

Shared Values and Trust: The Experience of Community Residents in a Fire-Prone Ecosystem

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Abstract

The risk and impact of fires have been significant on the San Bernardino National Forest. It is important to understand how residents of areas surrounded by the forest perceive the impact of fires. If fire management agencies understand these perceptions, fire management agencies will be better equipped to communicate with publics about risk-reduction efforts that agencies, community residents, and property owners need to take. Issues of interest include residents' responses to fire risk, beliefs about personal and agency responsibility for addressing risk, personal experiences with fire, and stressors associated with living in a fire-prone area. These issues are examined in light of values perceived as being shared with the Forest Service and other community residents, as well as trust.

A series of studies of natural resource management issues surrounding risk to habitat, nonhuman species, and humans has informed our understanding of the role of perceived similar salient values and trust. Trust continues to be highlighted as an essential element of fire management and communication, and risk management and communication in general. However, the functions of salient values similarity and trust have not been explored in the context of the experience of residing in a community in a fire-prone area.

The authors arranged for residents of fire-prone communities surrounding an urban national forest to participate in focus-group discussions and complete self-administered surveys. It was found that most study participants had multiple fire-related experiences, and that many regarded the risk of fire as part of living in the mountains. Although participants considered the Forest Service and the California Department of Forestry to be primarily responsible for

reduction of fire risk, they also rated personal and community responsibility highly. When participants saw their own values and those of the Forest Service as similar with respect to fire management, they seemed to consider the consistency of agency actions with those values an important basis for making judgments to trust the agency. Public meetings with the Forest Service were supported, although some participants stipulated that the meetings needed to involve dialogue. Other means of communication were also supported. Implications for communication and collaboration, education, and management actions are discussed in light of the role of salient values similarity and trust in a risk environment.

Keywords: Beliefs, fire-prone communities, risk communication, risk management, salient values, San Bernardino National Forest, stresses.

Introduction

Trust and Risk Management/Risk Communication

Trust has been identified as an important component in examinations of public response in risk situations (Siegrist 2000, Siegrist and others 2000). Examinations of trust of publics in fire-management agencies have also been applied to fire-management issues (Cvetkovich and Winter 2004, Liljebld and Borrie 2006, Schindler and others 2004, Winter and others 2002, 2004). General trends towards trust (Winter 2003) and distrust (Liljebld and Borrie 2006) have been presented. Trust seems to be target specific and situation specific and involves degree of risk and perceived impacts (Kneeshaw and others 2004, Langer 2002, Winter and others 2004). Trust has been documented as an essential component of effective communication surrounding risk management (Covello and others 1986, Freudenberg and Rursch 1994, Johnson 2004, Slovic 2000). Those who trust the source of a communication about risk are more likely to believe the communicated message and more likely to accept initiatives designed to address the risk, including actions they must take themselves.

Past Studies on Values, Trust, and Natural Resource Management—

A series of studies examining the interactions between salient values similarity and trust has been conducted. Across these studies, salient values similarity has been a significant predictor of public trust in the Forest Service to address a number of natural resource management issues including a proposed program of research (Cvetkovich and others 1995), a recreation fee demonstration program (Winter and others 1999), and acceptance of approaches to management of threatened and endangered species (Cvetkovich and Winter 2003, Winter and Cvetkovich 2000, Winter and Knap 2001). Other significant influences that have been explored in conjunction with this line of inquiry include community of interest and place, ethnicity, gender, concern, and knowledge about the target topic. In one study (Cvetkovich and Winter 2003), participants repeatedly raised the issue of consistency between Forest Service actions and similar salient values. From this we built a pair of items and tested them with publics regarding issues of endangered species management (Winter and Cvetkovich 2008) and fire management (Winter and Cvetkovich 2007). We confirmed that consistency and validity of inconsistency are instrumental in further understanding patterns of trust and distrust among publics. These findings are outlined in greater detail elsewhere (Cvetkovich and Winter 2004). However, the study of attitudes towards fire and fire management (Winter and Cvetkovich 2007) involved random samples of residents residing in four Southwestern States, including those with little direct experience with fire.

