, fire protection and prevention, as provided. The former Governor, Edmund G. Brown Jr., issued an executive order relating to, among other subjects, the streamlining of permitting for landowner-initiated projects for the improvement of forest health and the reduction of forest fire fuels on their properties. Pursuant to this executive order, a Forest Management Task Force involving specified state agencies was convened and an action plan was created.

This bill would require the task force, including the agency and the department, on January 1, 2022, to develop a comprehensive implementation strategy to achieve the goals and key actions identified in the action plan, as provided. The bill would require the implementation strategy to address specified actions, including increasing the pace and scale of wildfire and forest resilience activities, as provided.

The bill would require the task force, on or before January 1, 2023, and annually thereafter until January 1, 2048, to submit a report containing specified information, including progress made in achieving the goals and key actions identified in the action plan, to the appropriate policy and budget committees of the Legislature.

The bill would require the task force, on or before January 1, 2026, and every 5 years thereafter, to update the action plan, as provided. The bill would require the task force to invite the participation of specified federal entities in the creation, alignment, and coordination of joint efforts related to the above-described provisions.

## AB 322, Energy: Electric Program Investment Charge program: biomass.

The California Constitution establishes the Public Utilities Commission (PUC), with jurisdiction over all public utilities, including electrical corporations. Existing decisions of the PUC institute an Electric Program Investment Charge (EPIC) to fund renewable energy and research, development, and demonstration programs.

Existing law creates in the State Treasury the Electric Program Investment Charge Fund to be administered by the State Energy Resources Conservation and Development Commission (Energy Commission) and requires the PUC to forward to the Energy Commission, at least quarterly, moneys for those EPIC programs the PUC has determined should be administered by the Energy Commission for deposit in the fund.

Existing law requires the Energy Commission, in administering moneys in the fund for research, development, and demonstration programs, to develop and implement the EPIC program for the purpose of awarding funds to projects that may lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state’s statutory energy goals and that may result in a portfolio of projects that are strategically focused and sufficiently narrow to make advancement on the most significant technological challenges. Existing law, until January 1, 2023, requires the Energy Commission to expend certain percentages of the moneys appropriated from the fund for technology demonstration and deployment at sites that benefit certain communities.

This bill would require the Energy Commission to allocate not less than 20% of the funds appropriated for the EPIC program to bioenergy projects for biomass conversion, as defined.

# Forest Health Trends

## Monitoring Efforts

Monitoring of the Forest Practice Rules (FPRs) on private and public forestlands has shown generally high compliance with water-quality related rules, and that those rules are generally effective in preventing erosion and sedimentation when properly implemented (FORPRIEM, 2014). Additionally, since the passage of SB 901 in 2018, CAL FIRE has been engaged in the monitoring and reporting-on of ministerial Exemptions and Emergency Notices. Reporting from 2018 was published on May 7, 2019 ([**Olsen et al., 2019**](https://www.researchgate.net/publication/335149799_Exemption_and_Emergency_Notice_Monitoring_Pilot_Project_Report)), and the results from 2019 were approved by the Board on December 30, 2019, however impacts related to COVID-19 and the fire-siege of 2020 delayed such efforts for the 2020 calendar year.

**Pest Conditions**

The following is a summary of notable insect, disease, and forest health issues that continue to threaten and alter urban and wildland forests in California in 2020. Forest pest conditions can change dramatically from year to year. For a summary of forest pests and diseases, see the [2019 California Forest Pest Conditions Report](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd736355.pdf). The 2020 California Forest Pest Conditions Report will be available on the [California Forest Pest Council website](http://caforestpestcouncil.org/) in early 2021.

Invasive Shot Hole Borer (ISHB)

Polyphagous shot hole borer (PSHB) is established in Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Kuroshio shot hole borer (KSHB) is established in Los Angeles, Orange, Santa Barbara, San Diego, and Riverside Counties. Previously KSHB was found in a San Luis Obispo County trap. While no infestations have been found in the landscape there to date, trapping and surveying continues in high-risk locations throughout the county. PSHB and KSHB are found associated with several fungi, including species of Fusarium, which are known plant pathogens. Major hosts include species of willow, oak, maple, sycamore, cottonwood and numerous other hardwoods. Extensive damage continues to occur in parks, urban trees, and riparian areas. No new sites have been found outside of the 8-county ISHB zone of infestation (ZOI), though there has be significant movement into the west of San Bernardino County and into the National Forest. Ten million dollars has been spent in the past two years on education, outreach, tree removal, trapping, and proper disposal of infested materials.

Goldspotted Oak Borer (GSOB)

GSOB continued to spread in southern California through localized beetle flight as well as firewood movement. It is now found in extensive areas of San Diego, Los Angeles, Orange, Riverside, and San Bernardino Counties, with new spot outbreaks found outside of previous infestation locations. GSOB attacks and can kill California black oak, coast live oak, and, to a lesser extent, canyon live oak, preferring larger diameter and older trees. No new sites have been detected outside of the five-county area.

Bark Beetles

Conifer-killing bark and engraver beetle populations are increasing throughout northern and central California. Most infestations are in the central and northern Sierra Nevada, and isolated areas of the Coast Ranges, in ponderosa pine. Continuing drought conditions have exacerbated the outbreaks of western pine bark beetle and Ips engraver beetles. Western oak bark beetle infestations and associated foamy bark canker outbreaks have been detected statewide.

Mediterranean Oak Borer (MOB)

MOB (Xyleborus monographus) and its associated fungi continue to kill valley and blue oaks throughout Napa, Sonoma, and Lake Counties as well as in Citrus Heights, Sacramento County. Splat verbenone appears to have moderate repellency against this pest for 4 – 6 weeks after application. Chipping, solarization, and steam treatment tests to eliminate the beetle from cut wood were conducted in Nov 2021; results are pending. Long-term plots have been established to track decline in valley, blue, and Oregon oak in Napa and Sonoma Counties. No new infestations have been found outside of the known impacted counties.

Sudden Oak Death (SOD)

The EU1 lineage of Phytophthora ramorum (the plant pathogen that causes SOD) was officially confirmed in Del Norte County for the first time in 2020. This is the first confirmation in California wildlands of the EU1 strain, which appears to be more aggressive on conifers than the NA1 strain prevalent in infested California forests. The isolates collected from the Del Norte County infestation were genetically consistent with EU1 isolates from Oregon forests, the only state in the US in which this strain was previously found in wildlands. Management activities in Del Norte County consisted of removing infected trees and applying herbicide to remaining root systems to prevent resprouting, as well as herbicide treatment of tanoaks within a wide radius of the original infestation. The treatment also included removal of herbicide-treated trees likely to pose a hazard to State Route 197 after death.

