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Diversity in Southwesterners' Views of Forest Service Fire Management

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The risk of wildland fires is of significant concern in the southwestern United States. Although the Southwest has a long history as a fire-prone ecosystem, years of drought and insect infestation have increased fire risk. Paired with these ecological forces is the increased risk caused by the concentration of populations in the wildland-urban interface (WUI), compounded as urban encroachment spills over into wildland areas (Cleaves 2001; Daniel 2003; Fulton 2003; Murphy 2000; Platt 2001). As a consequence of this encroachment, the WUI has been growing (Cleaves 2001; Hamner et al. 2004; Platt 2001). These land-use changes and aggressive fire suppression have altered vegetative composition and structure and increased the risk of larger and more severe wildland fires (Cleaves 2001).

As the area defined as WUI and its population base increase, so does the importance of an effective approach to fire management, including prevention and suppression, with tools that integrate public communication, collaboration, and cooperation. Whether the approach is effectual rests in part on public acceptance and compliance with measures that impact individuals and communities (Daniel 2003). Public attitudes and actions pave the way for more effective management, such as through compliance with seasonal fire closures of natural resource areas. Individual and community support can lead to improved compliance with specific measures that can decrease fire risk to personal property. An understanding of the human aspects of support and compliance is essential to effective fire management (Cleaves 2001).

Trust and Salient Values Similarity

Trust in natural resource agencies has been documented as critical to gaining public acceptance of natural resource plans and management techniques (Borrie et al. 2002; Cvetkovich and Winter 2003; Winter et al. 1999) and appears to have direct applications to fire management (Cvetkovich and Winter 2004). The salient values similarity model (Cvetkovich and Winter 2003; Earle and Cvetkovich 1995) predicts that trust will result when individuals believe that they have similar salient values to another individual, group, or agency. Similarity of salient values is assessed through the measurement of perceptions of publics regarding how similar their values, goals, and views are to those of the Forest Service.

Overall social trust, or the belief that a generalized other is trustworthy, has been reportedly declining with each successive generation in the United States (Putnam 2000). Trust in the federal government specifically has also fallen (Jennings 1998). Hardin (2002) argued that the drop in trust is not a reflection of an overall loss of the confidence placed in government, but that citizens require more information than they had in the past to arrive at determinations of trust.

Distrust is not necessarily counterproductive. Some have argued that a mixture of trust and distrust is desirable in any political system (Kasperson et al. 1999). Those who distrust may provide a counterbalance to the system by holding government power in check and creating alternate control mechanisms to help maintain social order and political balance (Kasperson et al. 1999; Levi 1998). Distrust may lead to greater deliberations contrasting public and agency views, including more consideration of the layperson's viewpoint. Consideration of alternative viewpoints seems to be particularly beneficial in issues of risk (Slovic 2000a). At the far end of the spectrum, too much distrust leads to a loss of time and resources when a managing agency is compelled to defend each decision it makes either through litigation or in the public forum, and in the process, public trust and confidence are eroded (Cvetkovich and Lofstedt 1999; Susskind and Field 1996).

At the individual level, trust has been shown to be lowest among those who are less educated (Patterson 1999), female (Delhey and Newton 2002; Patterson 1999), economically disadvantaged (Rahn et al. 2003), and from Latino/Hispanic American or black/African American ethnic/racial groups (Rahn et al. 2003). In one study, white/Caucasians and Asian Americans were associated with higher levels of trust (Rahn et al. 2003). Lower levels of trust among groups of color have been explained as a reflection of their history of being marginalized, historically disadvantaged, or having experienced direct harm or discrimination (Hardin 1997, 2002; Patterson 1999). In contrast, higher levels of trust among Asian Americans have been explained based on the "model minority" stereotype (Rahn et al. 2003). (Another view, expressed in Kim and Yeh 2002, suggests that this stereotype is a myth and may increase the adverse

impacts and stressors experienced by subgroups within this community.) Understanding the perceptions of risk and responses to risk communications among multiethnic communities has been cited as essential to successful risk management in a diverse society (Lindell and Perry 2004). Because trust is a key aspect of risk perception and responsiveness to communications, these studies of diversity are essential.

