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Articles

The Role of Trust in Community Wildland Fire Protection Planning

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Growing accumulations of fuel, changing climates, and residential development in forested landscapes have accelerated the risk of wildland fire, particularly in the western United States. The magnifying level of risk of fire in the urban–wildland interface requires multiple actors implementing coordinated fuel management, fire suppression, and community protection activities. The successful implementation of such actions is built upon trusting relationships in fire protection planning process. Trust is fundamental to cooperative human relationships and natural resource planning literature increasingly cites lack of trust as a major issue for plan implementation. This study of two community wildland fire protection planning processes revealed the importance of transparency in decisions, effective leadership, consensus on the framing of risk, and planning scale in affecting trust. Based on these results, five suggestions are offered as necessary conditions to promote effective community wildland fire protection plans.

Keywords collaboration, community wildland fire protection planning, leadership, risk, trust

In an era of increased contentiousness, the presence or absence of trust can determine whether residents and agency officials can effectively deliberate on and agree to natural resource management plans. As Simmel (1950, 178) claims, trust underlies fundamental social interactions since “without the general trust people have in each other, society itself would disintegrate.”

To establish and maintain trust is not easy in an era of change, complexity, uncertainty, and controversy. Competing goals and conflicting values that often characterize pluralistic societies can lead to different visions of public lands and their

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management. These visions are often hotly contested, and in situations where agencies of the state are perceived to have their own agendas, trust is often the most fundamental barrier to the negotiation and construction of natural resource plans. In many contexts, extreme contention influences the planning and implementation of numerous projects involving public lands, including the management of wildland fire; thus, ensuring the construction and maintenance of trusting relationships is critical to success. As Schusler et al. (2003, 317) argue, such “collaborative relationships require trust.”

The increasingly complex urban–wildland interface characterizing many of the West’s public lands has amplified the risk from wildland fires, resulting in needs for communities and fire suppression agencies to enhance preparedness (McCool et al. 2006). For many communities, preparation of Community Wildfire Protection Plans (CWPP), authorized and encouraged through the Healthy Forests Restoration Act (HFRA) of 2003, has become an important mechanism to address these risks. Title I of the act requires the CWPP to be developed through a coordinated, collaborative process that engages a diverse constituency comprised of federal, state, and local fire suppression agencies, local community land use planning and emergency agencies, local elected officials, and residents of the affected area. By 2009, 5,567 communities had completed such plans, but that number represents about 8% of the nearly 70,000 communities identified as at risk from wildland fire (National Association of State Foresters 2010).

In practice, the plans assign various tasks to different agencies, and in the case of a wildland fire emergency, each agency carries out its assigned role. For at-risk communities located near public lands, Forest Service activities include treatment of vegetation, management of fire and its suppression where needed, and hiring of equipment and personnel for both treatment and suppression. Because of the importance of these actions and public acceptance of the planning and outcome, trusting relationships with the Forest Service are critical to development and implementation of a community plan. However, establishing and building trust is a difficult requirement in settings where conflict over public land management permeates social discourse, where relationships between land managing agencies and communities are strained as a result of divergent views on myriad issues (such as timber harvesting, wildlife management, and access to public lands), and where both community in- and out-migration occur at relatively high rates (e.g., see Fleeger et al. 2010).

While the quality and scale (proportion of population) of trust are not the only predictors of whether a wildland fire plan will be implemented, trust can determine the degree to which there is broad political and social acceptability, the likelihood for litigation, and the potential for future cooperative action. Furthermore, the quality and scale of trust can impede or promote a sense of responsibility to address a problem situation and an ability to have influence over a planning process and outcome (Lachapelle and McCool 2007).

In this article, we explore the role of trust in the Community Wildfire Protection Planning process using two case studies from West Central Montana. Specifically, we ask what factors impede or promote trust in the process and outcome of wildland fire planning in their communities. We look at the factors that influence both the quality of the process and the potential outcomes as a result of the trust fomented before, during, and after the community wildland fire planning process.

