California State Assembly

NATURAL RESOURCES

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CHAIR

INFORMATIONAL HEARING

Monday, November 9, 2020
1 p.m. -- State Capitol, Room 4202

SUBJECT: Expanding the Use of Prescribed Fire Including Cultural Burning to Reduce California's Wildfire Risk

Background

Wildfires in California are continuing to increase in frequency and intensity, resulting in loss of life and damage to property, infrastructure, and ecosystems. This year alone, wildfires have burned more than 4.1 million acres. The August Complex Fire in northern California, the largest fire in California's modern history, burned over 1 million acres. Combined, fires have killed 31 people and destroyed nearly 9,000 structures in 2020. The land area burned this year more than doubled the previous record, roughly 1.8 million acres, which was set in 2018. Furthermore, seven of the state's deadliest fires have occurred since 2017, with over one hundred fatalities in 2017 and 2018. CAL FIRE keeps records of the largest and most destructive wildfires in the state's history. Each year those records continue to be broken.

Fire has always been present in California landscapes, ignited either by lightning strikes or by Native American tribes who sought to preserve certain useful plants and prevent larger fires. Low-intensity fires have clear ecological benefits, such as creating habitat and assisting in the regeneration of certain species of plants and trees. Low-intensity fire also reduces surface fuel, which decreases future wildfire intensity.

A century of suppressing low-intensity fires, logging of older growth and more fire-resistant trees, and a significant five-year drought has increased the size and severity of California's fires. Climate change has also contributed to wildfire risk by reducing humidity and precipitation and increasing temperatures and wind speed. In the last 40 years, the number of days with extreme fire risk has more

than doubled. Additionally, communities have continued to expand into forested or other high-risk areas, with roughly 25% of the state's population living in the wildland-urban interface.

There are strategies to reduce wildfire risk and make the built and natural environment more resilient to wildfire. The use of targeted mechanical vegetation management, prescribed fire, and managed wildfire can reduce the accumulation of high fuel loads. In the long term, these practices promote healthier and more resilient forests and reduce the risk of high-severity wildfires in forested habitats.

The state invests heavily in fire suppression and response. The Budget Act of 2020 allocated $2.3 billion dollars for this purpose, compared to only $203.3 million for fire prevention and resource management. Investing more money upfront in prevention practices will reduce the need for wildfire response activities, as well as the cost associated with rebuilding damaged areas, over the coming decades. Furthermore, well-planned and ecologically informed forest management practices like prescribed fire provide a variety of co-benefits, including carbon sequestration, improved water quality and recreation, and can contribute to the state's efforts to achieve its climate goals.

Prescribed fire

Prescribed and managed fire are a type of vegetation management where low-intensity fires are either intentionally lit or allowed to burn in specified weather conditions and in a way that is consistent with a preapproved plan (known as a burn plan) to treat a specified area. The prescribed burn eliminates hazardous surface fuels and achieves other important ecological outcomes. Prescribed burns increase short-term air pollution and GHG emissions in order to mitigate the risk of larger fires with significantly higher air and GHG emissions in the future. In combination with other forest management practices such as forest thinning and vegetation clearing, prescribed fire can contribute to the health of California's forests and reduce the occurrence of catastrophic wildfires.

Prescribed burns reduce the risk of catastrophic wildfires primarily by reducing fuel loads in forested areas. Fire suppression has led to an accumulation of dense underbrush and dead and decaying trees on the forest floor, exacerbated by the recent drought that resulted in the death of over 140 million trees and tree mortality from infestations of bark beetles. Furthermore, the elimination of low-intensity fires, in combination with logging practices that removed old growth trees, have led to an increased density of trees and also reduced overall tree size. Consequently, fires have more fuel to burn hotter and are able to spread faster in the denser canopies. Prescribed fire, carefully planned on days with low-risk weather conditions and monitored by professionals, can incrementally remove the debris on the forest floor, reduce the density of forest stands, and therefore reduce the severity of future wildfires.

Despite widespread acknowledgement in the scientific community of the utility of the practice, a 2019 study found that implementation of prescribed burning as a forest management practice has not increased over recent decades.

The recent Creek Fire, which has burned over 300,000 acres, but is still not 100% contained, provides an example of the effectiveness of prescribed burns. The Southern California Edison property in Shaver Lake, one of the impacted communities, experienced substantially less damage on and near the property than other parts of the county. The resiliency of this property is attributed to the prescribed burning program that the utility has carried out since the 1960s.

SB 1260 (Jackson), Chapter 624, Statutes of 2018, was an omnibus fire prevention and forestry management bill with the intent of promoting long-term forest health and wildfire resiliency, including by increasing the use of prescribed burns. The bill also required the State Fire Marshal to create a program to certify "fire bosses" to qualify individuals to lead prescribed fire projects on public and private lands. The curriculum is now complete and is pending approval.