Putman (2000) distinguishes between social trust and trust in government, suggesting that measures of social trust cannot be assumed to indicate trust in government. Further distinctions have been outlined, specifying trust in government regarding a particular issue, such as social issues versus national security (Langer 2002). This may help explain why Dunlap (2000) found that a majority of the public trusted federal and state agencies to solve environmental problems. In other words, queries of specific issues may yield very different responses than would general questions on trust (Cvetkovich and Lofstedt 1999). It may also help explain why our own work has shown a trend toward trust, rather than distrust, in the Forest Service to address various natural resource issues (Cvetkovich and Winter 2003, 2004; Winter et al. 1999).

Trust in fire management agencies has been explored recently. For example, Winter et al. (2002) cited trust, based on perceptions of the managing agency's efficacy, skill, credibility, and communication efforts, as a frequently mentioned consideration in public acceptance of fuel treatments. Trust also has been found to have a significant association with perceived risks, benefits, and agency competence (Winter et al. 2004a). Shindler et al. (2004) suggest that although distrust is a reflection of frustration with the larger federal bureaucracy, local managers bear the brunt of distrust. They identify trust as one of the core components in determinations of social acceptability of forest management.

Additional measures have been examined in the trust and salient values similarity research. Each of these studies found trust and salient values similarity to be significant predictors of public response to the issues of focus. Cvetkovich and Winter (2003) found concern about threatened and endangered species to be a significant predictor of approval and perceived effectiveness of restrictions to protect species and self-assessed knowledge to be marginally significant. Ethnicity was a significant contributor to predictions of willingness to pay an annual fee for recreation on forest lands (Winter et al. 1999). Concern and knowledge were significant in the prediction of ratings on selected interventions to manage wildland and wilderness fires in California (Winter 2003). Gender was found to be significant in two of the four regressions predicting ratings of management interventions.

Some research has specifically addressed ethnic/racial diversity and fire management. Gonzalez-Cabán et al. (2003) examined fire reduction policies and willingness to pay, comparing English- and Spanish-speaking households in Florida. Once the researchers controlled for sociodemographic differences aside from ethnicity, differences between English- and Spanish-speaking households were not significant. In another study exploring willingness to

pay for forest fire prevention in California, Loomis et al. (2004) found that although willingness to pay somewhat higher taxes to support a burning program was lower for white/Caucasians than for African Americans, the difference was not statistically significant.

Examining Public Trust in Fire Management

This chapter examines southwestern residents' trust in the USDA Forest Service to manage wildland and wilderness fires—those in semideveloped and undeveloped natural areas, including federally designated wilderness areas. We explore ratings of salient values similarity and trust in keeping with our prior trust research. In addition, we look at concern and knowledge about wildland and wilderness fires and general opinions about fire management. Concern and knowledge have been examined in prior trust and salient values similarity research, with a focus on prediction of reactions to proposed or actual management interventions.

The exploration of variations and similarities within and between ethnic groups has been cited recently as essential to understanding and managing risk (Johnson 2004). Here we study the variability in trust and opinions about fire and fire management both among ethnic/racial groups and by gender. Instead of controlling for sociodemographic variations such as education and income, we focus on ethnicity and race. Sociodemographic variations among these groups are part of the cultural variations within our society. Many wildfires occur in the Southwest, which is known for its ethnic and racial diversity. That diversity is expected to increase over time. Furthermore, gender differences are of great interest, given the societal trend of more households headed by women. Differences by ethnic/racial group and gender have implications for fire researchers, managers, and educators, who all may be compelled to consider a homogeneous public in lieu of addressing impacts of our diverse society.

Methods

A telephone survey of residents in four southwestern states was conducted, with a random sample of telephone numbers drawn from regional divisions in each state. State and area planners use regional divisions as a tool to divide up states into logical subdivisions for planning, distribution of resources, and analysis of trends (Levy 2000). These regional divisions were believed to be the most valid groupings we could use at a broad scale across states for sampling purposes. In California, eight regional divisions were used based on the state's field poll methodology, mirroring statewide regional planning divisions. In Arizona, Colorado, and New Mexico, we used regional divisions available on state planning websites.

The total population for each of these regions and states was determined based on data from the U.S. Census (2000) and the State of California Department of Finance. These regional proportions were then used to create weights for the final data set. Target n's of 600 respondents in California and 400 in each of the other three states were set. California's target was established in the first wave of interviewing and was based on a desired confidence level of 95 percent, plus or minus 4 percent. The other three state targets were set for a second wave of interviewing, in which the same level of investment of resources was not possible. The target of 400 was designed for a confidence level of 95 percent, plus or minus 5 percent.