Values and Trust in a Fire-Prone Community—

Variation in degree of experience with fire is undeniably an important consideration. It may be that direct experience represents an opportunity to develop greater personal knowledge about fire, which, based on past work, would then be expected to reduce the reliance on trust in making judgments about fire management issues (Siegrist and others 2000). Another explanation may be that trust has been blurred with issues centered on direct experience and reflects confidence rather than assessments of trust (Cvetkovich and Winter 2007, Earle and others 2001, Siegrist and others 2003).

The Present Study

The present study examined trust and salient values similarity among residents in fire-prone communities surrounded by a southern California forest. These residents were assumed to have direct personal experiences with fire, based on the fire regime and recent fire history of this forest.

Method

Participants—

Residents and homeowners (n = 89) in fire-prone communities on the San Bernardino National Forest participated in this study. Participants were invited through fire-safe councils, local announcements in newspapers and on radio, a forest district email tree focused on partnerships, and personal phone calls from the investigators. The majority (57.3 percent) of participants were male, white (92.1 percent), 55 years of age or older (68.6 percent), with at least some college education (85.3 percent, with 30.3 percent reporting some graduate study). Participants' total annual household income was between \$50,000 and \$74,999 (13.5 percent), or mostly greater (42.7 percent).

Survey Instrument—

A self-administered survey was created for the purposes of this study and included a number of Likert-type items focused on concern about fire and fire management (concern held by respondents and respondents' judgments of concern held by residents in general), knowledge about fire management (self, residents, and Forest Service), salient values similarity and trust, consistency and validity of inconsistency, personal impact of fire, and perceived effectiveness of fire-risk-reduction efforts. There were also items that examined personal experiences with fire (a series of yes/no items), actions taken (a series of yes/no items), and stress-related experiences related to fire risk (a series of yes/no items, adapted from the Impact of Event Scale-Revised, cited in Weiss and Marmar 1996). To assess perceived responsibility of various agencies, political representatives, scientists, visitors and tourists, and members of the community, participants were provided a list of 10 parties and were asked to assign points to each, where the sum was to be 100. An "other" option was provided so that respondents

Table 1—Perceived responsibility and performance of selected parties

Party	Number	Range of responsibility points	Average responsibility	Grade point average ¹
USDA Forest Service	85	5 - 80	$\chi = 18.68, SD = 11.89$	2.94
California Department of Forestry	79	2 - 50	$\chi = 14.25, SD = 10.02$	2.95
Local fire departments	76	5 - 40	$\chi = 11.51, SD = 8.32$	3.30
Federal legislators and representatives	65	1 - 40	$\chi = 8.80, SD = 8.60$	1.78
State legislators and representatives	61	1 - 25	$\chi = 6.70, SD = 6.23$	1.67
Local community	76	3 - 50	$\chi = 10.79, SD = 9.06$	2.37
Visitors and tourists	60	1 - 30	$\chi = 8.10, SD = 6.35$	1.27
Local business owners	52	1 - 12.5	$\chi = 6.55, SD = 2.98$	1.98
Scientists and researchers	52	1 - 20	$\chi = 7.06, SD = 3.38$	2.40
Me and the people who live with me	76	1 - 80	$\chi = 11.81, SD = 12.39$	3.10

¹ Represents the average of grades assigned by respondents for each party, ranging from 1 = F to 5 = A.

could add parties to the list. Respondents could leave point assignments blank or enter 0 in case of no responsibility for reduction of fire risk. Paired with that responsibility was a followup question, wherein respondents were asked to assign a grade in the range A through F to any party they had assigned points to (Table 1). The grade was to reflect how the party had performed in the past 12 months in reducing the risk of wildland fires in the San Bernardino Mountains.

Focus Group Protocol—

Participants were led through a series of discussion items regarding fire and fire management on the San Bernardino National Forest. These items included objectives for fire management, concerns in fire management, alternatives to accomplish fire management objectives, and shared values and trust in Forest Service fire management.