The UC Berkeley-led SOD Blitz 2021 determined that new P. ramorum infections statewide were generally at lower levels than previous years, likely due to dry winter and spring conditions. The Blitz detected two additional P. ramorum-infected tanoaks in Del Norte County, near the EU1 management site. Since these detections were PCR-based, additional samples were collected from the area for culture confirmation of the pathogen and to delimit these satellite infestations. Notable sites where SOD outbreaks did intensify in 2021, included southern Mendocino County, parts of western Sonoma County, southern and western Marin County, the Oakland Hills, and the Santa Cruz and Santa Lucia Mountains.

Incense Cedar Dieback

High levels of incense cedar mortality were observed throughout the state. In Calaveras Big Trees State Park, cedars were heavily infested with cedar bark beetles (Phloeosinus spp.). High rates of female twig feeding caused large amounts of flagging on trees in all size classes. The impact of subsequent bole attack will be evaluated in 2022. Low rates of Phloeosinus infestation were found throughout the Northern Sierras.

Climate-driven tree die-off and decline in northern California

Die-off and decline of numerous hardwood and conifer species were reported throughout much of the San Francisco Bay Area starting in October 2020. This collapse or degradation of tree health is associated with low precipitation and high evaporative demand in the region that is “reeling from intense drought” as described by the NOAA/National Integrated Drought Information System (NIDIS) for California-Nevada. Each of the affected tree species displayed a different pattern of decline due to the tree species’ physiological response to drought and heat, as well as its associated agents - fungi or insects triggered by stress. Notably affected species included acacia, eucalyptus, Monterey pine, knobcone pine, coast redwood, bay laurel, and manzanita species. Additionally, oak decline and mortality not attributable to sudden oak death were recorded throughout much of the north state, including Mendocino, Humboldt, Shasta, and Siskiyou Counties.

Various cooperators led investigations into the causes of these dieback and mortality problems. The UC Berkeley Forest Pathology and Mycology Laboratory led a comprehensive and large-scale study of black acacia and eucalyptus dieback in the Bay Area and investigated manzanita dieback on Mount Diablo. UC Cooperative Extension and Cal Fire led investigations of oak and tanoak problems in Humboldt and Mendocino Counties, while Cal Fire pest specialists made several individual observations related to causes of dieback of the other species. In only one case was a known non-native pest observed to be associated with dieback, the case of the fungal pathogen Dothiorella moneti causing cankers and dieback on black acacia in the Leona Heights area of Oakland. Following is a table with the widespread endemic pests detected in association with tree dieback. In almost all cases, these pests only have minor impacts, or are latent/dormant in the trees or shrubs, during normal climatic conditions; however, they can take advantage of water stress during drought years, causing heavy impacts.

|  |  |  |
| --- | --- | --- |
| Tree/shrub species affected | Detected pathogen | Detected insect pest |
| Acacia | Dothiorella viticola, Diaporthe foeniculina, Dothiorella moneti |  |
| Eucalyptus | Pseudosydowia eucalypti |  |
| Monterey pine | Diplodia scrobiculata, Fusarium circinatum (pitch canker), Cronartium harknessii (western gall rust) | Dendroctonus valens (red turpentine beetle), Pseudips mexicanus (Monterey pine Ips) |
| Knobcone pine |  | Ips paraconfusus (California 5-spined Ips) |
| Coast redwood | Botryosphaeria dothidea, Neofusicoccum parvum, Neofusicoccum nonquaesitum, Diplodia mutila |  |
| CA bay laurel | Kabatiella sp. |  |
| Oaks and tanoaks | Tubakia californica, Diplodia corticola, Biscogniauxia mediterranea,  Geosmithia pallida (foamy bark canker) | Asterodiaspis spp., Parthenolecanium spp. (oak pit scales and oak Lecanium scales), Pseudopityophthorus pubipennus (western oak bark beetle) |
| Manzanita spp. | Neofusicoccum australe |  |

# Timber Harvest Permitting

The following timber harvesting permits are shown in the below tables. The use of exemptions, as allowed for under PRC § 4584 and 14 CCR § 1038, increased in acreage, but decreased in number (Figure1). Emergency Notices provided for under 14 CCR § 1052.1 increased in number and in acreage (Figure 4). Individual Timber Harvesting Plans (THPs) decreased slightly in number and decreased in acreage in Fiscal Year 2020-2021 (Figure 5). The number and acreage of Non-Industrial Timber Management Plans (NTMPs) almost half of previous year (Figure 6). A Program Timberland Environmental Impact Report was approved in 2020. (Figure 7).

#### F**igure 1. Exemption Statistics for Fiscal Years 14/15-20/21**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fiscal Year | Harvest Document Type | Number of Notifications | Acres | Total Acres |
| 2014/15 | 1038(b) Exemptions | 781 | 2,884,982 |  |
|  | All other Exemptions | 1,009 | 41,563 |  |
|  | Total Exemptions | 1,790 |  | 2,926,545 |
| 2015/16 | 1038(b) Exemptions | 697 | 2,589,358 |  |
|  | 1038(k) Exemptions | 776 | 110,224 |  |
|  | All other Exemptions | 1,003 | 27,433 |  |
|  | Total Exemptions | 2,476 |  | 2,721,015 |
| 2016/17 | 1038(b) Exemptions | 522 | 2,592,252 |  |
|  | 1038(k) Exemptions | 956 | 10,358 |  |
|  | All other Exemptions | 1,032 | 208,111 |  |
|  | Total Exemptions | 2,510 |  | 2,910,721 |
| 2017/18 | 1038(b) Exemptions | 554 | 2,933,286 |  |
|  | 1038(k) Exemptions | 414 | 44,357 |  |
|  | All other Exemptions | 1,042 | 482,206 |  |
|  | Total Exemptions | 2,010 |  | 3,459,849 |
| 2018/19 | 1038(a) & 1038(b) Exemptions (prior to 3/1/19) | 320 | 1,310,933 |  |
|  | 1038(b) Exemptions (after 3/1/19) | 131 | 999,762 |  |
|  | 1038(f) Exemptions (after 3/1/19) | 3 | 112 |  |
|  | 1038(k) Exemptions | 94 | 7,464 |  |
| 2018/19 (continued) | 1038.3 Exemptions (after 3/1/19) | 15 | 1,892 |  |
|  | All other Exemptions | 1,605 | 454,582 |  |
|  | Total Exemptions | 2,168 |  | 2,774,745 |
| 2019/20 | 1038.3 | 48 | 5,447 |  |
|  | 1038(b) | 463 | 2,281,985 |  |
|  | 1038(f) | 8 | 165 |  |
|  | 1038(g) | 0 | 0 |  |
|  | All other Exemptions | 2,246 | 733,933 |  |
|  | Total Exemptions | 2,765 |  | 2,706,977 |
| 2020/21 | 1038.3 | 66 | 5,039 |  |
|  | 1038 (b) | 384 | 2,023,689 |  |
|  | 1038 (f) | 3 | 55 |  |
|  | 1038 (g) | 126 | 602 |  |
|  | All other Exemptions | 1020 | 879,956 |  |
|  | Total Exemptions | 1,599 |  | 2,909,341 |