The California data were collected in the late summer through early fall of 2001. Additional resources were gathered, and the data for the other three states were collected in the summer of 2002. Interviewers contacted the adult in the household (age 18 or older) with the most recent birthday, assessed willingness to participate in a phone survey, and then asked whether the respondent was male or female (each final set of respondents was targeted to have half males and half females). Time to complete the survey was an average of 16 minutes (range was 7 to 57). Longer survey times were typically generated when the respondent had several comments to make throughout the interview process. The final cooperation rates were high: California, 83.9 percent; Arizona, 86.8 percent; Colorado, 87.6 percent; and New Mexico, 90.1 percent.

We developed a questionnaire in both English and Spanish for use with computer-assisted telephone interviewing (CATI), modeling it after prior surveys that were focused on trust in natural resource management (Cvetkovich and Winter 2003, 2004; Winter et al. 1999; Winter and Knap 2001). The questionnaire was pretested on a sample of randomly selected telephone numbers, resulting in minor adjustments to a portion of the introductory statement and two question items.

All respondents were asked about sociodemographics, concern about wildland and wilderness fires, level of knowledge about fires within their state of residence, similarity of salient values with and trust of the Forest Service (adapted from Earle and Cvetkovich 1995), and agreement with general attitudinal statements about fire and fire management.

Concern about wildland and wilderness fires in the state was assessed using an eight-point Likert scale, ranging from 1 = not at all concerned to 8 = very concerned. Respondents also rated their knowledge about wildland and wilderness fires in their state of residence, with 1 = not at all knowledgeable and 8 = very knowledgeable. A series of four items addressed salient values similarity and trust in the Forest Service to manage wildland and wilderness fires. Salient values were measured by asking about values, goals, and views, with the respondents rating similarity to the Forest Service on an eight-point scale, where 1 = a dissimilarity anchor and 8 = a similarity anchor (for example, "The Forest Service does not share your values" represented dissimilarity). Then the respondents were asked the extent of their overall trust in the Forest Service to manage fires, on a scale

ranging from 1 = do not trust the Forest Service at all to 8 = trust the Forest Service completely. The overall trust and salient values similarity items were specific to the Forest Service's ability to manage fires in wildland and wilderness areas. To assess general opinions about fire, respondents were asked to select which one of three statements best represented their own opinion about fire management.

A total of 1,811 telephone surveys were completed: 606 in California, 402 in Arizona, 402 in Colorado, and 401 in New Mexico. All respondents were residents of the states within which they were contacted. Slightly more females (50.2 percent) than males (49.8 percent) participated. The vast majority of surveys were completed in English (92.9 percent), with the balance conducted in Spanish by a bilingual interviewer. Data from the English and Spanish versions of the survey are handled jointly in this chapter. The majority of respondents had attended college, with more than one-third (39.3 percent) reporting a bachelor's equivalent level of education or greater. About one-fourth of the respondents (25.9 percent) were between 18 and 34 years of age, 43.7 percent were 35 to 54, and 30.3 percent were age 55 or older.

Results

We analyzed the data across all respondents using summary and descriptive statistics. We further explored differences based on ethnic/racial group and gender through analysis of variance (ANOVA), t-tests, and chi-square, as appropriate, and used linear regression to examine the prediction of trust in the Forest Service based on race/ethnicity, gender, education level, concern about wildland and wilderness fires, self-rated knowledge, and similar salient values. Some of the ethnic/racial groups had smaller sample sizes than would be desirable for statistical tests; however, analyses were in keeping with the overall goals of our research (Table 9-1).

TABLE 9-1. Number of Respondents within Each Ethnic/Racial Group by Gender

<i>Ethnic/racial group</i>	<i>Males</i>	<i>Females</i>
Asian American/Pacific Islander	28	27
Black/African American	27	18
Latino/Hispanic American	178	182
Native American/First Nations	34	22
White/Caucasian	581	607
Multiracial	15	29

Note: 3.5%, or 63 respondents, were missing ethnic/racial data.