Procedure—

Each session lasted one and one-half hours and started with a statement of purpose of the study, the voluntary nature of responses, importance of respect of other views in the discussion, and ability to opt out of any items that made the participant uncomfortable. Participants completed the self-administered questionnaire and then were led through the discussion topics. Each discussion was audiotaped; a note taker recorded key comments and concepts to help anchor the transcription of audio records. A total of 10 sessions were conducted over a 3-week period.

Results

Resident Experiences With Fire and Fire Risk—

Participants reported a number of personal experiences with fire during their lifetimes. The vast majority had experienced seeing a wildland fire (91 percent), smoke from a wildland fire (89.9 percent), or road closure owing to a fire (87.6 percent). Additional experiences shared by the majority included evacuation from their homes on account of fire (69.7 percent), went without power, which was shut off to reduce fire risk (65.2 percent), and a prescribed burn near their homes (62.9 percent). Less common were having a family, friend, or close neighbor who suffered loss or damage to personal property (44.9 percent); loss or damage to personal property (15.7 percent); health problems or discomfort (14.6 percent); personal injury (5.6 percent); and a family, friend, or neighbor injured by wildland fire (5.6 percent). Reported health problems were primarily smoke related. Of the 11 potential personal experiences, an average of six were reported. Participants judged the direct, personal impact of fire on the San Bernardino National Forest. A majority (61.8 percent) selected a 6, 7, or 8 on the 8-point impact scale (1 = no impact, 8 = extensive impact), although almost one-tenth (9 percent) selected no impact (a rating of 1).

Stresses Experienced—

A list of 22 possible difficulties was presented, and respondents indicated which, if any, they had experienced in

the past 7 days with respect to wildland-fire risk. Almost one-third of our participants had not experienced any of the items listed (the modal response was 1). Slightly more than one-third (38.2 percent) indicated that “I avoided letting myself get upset when I thought about it or was reminded of it,” and almost one-third (29.2 percent) reported “any reminder brought back feelings about it,” as well as “I felt watchful or on guard” (29.2 percent). About one-fourth (25.8 percent) reported that “other things kept making me think about it,” and “pictures about it popped into my mind” (24.7 percent). About one-fifth (18.0 percent) thought about it when they didn’t mean to. Approximately one-tenth of our respondents reported “I had waves of strong feelings about it” (13.5 percent), “I tried not to think about it” (11.2 percent), “I felt irritable and angry” (9.0 percent), and feeling like they were back in a time when there was no fire (9.0 percent). Reporting of physical symptoms (sweating, trouble breathing, or nausea) was rare (only 3.4 percent). However, more than one-third (41.0 percent) indicated that more than one difficulty was experienced within the past 7 days.

Beliefs—

Beliefs about responsibility and performance in meeting that responsibility are reported in terms of responsibility points assigned to each and overall grade point average (or GPA) representing the average of the letter grades assigned to each responsible party (Table 1).

About Agency Responsibility

The three agencies listed were among the parties assigned the most responsibility. The USDA Forest Service received the highest average responsibility points. This means that respondents felt that the Forest Service had the greatest amount of responsibility for fire management in San Bernardino (Table 1). The agency received a B grade on performance. California Department of Forestry received the second highest average number of responsibility points and was also given a B grade on performance. Local fire departments had somewhat lower responsibility ratings—about equal to the ratings the respondents gave themselves and those who lived with them. Local fire departments were given a somewhat higher average grade for performance (about B+). A few respondents listed city and county plan-

ning agencies under the “other” option. When they did so, they tended to assign or give the agencies high responsibility ratings and below-average performance grades. Planning regulations and codes were also listed as having responsibility, and these were assigned below-average or failing performance grades.

About Responsibility of Federal and State Representatives

Responsibility of Federal and State legislators and representatives was also rated and was scored much lower than that of most other parties. Among the 10 parties listed, Federal legislators and representatives were ranked about sixth in responsibility for fire management. Although they were perceived as having less responsibility than agency-affiliated parties, Federal representatives were given a performance grade of C- (1.78 GPA). State legislators and representatives were seen as having even less responsibility (last among the parties listed), but were also given a grade of C- (1.67 GPA).