Conceptual Framework

Characteristics of Trust

Trust has many theoretical origins and disciplinary homes and has been described as a highly “elusive” concept (Gambetta 1988). As Möllering (2006, 1) observes, “Trust belongs to the same class of abstract concepts as freedom, justice, knowledge, power, prosperity, solidarity or truth.” The difficulty in precisely defining and describing trust presents challenges in terms of understanding, applying, and measuring the concept in various contexts.

There is general agreement that trust is a foundational element of social relationships (Möllering 2006; Rousseau et al. 1998). This characterization of trust is often referred to as relational or interactional trust. Relational trust develops from repeated interactions involving reciprocity, cycles of reliable exchange, and fulfillment of expectations. Relational trust allows each party to act in confidence and with faith in the integrity, capacity, or character of individuals, groups, or organizations. Exchanges based on relational trust are said to be resilient since the relationship allows for a “shared identity” involving “shared information, status and concern” (Rousseau et al. 1998, 400). Ultimately, a relationship based on a shared identity can lead to constructive interdependence and an ability to take or accept certain risks.

Interdependence and risk-taking are important social qualities and are seen as essential conditions for trust to exist (Rousseau et al. 1998). Interdependence is characterized by a reliance on others to act in good faith resulting in mutually beneficial interactions. If neither party relies on the other, the motivation to trust is unnecessary. Risk is a social construct and is inherently subjective with a blending of science and judgment involving psychological, social, cultural, and political factors (Slovic 1999). Any assessment of risk is founded on collective judgments formed by perceptions, values, and knowledge and based in large part from the past behaviors and related expectations of individuals, groups, or organizations. Risk assessments are imbued with particular degrees of uncertainty and thus require trust in the expectation that individuals will be virtuous regarding sharing accurate information and fulfilling necessary actions. As Brooks et al. (2006, 3) aptly note, “The interplay of mutual trust and problem framing can allow for a common language, which involves shared definitions of management, fire and its roles, forest conditions, restoration, and success.”

To create the necessary conditions for trust, reciprocal relationships ultimately involve a willingness to be vulnerable (Möllering 2006). Community wildland fire planning is based on interdependence (the realization that multiple parties are necessary and will act with integrity to address fire issues) and common framing on the type, extent and necessary actions to reduce risk. Unquestionably, past experience of the expected roles and behaviors of individuals and agencies influences perceptions of trust.

Trust in the Context of Wildland Fire

Trust has emerged as a significant factor in natural resource planning and decision making as demonstrated by a proliferation of research on trust in natural resource management (see, for example, Beierle and Konisky 2000; Conley and Moote 2003; Ostrom et al. 1999). Research outlining positive outcomes as a result of processes that promote and enhance trust in natural resource planning is abundant: for example, trust enhancing individual and group learning (Brechin et al. 2002;

Halvorsen 2003); building positive relationships (McCool and Guthrie 2001); promoting creative solutions (Leach and Sabatier 2005; Wondolleck and Yaffee 2000); teaching citizenship or inculcating civic virtue (Kemmis 1990); and instilling a sense of fairness in procedural efforts and notions of justice (Lawrence et al. 1997; Smith and McDonough 2001). In short, trust has many ancillary benefits in the context of natural resource planning beyond the goal of promoting interdependence, ability for risk-taking, and ultimately, plan implementation.

There has been a recent proliferation of studies linking wildland fire planning and management to trust (Bright et al. 2007; Brooks et al. 2006; Cohn et al. 2008; Jakes et al. 2007; Liljebld et al. 2009; Paveglio et al. 2009; Toman et al. 2006; Vaske et al. 2007). Several case studies have found trust to be a strong predictor of respondents' approval of government agencies to make proper decisions about the use of various treatments, such as prescribed burning and mechanical fuel reduction (Vogt et al. 2005; Winter et al. 2004). In a longitudinal study, trust waned with regard to how the U.S. Forest Service was to implement responsible and effective fuel reductions programs (Shindler and Toman 2003). Trust has also been related to competence in terms of how an agency implements hazardous fuel reduction treatments (Vogt et al. 2005). In short, trust is increasingly reported to be a critical component of a wildland fire planning process in order to ensure broad social and political acceptability, avoid costly litigation, and promote cooperative behavior in the future.

