

A prescription for fostering support for fuel treatments at the wildland urban interface: change beliefs, build trust

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What makes fuel treatment acceptable in some locales, and a not acceptable in others? Is it the people (as manifest in their attitudes and beliefs)? Is it the context (e.g., fuels, road access, proximity to noteworthy or destructive past fires)? And does acceptance vary smoothly over space? Can likely acceptance be mapped from known demographic and geographic attributes? A recently concluded Joint Fire Science Program funded project, "Demographic and geographic approaches to predicting acceptance at the wildland-urban interface", sought answers to these and related questions via focus groups, survey research and geographic and geostatistical analysis.

We sought to assess and understand the attitudes held by wildland urban interface (WUI) homeowners, with a focus on those attitudes that might relate to their acceptance of specific fuel treatments. We hoped that fuel treatment acceptance could be modeled from beliefs and attitudes, and that these in turn could be predicted at the neighborhood scale from demographic variables (such as those collected by the U.S. Census) and contextual variables relating to proximity to high hazard fuels and past catastrophic fire incidents.

After discussions with fire and fuels managers and conducting focus group interviews with homeowners living in selected WUI areas of California, Michigan and Florida, researchers identified three distinct WUI fuel treatment approaches (prescribed burning, mechanical treatment, and enactment/enforcement of defensible space regulations) that receive widely varying levels of acceptance. We also discovered a collection of issues and concerns that were remarkably consistent in these disparate sections of the U.S. Building on what we learned, we developed and tested a nationally applicable survey instrument for evaluating public acceptance of fuel treatment. Testing the survey with three fuel treatment approaches at some particularly fire-prone WUI sites in these same three states revealed striking regional differences in fire-related experiences, beliefs, attitudes and acceptance as well as some common factors that influence acceptance.

Analyzing the 2,260 returned surveys, we found that homeowners living at the California WUI sites held strongly positive attitudes towards mechanical fuel reduction on public lands (5.8 on a 7 point scale) and defensible space ordinances on their own property (also 5.8). Floridians held strongly positive attitudes towards prescribed burning (5.7), but less than half had positive attitudes towards defensible space. Michiganians were relatively neutral on all three approaches, though slightly positive (5.0) on mechanical treatments.

Differences in homeowners' experiences among these three sites were sometimes striking. For example, 32% of California site respondents reported having been required to remove flammable vegetation on their property (versus 2 % of those at the Florida and Michigan sites), while 91% of California respondents reported actually removing vegetation from their property (versus 44% in Florida and 42% in Michigan). And,

experience was found to be related to attitude. For example, in California and Michigan, those who had removed vegetation were more likely to have a positive attitude towards defensible space ordinances.

Attitude towards prescribed burning, mechanical treatment and defensible space was in all cases contingent on the personal importance (a measure of relevance) that homeowners attached to these approaches and on perceptions of their cost effectiveness. Beliefs also influenced attitudes. For example, the negative belief that prescribed burning results in uncontrolled fires translated to reduced acceptance. Acceptance of mechanical treatment and defensible space was reduced by the belief that these approaches adversely impact scenery.

When faced with three, hypothetical, up-or-down votes (i.e., a ballot initiative for each fuel management approach), the vast majority indicated they would support one or more (99% in California, 96% in Florida, and 86% in Michigan). However, most found one or more approaches objectionable – the percent “voting” yes in all three referenda was 49%, 32% and 18% in these three states respectively. And, the approach with the greatest support varied by site; at the California and Michigan sites, mechanical treatment was most accepted (with 88% and 73% approval, respectively); at the Florida site, prescribed burning was rated most acceptable (with 87% approval).

Although attitude and approval were closely related, approval scores were lower than attitude scores for all fuel management approaches at all three sites. While this varied by approach and site, as many as 40% of the “No” votes were cast by those with a positive attitude. Clearly, something was tempering the positive attitudes, and statistical results revealed at least part of that something to be *trust in the agency*.

WUI homeowners reserved their greatest trust for “the government doing a good job of protecting private property from wildland fires” (with California at 5.2 on a 7 point agreement scale, Florida at 4.9 and Michigan at 3.9). Floridians were slightly more trusting (4.5) of the use of prescribed burning than Californians (4.1) or Michiganians (3.3). Acceptance of each fuel treatment approach could be predicted from attitude and the degree to which people trust the agencies responsible for carrying out these approaches.