#### Figure 2. Emergency Notice Statistics for Fiscal Years 14/15-19/20.

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Harvest Document Type | Number of Notifications | Total Acres |
| 2014/15 | Emergency Notice | 266 | 66,735 |
| 2015/16 | Emergency Notice | 231 | 28,921 |
| 2016/17 | Emergency Notice | 81 | 15,123 |
| 2017/18 | Emergency Notice | 189 | 14,133 |
| 2018/19 | Emergency Notice | 289 | 42,247 |
| 2019/20 | Emergency Notice | 158 | 16,056 |
| 2020/21 | Emergency Notice | 452 | 86,616 |

Note: Calculated as Emergency Notices validated by CAL FIRE review team between July 1 and June 30 of each FY.

#### Figure 3. THP Statistics for Fiscal Years 11/12-19/20

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Harvest Document Type | Number of Plans | Acres |
| 2011-12 | THP | 270 | 139,553 |
| 2012-13 | THP | 243 | 107,051 |
| 2013-14 | THP | 278 | 146,384 |
| 2014-15 | THP | 260 | 128,644 |
| 2015-16 | THP | 249 | 99,271 |
| 2016-17 | THP | 219 | 91,067 |
| 2017-18 | THP | 266 | 105,433 |
| 2018-19 | THP | 244 | 100,888 |
| 2019-20 | THP | 234 | 122,586 |
| 2020-21 | THP | 207 | 92,917 |

Note: Calculated as Timber Harvest Plans validated by CAL FIRE review team between July 1 and June 30 of each FY.

#### Figure 4. NTMP Statistics for Fiscal Years 11/12-19/20

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Harvest Document Type | Number of Plans | Acres |
| 2011-12 | NTMP | 14 | 10,932 |
| 2012-13 | NTMP | 12 | 7,365 |
| 2013-14 | NTMP | 10 | 4,126 |
| 2014-15 | NTMP | 12 | 3,367 |
| 2015-16 | NTMP | 17 | 8,100 |
| 2016-17 | NTMP | 23 | 5,105 |
| 2017-18 | NTMP | 14 | 4,448 |
| 2018-19 | NTMP | 14 | 2,410 |
| 2019-20 | NTMP | 13 | 4,215 |
| 2020-21 | NTMP | 8 | 1,542 |

Note: Calculated as Nonindustrial Timber Management Plans validated by CAL FIRE review team between July 1 and June 30 of each FY.

#### Figure 5. PTEIR Statistics for Fiscal Year 20/21

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Harvest Document Type | Number of Plans | Acres |
| 2020-21 | PTEIR | 1 | 17,480 |

## Timber Harvesting Volumes

## The following timber harvesting volumes are shown in the below table. The statewide estimate for timber harvesting data from California state forests and other public lands for Calendar Year 2020. Information presented in this table is generated through a statewide census of California’s database of forest inventory.

#### Figure 6. Timber Harvesting Volumes (January through September 2020).

|  |  |  |  |
| --- | --- | --- | --- |
| Private and Tribal | State | BLM and other Public | Forest Service |
| 1,343,715 MBF | 23,485 MBF | 2,587 MBF | 241,533 MBF \* |

# \*Partial harvest volumes only

# Fire Protection Trends

## Weather Patterns

Much of California was ranging from near average to record driest precipitation for calendar year 2021, especially near the northern Sacramento Valley ([NOAA, 2021](https://www.ncdc.noaa.gov/temp-and-precip/us-maps/)). Precipitation was also significantly below average for the water year (Figure 6), possibly reflecting a slightly shorter or later than average start to winter precipitation in 2019 ([NOAA, 2021](https://www.ncdc.noaa.gov/temp-and-precip/us-maps/)). Temperatures have generally been much above average for majority of the state, with greater departures in the Bay Area, and the San Joaquin Valley. (Figure 8) ([NOAA, 2021](https://www.ncdc.noaa.gov/temp-and-precip/us-maps/)).

The California Department of Water Resources reported that due to the pandemic, no coverage of snow survey was allocated.

#### Figure 7. Precipitation Rankings for January-October 2021 When Compared with Local Averages from 1895-2021. NOAA National Centers for Environmental Information.Figure 9. Precipitation Rankings for January-October 2021 When Compared with Local Averages from 1895-2021.

#### Figure 8. Precipitation Rankings for January - October 2021 When Compared with Local Averages from 1895-2021. NOAA National Centers for Environmental Information.*[[1]](#footnote-2)*

#### Figure 10. Precipitation Rankings for January - October 2021 When Compared with Local Averages from 1895-2021. A map showing the contiguous United States with all regions of California receiving either "below average" or "much below average" precipitation for January 2020 through October 2020.

#### Figure 9. Temperature Rankings for January-October 2021 When Compared with Local Averages from 1895-2021. NOAA National Centers for Environmental Information.

#### A map of the contiguous United States showing mean temperature rankings for January through October, 2021. Majority of California is "much above," while the remainder (less than ten percent) is shown to be " above average".

#### Figure 10. California Snow Water Content,*[[2]](#footnote-3)* August 30, 2021, Percent of April 1 Average. California Department of Water Resources.

Figure 12. California Snow Water Content,  August 30, 2021, Percent of April 1 Average. California Department of Water Resources. 

Chart showing snow water content for the North, Central, and South sampling regions. All three regions show similar trends. 2018-2019 is above average, though slightly below 2016-2017. 2017-2018 is significantly below average, and 2014-2015 is shown as the lowest year on record.

## Prescribed Fire and Fuel Reduction Efforts

As fire size and severity have worsened over the past decade, mandates to focus on fuels reduction treatments have arisen. In 2018, Executive Order B-52-18 from then-governor Brown ordered the doubling of forest acres treated per year from 250,000 to 500,000 statewide within five years. The expanded use of fuels treatments to prevent catastrophic wildfire continues to be a high priority for the Board and CAL FIRE. Fuel treatments are intended to reduce the amount of surface and ladder fuels and thereby reduce the risk of catastrophic fires that burn longer, further, and hotter. The modification of fire behavior because of fuel reduction efforts may prevent loss of life, reduce fire suppression costs, reduce property losses, and protect natural resources. Fuel treatments utilized by CAL FIRE include, but are not limited to, prescribed fire, mechanical clearing, cooperative fuel reduction grants, and encouraging stand management by timber owners through application of the FPRs. EO B-52-18 also encouraged the use of prescribed fire as a management tool.