About the Responsibility of Other Parties

Other parties listed that did not fit the agency or representative categories included the local community, visitors and tourists, local business owners, and scientists and researchers. The local community was fifth in average responsibility, at the middle of the parties rated. The average performance grade for the local community was a C+ (2.37 GPA). Whereas visitors and tourists ranked only seventh in responsibility, and were given a below-average performance grade of D+ (1.27 GPA). This was the lowest grade assigned to any of the parties and open-ended comments reflected significant concern about the role of recreationists and tourists in fire. Local business owners were assigned the least average responsibility and were given a passing grade for performance (GPA of 1.98, or a C). Scientists and researchers were also assigned relatively little responsibility compared to other parties (eighth out of the 10 parties rated), and were also given a passing grade for performance (GPA of 2.40, or a C+). A few respondents mentioned environmentalists and environmental groups. In such instances, poor grades were given.

About Personal Responsibility

Most respondents (76) assigned at least some responsibility to themselves and the people who live with them.

Respondents and the people who live with them ranked, on average, as the third most responsible group out of the 10 rated. They received a B average (GPA of 3.10) for performance.

A number of actions that could be effective in reducing fire risk were reported. The vast majority of respondents had read about home protection from wildland fires (97.8 percent), implemented defensible space around their property (94.4 percent), and attended a public meeting about wildland fire (93.3 percent). A majority had also reduced flammable vegetation on their property (75.3 percent), worked with a community effort focused on fire protection (75.3 percent), made inquiries of the local fire safety council or volunteers on how to reduce fire risk (73.0 percent), made inquiries of the local fire department on how to reduce fire risk (64.0 percent), or made inquiries of the local forest ranger (56.2 percent). About a third had changed the structure of their home to reduce risk (38.2 percent) or worked on a wildland-fire-suppression effort (38.2 percent). Others had volunteered through various efforts or had worked through a fire-safe council.

An overall judgment of the effectiveness of those actions in reducing the risk of losing one's home during a wildland fire was requested. Effectiveness was rated on a scale from 1 to 8 (1 = not at all effective, 8 = extremely effective), and was rated positively ($\chi = 6.01$, $SD = 1.55$, median=6).

Participants were queried about barriers to effective reduction of fire risk, with one-half of the participants (50.6 percent) selecting "my neighbors have not done their part." Other entities that had not done their part according to respondents included public agencies (29.2 percent selected this barrier) and the Forest Service (22.5 percent selected this barrier). About one-fifth of respondents indicated various barriers to reduction of risk including: "I don't have adequate financial resources" (21.3 percent), "My own physical limitations" (21.3 percent), "I don't want to change the landscape" (21.3 percent), "I don't want to change my roof or other built structures" (20.2 percent), and "I'm not worried about fire risk" (19.1 percent). A few indicated, "I am not sure what will really work" (13.5 percent), or "I don't know who to call/hire to help" (3.4 percent). Other barriers

added by respondents were focused on land use policies, growth and housing, community restrictions on removal of trees and vegetation, a lack of coordination between agencies, and environmentalists.

Trust and Shared Values and Other Evaluations—

Using the salient values similarity model of trust, we examined dimensions of trust and shared values regarding community and the Forest Service.

Community

Participants were asked to rate how concerned San Bernardino National Forest community residents are regarding fire and the risk of fire. Using an eight-point scale (1 = not at all concerned, 8 = very concerned), residents were rated as concerned about fire ($\chi = 6.71$, $SD = 1.38$, median = 7, $n = 87$). This was only slightly below the average level of concern of respondents, who rated their own concern about fire at 7.38 ($SD = 1.00$, $n = 88$). Participants believed that San Bernardino National Forest community residents were somewhat knowledgeable about effective fire management ($\chi = 3.92$, $SD = 1.47$, median = 4, $n = 88$; using an eight-point scale, 1 = not very knowledgeable, 8 = very knowledgeable). However, they saw themselves as more knowledgeable ($\chi = 6.13$, $SD = 1.60$, median = 6, $n = 88$). When asked the extent to which fellow community residents share participants' values about fire management, the average response was above the midpoint on the scale, indicating moderately shared values ($\chi = 5.58$, $SD = 1.55$, median = 6, $n = 81$).