Most remarkable to us was how many attributes which seemed logically connected to the acceptance decision proved to have no significant relationship. For example, experience with a particular fuel management approach was largely unrelated to acceptance. Every other demographic and geographic variable we collected in the survey or computed in a geographic database, was similarly insignificant in its relationship to fuel treatment acceptance. These included, length of residence, age, educational attainment, income, property value, proportion of the vicinity in high hazard fuels (where vicinity was defined as circles with radii ranging from 1/8 to 1 mile), number of large historical fires in the vicinity, distance to the perimeter of the closest large fire, and distance to the nearest area of high hazard fuels.

Because the intention to support a fuel management approach turned out to be unrelated to any geographic variable we considered, it was not surprising that support exhibited no spatial continuity. This flies in the face of the notion, “Birds of a feather flock together”, which is held dear by those in the marketing business who place great stock in

demographic stereotypes linked to zip codes or census tracts. Perhaps that approach works when it comes to predicting spending decisions concerning organic food, doggie day care and fitness clubs, but the same does not appear to hold true for opinions about and support for fuel treatments. We observed plenty of cases in an earlier study in Michigan's jack pine forest where one family would take all possible precautions to create and maintain a defensible space, while the family next door would opine that they "live in the woods to live in the woods", guaranteeing that the vegetative screening around their home will remain undisturbed unless destroyed by fire or altered by a future landowner. The existence of such realities on the ground all but eliminates the possibility of spatial continuity in the survey variables we collected, and dashed hopes for mapping acceptance and targeting promotional messages based on easily obtained demographic and geographic data.

Several important lessons emerged from listening to WUI homeowners. These lessons can be used in planning fuels management communications and outreach programs.

Lesson #1: There are no easy shortcuts to predicting acceptance of fuel management. Beyond the probably broad, regional differences that our survey testing demonstrated, there's no really good way to find out what folks support other than to ask them. This means that message development and outreach activities should be targeted widely, rather than to specific sub-populations that are presumed to have a particular bias toward fuels management activities.

Lesson #2: Beliefs drive attitudes, and attitudes towards some fuel treatment approaches are far less positive than they need to be for these approaches to achieve widespread acceptance. For example, 58% in Florida and Michigan held neutral or negative attitudes towards defensible space, and in Michigan, 58% were neutral or negative towards prescribed burning. If education and demonstrations induce more homeowners to believe that prescribed burning doesn't lead to more uncontrollable fires, doesn't have terrible consequences for scenic beauty, and does reduce firefighting costs, we would expect attitudes to be more positive and acceptance more widespread.

Lesson #3: No matter how positive the attitude, a lack of trust in those doing the treatments can torpedo the chances of achieving fuel management acceptance. Besides the depressing effect on acceptance, low levels of trust can affect attitudes. Those with negative attitudes towards fuel treatment approaches disagreed, on average, that the government can effectively manage wildland, including wildfire, prescribed burning, mechanical fuel reduction and defensible space ordinances. While social science researchers are not in complete agreement about what constitutes trust, evidence suggests that, in the case of fuels management, homeowners trust land managers who are competent, credible, and share their values that relate to natural resource management.

For more information on the study and the results, including links to publications completed to date, please see the Social Acceptance of Fuel Treatments web site at: <http://www.fire-saft.net/index.htm> on the web. Published results can also be found via the following references:

- Vogt, C., G. Winter, and J.S. Fried. 2003. "Antecedents to Attitudes toward Prescribed Burning, Mechanical Thinning and Defensible Space Fuel Reduction Techniques (pp74-83)" *In People and Wildfire -Proceedings from the 9th International Symposium on Society and Resource Management* (Pam Jakes, Ed). Gen. Tech. Report NC-231 - St. Paul, MN: US Dept. of Agriculture, Forest Service, North Central Research Station. P. 74-83.
- Vogt, C.A., G. Winter and J.S. Fried. 2005. Predicting homeowners' approval of fuel management at the wildland-urban interface using the Theory of Reasoned Action. *Society and Natural Resources*. 18(4):337-354.
- Winter, G.J., C. Vogt, and J.S. Fried. 2002. Fuel treatments at the wildland-urban interface: common concerns in diverse regions. *Journal of Forestry* 100:15-21.