In addition to the element of trust in wildland fire planning efforts, there has been recent scholarship on the controversy associated with identifying wildland fire planning objectives and outcomes (Steelman and DuMond 2009). While the CWPPs are defined by statute as "recommendations" for officials to "consider,"¹ the community collaboration language in the law is, at least tacitly, an attempt to address trust that has in the past created an environment characterized by "analysis paralysis" (Kemmis 2004, 112). The collaborative spirit of these plans is an effort, at least tacitly, to increase interdependence and to reach consensus on actions to reduce risk.

Trust is a significant issue throughout the process and outcome of CWPP, since both risk and interdependence are critical factors in addressing wildland fire. There is an inherent risk involved in forecasting and managing wildland fire that requires a degree of interdependence in any coordinated planning and response effort. Communities defined as "at risk" are encouraged to be involved in fire planning, monitoring, and evaluation. The CWPPs are developed and agreed to by applicable local government, local fire department, and the state agency responsible for forest management, in consultation with interested parties and the federal land management agencies managing land in the vicinity of the at-risk community. The objective of the plan is to identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment on both public and private land.

Since risk is socially constructed and often politically negotiated, technical approaches to risk management often fail because experts and the public disagree on the nature of the risk (Kunreuther and Slovic 1996). Thus, a process that allows and encourages the framing of risk from a social, political, and technical perspective is more likely to garner broad support and trust. If one government agency or special interest group dominates the framing of risk and the actions to reduce it, the public will likely be unwilling to trust the process or outcome. Whether the CWPPs allow for and encourage this broader framing of risk is of particular significance since it can lead to the likelihood for broad social and political acceptability of the plan (Brooks et al. 2006).

Methodology

We chose two communities in west central Montana to examine because the region has experienced extreme wildland fire events in the past decade with predictions for increases in frequency, intensity, and size in the coming years (Covington 2000). CWPP in these communities requires full integration of local, state, and federal agencies to manage risk, prepare for wildfire, and mitigate consequences. The process of selecting respondents applied a combination of purposive and snowball sampling. The objective for choosing respondents was to obtain diversity and richness of perspectives and opinions. The criteria for choosing the sample included respondents with an active interest, background, or ability to influence the CWPP including those who vigorously supported the process and those who did not. Sample size was not predetermined; rather, discovering and representing a diversity of opinion was sought in order to provide a rich understanding of the context and the variety of positions and philosophies within the planning process.

We interviewed a total of 50 respondents in communities in the Bitterroot and Seeley-Swan valleys currently revising or having recently completed a CWPP using ethnographic and case study techniques. Interviews took place from the summer of 2005 to the spring of 2006. Table 1 shows the total study respondents by category.

The interview schedule contained questions and statements that would direct but not dictate the conversation to structure the interview process. Questions were based on the concept of relational trust and the nature and quality of past and present relationships between individuals and organizations. Respondents were encouraged to discuss trust related to all aspects of the process and outcome of the CWPP. Trust in this case was defined as trust in the agency, trust in the individuals involved in the plan, and trust in the planning process itself. Given the dominance of federal land in the two study areas (i.e., Forest Service managed) the researchers anticipated that most of the discussion about trust would be focused on the Forest Service. However, respondents were free and encouraged to discuss all aspects of trust that might influence the CWPP process and outcome.

Interviews were recorded and transcribed verbatim, amounting to more than 1,000 pages of interview data. The software program QSR NVivo version 1.2 was used to organize and code data based on the meaning and significance of words,

Table 1. Total study respondents by category

Study respondent category	Total
Representatives of local environmental organizations	9
Landowners–local residents	9
Consulting foresters	7
Loggers	6
Current Forest Service employees	5
Retired Forest Service employees	4
Representatives from national natural resource policy organizations	4
Local fire chiefs	3
MT Dept. of Natural Resources and Conservation Employees	2
County employees	1
Total	50

sentences, and ideas from the respondent's point of view, rather than counting occurrences of words or phrases. The software program allows for both open and axial coding to create and relate codes or themes. However, the meaning analysis is performed by the researchers, who interpret separate themes and attempt to relate the themes into coherent relational groups.

