

Private land managers show growing interest in prescribed fire in the Sierra Nevada, California, USA



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Euro-American settlement of the western US resulted in over a century of fire exclusion policies and management practices that created a fire deficit in landscapes adapted to frequent, low severity burning, whether through Native American burning or lighting ignitions. This fire deficit, along with climate change, has manifested in declining ecosystem health and the buildup of fuel, increasing the frequency, severity, and size of wildfires. Prescribed fire is gaining traction as a method to restore western fire regimes and reduce wildfire hazards in places like the Sierra Nevada, where human communities have experienced devastating wildfires in recent history. Though perceptions and practices around the use of prescribed fire on California's public lands are relatively well-studied, less is known about the perspectives of private land managers, who own the majority of California's lands.

Preferred treatments, pathways, motivators, and perceived barriers to prescribed fire implementation were studied in a group of 172 participants in six "Prescribed Fire on Private Lands" workshops held by UC Agricultural and Natural Resources in the Central Sierra Nevada from 2018-2019. Approximately 39% of participants did not have previous experience using prescribed fire, and only 11% had previous experience with organizations such as Prescribed Burn Associations (PBAs), Training Exchanges (TREX), or Volunteer Fire Departments (VFD). Participants tended to have two or more vegetation types on their property, including forests, oak woodlands, grasslands, and shrublands. 34 participants indicated wanting to burn more than 20% of their property, while 17 wanted to burn more than 50%. 52% of the participants had not conducted any prescribed burns on their property in the last decade.

From the 14 fuel treatments described to participants, pile and broadcast burning received the highest interest (54% of participants were "definitely" interested), while open grazing by goats and sheep received the least interest (Figure 1). There was also general interest in mechanical treatments (i.e. mastication, mowing, thinning from below), but up to 33% of participants would not consider these treatments. Pathways considered include the CalFire Vegetation Management Program (VMP), contractors, CalFire California Forest Improvement Program (FIP), family and friends, PBAs, the Natural Resource Conservation Service, and the Environmental Quality Improvement Program (EQIP). Many participants (37-39%) were interested in using public assistance programs (VMP, FIP, EQIP), or family and

MANAGEMENT IMPLICATIONS

- There is significant interest in implementing prescribed burns among private landowners, stewards, and managers in California, but translating these interests into actual burning is often constrained by concerns about liability insurance, operational knowledge, and physical capacity (i.e. personnel needs, planning costs).
- Pile and broadcast burning are the two prescribed fuel treatments most preferred by private land managers, followed by mechanical treatments and grazing. In educational materials about prescribed fire, it is important to distinguish between pile and broadcast burning as these practices entail different perceived risks, operational procedures, and ecological impacts. Obscuring these differences can lead to inconsistencies in metrics for outreach success and capacity-building.
- Many landowners (almost 40%) are interested in using public assistance programs like the CalFire Vegetation Management Program, the Forest Improvement Program, the Environmental Quality Improvement Program, and/or family and friends to implement prescribed burns on their land. However, there is often a disparity between knowledge of these programs and interest in using them, indicating the need for greater outreach and centralized information about these programs.

friends, to implement prescribed fire on their land, with slightly less interest in PBAs and contractors. For PBAs and EQIP, fewer respondents knew about these programs than would use them, indicating a disparity between knowledge and enthusiasm about these options.

Reducing fuel hazards and improving natural lands health were the two most cited motivators for landowners to consider using prescribed fire, with the improvement of wildlife habitat and scenic quality, as well as the reduction of invasive species, woody encroachment, and insect and disease issues following. Finally, the most significant perceived barrier to prescribed fire implementation on private land was liability insurance, followed closely by narrow burn windows, the costs of burning and planning, and the safety of residential structures. Interestingly, air quality and general burn permitting were the least significant perceived barriers, diverging markedly from the perceptions of the workshop organizers.

The results of the survey indicate that although a cumulative 98% of participants were “definitely”, “likely”, or “maybe” interested in pile burning on their land, few of the participants had actually operationalized these interests. Though the interest in this study may be inflated compared to the average population by virtue of self selection (i.e. participants willing to attend an 8-hr workshop about prescribed fire are likely already interested), this disparity between interest and practice suggests that there is a growing window of opportunity for expanding pile burning capacity on private lands in California contingent on knowledge-sharing and program-based support. Though many participants were also interested in expanding the use of broadcast burning on their property, these participants indicated higher apprehension surrounding their knowledge and safety concerns, underscoring the importance of outreach

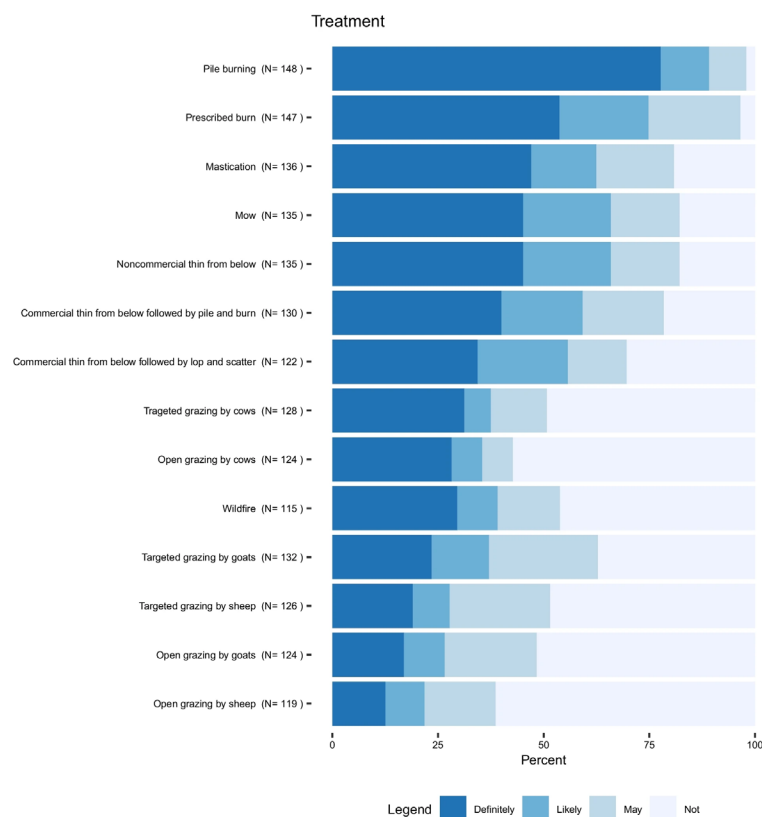


Figure 1. From Wilkin et al. 2024 shows percentages of participants responding that they “definitely”, “likely”, or “maybe” have used or would use the specified fuel treatments on their property.

programs to private landowners that distinguish between pile and broadcast burning practices. Overall, the workshop series introduced approximately 20% of participants to prescribed fire for the first time, indicating that similar workshop-based programming may be effective in increasing prescribed fire literacy, laying the groundwork for community prescribed fire networks, and motivating private landowners to contribute collectively to increasing prescribed burn acreage in California.

Additional Information

This brief is based on the following article:

Wilkin, Kate M., Amanda M. Stasiewicz and Susan D. Kocher. 2024. Private landowner interest in prescribed fire in California: findings from workshops in the Sierra Nevada. *Fire Ecology* 20, 48. <https://doi.org/10.1186/s42408-024-00277-9>

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