

Eight Questions Answered: Social Science and Wildfire



Introduction

In 2009, the Joint Fire Science Program (JFSP) was asked by a group representing Partners in Fire Education (PIFE) to assess existing research to help formulate a public education campaign that would focus on fire's natural role in ecosystems, the benefits of fire management to ecosystems, and public health and safety.

Eight specific questions were addressed:

- What is the public's understanding of fire's role in the ecosystem?
- Who are trusted sources of information about fire?
- What are the public's views of fuel reduction methods, and how do those views vary depending on location in the wildland-urban interface (WUI) or elsewhere?
- What is the public understanding of smoke effects on human health, and what shapes public tolerance for smoke?
- What are homeowner views of their responsibilities for home and property protection and mitigation, e.g., defensible space measures?
- What role does human health and safety play in public perceptions of fire and fire management?
- What are public views on the role and importance of costs in wildfire incident response decisions?
- How do findings differ among ethnic and cultural groups, and across regions of the country?

Much of the gathered information by the JFSP team of researchers has application to public information officers (PIOs) and people working in prevention, education and mitigation. At the end of each of the eight sections, a summary of the findings was written. This document contains the key statements from those summaries and a few sentences from the report itself – it's a summary of the summaries, in effect.

Reading this document is designed to catch your interest, help you pick up a few morsels that may be of immediate use, and make you generally aware of the research synthesis. It is not, though, a substitute for reading the larger document, which will be available in October as a Northern Research Station General Technical Report:

McCaffrey, S., and C. Olsen. In press.. Research Perspectives on the Public and Fire Management: A Synthesis of Current Social Science on 8 Essential Questions. Gen. Tech. Rep. NRS-XX. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station.

Here's the distillation of the summary. Enjoy, put it to use ... it's good stuff!

Question 1: What is the public's knowledge of fire's role in the ecosystem?

- "Overall, studies provide ample evidence that members of the public recognize fire's ecological role. Indeed, findings demonstrate that, particularly for those in high fire hazard areas, individuals often have a fairly sophisticated understanding of fire's ecological role."
- "Studies also suggest that even modest educational efforts can significantly raise both knowledge and (treatment) support levels."

Question 2: Who are trusted sources of information about fire?

- "... perhaps the most important characteristic in determining if an information source is trusted and useful is if it allows for interactive exchange."
- "Findings show that there is no single best information source; individuals generally access multiple sources of information on fire risk ..."
- "... most trustworthy sources were often public agency sources ..."
- "Overall, the research highlights that the fire information sources people turn to and find helpful are highly varied."
- "... government sources are generally a preferred information source and are often, but not always, highly rated."
- "... mass media was often seen as inaccurate and not sufficiently local."

Question 3: What are the public's views of fuel reduction methods and how do these views vary depending on location in the WUI or elsewhere?

- “A substantial body of work provides a picture of a public that generally supports the need for fuels reduction ...”
- “... over 80 percent of respondents accept some level of each (prescribed fire or mechanical thinning) fuels practice.”
- “... where studied, grazing has been found to have a comparably high acceptance rate ... Much lower acceptance levels are found for use of herbicides.”
- “In general, studies have found a preference for use of mechanical thinning in more urbanized areas and for prescribed fire in less populated areas.”
- “When provided as an option, ‘no action’ consistently is the least preferred choice.”
- “Forest health is generally a parallel, and sometimes more dominant, consideration than reducing fire risk in acceptability or approval of treatments ... A national survey found the highest level of concern expressed by respondents was that ‘fire management programs consider long-term forest health.’”
- “Although not uniform across studies, risk of escape is generally the primary concern raised about prescribed fires.”
- “Overall, results clearly show that prescribed fire and mechanical thinning are, at some level, acceptable management practices for over three-quarters of the public.”

Question 4: What is the public understanding of smoke effects on human health, and what shapes the public tolerance for smoke?