Significant positive relationships were found between rating of one's own concern about fire and rating of concern of community residents ($r = 0.305$, $p < 0.01$, $n = 86$), rating of one's own knowledge about fire and rating of knowledge of community residents ($r = 0.355$, $p = 0.001$, $n = 88$), and concern of community residents and perceived shared values with community residents ($r = 0.424$, $p < 0.001$, $n = 80$). Participants who believed that neighbors had not done their part and that this was a barrier to effective fire management did not rate others' concern, others' knowledge about fire, or perceived shared values differently (t-tests, $p > 0.05$) than did participants who did not believe this.

Forest Service

We were also interested in how knowledgeable participants believed the Forest Service to be regarding effective fire management on the San Bernardino National Forest. Participants' Forest Service knowledge ratings averaged 6.86 (SD = 1.32, median = 7, n = 88), indicating they believed the agency to be fairly knowledgeable.

Participants' ratings of the salient values similarity items indicated a perception of shared values (values: $\chi = 6.61$, SD = 1.53, median = 7, n = 85; goals: $\chi = 6.37$, SD = 1.75, median = 7, n = 84; views: $\chi = 6.31$, SD = 1.56, median = 6, n = 81). Less than 6 percent of the participants provided ratings below the midrange on each of these items, indicating dissimilar values. Participants were also asked to what extent they trust the Forest Service in their fire management efforts. Based on an 8-point scale (1 = I completely distrust the Forest Service, 8 = I completely trust the FS), responses leaned toward trust ($\chi = 5.85$, SD = 1.68, median = 6, n = 86), with the majority (64 percent) providing a rating of 6, 7, or 8 on the trust item.

We asked participants to indicate how often the Forest Service makes decisions and takes actions consistent with their values, goals, and views. A small portion selected never (1.1 percent) or rarely (5.6 percent), and about one-fourth (25.8 percent) selected sometimes. About one-third (33.7 percent) indicated Forest Service actions were usually consistent with their values, another fourth (24.7 percent) chose almost always, and a few (2.2 percent) said Forest Service actions were always consistent with their values. Participants were then asked to respond to "If or when the Forest Service makes decisions or takes actions inconsistent with my values, goals, and views, the reasons for doing so are valid." A few disagreed with the statement (3.4 percent completely disagreed, and another 15.7 percent disagreed). Almost one-third (31.5 percent) neither agreed nor disagreed. Almost half agreed that inconsistency between values and Forest Service actions was valid when it occurred (39.3 percent agreed, 4.5 percent completely agreed). One participant expressed this balance between trust and the perception that there are valid reasons why the agency might not get things done as follows: "I would trust

one of them with my life. The only problem is red tape and money constraints." Another participant pointed to policy-related constraints: "What I am thinking is that the people in the Forest Service have the rulebook and are playing by the rulebook and the negligence comes with the change in policy. Maybe we need to have a more flexible policy. I trust the Forest Service people, but they are stuck with the policy and they need to figure a way to change policies."

Relationship Between Trust and Salient Values

A significant portion of the variance in trust of the Forest Service was accounted for by similarity ratings for values, goals, and views ($R^{2adj.} = 0.468$, $F_{(3, 76)} = 2.4129$, $p < 0.001$). When consistency and validity of inconsistency were added to the trust prediction model that was based on salient value similarity for values, goals, and views, the resulting model accounted for an increased proportion of the variance in trust ($R^{2adj.} = 0.582$, $F_{(5, 70)} = 21.893$, $p < 0.001$). The most influential predictors in this equation were consistency of action with values ($t = 3.870$, $p < 0.001$) and shared values ($t = 2.546$, $p = 0.013$).

