

Options for Prescribed Fire on Private Lands in California

by Jeffery Stackhouse¹ and Lenya Quinn-Davidson²

For many years, as county-based University of California Cooperative Extension advisors, we have fielded questions from landowners about prescribed fire. Prescribed fire, or the use of fire to meet specific land management goals, has been identified as a necessary tool for treating fuels and restoring fire-adapted landscapes (Ryan et al. 2013). Private landowners have voiced interest in using fire to improve range resources, enhance wildlife habitat, reduce fuels, manage invasive species, and increase biodiversity, but the options for burning on private lands in California have been unclear. With this paper, we aim to clarify the options for prescribed fire on private lands in California.

California's ecosystems have been shaped by fire for millennia. The fire historian Stephen Pyne (2016) said that 54% of California's ecosystems are fire-dependent, meaning they need fire to persist, and most of the remaining areas are fire-adapted. This makes sense given that approximately 4.5 million acres burned annually in California pre-1800 (Stephens et al. 2007) by a combination of lightning and human-ignited fires. Even as recently as the 1950s, approximately 100,000 to 225,000 acres of permitted burns were conducted by private ranchers each year to reduce fire hazard and improve grazing (Biswell 1999). In more recent decades, the California Department of Forestry

and Fire Protection (CAL FIRE) has been the leader in private lands burning. In the 1980s, the Vegetation Management Program (VMP) peaked at around 30,000 to 65,000 acres of prescribed burning annually, but in recent decades, those numbers have consistently fallen short of 10,000 acres a year (FRAP 2019). CAL FIRE is currently revamping the VMP, with new goals of treating 50,000 acres a year, but it has become clear that landowners need more options for accomplishing their prescribed fire goals and moving California toward fire resiliency. This paper presents the four primary options for private lands burning in California, including a short description of each option, as well as a comparative analysis of all four (Table 1).

Option One: CAL FIRE's Vegetation Management Program (VMP)

CAL FIRE is the state's fire suppression agency. CAL FIRE implements prescribed fire projects on private lands through the VMP, which has been in existence since 1982 (CAL FIRE 2019). Under the VMP, landowners enter into a contract with CAL FIRE, and CAL FIRE plans and implements the project, providing most or all of the funding and assuming liability for the burn. Historically, VMP contracts had a

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Right: Do-it-yourself winter burning in oak woodlands, Humboldt County, CA.
Photo: L. Quinn-Davidson



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three-year window, which — because of narrow burns windows and competition for resources — was often an insufficient period to complete contracts. In the fall of 2018, Senate Bill 1260 extended VMP contracts to 10 years and removed cost-share requirements (SB-1260 2018) in an effort to accelerate the pace and scale of CAL FIRE-led prescribed fire projects.

The VMP greatly incentivizes private lands burning, but those incentives come at the cost of relatively long planning timeframes; this is due in large part to environmental compliance requirements, and limited agency capacity to complete projects. Projects that involve state funding or have a state agency in a lead role require compliance with the California Environmental Quality Act (CEQA), which requires field surveys, reporting, and other work by specialized staff who have already limited time. Even when projects are planned, CEQA-compliant, and ready to burn, the agency’s capacity can be a major limiting factor. The best burn windows in northern California often overlap with the active fire season in southern California, pulling resources away from prescribed burns. Likewise, even when resources are available, there is a limit to how many projects an individual CAL FIRE unit can complete. We suggest that VMP projects concentrate on more complex, high-risk projects that necessitate the expertise and resources that CAL FIRE brings.

Option Two: Hire a contractor

The second option for private landowners is to hire a private contractor to plan and implement prescribed fire projects. There are few private companies that specialize in prescribed fire, but those that do are fire professionals with the highest levels of qualifications and expertise for both prescribed burns and wildfire. Prescribed fire contractors also carry insurance and can help landowners obtain permits. Hiring a contractor for prescribed fire projects may also alleviate some of the environmental compliance hurdles associated with the VMP, depending on the source of project funding. The

ultimate downside of hiring a contractor is cost. Although highly variable, prescribed burning can cost more than \$10,000 per day. These costs are tied more closely to the complexity of the burn and associated resource requirements (e.g., crews and engines) than to the size of the project. For example, a 5-acre forest understory unit may require more resources—and therefore be costlier — than a 200-acre grassland unit. Landowners interested in using contractors should remember that treating large areas with low perimeter-to-area ratios minimizes boundary treatment and per acre costs (Sneeuwjagt et al. 2013). Although hiring a contractor is the most expensive option, some landowners in the Midwest have found it economically viable at large scales.