Concern about Wildland and Wilderness Fires

Respondents had a high average concern about wildland and wilderness fires in their state (mean = 6.7, SD = 1.8, $n = 1,799$; 1 = not at all concerned, 8 = very concerned). The vast majority (78.5 percent) rated their concern as 6, 7, or 8 on the scale. Ratings of concern over wildland and wilderness fires varied significantly by ethnic/racial group (based on the six ethnic/racial groups, ANOVA, $F_{5, 1,731} = 7.47$, $p < 0.001$; see Table 9-2), with the highest concern among Native American/First Nations and Latino/Hispanic Americans. Comparisons among ethnic/racial groups showed significant differences in concern ratings, with Asian American/Pacific Islanders having lower ratings than Latino/Hispanic Americans and Native American/First Nations, and white/Caucasians lower than Latino/Hispanic Americans (Scheffe contrasts, $p < 0.05$). Follow-up t-tests comparing males and females within each ethnic/racial group revealed significant differences by gender for white/Caucasians, black/African Americans, and Latino/Hispanic Americans (Table 9-3). White and Latino/Hispanic American females were more concerned about wildland and wilderness fires in their states than their male counterparts, but black females were less concerned than black males.

Knowledge about Fires in One's State of Residence

Self-assessed knowledge regarding wildland and wilderness fires in the respondent's state of residence was rated above the midpoint on the scale (mean = 5.3, SD = 2.0, $n = 1,788$; 1 = not at all knowledgeable, 8 = very knowledgeable). As with concern, knowledge also varied significantly by ethnic/racial group (ANOVA, $F_{5, 1,719} = 1.85$, $p < 0.001$; see Table 9-4), with Native American/First Nations and white/Caucasians rating their own knowledge about fire the highest. Differences between males and females within each ethnic/racial group

TABLE 9-2. ANOVA Exploring Variation in Concern by Ethnic/Racial Group

<i>Ethnic/racial group</i>	<i>Mean^a</i>	<i>n</i>	<i>df</i>	<i>F</i>	<i>p</i>
Asian American/Pacific Islander	6.00	54	5, 1,731	7.466	< 0.001
Black/African American	6.16	45			
Latino/Hispanic American	7.07	358			
Native American/First Nations	7.17	54			
White/Caucasian	6.59	1,182			
Multiracial	6.61	44			

^aScale was 1 = not at all concerned, 8 = very concerned.

TABLE 9-3. Concern within Each Ethnic/Racial Group by Gender

<i>Ethnic/racial group</i>	<i>Mean^a</i>		<i>t</i>	<i>df</i>	<i>Sig.</i>
	<i>Males</i>	<i>Females</i>			
Asian American/ Pacific Islander	5.83	6.06	-0.44	61	0.663
Black/African American	6.59	5.14	2.50	49	0.016*
Latino/Hispanic American	6.83	7.29	-2.83	324	0.005**
Native American/ First Nations	7.09	7.16	-0.25	79	0.801
White/Caucasian	6.28	6.90	-6.06	1,125	< 0.001**
Multiracial	7.13	6.34	1.75	42	0.088

*Statistically significant difference by gender at $p < 0.05$.

**Statistically significant difference by gender at $p < 0.01$.

^a Scale was 1 = not at all concerned, 8 = very concerned.

TABLE 9-4. ANOVA Exploring Variation in Knowledge by Ethnic/Racial Group

<i>Ethnic/racial group</i>	<i>Mean^a</i>	<i>n</i>	<i>df</i>	<i>F</i>	<i>p</i>
Asian American/Pacific Islander	4.04	55	5, 1,719	11.85	< 0.001
Black/African American	4.38	45			
Latino/Hispanic American	4.91	356			
Native American/First Nations	6.00	55			
White/Caucasian	5.43	1,170			
Multiracial	5.20	44			

^a Scale was 1 = not at all knowledgeable, 8 = very knowledgeable.

were significant for white/Caucasians but not for any other group (Table 9-5). In the majority of groups, the tendency was for males to rate their knowledge higher than females.

Trust and Similar Salient Values

Perceptions of similar salient values, goals, and views were high, ranging from 5.8 to 6.0 (see Table 9-6). A majority (59.1 percent) of respondents selected 6, 7, or 8 on the shared values scale, as well as for shared goals (57.2 percent) and

TABLE 9-5. Knowledge within Each Ethnic/Racial Group by Gender

Ethnic/racial group	Mean ^a		t	df	Sig.
	Males	Females			
Asian American/ Pacific Islander	4.00	4.07	-0.14	53	0.893
Black/African American	4.74	3.83	1.24	43	0.223
Latino/Hispanic American	5.01	4.81	0.82	354	0.411
Native American/ First Nations	6.36	5.45	1.81	53	0.076
White/Caucasian	5.56	5.30	2.47	1,168	0.014*
Multiracial	6.07	4.76	1.73	42	0.090

*Statistically significant difference by gender at $p < 0.05$

^aScale was 1 = not at all knowledgeable, 8 = very knowledgeable.