- “Studies thus far suggest that smoke is not a significant barrier to the use of prescribed fire for a majority of the population” and that forest health and/or reducing fire risk concerns tend to outweigh smoke concerns.
- “Studies thus far suggest that smoke is not a significant barrier to the use of prescribed fire for a majority of the population (when conducted) to improve forest health and/or reduce fire.”
- “However, findings also suggest that for roughly a third of households, smoke is a major issue due to health concerns ... For these individuals, understanding how smoke issues are addressed in fire and fuels management will continue to be a highly salient issue.”
- “A review of four studies found ... 30 percent of respondents had a household member with a health issue affected by smoke.”
- In one study, “... as participants learned more about the ecological benefits of a burn they became more willing to tolerate smoke from prescribed burns on public lands because the benefits accrued to multiple parties.”

Question 5: What are homeowners' views of their responsibilities for home and property protection and mitigation (e.g., defensible space)?

- “When discussing fire management (study) participants routinely bring up the notion of shared responsibility ... each landowner, whether private or public, is seen as primarily responsible for taking care of their property.”
- “Both a sense of fairness and recognition that actions on adjacent properties can affect one’s fire risk shape this view” (of shared responsibility).
- “Research has shown broad support for the idea that relevant government agencies have some responsibility for providing educational materials and advice to homeowners ...”

Question 6: What role does human health and safety play in public perceptions of fire and fuel management?

- “No published study could be found that directly addressed the role of health and safety in public perceptions, though several studies did address it tangentially.”
- In one study, “When asked how important certain considerations were in judging fire management decisions ... firefighter and community/resident safety were the two most important considerations ...”
- In another study, “... the top concerns about potential fire impacts were related to public health and safety; deteriorated public water supply; damage to private property; and risk to human safety.”
- “Although findings are too limited to provide a coherent picture, they suggest that members of the public put a priority on human health and safety ...”

Question 7: What are public views about the role and importance of costs in wildfire incident response decisions?

- Research is limited but “suggests that cost is a more important consideration before an event than during.”
- In one study, “Homeowners in four fire-affected communities were asked how important certain types of information were to receive during a fire ... firefighting cost was the least important information and consideration to respondents.”
- In another study, “... almost 80 percent of respondents indicated that concern about cost-effectiveness was a somewhat to very important factor in determining their treatment preferences.”
- In a third study, “The notion that it is better to pay now to reduce fuels than pay more later to fight fires was a consistent theme ...”

Question 8: To the extent that information is available, identify how findings differ among ethnic and cultural groups, and across regions of the country.

- “Quite a number of studies have explicitly included geographic variation as part of their design. Notably, the most consistent finding across these studies is that they detected much less variation than expected ... Where geographic variation has been found it has either generally been too small to be meaningful or was seen to reflect specific local contextual factors, such as ecological conditions, regulations, building styles, agency-community interaction, or specific historical events.”
- “... the urban versus rural distinction is not a consistently useful explanation for understanding differences in public response to wildfire.”
- “Findings suggest that time may be a key variable shaping seasonal residents’ actions and that neighborhood norms can also be an important factor, particularly for permanent residents.”
- “While there is always a range of public response to different aspects of fire management, research suggests that, except for ethnicity and race, these differences are difficult to attribute to easily measurable or mapable variables, such as demographics and geography. Instead, more complex, often identity-based, and harder to measure factors, such as worldview and group membership, appear more likely to explain variation in how individuals respond to fire management issues ...”

General Conclusions

- “... overall the findings provide a fairly clear indication that public response to a variety of fire management issues is more positive than is often assumed. “
- “Indeed, the vast majority of the public, particularly in areas with high fire risk, have a fairly sophisticated understanding of fire ecology and behavior.”
- “... high public acceptance cannot be developed simply by increasing knowledge ... Key amongst these (factors) is the level of trust in those implementing a practice.”
- “... how the public accesses information is a complex process where no single source is always more effective than another ... The most consistent finding is that interactive information sources are both generally preferred and more effective.”
- “Overall, the public has a reasonably sophisticated understanding of fire, is supportive of active management to reduce fire risk and improve forest health, and takes responsibility for mitigating the risk on their property. At the same time, there is a bit of bad news – there is no single piece of information or best information source that shapes acceptance of active fire management or compliance with mitigation recommendations. However, taken together, this body of research suggests that interactivity is a key feature of information dissemination.”