Relationship Between Trust and Other Fire-Related Items

The relationship between trust in the Forest Service and personal actions taken to reduce fire risk and number of perceived barriers to reduction of fire risk was examined. Neither actions nor barriers had a significant relationship with trust. Participants who had experienced more fire-related impacts (such as smoke or knowing someone who lost property) were less likely to trust the Forest Service ($r = -0.293$, $p < 0.01$, $n = 83$). Likewise, participants who reported more difficulties (such as having waves of strong feelings or feeling watchful and on guard) tended to trust the Forest Service less ($r = -0.366$, $p < 0.01$, $n = 80$).

Finally, grades assigned to the Forest Service in fire risk reduction efforts were related to trust ($r = 0.648$, $p < 0.001$, $n = 81$). An ANOVA to examine average trust ratings by grade was completed ($F_{(4, 76)} = 17.850$, $p < 0.001$). Participants who had assigned an F to the Forest Service had a mean trust rating of 2.50, the D group had a mean of 3.17, C's had an average of 5.67, B's had an average of 5.71, and A's had an average rating of 7.00.

Reasons for Reliance on the Forest Service

We asked participants to indicate whether or not a series of items were reasons to rely on the Forest Service's fire management on the San Bernardino. A majority felt that the following were not reasons to rely on the Forest Service: media coverage of Forest Service fire management (60.7 percent said this was not a reason), and Congress holds the Forest Service accountable for its fire management (52.8 percent said this was not a reason). The majority agreed or strongly agreed that the following were reasons they relied on the Forest Service: procedures that ensure the Forest Service uses effective fire management (67.4 percent), personal relationships I have with Forest Service personnel (59.6 percent), the Forest Service's past record of fire management (58.4 percent), and the laws controlling the Forest Service's fire management (52.8 percent). Participants were almost equally divided on "opportunities that I have to voice my views about fire management" (38.2 percent said this was not a reason, 46.1 percent said it was a reason).

Communication and Education

Participants had many relevant views on approaches to communication, collaboration, and education. The most preferred sources of information were public meetings the Forest Service leads so the community can ask questions (88.8 percent) and community meetings (84.3 percent). Other preferred information sources included a Web site (79.8 percent), brochures and pamphlets available on request (77.5 percent), articles in the local paper (77.5 percent), an email tree sent by a Forest Service representative and forwarded by fire-safe council volunteers (75.3 percent), local television/radio spots put on by a local Forest Service ranger (64.0 percent), and information and displays at Forest Service visitor center (60.7 percent). Additional suggestions included emails directly from the Forest Service, signs, a hotline or number residents could call to speak directly with someone knowledgeable, and messages on community bulletin boards. Flyers and newsletters left on residence doors were also brought up as a means of getting the word out. It should be noted that the strong support for community meetings and direct engagement with the Forest Service was expressed by participants who themselves had

come to participate in a meeting. There were many residents who did not attend. From many we heard about scheduling conflicts, burnout from so many meetings, or the need to have a direct, tangible outcome from the meeting before they would commit to participation.

Some residents did not participate because of road closures or weather-related concerns (an unusual series of late-season snowstorms and fog occurred during the study period). However, others told us they felt there was not adequate notice about our meetings. This was in spite of the radio and newspaper announcements, including media Web sites, as well as email notices and telephone calls from the researchers or through fire-safe councils. Identifying the most effective communication networks, including those that are community based, was an important part of our research effort, and we only had partial success. On one forest district, many of our contacts came through an email list derived from various partnership and collaborative efforts. This proved an invaluable resource to us, and the direct contact with a Forest Service employee who was known to residents helped pave the way. In sum, we found that a number of routes and contacts were necessary. These routes varied greatly and, in some ways, reflected the unique nature of the communities we tried to reach.