Roughly one third of California is forested. The federal government has jurisdiction over 57% of these forests. Individuals, Native American tribes, and corporations own roughly 40% of the forests, and the remainder are owned by the state, local governments, and land trusts. Although the state owns only a small percentage of the forested land, it is responsible for fire protection on 31 million acres of forests, watersheds, and rangeland. CAL FIRE aims to conduct prescribed burns on 25,000 acres per year. In the 2019-20 fiscal year, they burned 27,143 acres, exceeding their yearly goal by 110.36%. CAL FIRE burned 31,305 acres in the 2018-19 fiscal year and 19,413 acres in the 2017-18 fiscal year. For comparison, studies estimate that 1.8 million to 4 million acres burned annually in the state prior to colonization and associated fire suppression activities. A 2020 study from Nature Sustainability estimated that 20 million acres need to be burned to restore the condition of California's forests.

The U.S. Forest Service manages over 20 million acres of National Forest in the state. In August, Governor Newsom signed a Memorandum of Understanding with the Forest Service to sustainably treat one million acres of forest lands per year by 2025, half of which will be on federal land. SB 901 (Dodd) Chapter 626, Statutes of 2018, requires $165 million to be appropriated to CAL FIRE from the Greenhouse Gas Reduction Fund for healthy forest and fire prevention programs annually through the 2023-24 fiscal year. The bill also appropriates an additional $35 million specifically for prescribed burns and other forestry practices, including the operation of year-round prescribed fire crews and implementation of a research and monitoring program for climate change adaptation.

There are substantial barriers to meeting the state's prescribed fire goals. For example, the Clean Air Act limits the emission of fine particulate matter from human-caused events and regulates prescribed fire. This means any prescribed fire requires a permit from an air quality district. In addition, prescribed fires must be conducted on a day when the Air Resources Board (ARB) allows burning in the state, and must comply with ARB's Smoke Management Guidelines that are almost 20 years old. In the 2018-19 and 2019-20 budgets, $2 million per year in funding from the Greenhouse Gas Reduction Fund was provided to local air districts to improve permitting and management of prescribed fire. Those engaging in prescribed fire must also purchase significant insurance to cover any damage if the fire escapes, including any associated fire suppression costs. This insurance is costly and hard to find.

It is important to note that prescribed fire is an effective tool for reducing wildfire risk in forested ecosystems and specifically for reducing the intensity of fuel-driven fires. However, some fires in the state are wind-driven and not in forested ecosystems, with high-fuel loads playing a less important role in their severity and spread. In these cases, different prevention methods such as defensible space, community preparedness, roadway hardening and the removal of invasive plants could be prioritized as an alternative to fuels management.

Cultural burning

For thousands of years, Native American tribes used fire to manage the landscape in California. These cultural burns were used to renew food, medical, and cultural resources, to create habitat for wildlife, and to reduce the risk of larger fires. As native peoples were forcibly removed from their land, the practice of cultural burning was largely eliminated. The U.S. government began the policy of fire suppression on federally managed land after the establishment of Yellowstone National Park in 1872. By the 1930s, the Forest Service's fire policy required all fires to be suppressed by 10 a.m. the morning after they were spotted. In addition to depriving native peoples of land sovereignty, access to resources, and the right to practice traditional cultural activities, fire suppression policies also contributed to the overstocked and highly flammable forest conditions that result in destructive wildfires today. Although the National Park Service and the Forest Service began to rethink their prescribed fire policies in the 1960s and 1970s due to their negative impact on the forest health, cultural burning has not been meaningfully included in the state or federal forest management strategies.

Partnering with California tribes to reintroduce the practice of cultural burns onto landscape provides an opportunity to restore an important cultural practice while also improving forest health and decreasing the risk of catastrophic wildfires. Several California tribes are working to create and maintain these types of partnerships. For example, the Cultural Fire Management Council aims to facilitate the practice of cultural burning on the Yurok Reservation and Ancestral Lands. The Lomakatsi Restoration Project, a nonprofit organization that works with tribal communities in Oregon and California, aims to advance efforts to repair fire-adapted ecosystems. Representatives of the North Fork Mono have entered into an agreement with state and federal agencies near Fresno to perform more prescribed burns to restore mountain meadows that have become overgrown due to fire suppression.

A Stanford-led study with the U.S. Forest Service in collaboration with the Yurok and Karuk tribes found that incorporating traditional techniques into current fire suppression practices could help revitalize American Indian cultures, economies and livelihoods, while continuing to reduce wildfire risks. Evidence from a program in Australia, where an Aboriginal burning program has been managing land for the last seven years, also provides evidence for the efficacy of cultural burns. The program is credited with reducing the incidence of destructive wildfires in half and for reducing carbon emissions by 40% on the land within the program's jurisdiction.

Several tribes put on prescribed fire training. State support of these efforts could increase the number of trained fire bosses and therefore increase the frequency and safety of prescribed burning, as both a cultural practice and a forest management tool. The state could also increase investment in partnerships between tribes, private landowners, and land management agencies to burn on adjacent lands. These partnerships could also be enhanced by integrating tribal representatives into CAL FIRE and other land management agencies.