TABLE 9-6. Pearson Correlations between Salient Values Similarity Items and Overall Trust

SVS/trust	Mean ^a	SD	Goals	Views	Trust
Values	6.0	2.0	0.67* (1,539)	0.69* (1,527)	0.59* (1,619)
Goals	5.8	2.1		0.67* (1,527)	0.55* (1,600)
Views	6.0	2.0			0.61* (1,577)
Trust	6.3	1.9			

*Significant at $p < .001$.

^a Values: 1 = the Forest Service does not share your values, 8 = the Forest Service shares your values; Goals: 1 = the Forest Service has different goals, 8 = the Forest Service has the same goals; Views: 1 = the Forest Service opposes your views, 8 = the Forest Service supports your views; Trust: 1 = you do not trust the Forest Service at all, 8 = you trust the Forest Service completely.

shared views (58.2 percent). Even more (71.1 percent) chose 6, 7, or 8 on the scale for overall trust in the Forest Service to manage wildland and wilderness fires in their state of residence. The salient value items were highly correlated with each other (ranging from 0.67 to 0.69), and each of the salient values items was significantly correlated with trust (0.55 to 0.61).

The prediction of trust in the Forest Service was examined through hierarchical linear regression. The predictors included the average of the three similar

TABLE 9-7. Summary of Simultaneous Regression Analysis to Predict Trust Ratings

<i>Independent variable</i>	β	<i>t</i>	<i>sr</i> ^{2a}
Similar salient values	0.64	32.86	0.38
Knowledge	-0.09	-4.19	< 0.001
Ethnicity/race	-0.05	-2.75	< 0.001
Concern	-0.07	-3.56	< 0.001
Gender	0.05	2.51	< 0.001
Education	-0.05	-2.26	< 0.001

* Squared semipartial correlation is a measure of the unique contribution of the independent variable to the amount of variance explained within that set of independent variables. According to the numbers shown, similar salient values is the only variable contributing a substantial unique variance beyond the other independent variables (Tabachnik and Fidell 2001).

salient values items, knowledge, ethnic/racial group, concern, gender, and education (Table 9-7). A significant amount of the overall variance in trust was explained by these predictors ($R^2 = 0.429$, ANOVA, $F_{6, 1,615} = 201.99$, $p < 0.001$). The most influential predictor in the regression was similar salient values.

In order to examine trust and similar salient values in similar fashion to concern and knowledge, we averaged the three similar salient value items and the trust rating to create an overall trust scale. The creation of the scale was supported by our prior work, a singular factor loading in principal components analysis, and a high Cronbach's alpha ($\alpha = .874$).

The trust scale was analyzed by ethnic/racial group, and significant variation by group was revealed (ANOVA, $F_{5, 1,724} = 3.97$, $p < 0.001$; see Table 9-8). The lowest average trust scale ratings were provided by white/Caucasian respondents and the highest by Latino/Hispanic Americans, with this difference statistically significant using Scheffe contrasts ($p < 0.01$). Contrasts by gender

TABLE 9-8. ANOVA Exploring Variation in Trust Scale Ratings by Ethnic/Racial Group

<i>Ethnic/racial group</i>	<i>Mean</i> ^a	<i>n</i>	<i>df</i>	<i>F</i>	<i>p</i>
Asian American/Pacific Islander	6.13	53	5, 1,724	3.97	< 0.001
Black/African American	6.38	45			
Latino/Hispanic American	6.40	359			
Native American/First Nations	6.07	54			
White/Caucasian	5.97	1,175			
Multiracial	6.12	44			

^a Trust scale was the average of ratings on values, goals, views, and trust.

TABLE 9-9. Trust Scale within Each Ethnic/Racial Group by Gender

Ethnic/racial group	Mean		t	df	Sig.
	Males	Females			
Asian American	5.65	6.59	-1.99	51	0.05*
Black/African American	6.46	6.26	0.46	43	0.65
Latino/Hispanic American	6.20	6.59	-2.50	357	<0.01*
Native American/Pacific Islander	5.86	6.39	-1.03	52	0.31
White/Caucasian	5.71	6.22	-5.31	1,173	< 0.01**
Multiracial	5.43	6.48	-1.68	42	0.10

*Statistically significant difference by gender at $p < 0.05$.