Discussion and Conclusion

Experiences in These Fire-Prone Communities

The majority of participants reported multiple fire-related experiences, though a minority had suffered personal injury or personal property loss. However, almost half knew others who had suffered loss or damage. Comments about fire risk revealed that many took the risk of fire in stride as part of living in the mountains. The one exception to this surrounded discussions about prescribed fire where participants mentioned the risk of fires getting out of control and the concern surrounding that management technique. A majority indicated that fire had an impact on them directly, but the reporting of stress-related experiences within the past 7 days reflected the time elapsed from the last fire event to the study period. We expect that this timing had something to do with the reports of stress-related events being somewhat low. Another factor may have been the active

role participants have taken in direct actions to reduce fire risk and to educate themselves about fire. This would be an interesting area for further research.

Responsibility and Performance

Participants were most likely to view agencies as having a majority of responsibility for reduction of fire risk, with personal and community responsibility following closely. Agencies, including the Forest Service, personal households, and community were viewed as doing fairly well, although respondents suggested that the Forest Service and neighbors might not always have done their part in reducing fire risk. Although assigned little responsibility overall, tourists and visitors were viewed as doing poorly in reducing fire risk. Comments indicated support for limitations on tourists and visitors, including more limits on access or more limits on forms of use (such as no fires at yellow post sites).

The Interplay Between Values, Trust, Risk, and Response

Whereas perceived salient values and trust were significantly related to each other, consistency between perceived shared values and actions taken by the Forest Service seemed to be more influential in determinations of trust than were the shared values alone. This may have been due to the relatively high average rating of perceived value similarity, paired with low variability. Direct personal experiences with fire and stressful impacts were both negatively associated with trust. Trust was significantly related to perceived effectiveness of the Forest Service in reducing fire risk. Given the role of trust in acceptance of agency actions and communications, we expected to find a relationship between direct actions and trust. However, the number of actions taken had no relationship to trust. This has interesting implications for study of the relationship between trust and public response. Perhaps only those actions directly advocated through the Forest Service might be expected to be influenced by trust and perceived similar salient values. Reliance on procedures and personal relationships seemed to be a factor in deciding to rely on the Forest Service's fire management efforts. The past record of fire management

seemed a bit less important but was still held by a majority to be a reason for reliance.

Implications for Communication and Education

A majority of the participants supported public meetings with the Forest Service, although comments made clear the need to have an open forum where they could ask questions and receive answers from a knowledgeable source. Most of the methods of communication listed are already employed in these communities to some extent, although some residents expressed the feeling that it had been a while since they had met with the Forest Service and that they were starting to feel out of touch with what was going on. Others who did not attend the study sessions expressed a sense of overload on meetings. Clearly, various kinds of contacts need to be used on an ongoing basis, and the use of community organizations and networks, including the fire-safe councils, seems to be an effective vehicle to include. Although media were included in the means of contact, the local newspaper received more support than television or radio spots. A Web site for current and community-based information seemed to receive strong support. One community declined participation because they were waiting for the agency to act on commitments made in prior meetings. This demonstrates the importance of following up with community members after meetings and keeping them informed on an ongoing basis. It would probably be helpful even to report efforts to meet commitments. If barriers were met, those could also be reported, as it seemed participants understood that funding, policies, and other challenges could prevent the Forest Service from taking action.

Gaps and Where We Go From Here

Participants were fairly similar and not representative of the overall populations within these forest communities. Although we made a concentrated effort to recruit seasonal residents, only a few actually participated. Whereas a past study sheds light on differences between seasonal and year-round residents of the San Bernardino mountain communities (Vogt 2008), some participants suggested that seasonal residents and those leasing or renting their properties were less concerned and less similar in values

than were the year-round community members. Additional studies of the differing perceptions of seasonal and year-round residents, including how the Forest Service and other fire management agencies view these two groups, would be of interest. The lack of relationship between personal actions taken and trust levels was somewhat surprising, although the relatively small sample size and little variance in trust may have suppressed any relationship between these two variables. The interest in meetings and information from the Forest Service, and an interest in maintaining an ongoing dialogue, were made clear. The need to report on actions taken, progress made, and barriers experienced by the Forest Service in its fire management efforts was affirmed. These steps would assist the agency in continuing to develop trust and a positive basis for interaction in these communities who sometimes view themselves as very alone in their efforts to reduce risk.

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