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Gauging the Acceptability of Fuels Management: A Matter of Trust

By Mark Brunson



Wildfire is an increasingly daunting issue for Western communities. The effects of fire on homes and livelihoods is increasing throughout our region as more and more people choose to live adjacent to fire-susceptible landscapes such as national forests, BLM lands, ranches, and other lightly developed areas.

Meanwhile, the National Interagency Fire Center reports that the number of wildland acres burned nationwide each year has risen steadily since the 1990s, even though the total number of fires has actually decreased (Figure 1). In other words, wildfires are getting bigger and more destructive.

The Great Basin is a region where this trend is especially noticeable. In 2007, for example, the Milford Flat wildfire in west-central Utah was the largest in that state's history at more than 350,000 acres, but even that was dwarfed by the Murphy Complex fires that burned over 1,000 square miles just north of the Nevada-Idaho border. Although these fires burned sparsely-settled rangelands, they nonetheless killed livestock and destroyed buildings, resulting in devastating losses to those affected, and filled downwind urban areas with smoke that diminished air quality and increased health care costs for people who suffer lung problems.

Several factors have converged to cause the increase in wildfire size and significance. Two of the most important in the Great Basin are ongoing invasions of sagebrush-dominated rangelands by non-native grasses such as cheatgrass and the expansion of woodlands dominated by junipers and pinyon pines. Both of these processes have increased the amount and flammability of dried plant materials ("fuels") that can accumulate in rangelands. The situation is most apparent on lands managed by the federal government.

Public land managers have tools that can reduce the risk but sometimes there are barriers to using them. One significant obstacle can be citizen opposition to activities such as shrub mowing, prescribed burning, tree-felling and herbicide application. Federal law allows private citizens and interest groups to file administrative appeals or lawsuits to block management activities they believe are harmful to the public's lands. Therefore, it's important for managers to know how citizens perceive alternative practices for wildland fuels reduction, and why they feel that way. As part of the SageSTEP research project that is evaluating the various effects of alternative practices for rangeland restoration and wildfire risk-reduction (see related story, p. 7), social scientist Bruce Shindler of Oregon State University and I have been studying the social acceptability of different management options for Great Basin rangelands.

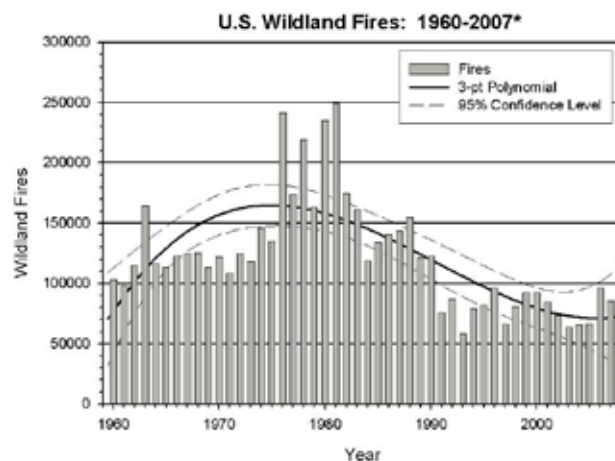
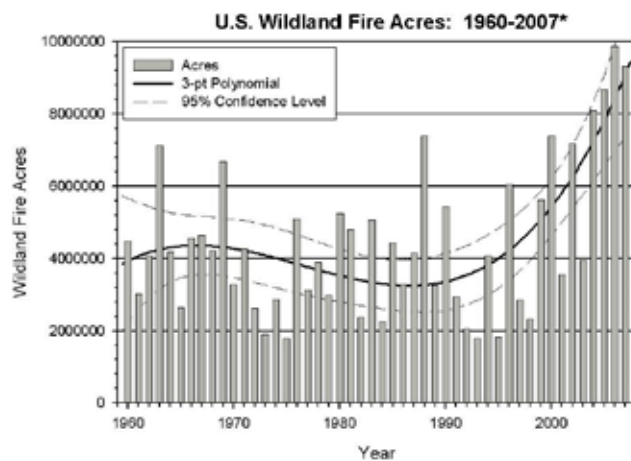
Our research on citizen responses to management options for sagebrush entails several complementary studies. The first two involved interviews of members of significant stakeholder groups as well as land managers themselves. We also sent a mail survey to randomly selected households in communities throughout the

Great Basin. Subsequent and ongoing research activities will include additional surveys of specially targeted populations such as grazing permit-holders and citizens affected by 2007 wildfires, analysis of statements about range management made in interest group literature and legal documents, and assessment of how citizens' attitudes and acceptance are affected by information about wildfire risks and rangeland ecology.