Segments of the text were assigned textual codes that represent the meaning or significance of the text. An iterative review of transcript data allowed major categories to emerge based on specific perspectives, descriptions, and meanings emphasized by respondents in the text. Multiple, iterative stages of coding led to a final coding scheme used as a framework to summarize and represent the data. This coding scheme represents major topics, ideas, and perspectives emerging from the interview data that are shared among many or all of the respondents. For example, one broad theme may be titled "transparency" and includes detailed respondent excerpts describing "information sharing," "lack of access to data," or "Freedom of Information Act requests."

The ultimate goal of the data analysis was to define and understand distinct themes and patterns across individuals on the range of perspectives: in other words, the essence of the meaning from each respondent's perspective and across many respondents. Data analysis began immediately following the first interview to identify cogent themes. Interviewing continued until no new themes were identified during subsequent interviews. Four major themes related to trust are described next and are presented and discussed for each case study.

Results and Discussion

Our two case studies of the Bitterroot and Seeley-Swan valleys exhibit different characteristics, particularly in terms of population, total area, and land ownership. The planning process in the Bitterroot valley occurred in the winter of 2002–2003 and in the Seeley-Swan occurred in 2003–2004, with participation by many individuals representing diverse interests and organizations in both case studies. A series of public meetings was held in various locations in each valley with the resulting final CWPP that was eventually implemented. The CWPPs continue to be revised as needed. Table 2 shows key demographic and geographic characteristics of the two case-study CWPPs.

There were four principal themes that emerged as factors influencing any ability to have trust in the process and outcome of CWPP in the two case studies. These factors are: (1) transparency, (2) leadership, (3) framing of risk assessments, and (4) spatial scale. The factors influencing trust are not presented in any particular order or hierarchy, as that was not the objective of this research; each case study is described in the following with supporting evidence from excerpted interviews.

Case Study 1: Bitterroot Community Wildfire Protection Plan

Transparency issues related to a host of forest-related planning efforts, both past and present, were frequently discussed in the Bitterroot case study as impeding trust in the Forest Service to organize and play a leadership role in the current CWPP. For instance, several landowners and members of environmental organizations in the Bitterroot cited alleged examples of the Forest Service purposefully concealing information. The following excerpt is from a retired Forest Service employee who

Table 2. Key characteristics of Bitterroot and Seeley-Swan CWPP

Characteristic	Bitterroot	Seeley-Swan ^a
Population (permanent)	36,070 ^b	2,460
Population (seasonal)	unavailable	2,032
Area of CWPP (acres)	1,534,712 ^c	568,000
Area high risk (acres)	150,387	30,795
Area high risk (%)	9.8	5.4
Area private, nonindustrial land ownership (%)	23.9	7.6
Area Plum Creek lumber company ^d (%)	0.5	30.6
Area federal land ownership (%)	72.9	53.9
Area state land ownership (%)	2.5	6.4
Area misc. land ownership (%)	0.3	1.5

^aAll figures taken from Seeley-Swan Fire Plan (2008).

^bFigures taken from U.S. Census Bureau (2000).

^cMontana Natural Resource Information System (2011).

^dThe Plum Creek Lumber Company recently formed a real estate investment trust but still owns and manages a significant amount of this land.

felt the Forest Service was not transparent in providing information on the effects of logging after wildland fires in 2000 and therefore could not be trusted in the current planning process.

There's no question that the Forest Service likes to control information and tends to put out the information that supports their position and does not want to look into stuff that doesn't support their position. I actually worked for a few weeks for the Bitterroot [National Forest] after the 2000 fires and one of the things we found out was that there was a real lack of information of the effects of postfire salvage logging. (Retired Forest Service employee)

A current Forest Service employee also recognized issues of transparency and culpability of the agency, noting that generally, "we don't keep people as well informed as we should" and "communication is a big problem." This individual recognized both the difficulty and importance of disseminating information since a "credibility question" results from poor communication. Transparency issues in the Bitterroot process were primarily directed toward the Forest Service and resulted from past performance issues that appear to influence the ability of individuals to trust both individuals within the agency and the agency in general regarding participation in the present CWPP process.