**Statistically significant difference by gender at $p < 0.01$.

within each ethnic/racial group revealed significant differences for white/Caucasians and Latino/Hispanic Americans, with females giving higher trust scale ratings than their male counterparts (Table 9-9).

General Opinions about Forest Fire Management

To assess general opinions about forest fire management, respondents were asked to select which of a series of statements best represented their own opinion. The majority (63.3 percent) agreed with the statement "We probably have to let some fires burn but must protect residences." About one-fourth (26.2 percent) selected "All fires must be extinguished regardless of cost." Few (7.5 percent) chose "Fires must be allowed to take their natural course when burning in wildland or wilderness areas, even if structures are involved." Those who said "None of the above," "Don't know," or refused to answer were rare (3.0 percent). Agreement with these statements varied by gender, with males twice as likely as females to select "Fires must be allowed to take their natural course . . ." ($\chi^2_{2, 1,756} = 9.32, p < 0.01$).

The majority was very much defined by white respondents, however. Breaking out the agreement by ethnic/racial group showed a very different pattern of responses, with majority agreement varying dramatically (Table 9-10). Variation by ethnic/racial group on general opinions about fire management was statistically significant (Kruskal-Wallis $\chi^2_{5, 1,696} = 207.05, p < 0.001$). White/Caucasians, Asian American/Pacific Islanders, and multiracial respondents were more likely to agree with letting some fires burn while protecting residences, whereas black/African Americans, Latino/Hispanic Americans, and Native American/First Nations were more likely to say that all fires should be extinguished.

TABLE 9-10. Agreement with Attitudinal Statements about Fire, Overall and by Gender

Statement	Ethnic/ racial group	Percent agreement*	Percent males**	Percent females**
All fires must be extinguished regardless of cost	Asian American/ Pacific Islander	36.4	18.2	18.2
	Black/African American	55.5	31.1	24.4
	Latino/Hispanic American	53.0	26.1	26.9
	Native American/ First Nations	48.2	32.1	16.1
	White/Caucasian	15.7	7.1	8.6
	Multiracial	27.3	9.1	18.2
We probably have to let some fires burn but must protect residences	Asian American/ Pacific Islander	52.7	27.3	25.4
	Black/African American	31.1	17.8	13.3
	Latino/Hispanic American	41.9	21.4	20.5
	Native American/ First Nations	42.9	21.4	21.4
	White/Caucasian	72.5	35.6	36.9
	Multiracial	65.9	20.5	45.4
Fires must be allowed to take their natural course when burning in wildland or wilderness areas, even if structures are involved	Asian American/ Pacific Islander	5.5 ^a	5.5	0
	Black/African American	8.9 ^b	8.9	0
	Latino/Hispanic American	3.0 ^c	1.6	1.4
	Native American/ First Nations	7.1 ^d	5.4	1.8
	White/Caucasian	8.5 ^e	5.0	3.5
	Multiracial	6.8	4.5	2.3

*Opinion ratings were significantly different by ethnic/racial group (Kruskal-Wallis $\chi^2_{5, 1,696} = 207.05, p < 0.001$).

**Opinion ratings were significantly different by gender ($\chi^2_{2, 1,756} = 9.32, p < 0.01$).

^a3% of Asian American/Pacific Islanders selected none of the above, don't know, or did not respond.

^b4.4% of black/African Americans selected none of the above, don't know, or did not respond.

^c1.9% of Latino/Hispanic Americans selected none of the above, don't know, or did not respond.

^d1.8% of Native American/First Nations selected none of the above, don't know, or did not respond.

^e3.3% of white/Caucasians selected none of the above, don't know, or did not respond.

Findings and Implications

Findings suggest that ethnic/racial diversity and gender are of importance in Forest Service fire management. Asian American/Pacific Islanders were found to have significantly lower levels of concern about wildland and wilderness fires than some other ethnic/racial groups studied, rated their knowledge level lower than other groups, and fell into the midrange in their trust of the Forest Service. Males tended to be similar to females in concern and knowledge but trusted the Forest Service less and perceived less similar salient values to the agency. Given the prediction of higher trust among Asians as a "model minority," this result was contrary to expectation based on the trust literature (Rahn et al. 2003). The majority tended to support letting fires burn but protecting residences.