Surveys of Great Basin Citizens

We mailed surveys to randomly selected households in six different parts of the Great Basin: the cities of Boise, Reno, and Salt Lake City, and rural areas in Elko and White Pine counties, Nevada; Lake and Harney counties, Oregon; and Beaver and Millard counties, Utah. The urban areas were chosen because they are the region's largest population centers; the rural areas consisted of adjacent counties of roughly equal combined populations (about 18,000 people according to the 2000 Census) that are also locations for two or more SageSTEP experimental treatment sites.

We mailed 600 surveys to each of the six study areas, for a total of 3,600 surveys, and received 1,345 valid responses. After accounting



*2007 wildfire activity includes preliminary data through December 28th

Figure 1. Trends in the number and size of wildfires in the U.S. since 1960. (Source: National Climatic Data Center, U.S. Department of Commerce)

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for the 636 surveys that were undeliverable, the overall response rate was forty-five percent with a range from forty percent (Reno) to fifty-five percent (Millard/Beaver, Utah). For purposes of this article, we have combined results for the three cities and the three rural areas.

The surveys found that overall Great Basin citizens believe their region's environment is moderately healthy. However, they do recognize threats to sagebrush ecosystems, especially from development, invasive species, OHVs, impacts to riparian systems, overgrazing, and wildfire (Figure 2). Interestingly, rural residents are more likely to perceive threats to rangeland health that are attributable to ecological processes such as juniper encroachment, wild horse overpopulation or overly dense sagebrush, while urban residents are more likely to attribute threats to human activities such as development, off-highway vehicle use or poorly managed livestock grazing.

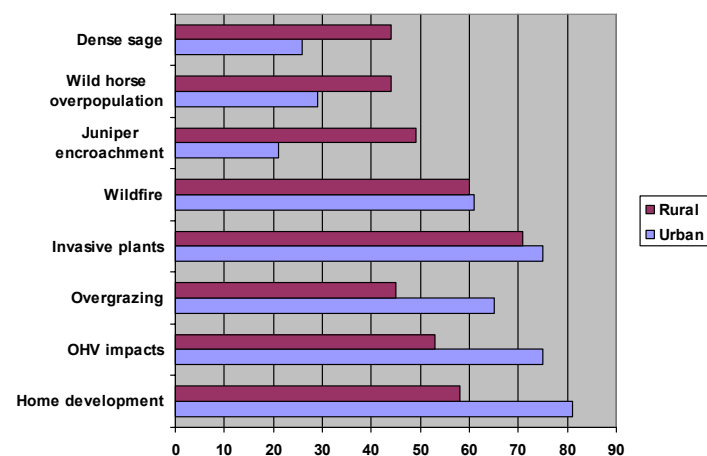


Figure 2. Perceived threats to rangelands (percent agreement of rural and urban citizens).

Public acceptance is relatively high for managing rangeland conditions via prescribed burning, grazing, thinning, or mowing (Table 1). If we consider responses of citizens who offer at least minimal levels of acceptance – i.e., those who believe a practice can be used widely and those who believe it should be used sparingly – a majority of citizens in both rural and urban areas can support some use of these practices. However, this is not the case for “chaining” (i.e., removing juniper and pinyon trees by dragging a heavy chain between two bulldozers) or spraying herbicides, both of which are minimally acceptable to rural residents but not to urban residents, who make up more than three-fourths of the population in the Great Basin.

	Livestock grazing		Prescribed burning		Mowing shrubs/grasses		Felling woodland trees		Chaining woodland trees		Spraying herbicides	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Legitimate tool – use wherever managers see fit	47	65	39	41	27	35	22	43	11	31	11	24
Use infrequently only in carefully selected areas	31	18	45	40	35	35	42	31	24	33	29	40
Should not use due to negative impacts	8	5	6	8	11	8	14	9	24	11	27	12
Should not use – unnecessary	5	4	4	5	9	12	9	9	22	13	18	17
Don't know	10	9	7	6	19	11	14	9	19	12	16	9

Table 1. Levels of acceptability of different practices that may be used to reduce wildland fuel loads and wildfire risk.

Perhaps more significant is what happened when respondents were asked whether they were confident in federal agencies' ability to implement these practices successfully. These answers were less positive (Figure 3). Trust levels were significantly lower than acceptability levels for all six practices. Trust levels did not differ between urban and rural residents except in the case of prescribed fire, where confidence in agencies was lower among rural residents (who are most likely to be affected if a prescribed fire gets out of control).