The type and quality of leadership comprised a characteristic identified as critical for influencing trust and relationships for the CWPP process. In the Bitterroot, leadership was criticized on many fronts but one particular issue received considerable media attention and was described by many individuals as an exemplary act of poor leadership on the part of the Forest Service. The incident occurred at a press conference in which members of an environmental organization were removed from the event by law enforcement for wanting to only attend the meeting. As a result,

many respondents described trust of certain Forest Service employees as significantly reduced because of this one action.

You have a Supervisor that is referring to the environmentalists as obstructionists. So we have a leadership problem and he has lost the confidence of the people. The Forest Service is after all here to serve the public interest but our free voice has been suppressed and it's a terrible handicap for the agency as it faces these crises and this loss of public support. This is a destructive process and there are those in the Forest Service who contribute to it by dividing and conquering and feeding misinformation and a charade of community involvement It leaves us in a position where we have citizens on one side, the agency on the other. Why can't the Forest Service leadership recognize that its best friends are within the environmental movement? (Representative of local environmental organization)

Leadership in the Forest Service in the Bitterroot process was also criticized because of previous management decisions including particular salvage logging sales, travel plans, and general forest planning efforts. These collective views on leadership led many individuals to mistrust the current CWPP process and to either not participate or be highly suspicious in the planning effort as a result.

Respondents in the Bitterroot had mixed views on the Forest Service's framing of wildfire risk and the necessary actions to mitigate danger both for homes in the wildland-urban interface (WUI) and in more remote forested locations. Many respondents thought the Forest Service risk assessment and related proposal to thin many miles from the WUI border were misplaced and that actions were only being put forward to increase revenue from logging. Respondents thought that homeowners in the WUI could address wildfire risk on their own and should take personal responsibility of their own property, and the Forest Service should not be subsidizing thinning outside a narrow parameter from the WUI. Further, many felt the risk assessment of "catastrophic" fire was exaggerated by the agency in order to further an agenda, and thus, trust was impeded, both of the agency and of the CWPP process in general. Several comments, including from this landowner, were directed at the use of science to exaggerate claims of risk of wildfire in the area. The motive of exploiting fear by advocating extreme risk was seen as a ploy to "get out the cut."

This whole focus on fire risk prevention appears to me to be a ruse . . . On the Bitterroot National Forest, thinning doesn't have anything to do with fuel reduction from a scientific point of view . . . it destroyed whatever kind of trust that we had established before then It's a practice and policy of deception in the Forest Service, because a lot of the public are afraid of wildfire . . . and this fear is being exploited in order to give access to the timber companies They want to get the merchantable timber and they're even talking about leaving the small diameter fuels that are really a fire risk and everybody knows that the big trees aren't where the fire risk is The real intention is to get out the cut, take those big trees. (Landowner-local resident)

This view was shared by many who felt risk was exaggerated by the Forest Service, particularly far from the WUI, and used as a financial incentive to move

a timber harvest agenda forward. Trust in the agency and in the CWPP process was consequently diminished.

There were also references on the importance of the geographic scale of the CWPP. The scale of the wildland fire plan seemed to be a critical factor in respondents' ability to trust in the process. Many respondents in the Bitterroot Valley described the area as too large to encompass one plan, with those in the north of the valley too far geographically and culturally for any plan to unite. For these respondents, the large area of the plan tended to discourage significant relationship-building and ensuing trust, and instead many felt frustrated by meetings that tended to focus on the entire planning area, and not their particular drainage or neighborhood. The excerpt given next focuses on the differences between the more heavily forested Seeley-Swan Valley versus the more geographically diverse Bitterroot Valley where there is generally less forested area and a lower density population in the WUI.

To be collaborative in the Bitterroot Valley looks very different than to be collaborative in the Swan Valley. In the Swan, they have community meetings and you get most of the community there because it's a small enough community. In the Bitterroot you can't do that. It's more collaborating with interest groups, not with people The more successful efforts are definitely in the more rural areas where people still have a connection to the landscape and care passionately about it The reason why it works better in rural areas like the Swan is because people do have a better connection to the landscape. In the Bitterroot Valley, lots of people have come here for the beauty. They don't know the landscape. (Representative from national natural resource policy organization)

Case Study 2: Seeley-Swan Community Wildfire Protection Plan

Transparency was described as open and accessible, including the agendas of the Forest Service, environmental organizations, and landowners. The CWPP was described as a forum where information could be freely and honestly accessed, distributed, and discussed. One way trust was enhanced in the Seeley process was through proactive invitations to meet and share information. The example given next is from a current Forest Service employee who actively invited individuals on a field visit to a timber stand to discuss CWPP objectives. The field trip brought about a new coalition in what could have turned out to be a litigious situation. The result was described as enhancing trust in the current planning process.