White/Caucasians were midrange in concern but among the highest in self-assessed knowledge. They had the least trust and perceived their values to be dissimilar to those of the Forest Service. Gender differences were significant across all measures, with females expressing more concern, less knowledge, and greater trust in the agency. This finding was also contrary to the trust literature, which would have suggested that white males would have the highest trust scale ratings (Rahn et al. 2003). White/Caucasians tended to be strongly in favor of letting some fires burn but protecting residences.

Black/African Americans expressed low levels of concern about wildland and wilderness fires, rated their knowledge among the lowest of the ethnic/racial groups, yet were higher than other groups on average trust scale ratings. Males expressed more concern than females but were similar to females in knowledge and trust. Black/African Americans tended to support extinguishing all fires regardless of cost.

Latino/Hispanic Americans expressed more concern than several of the other groups, fell about midrange on self-assessed knowledge, and were the highest on the average trust scale rating. Females were more concerned than males and were significantly higher on trust scale ratings. Latino/Hispanic Americans favored extinguishing all fires regardless of cost.

Native Americans/First Nations, with a cultural history of fire in their land management practices (Raish and Gonzalez-Cabán 2003), were highest in concern and self-assessed knowledge but were one of the two lowest groups in trust scale ratings. They were split between letting some fires burn while protecting residences and extinguishing all fires regardless of cost.

The lower levels of trust among those with historically greater social advantage—white/Caucasians and Asian American/Pacific Islanders, especially males—is an interesting finding. This seems to confirm that exploring specific topics regarding trust in government will reveal variations in level of trust, not all in keeping with the general inquiries of social trust, as suggested by Langer (2002) and Cvetkovich and Lofstedt (1999). For some groups, it seems that an inverse relationship exists between level of knowledge and scores on the trust

scale. This finding is interesting in light of the work by Siegrist and Cvetkovich (2000), who found that lay publics and those who have less knowledge about a hazard rely more on trust when making judgments about risks and benefits of management actions, whereas those with more knowledge about an issue rely much less on trust.

Fire managers and public information officers working in ethnically and racially diverse areas can use these findings by anticipating that the various ethnic/racial groups will respond uniquely to some proposed and actual management actions. Given the significance of salient values similarity and trust, it seems advisable to establish and maintain ongoing relationships with each of these groups to foster trust. As the nation continues to increase in diversity, the importance of such efforts will increase.

Conclusions

In this chapter, we presented the results of our examination of the role of trust and salient values similarity in opinions regarding fire management. These results demonstrate the significance of perceived similar salient values, trust, and concern related to fire management. Analyses exploring the roles of gender and ethnic/racial identity indicate substantial heterogeneity among groups of color, as well as between males and females within groups on some measures. Given the paucity of information on variations in attitudes and perceptions regarding fire and fire management among groups of color, this study makes a significant contribution toward understanding the role of diversity in fire management.

These findings offer insight into the ever-increasing complexity of managing fires and fire risk, as well as forming informational and educational strategies that are sensitive to the diverse cultures of the region. Findings suggest caution in assuming that all groups of color can be considered homogeneous. Recent research has revealed the importance of considering heterogeneity within ethnic groups (Alvarez et al. 2004; Anderson et al. 2000; Tierney et al. 1998; Winter et al. 2004b), further emphasizing the complexity of a diverse public.

Additional research is needed, however, to further illuminate the differences and similarities within and among ethnic/racial groups and between genders. Studying larger numbers within each group would be helpful in ensuring that programmatically important differences can be statistically detected. Purposive sampling of specific ethnic/racial groups would be helpful toward that end. Future research might also incorporate measures of ethnic identity, including importance of that identity to the individual and degree of acculturation, to offer additional understanding of these differences in perception of the risk of fire and how to manage it (Johnson 2004). This would represent an intersection of research on the social aspects of fire and ethnic identity.

How much influence fire risk has on individuals should be considered as well (Shindler et al. 2004) and may be a factor in the detailed determinations of trust judgment among varying publics. It may also be necessary to employ qualitative techniques in addition to the quantitative ones used here to further understand the dynamics behind judgments of trust and value similarity among different ethnic/racial groups. The continuing increase of diversity within an already diverse society speaks to the importance of these lines of inquiry.