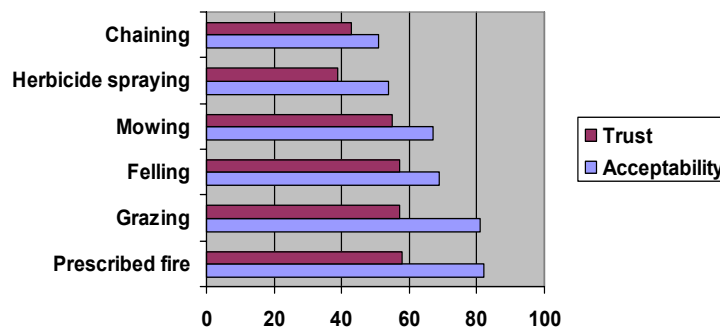


Figure 3. Percentage of citizens indicating acceptance of management practices vs. trust in land managers' ability to implement those practices (rural and urban results combined for display purposes).

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Stakeholder Interviews

Similar patterns of response were found when members of our research team interviewed active participants in range management and policy activities in four broad categories of interest group: livestock grazing, recreation (including hunting and OHV use), environmentalist, and research/extension. Again, we found high recognition among the stakeholder groups of threats to sagebrush ecosystems and solid support for the concept of sagebrush steppe restoration in principle. Most interviewees saw a place for any restoration method in the manager's "toolkit," though a few from the environmental community expressed misgivings about herbicide and mechanical shredding ("Bullhog") treatments. But again, interviewees clearly expressed concerns about the capacity of the land management agencies to make it happen.

Among the issues raised by interviewees as influences on trust in agencies were: levels of funding available to implement fuels-reduction treatments; ability to keep pace with increasing wildfire and non-native plant invasion processes; interference from political forces both in constituency groups and in Washington, D.C.; and agencies' willingness to incorporate local knowledge and concerns into planning for restoration treatments.

When we interviewed persons within the agencies themselves, we heard many of the same feelings about threats to sagebrush ecosystems and potential impediments to successful restoration, although, not surprisingly, the managers expressed greater confidence in their agencies' ability to achieve fuels-reduction and restoration goals. Another difference between managers' and stakeholders' views pertained to the scale of management action, with stakeholders preferring smaller "targeted" treatments that would be less likely to have widespread negative impacts if something went wrong, while land managers advocate larger landscape-scale projects that more closely match the scales at which ecosystem processes actually occur. Since citizens' wariness of large-scale projects are largely a way to minimize risk and uncertainty, it may be valuable for agencies to try smaller projects at first and gradually build up a reservoir of trust among interest groups and affected citizens.

Conclusions

Citizens throughout the Great Basin region recognize that wildfire represents a significant threat to the health of rangelands as well as to human communities and livelihoods. In general they agree that land managers should have the option to use most tools in the management "toolkit," although residents of the region's cities as well as environmental activists are concerned about negative impacts of herbicides and some forms of mechanical removal of woodland trees. However, there is a significant gap between the acceptability of management practices in theory and the confidence that citizens have in land managers' abilities to use those practices safely and effectively. Perhaps this gap simply reflects the widespread tendency of Westerners – especially in rural resource-dependent communities – to view the federal government with a wary eye. But since most citizens

are willing to accept the use of multiple practices on a small scale, opportunities exist for land managers to build citizens' confidence in their activities while gradually reducing the risk of wildfire to the Great Basin's most susceptible communities.

Acknowledgments

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About the author

Mark Brunson is professor of Environment and Society at Utah State University in Logan, Utah.



Citizens throughout the Great Basin region recognize that wildfire represents a significant threat to the health of rangelands as well as to human communities and livelihoods.

Related Reading

The following articles offer a more detailed description of the concept of social acceptability as it has been applied to wildfire and fuels management in the West:

Brunson, M.W., and J. Evans. 2005. Badly burned? Effects of an escaped prescribed burn on social acceptability of wildland fuels treatments. *Journal of Forestry* 103 (April/May): 134-138.

Brunson, M.W., and B.A. Shindler. 2004. Geographic variation in social acceptability of wildland fuels management in the western U.S. *Society and Natural Resources* 17:661-678.

Toman, E., B. Shindler and M. Brunson. 2006. Fire and fuel management communication strategies: Citizen evaluations of agency outreach programs. *Society and Natural Resources* 19:321-336.