CAL FIRE’s Vegetation Management Program (VMP) is a cost-sharing program that encourages fuel reduction in state responsibility area lands (SRA) and focuses on prescribed fire. The use of fire mimics natural processes, enables fuel reduction, and restores fire to its historic role in wildland ecosystems, which may improve native communities. The VMP can be utilized by private landowners to accomplish fuel reduction goals on their property using prescribed fire and other fuel management techniques. Figures 12 and 13 below illustrate the acreage goals and number of acres treated in the three most recent fiscal years.

#### Figure 11. Broadcast/Prescribed Burn Targets and Acres Completed.

**\*FY 2021/22 is through June 30, 2021**

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Target | Completed | % Completed |
| 2017/2018 | 20,000 | 19,413 | 97.07% |
| 2018/2019 | 25,000 | 31,305 | 125.22% |
| 2019/2020\* | 25,000 | 13,450 | 53.80% |
| 2020/2021 | 25,000 | 27,143 | 108.57% |
| 2021/2022 | 30,000 | 32,226 | 107.42% |

#### Figure 12. All Other Fuel Reduction Method Targets and Acres Completed.

**\*FY 2020/21 is through December 31, 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Target | Completed | % Completed |
| 2017/2018 | 20,000 | 13,344 | 66.70% |
| 2018/2019 | 20,000 | 15,331 | 76.66% |
| 2019/2020\* | 20,000 | 13,730 | 68.65% |
| 2020/2021 | 20,000 | 28,033 | 140.17% |
| 2021/2022 | 20,000 | 12,795 | 63.98% |

Defensible space is managed space around a structure or other site of importance designed to reduce the risk of a fire spreading into adjoining wildland, and vice versa. Reduced natural fuel loads, decreased continuity of fuels, the removal of flammable materials from near structures, and the use of fire-resistant materials in landscaping and home construction are just some of the techniques that contribute to defensible space. These techniques reduce the chances of a structure igniting during a wildfire and increase firefighter safety during structure defense operations. Defensible space and the management of fuels, particularly around homes and public buildings, have become increasingly important as the Wildland-Urban Interface (WUI) continues to expand and more severe fires threaten WUI areas. CAL FIRE recently updated the Defensible Space Collector App to make inspections more efficient and accurate. Figure 14 illustrates the goals for defensible space inspections and how many were accomplished within the three most recent fiscal years.

#### Figure 13. Defensible Space Inspections Completed.

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | Target | Completed | % Completed |
| 2017/2018 | 250,000 | 217,666 | 87.07% |
| 2018/2019 | 250,000 | 204,341 | 81.74% |
| 2019/2020 | 250,000 | 222,040 | 88.82% |
| 2020/2021\* | 250,000 | 150,056 | 60.02% |

CAL FIRE also sponsors several grant opportunities which focus on fuels reduction and forest health. The California Forest Improvement Program (CFIP) can be used by small landowners for reimbursement of forestry practices that improve the health and resilience of their lands. These activities may include fuels reduction practices. Additionally, CAL FIRE sponsors the Forest Health, Urban and Community Forestry, and Fire Prevention grants, which are funded through the Greenhouse Gas Reduction Fund. Part of their overarching goal is improving carbon sequestration by reducing the risk of intense wildfires and improving general forest health.

Finally, CAL FIRE has developed designated fuels reduction crews. Previously, fuels reduction was often completed by local CAL FIRE teams when they were not fighting fire. The development of designated crews for fuels reduction is anticipated to increase prescribed fire and manual fuels treatment numbers in the coming years. Five crews are headquartered in the Northern Region and five in the Southern Region. CAL FIRE approved 318 applicants to take the most recent Forestry Technician exam. The new members of these crews are currently rotating between their required trainings and working in the field.

## California Vegetation Treatment Program (CalVTP)

On December 30, 2019, the Board certified a Program Environmental Impact Report (PEIR) and approved the California Vegetation Treatment Program (CalVTP), a Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting program. This CalVTP and PEIR will streamline California Environmental Quality Act (CEQA) compliance for CAL FIRE and other state and local public agencies’ vegetation management projects. The CalVTP PEIR is intended for vegetation management activities that lower the risk of catastrophic wildfires on non-federal lands by managing vegetation to modify or reduce hazardous fuels. There are currently 13 proposed projects and 5 which have been certified for implementation (see Figure 15 below).

In collaboration with Ascent Environmental, Inc, in the spring of 2021 the Board conducted two training sessions for potential lead agencies. The trainings covered the practicalities of using the CalVTP for CEQA streamlining and are available for viewing on the Board’s website.

In 2021, the Board was allocated two million dollars to provide technical assistance to lead agencies for preparing Project-Specific Analyses (PSAs). Again, in collaboration with Ascent Environmental, Board staff are in the process of identifying projects that would be an appropriate use of this funding.

#### Figure 14. Vegetation Treatment Projects Certified under the CalVTP.

|  |  |  |
| --- | --- | --- |
| Project ID | Acres Treated | Treatment Type |
| 2020-9 | 398 | Broadcast burning; pile burning |
| 2020-12 | 100 | Manual treatment; pile burning |
| 2020-13 | 1,630 | Broadcast burning; pile burning; Manual treatment; Mechanical treatment; Herbicide Application |
| 2020-10 | 90 | Broadcast burning; Pile burning; Mechanical treatment |
| 2020-1 | 1,012 | Broadcast burning |
| Sum | 3,230 |  |

***Wildfire Activity***

The 2021 wildfire season in California experienced an unusually early start amid an ongoing drought and historically low rainfall and reservoir levels. In January 2021 alone, 297 fires burned 1,171 acres on nonfederal land, which is almost triple the number of fires and more than 20 times the acreage of the five-year average for January. In July, more than three times as many acres had burned compared to the previous year through that date, with drought, extreme heat, and reduced snowpack contributing to the severity of the fires.

By mid-August, the state of California was facing "unprecedented fire conditions" as multiple fires including the Dixie Fire, McFarland Fire, Caldor Fire, and others raged on. Some relief was brought to the state during the month of October, especially in the Northern region where most of the fires were located, when it received its first rain in over 200 days reducing the wildfire risk for much of the state.

Throughout the months of July, August and September, 7 CAL FIRE Incident Management Teams (IMT) were activated, thousands of firefighters, and resources from 9 states across the nation were assigned to emergency incidents here in California.

