TRAVERSING THROUGH THE HAZE

EXPLORING THE HUMAN PERSPECTIVE OF SMOKE FROM FIRE

RESEARCH BRIEF 1 • SPRING 2013

The air in the valley settles like a grey blanket, engulfing residents with lingering smoke for what could be days or weeks. The smoke might come from a wildfire being fought miles away, a prescribed burn, or a neighbor's woodstove or burn pile. The wind may sweep this low-quality air away or it may linger until the winds of the next season change. Until then, the community lives in a bubble of poor quality air with restrictions on further smoke-producing activities.

Poor air quality caused by smoke in Lakeview, Oregon.

How does this smoke affect people? Do people know where the smoke comes from and does such knowledge affect their attitude towards it? Do concerns about smoke preclude the use of prescribed fire? Gaining insight into public attitudes toward smoke is important in making decisions regarding its management. To investigate these questions, we conducted a mail survey of households in four sites across the US in 2012. Nearly 1000 people responded to the survey.

KEY FINDINGS

- A majority of respondents indicated they know where smoke comes from and this influences how acceptable that smoke is.
- Wildfire and prescribed fire were the most acceptable sources of smoke.
- Most respondents had experienced odors or discomfort from smoke. Around one-third of respondents had experienced negative health impacts.
- A majority of respondents agree that there are many benefits of prescribed fire.

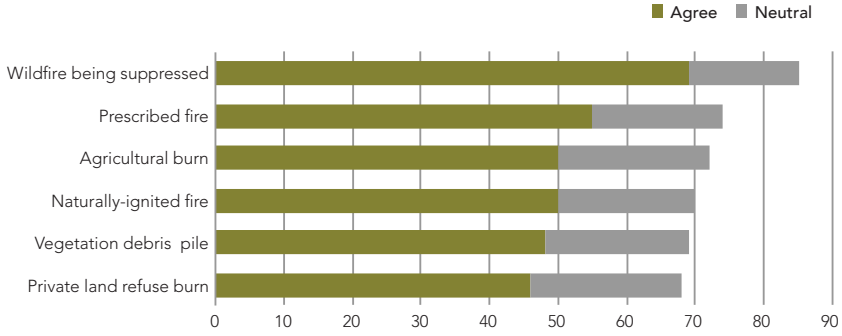

Figure 1. Acceptance of smoke by origin.

The Northwest Fire Science Consortium is a regional fire science delivery system for disseminating knowledge and tools, and a venue for increasing researcher understanding of the needs of practitioners.

RESULTS

Over 70% of respondents said they were able to identify where smoke was coming from. Overall, smoke from all types of fires considered in this study was deemed acceptable or at least perceived neutrally by the majority of respondents (Figure 1).

Wildfires were considered the most acceptable origin of smoke, with prescribed burns second. Acceptance may be conditional, however. Over 70% of respondents believed that smoke from a prescribed fire was acceptable if it resulted in a healthier forest. When asked about impacts from smoke, the majority had experienced unpleasant odors, and nearly one-third had experienced the more severe impact of personal health effects from smoke (Figure 2).

The type of fire also made a difference in the type of impacts respondents had experienced and their acceptance of that smoke. For example, wildfire was more frequently perceived as the source of smoke that caused road delays, while discomfort from smoke was experienced from all types of origins including woodstoves, pile burns, agricultural burns, as well as prescribed burns and wildfire. Most participants agreed that prescribed fires could result in several benefits including reduced fuels and risk of future fires as well as improvements to ecological conditions (Figure 3).

Respondents also reported using a variety of methods to get information about smoke. The methods rated as most useful include conversations with agency personnel, official websites, road signs, public service announcements, and visitor centers or interpretive signage. The methods rated as least useful include brochures, newsletters, and government meetings. The high ratings for websites may be because they provide access to up to date information during smoke events or regarding burning restrictions.

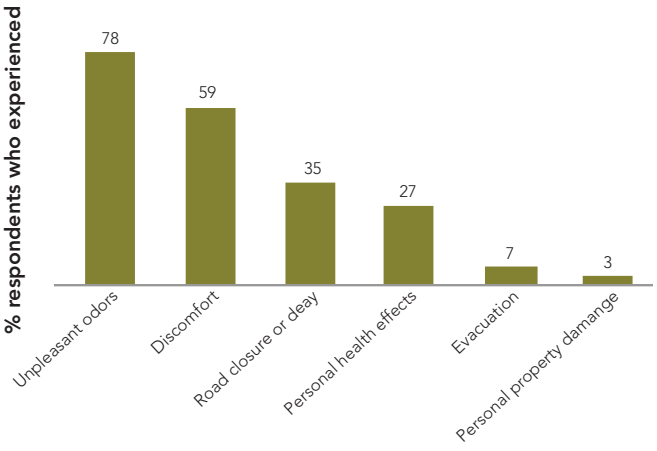

Figure 2. Respondents' experiences with smoke impacts.

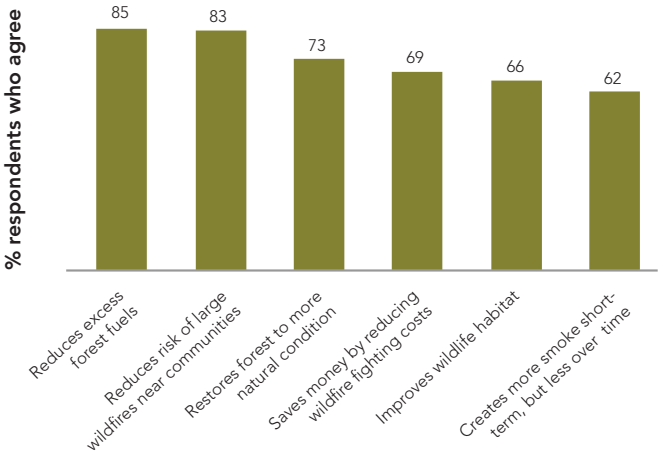

Figure 3. Benefits of prescribed fire.

IMPLICATIONS

Achieving multiple objectives may prove difficult as the acceptance and impacts of smoke are weighed against the activities that produce it. As forest fuels continue to accumulate and large wildfires persist, using all available tools to manage fire-prone land is crucial. Our results show that there is broad support for prescribed fire even though many have experienced impacts from the smoke produced.

Although a majority of people appear to consider smoke only a nuisance, a minority who experience more severe effects must be carefully considered and engaged. Discounting their needs could damage relationships and present barriers to future management activities. Our results suggest that some methods of communication about smoke are more effective than others, and may offer greater opportunities to engage with local residents.

AUTHORS:

Stacey Sargent Frederick
Oregon State University
Stacey.Frederick@oregonstate.edu

Dr. Christine Olsen
Oregon State University
Christine.Olsen@oregonstate.edu

Dr. Eric Toman
The Ohio State University
toman.10@osu.edu