Option Three: Do it yourself

Arguably, the most attainable option for prescribed fire is to do it yourself (Photo 1). California landowners have the right to use prescribed fire on their properties, granted they meet permit requirements (air quality permits year-round, plus CAL FIRE permits during declared fire season). Many landowners conduct prescribed burns on their properties by themselves or with friends and family. With this model, landowners must secure their own permits, prepare the unit, and ensure they have adequate resources to safely implement the burn. The landowner is also fully liable if something goes wrong. The biggest limitation with this option is scale. Most do-it-yourself burning is small-scale and implemented in the off-season when CAL FIRE permits are not required. For projects that require in-season burning to meet objectives (e.g., early summer burning to eradicate medusahead [*Elymus caput-medusae*] or starthistle [*Centaurea* spp.]), the do-it-yourself model may not be feasible.

Option Four: Prescribed Burn Associations

A prescribed burn association (PBA) is a group of local landowners and other interested individuals that form a partnership to conduct prescribed burns (Weir et al. 2010) (Photo 2). PBAs provide training, equipment, and labor to safely use fire and meet permit requirements, facilitating the application of fire as a tool and reducing the associated risks (Toledo et al. 2013). These associations also build networks and social capital among landowners and other community members, resulting in changes in attitudes toward fire and enhancing the social acceptability of using prescribed fire as a management tool (Toledo et al. 2013). PBAs are a great, low-cost way for community members to gather and share tools and equipment, and to work together to advance prescribed fire training and expertise. They also encourage a neighbors-helping-neighbors approach, which can alleviate liability concerns and facilitate cross-boundary projects that take advantage of landscape features, rather than property boundaries, as control lines.

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Table 1: Overview of private land burning options and general considerations for California.

Option	Cost to Landowner	Success Rate
CAL FIRE (VMP)	Low: Sometimes involves cost-share, but cost-share is no longer required (per SB1260)	Variable
Private contractor	High: >\$10k per day	High: Only economically feasible at large scales
Do-it-yourself	Low: Equipment, time, labor, unit preparation	High: Likely only at small scales
Cooperative burning (PBA)	Low: time, labor, unit preparation, lunch for volunteers	High



Prescribed Burn Association burning in encroached coastal prairie, Humboldt County, CA. Photo: L. Quinn-Davidson

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A 2012 survey of 27 Midwest PBAs reported 1,094 burns totaling 472,235 acres (432 acres/burn average) since their establishment, with an average of 8 years since establishment (Weir et al. 2015). The PBAs reported an escape rate of 1.5%, which is comparable to rates reported by the U.S. Forest Service (Dether and Black 2006). In all 1,094 burns, only one minor injury was reported, and no insurance claims had been filed against any of the PBAs or their members. As with the do-it-yourself option, PBAs empower landowners to burn when and how they want. However, PBAs are more efficient in accomplishing prescribed burns because they can effectively organize resources and crews, allowing for more complex, larger-scale projects (Weir et al. 2015). The value of forming a PBA is realized not just by individuals, but entire communities. PBA burns may address a range of objectives, promoting healthy ecosystems, improving wildlife habitat, reducing hazardous fuel loads, and increasing profitability of local ranches and timberlands (Diaz et al. 2016).

PBA burns also provide a rare opportunity for live-fire training to landowners and other community members. This model has been extremely successful across the Great Plains and other parts of the United States. California's first PBA was formed in Humboldt County in March 2018 and has treated almost 700 acres on seven different properties in its first year. Similar efforts are brewing across the state. If you are interested in forming a PBA, contact the authors or your local University of California Cooperative Extension or Resource Conservation District office.

Conclusions

California's century-long fire deficit, and subsequent fuel loading has increased the recognition of prescribed fire as a valuable tool for improving ecosystem function and promoting resilience. However, relying on fire agencies alone to meet statewide prescribed fire needs is unrealistic, and private landowners need additional pathways for bringing fire back into the toolbox. This paper summarizes the four primary options available for private lands burning in California, answering the questions that so many people have been asking, and perhaps whetting the appetite of other private lands managers who are less familiar with fire as a tool.



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