In 2021 California experienced more than 8,800 fires that burned over 2.5 million acres, damaging and/or destroying over 3,600 structures and caused thousands of evacuations.

|  |  |  |  |
| --- | --- | --- | --- |
| ***TOP 2021 LARGEST FIRES*** | | | |
| ***FIRE NAME*** | ***DATE*** | ***COUNTY*** | ***ACRES BURNED*** |
| **2 DIXIE** | July 2021 | Butte, Plumas, Lassen, Shasta & Tehama | 963,309 |
| **MONUMENT** | July 2021 | Trinity | 223,124 |
| **CALDOR** | August 2021 | Alpine, Amador, & El Dorado | 221,835 |
| **RIVER COMPLEX** | July 2021 | Siskiyou & Trinity | 199,343 |

\*These are the Top 20 regardless of state, federal, or local responsibility.

***Note: Unless noted otherwise, these values tabulate wildfires responded to by CAL FIRE in SRA and LRA regions under contract with CAL FIRE.***

# Accomplishments 2021 – Regulatory

**Southern Subdistrict and Broadcast Burning Amendments**

These amendments addressed the need to expand the definition of Broadcast Burning to reflect a more technically appropriate and widely accepted definition and to eliminate the prohibition on Broadcast Burning within the Southern Subdistrict of the Coast Forest District. These amendments also improve the efficacy of existing regulations related to surface fuel treatment and improve the clarity of the existing regulations related to surface fuel treatment. These amendments will take effect January 1, 2022.

**Fire Risk Reduction Communities List, 2021**

PRC §4290.1 required the Board to develop criteria for and maintain a list of Local Agencies located in a State Responsibility Area (SRA) or Very High Fire Hazard Severity Zone (VHFHSZ) which meet best practices for local fire planning by July 1, 2022. Public Resources Code Section 4124.7 requires that the Department of Forestry and Fire Protection (Department) prioritize local assistance grant funding applications from Local Agencies based on this Fire Risk

Reduction Communities List (List). These regulations were developed to create a standardized process for the Board to maintain a Fire Risk Reduction Communities List that will be used to recognize dedication to fire planning best practices and to prioritize local assistance grant funding. It is anticipated that these regulations will take effect January 1, 2022.

**Emergency Rulemaking: Emergency Notice Fuels Treatment and RPF Responsibility**

This emergency rulemaking addressed observed environmental compliance and water quality issues in Emergency Notices as noted in the 2019 draft CAL FIRE Report on Exemptions and Emergency Notice Timber Harvests. It addressed the current needs for improved compliance with the Rules in all Emergency Notice timber harvests. The action required the Timber Owner or operator retain an RPF to provide professional advice and that the RPF be present on site at a sufficient frequency to know the progress of operations and advise the Timber Owner or LTO. The increased presence of the RPF and subsequent increase in compliance and implementation of the Rules is intended to avoid impacts to water quality resulting from non-compliance. The proposed action will also make the timelines for fuels treatment in Emergency Notices for Fuel Hazard Reduction clear and consistent. This amendment became effective August 5, 2021. It is anticipated that it will be approved for readoption at the January 2022 Board meeting. The Board approved this regulation for permanent rulemaking at the November 2021 meeting.

**Emergency Rulemaking: Santa Cruz and San Mateo Weekend Emergency**

This emergency rulemaking extends the county-specific allowed days of the week for work involving logging and hauling timber to allow the removal of salvage timber from Timberland affected by the CZU Lightning Complex Fire. This amendment became effective May 26, 2021, and expired November 22, 2021.

**Local Government**

**General Plan Safety Elements**

Under Government Code § 65302.5, the Board is required to review the General Plan Safety Elements for jurisdictions with SRA or very high fire hazard severity zones (VHFHSZ). Utilizing staff from CAL FIRE’s Land Use Planning team, the Board established a standardized method to review the safety element of general plans. The methodology includes:

1. Reviewing the safety element for the requirements in Government Code §65302, subdivision (g)(3)(A),
2. Examining the safety element for goals, policies, objectives, and implementation measures that mitigate the wildfire risk in the planning area (Gov. Code, § 65302, subd. (g)(3)(B) & (C)), and
3. Making recommendations for methods and strategies that would reduce the risk of wildfires (Gov. Code, § 65302.5, subd. (b)(3)(B)).

Once completed, the Safety Element Assessment should provide clear guidance to a city or county regarding any areas of deficiency in the safety element as well as specific goals, policies, objectives, and implementation measures the Board recommends adopting to mitigate or reduce the wildfire threat in the planning area. The Board does not have the authority to approve safety elements, but rather offers recommendations to improve fire hazard planning in the planning area. If jurisdictions choose not to implement the Board’s recommendations, they must respond in writing to the Board discussing the reasons why not. If a local jurisdiction chooses not to adopt the Board’s recommendations, the Board may request a consultation which must occur before the local jurisdiction proceeds with adopting its draft safety element. The Board has reviewed 121 safety elements since the requirement took effect in 2013, 36 of which occurred in 2021.

**Figure 17. General Plan Safety Elements Reviewed by the Board January 2021 – November 2021**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Region | Type | Jurisdiction | Received | Reviewer | Board Review |
| CSR | City | Moreno Valley | 4/5/21 | Ray Martinez | 5/4/2021 |
| CNR | County | Mendocino | 4/28/21 | Shane Galvez | 6/8/2021 |
| CSR | City | San Clemente | 5/26/21 | Brian Barkley | 6/8/2021 |
| CSR | County | Mono | 4/30/21 | Melissa Curtis | 6/8/2021 |
| CSR | City | Wildomar | 6/7/21 | Ray Martinez | 13-Jul |
| CSR | City | El Cajon | 6/29/21 | Brian Barkley | 13-Jul |
| CSR | City | Rolling Hills Estates | 6/21/21 | Shelley Redden | 13-Jul |
| CSR | City | Westlake Village | 6/3/21 | Shelley Redden | 13-Jul |
| CSR | City | Menifee | 7/4/21 | Shelley Redden | 9/21/2021 |
| CSR | City | Los Angeles | 7/15/21 | Shelley Redden | 9/21/2021 |
| CSR | County | Riverside | 7/19/21 | Ray Martinez | 9/21/2021 |
| CSR | City | Whittier | 7/21/21 | Shelley Redden | 9/21/2021 |
| CNR | County | Yuba | 7/26/21 | Nick Wallingford | 9/21/2021 |
| CSR | City | Laguna Beach | 8/5/21 | Brian Barkley | 9/21/2021 |
| CNR | County | Plumas | 8/30/21 | Shane Vargas | 9/21/2021 |
| CSR | City | Riverside | 9/8/21 | Brian Barkley | 9/21/2021 |
| CSR | Town | Yucca Valley | 8/5/21 | Shelley Redden | 9/21/2021 |
| CSR | City | Brea | 9/9/21 | Ray Martinez | 9/21/2021 |
| CSR | City | Lake Elsinore | 8/19/21 | Shelley Redden | 9/21/2021 |
| CSR | City | La Canada Flintridge | 8/25/21 | Shelley Redden | 9/21/2021 |
| CSR | City | Simi Valley | 9/10/21 | Gene Potkey | 9/21/2021 |
| CSR | City | Temecula | 9/8/21 | Shelley Redden | 9/21/2021 |
| CSR | City | San Marcos | 9/8/21 | Brian Barkly | 9/21/2021 |
| CSR | City | Duarte | 10/14/21 | Shelley Redden | 11/2/2021 |
| CSR | City | San Juan Capistrano | 9/27/21 | Brian Barkley | 11/2/2021 |
| CNR | City | Cloverdale | 10/14/21 | Shane Galvez | 11/2/2021 |
| CSR | City | Dana Point | 10/19/21 | Brian Barkley | 11/2/2021 |
| CSR | City | Highland | 10/15/21 | Shelley Redden | 11/2/2021 |
| CNR | City | Los Gatos | 10/12/21 | Chase Beckman | 11/2/2021 |
| CSR | City | Rolling Hills | 10/14/21 | Shelley Redden | 11/2/2021 |
| CSR | City | Sierra Madre | 10/6/21 | Shelley Redden | 11/2/2021 |
| CSR | City | Loma Linda | 10/26/21 | Shelley Redden | 11/2/2021 |
| CSR | City | Rancho Cucamonga | 10/26/21 | Shelley Redden | 11/2/2021 |
| CSR | City | Beaumont | 10/22/21 | Shelley Redden | 11/2/2021 |

**Subdivision Review Program**

Public Resources Code §4290.1 requires the Board, in consultation with the State Fire Marshal, to “survey local governments, including counties, cities, and fire districts, to identify existing subdivisions located in a state responsibility area or a very high fire hazard severity zone [SRA or LRA VHFHSZ], identified pursuant to Section 51178 of the Government Code, without a secondary egress route that are at significant fire risk” on or before July 1, 2022.

The Board is additionally required to develop recommendations to improve fire safety in the identified subdivisions, in consultation with the State Fire Marshal and the local government that identified the subdivision. Subdivision Review Program staff at the Office of the State Fire Marshal conduct an on-the-ground fire safety survey of each identified subdivision. Program staff then develop survey reports, which include fire safety recommendations, for review by the Board’s Resource Protection Committee. The Board does not vote to approve or deny reports and recommendations; its role is to review and provide input before reports are sent back to local jurisdictions on the Board’s behalf. The Resource Protection Committee began reviewing these reports on a county-by-county basis at its November 2021 meeting. The recommendations included in these reports are non-binding, and the Board does not have legal authority to require their implementation.

Of the state’s 56 counties which contain SRA or LRA VHFHSZ, 44 contain subdivisions which meet the criteria to be surveyed. Approximately 1,300 subdivisions have been identified for survey. Surveys have been completed for 318 of those, or 23%. The Board has reviewed 93 of the resulting reports as of November 2021.

**Figure 18. Counties for which all Fire Safety Survey Reports have been completed and reviewed by the Board, Jan 2021 - November 2021**

|  |  |  |
| --- | --- | --- |
| Region | Jurisdiction | Board Review |
| CSR | San Luis Obispo | 11/2/2021 |
| CSR | Tuolumne | 11/2/2021 |
| CSR | Calaveras | 11/2/2021 |

**Appointment of Authorized Designees for Less Than Three Acre Conversions**

The Board has been working on issues of conversion of timberland to cannabis cultivation for the past several years. The conversion of timberland to a use other than growing timber requires, prior to conversion, a Timberland Conversion Permit (or its equivalent) to be approved by CAL FIRE or, if eligible, a Less Than 3 Acre Conversion Exemption to be accepted by CAL FIRE. In the context of cooperation with local entities, the Board, pursuant to §1104.1(a)(1)(D) of Title 14 of the California Code of Regulations (14 CCR), gives the county the opportunity to determine if proposed timberland conversions are in conformance with all county regulatory requirements through the incorporation of a signed and dated statement from an authorized designee of the County Board of Supervisors.

When a county does not have an authorized designee, the authority falls to the RPF preparing the Exemption to certify that the county has been contacted and the conversion is in conformance with county regulatory requirements. RPFs have communicated that this determination can be challenging if they work in multiple counties, each of which may have different regulatory requirements. Consequently, the Board communicated with County Boards of Supervisors to encourage them, if they have not already done so, to appoint an authorized designee to ensure land uses conform to county regulatory requirements. Figure 20 below indicates the response to the Board's request for counties to appoint an Authorized Designee to determine if conversions are following county regulatory requirements. These efforts have been successful since their inception, with many counties appointing Authorized Designees. In 2021, the Board continued outreach and policy related to Less Than 3 Acre Conversions.

**U.S. Forest Service Forest Inventory and Analysis (FIA) Intensification**

CAL FIRE has invested in accelerating the U.S. Forest Service (USFS) Forest Inventory and Analysis program from a 10-year re-measurement cycle to a 5-year re-measurement cycle. This will allow for more frequent monitoring and estimates of changes in forest conditions and the drivers of change, which is increasingly important given impacts from wildfire, insects and drought, and State goals for increased forest management. This acceleration was a recommended action item in the Forest Climate Action Team’s Forest Carbon Plan (FCAT 2018) and supports annual forest ecosystem carbon reporting to the BOF. In order to implement this program, CAL FIRE staff from the Biometrics and Fire and Resource Assessment programs have coordinated closely with the USFS Pacific Northwest Research Station and the private contractor, Integrated Resources Inventories, LLC. The field season in 2020 was used as a pilot year to train and certify the private contractor in FIA field data collection protocols with a small number of plots. The first year of the accelerated cycle began with the 2021 field season. However, plot access issues due to the covid-19 pandemic and the 2020 and 2021 wildfires have severely hampered data collection, with many plots carrying over into 2022. The USFS and CAL FIRE have collectively decided to use the 2022 field season to catch up on the 2020 and 2021 plots. This will ultimately shift the measurement cycle by one year, resulting in a 6-year rather than a 5-year re-measurement cycle. Though not ideal, this represents the best opportunity to catch up on the core FIA data collection while also advancing the State’s needs for an accelerated re-measurement cycle.

With the recent budget allocations, the FIA intensification program has secured funding through FY25 as well as two new positions, one each in the CAL FIRE Biometrics and FRAP programs. These new positions are critical for overseeing the accelerated FIA program work. New staff will help contact land owners, coordinate state-funded field crews and manage the scheduling, contracting, training, quality control, data management, and technical matters between the Forest Service and the State. These positions will also provide capacity for data analysis to report impacts from climate change, management and other disturbances on forest health and carbon to the BOF and the Governor’s Wildfire and Forest Health Resilience Task Force.

**California Forest Ecosystem and Harvested Wood Product Carbon**

California has set a net carbon sequestration target for the forest sector of five million metric tons (MMT) of carbon dioxide equivalent (CO2e) annually until 2020. The Board is required to analyze above ground and below ground carbon stocks within all forested landscapes in California (AB 1504, 2010). In response, the Board publishes annual reports which discuss several elements of the State's effort to meet these greenhouse gas (GHG) emissions reduction targets.

In February of 2021, the Board released an AB 1504 [California Forest Ecosystem and Harvested Wood Product Carbon Inventory](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fbof.fire.ca.gov%2Fmedia%2F10147%2F5-final_1504_forest_ecosys_hwp_c_2018_full.pdf&data=04%7C01%7CClaire.McCoy%40bof.ca.gov%7Ce4681a04089749d919a108d8b81e8267%7C447a4ca05405454dad68c98a520261f8%7C1%7C0%7C637461788460738439%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=Sh6%2FndwlNawzGth0sIXxtV3nHOy1OA1O5Se40HJfFuI%3D&reserved=0) data update for the 2019 reporting period. The report relies on the U.S. Forest Service Forest Inventory and Analysis (FIA) program and indicates that California’s forests are sequestering carbon at a rate of 25.2 MMT CO2e per year. Values for 2019 include changes to the FIA post-stratification process to not only reduce overall sampling error, but also to reduce the potential for bias introduced by non-sampled plots. In order to compare 2019 results to the previous reporting period, the 2018 reporting period was re-calculated using the new post-stratification process. Under the old process, the net sequestration rate for the 2018 reporting period was 24.9 MMT CO2e per year. However, after the recalculation, the value was 26.2 MMT CO2e per year. The net carbon sequestration from the 2019 reporting period is down slightly from the 2018. This reduction in annual carbon sequestration is the result of several factors including improvements in inventory methodology but is also being driven by two complementary factors; a continued increased rate of tree mortality and decreased gross growth rate on live trees. This value includes changes in forest ecosystem pools (26.0 MMT CO2e per year), harvested wood product pools (0.8 MMT CO2e per year), non-CO2 emissions from wildfires (-0.6 MMT CO2e per year), and forest land conversions (-1.0 MMT CO2e per year).

In addition to changes to the FIA post-stratification process to reduce overall sampling error and the potential for bias introduced by non-sampled plots, this update also includes revisions to correct previous harvested wood product carbon stock Monte Carlo Analysis which resulted in narrower confidence intervals than expected based on input parameters. A detailed description of the refined Monte Carlo analysis are included in the report. These refinements were completed through an agreement between Oregon Department of Forestry, Oregon State University, and Groom Analytics, LLC. Work through this agreement continues to refine the stand-alone R-script for the Harvested Wood Product Carbon Accounting Model and to create an R Shiny app that has a more user-friendly interface to generate HWP C estimates from user’s own harvest and utilization data. This work is expected to be complete in the Spring of 2022 at which time the BOF and CAL FIRE will be able to post the HWP C Accounting Model for public use.

**Figure 19. California forest land statewide estimate of average annual carbon flux (MMT CO2/year) by pool and ownership, 2001-2009 to 2011-2019\*.**

Chart, bar chart

Description automatically generated

\*Excludes contributions from forest land-use changes, non-CO2 GHG from fire, and HWP C.

In 2020, a new agreement with the Forest Service Pacific Northwest Research Station (PNW) to complete the full 10-year measurement cycle carbon report following completion of data collection in 2020 was executed. However, due to plot access issues related to the Covid-19 pandemic and the 2020 and 2021 wildfire seasons, the PNW FIA program was unable to complete data collection on the 2020 plots. Data collection is anticipated to be completed in the 2022 field season, with the AB 1504 2020 report being delayed until the end of the 2023 calendar year.

Collaboration with the states of Oregon and Washington, British Columbia, PNW, and academia have been ongoing through the Pacific Coast Carbon Initiative led by PNW. The Oregon Department of Forestry and Washington Department of Natural resources have released a forest ecosystem and harvested wood product carbon inventory that mirrors California’s AB 1504 inventory. CAL FIRE staff are consulting with the Colorado State Forestry Service as they look to replicate the effort in their state. Collaborative work on the BOF-funded Pacific Coast Temperate Forest and Harvested Wood Product regional report continues. This work will incorporate results from the California, Oregon, and Washington forest carbon inventories as well as relevant data from BC. This report will also include a timber (i.e., log and chip) and finished wood product flow analysis of material within and beyond this region, funded by PNW. This report is anticipated to be completed by the summer of 2022.

Lastly, the BOF-funded project on forest management and wood utilization carbon modeling is underway to explore potential climate mitigation opportunities from California’s forests and wood products. Potential mitigation from the forest sector depends on a variety of factors, including potential changes in climate and disturbance regimes, global emission scenarios, overall harvest levels, wood utilization scenarios, possible fossil fuel energy and material substitution benefits, all of which are subject to various economic, regulatory, technological innovation and other forces. Each forest management and wood utilization scenario has trade-offs with in-forest and harvested wood product carbon pools and other forest ecosystem services. Results may also vary by ownership, ecoregion and forest type and whether scenarios are evaluated at short-, mid-, and late-term time horizons or different spatial scales such as in-forest only, California-only, or global scales. Costs and other economic impacts such as on jobs or revenue may also vary. By partnering with Michigan State University (MSU), American Forests (AF), the Canadian Forest Service (CFS), the US Forest Service (USFS) Northern Institute of Applied Climate Science (NIACS), CAL FIRE and the BOF can leverage funding from the U.S. Climate Alliance, achieve consistency with several other states, including Oregon (e.g., Dugan et al. 2021) looking to explore potential climate mitigation through the forest sector using the Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3) and harvested wood product framework (CBM-FHWP), and learn from the expertise the Canadian Forest Service (e.g., Smyth et al. 2020) has built over several years of research. This project also leverages the investments the state of California has made in the USFS Forest Inventory and Analysis (FIA) program as the model will be calibrated with FIA data capturing the different trends in carbon stocks and flux among landowners, ecoregions, etc. The University of California – Berkeley will also provide an economic analysis to determine the cost-effectiveness of mitigation scenarios and other economic benefits. Modeling will be based on realistic various forest management scenarios informed by a robust stakeholder engagement process, considering various goals for wildfire resilience and forest health established in California (i.e., FCAT 2018, FMTF 2021). This project will allow the BOF to understand how potential mitigation from the entire Pacific Coast temperate forest region may interact to better inform policy decisions in California to minimize or avoid any negative repercussions such as leakage. This project can also inform the 2022 Climate Change Scoping Plan Update for the Natural and Working Lands sector and serve to evaluate the goals established in the California Wildfire and Forest Resilience Action Plan. Preliminary modeling results are anticipated in the spring of 2022, with project completion towards the end of the calendar year.

# State Forests

The Board has changed the review periods for Initial State Forest Management Plans from five to ten years. This change was made following concerns expressed by forest managers, citing limited staffing and increasing workload. The longer period will allow the plans to be broader, encompass longer-term changes and trends, and reduce pressures on staff. Figure 23 (below) outlines the proposed schedule for management plan updates.

**Figure 20. Proposed Management Plan Update Schedule**

| **Demonstration State Forest** | **Management Plan Update (Year)** | **Management Plan Status** |
| --- | --- | --- |
| LaTour | 2022 | Approved 2013 |
| Soquel | 2024 | Approved 2014 |
| Jackson | 2026 | Approved 2016 |
| Boggs Mountain | 2028 | Approved 2018 |
| Mountain Home | 2030 | Approved 2020 |

# Stewardship Lands

The Stewardship Council Board has recommended fee title transfer of lands within the North Fork Mokelumne River, Pit River, Tunnel Reservoir, Battle Creek, Cow Creek, Lake Spaulding, and Bear River planning units to CAL FIRE. With the Stewardship Council Board recommendation for transfer of lands to CAL FIRE at Bear River in November 2018, fee title recommendations have been completed. In 2018, the Stewardship Council Board approved final Land Conservation and Conveyance Plans (conservation easements and agreements known also as LCCPs) for North Fork Mokelumne River, Pit River, and Tunnel Reservoir. The Stewardship Council adopted the final LCCPs for the remaining projects during 2020.

The Department of General Services and Pacific Gas & Electric (PG&E) have developed the final form and content for each of the transaction documents, which will be utilized to construct documents for each of the transactions going forward. The California Natural Resources Agency has also participated in these discussions and is working to bring along associated transactions with State Parks. CAL FIRE took fee title to the 1,052-acre North Fork Mokelumne property on December 23, 2019.

Conservation easement holders for each of the properties have been recommended by the Stewardship Council Board and include Shasta Land Trust (Pit River, Tunnel Reservoir, Cow Creek), Western Shasta Resource Conservation District (Battle Creek), Mother Lode Land Trust (North Fork Mokelumne River), Placer Land Trust (Lake Spaulding), and Bear, Yuba, and Placer Land Trusts (Bear River). As currently written, CAL FIRE has successfully negotiated identical or very similar terms with each of the conservation easement holders to reduce the number of unique restrictions on any property. CAL FIRE has been on site to document baseline conditions and discuss the intended management with each of the conservation easement holders.

The Stewardship Council has informed CAL FIRE that it will dissolve in late 2022 or early 2023. A deadline has been set for all transactions to be signed by CAL FIRE, DGS, and PG&E prior to the end of 2021. Final State approval by the Public Works Board and close of escrow would follow shortly after. It is expected that the Pitt River, Tunnel Reservoir, Lake Spaulding, and Bear River planning units will close in early to mid-2022.

# Professional Licensing and Forest Practice Enforcement

Pursuant to California Public Resources Code (PRC) § 750 *et seq.,* the Board is authorized to grant licenses to Registered Professional Foresters (RPFs) and specialty certificates for Certified Rangeland Managers (CRMs). Earning either license is contingent upon meeting educational and work experience standards and ultimately passing an examination specific to the license or specialty.

The term “Professional Forester” is defined in PRC § 752 and refers to a person who, by reason of his or her knowledge of the natural sciences, mathematics, and the principles of forestry, acquired by forestry education and experience, performs services, including, but not limited to, consultation, investigation, evaluation, planning, or responsible supervision of forestry activities when those professional services require the application of forestry principles and techniques. The CRM certification is the only “Certified Specialist” credential bestowed and recognized by the Board. A CRM is defined in 14 CCR § 1651 as “… a person who provides services pursuant to 14 California Code of Regulations (CCR) 1602, at the request of the landowner or hiring agent, relating to the application of scientific principles to the art and science of managing rangelands and range.”

**Figure 21. Board Licensed Professionals and Certified Specialists**

|  |  |  |
| --- | --- | --- |
| Year | RPFs | CRMs |
| 2016 | 1194 | 85 |
| 2017 | 1161 | 84 |
| 2018 | 1132 | 88 |
| 2019 | 1126 | 89 |
| 2020 | 1105 | 86 |
| 2021 | 1107 | 81 |

**Professional Discipline**

#### Most professional disciplinary matters are confidential in nature. They are handled administratively and generally do not culminate in a hearing before an Administrative Law Judge and/or the Board. In 2021, the Professional Foresters Examining Committee (PFEC) received one unlicensed practice complaint and one RPF complaint.

#### Enforcement

PRC § 4601 *et seq.* authorizes the Board to investigate and discipline, “Any person who willfully violates any provision of this chapter or rule or regulation of the Board….” These civil penalties are identified, investigated, and pursued by CAL FIRE, with final adjudicative authority on these matters residing with the Board. During the 2020 calendar year, the Board deliberated and acted on seven civil penalties for non-compliance with the Forest Practice Act and/or the Forest Practice Rules.

# Acronyms:

The following acronyms and abbreviations are used in this document:

APA: Administrative Procedure Act

Board: California State Board of Forestry and Fire Protection

CalEPA: California Environmental Protection Agency

CAL FIRE: California Department of Forestry and Fire Protection

CalVTP: California Vegetation Treatment Program

CDTFA: California Department of Tax and Fee Administration

CEQA: California Environmental Quality Act

CFIP: California Forest Improvement Program

CLFA: California Licensed Foresters Association

CRM: Certified Rangeland Manager

DWR: California Department of Water Resources

EMC: Effectiveness Monitoring Committee

FCAT: Forest Climate Action Team

FPA: Z’berg-Nejedly Forest Practice Act of 1973

FPRs: Forest Practice Rules

FRAP: Fire and Resource Assessment Program

FRID: Fire Return Interval Departure

LRA: Local Responsibility Area

NTMP: Nonindustrial Timber Management Plan

OAL: Office of Administrative Law

PG&E: Pacific Gas & Electric

PEIR: Program Environmental Impact Report

PFEC: Professional Foresters Examining Committee

RMAC: Range Management Advisory Committee

RPF: Registered Professional Forester

SRA: State Responsibility Area

SYP: Sustained Yield Plan

UCANR: University of California Agriculture and Natural Resources

USDM: United States Drought Monitor

USFS: United States Forest Service

VHFHSZ: Very High Fire Hazard Severity Zone

WFMP: Working Forest Management Plan

WUI: Wildland-Urban Interface

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1. Note: Data for this period were not found presented at the same fine scale used for the annual data, Figures 9 and 11. [↑](#footnote-ref-2)
2. The Y-axis of the figure is percent of April 1st average Snow Water Content, which refers to the depth of liquid that would result over the same land area if the entire snowpack were to be melted instantaneously. [↑](#footnote-ref-3)