The last (timber) project was appealed, but, we brought the appellants out We walked through the stand and, certainly [name] could have litigated the project, but he chose not to after we got on the ground and he saw what we were doing and we talked about it. It's hard to argue because most people like it We are pretty plain about what our objectives are. (Current Forest Service employee)

Individuals from several environmental organizations also felt they trusted the Forest Service and other stakeholders because of the forthright and transparent

approach with past timber projects and for the CWPP process and organizations and individuals participating.

Regarding leadership, individuals working for the local rural fire departments and the Forest Service were described as having outstanding leadership qualities and were thus held in high regard and trusted because of their positive interactions in the community. This logger describes the early stages of the CWPP process.

The fire plan truly was championed by the rural fire department. They were in the leadership role. It was not the federal government, it was not the state government. It wasn't county government. Folks in Seeley Lake have a great deal of respect and admiration for these rural fire guys that have saved their neighbor's house Rural fire was in the leadership role, so there was an extremely high level of trust and that helps move things forward. (Logger)

In this case, it appears that the active involvement by the local rural fire departments was well regarded and thus increased overall trust because of the strong relationships that respondents had with many of these firefighters. However, it's not just that respondents lauded leaders emerging from "their own ranks," as the Forest Service was also described positively with regard to leadership in the CWPP. Specific individuals in the Forest Service were singled out as providing exemplary leadership, in part due to their proactive role in other, unrelated community services such as the local school board and the Chamber of Commerce board. In the Seeley-Swan area, individuals working both for the Forest Service and the rural fire departments were described as proactive, responsive, visionary, and communicative. In this case, leadership was seen as a critical component of establishing and maintaining trusting relationships and the ability to build consensus in the wildland fire planning process.

A common point of agreement for residents was the wildland fire risk from dense vegetation throughout the valley, particularly near the populated areas, and the limited options of retreat in the case of a large-scale fire event. Since many residents agreed on framing the type and extent of risk in the Seeley-Swan Valley, there was concurrent agreement on details in the CWPP regarding the type and scale of hazardous fuel reduction treatments as exemplified by a comment from this landowner and local resident.

With past fires, in one fell swoop all of Seeley Lake would have been gone. In fact, a little wind change one afternoon would have done a number. In Seeley Lake, the vegetation is dense; It's a lot moister climate than the Bitterroot, and so there's a lot of regeneration and understory One Neighborhood Association was in a leadership role in the community, bringing folks along at meetings about risk and treatments, which actually made moving forward with the fire plan a little less contentious. (Landowner-local resident)

There was a general consensus on the framing of risk and methods of addressing the risk for respondents in the Seeley-Swan Valley due to the proximity of forests to the population and few options for exit in the area. In turn, this common framing of risk led to coordinated planning and ability to trust the Forest Service to define actions necessary to reduce risk from wildfire.

There were also references on the importance of the geographic scale of the CWPP. Comparisons were made between the two areas by respondents, with many comments on the comparatively smaller area of the Seeley-Swan area. It was noted that a plan with a smaller geographic area was more conducive to successful community planning. This logger notes that the smaller geographic area of the Seeley-Swan would encourage more participation in the wildland fire planning effort because of trust present from existing relationships.

The Seeley-Swan Fire Plan is a fairly confined area, but in the Bitterroot you have to try to work all of the cities and towns together. The folks from the north don't regularly deal with, on a daily basis, the folks in the south of the valley and a lot of them don't know each other I think the challenge has more to do with spatial distribution Most residents have been in Seeley Lake for a long time; years and years and years. They know each other and they trust each other. They are more likely to go along with recommendations that come up because they have this longstanding relationship. (Logger)

Many respondents felt that the smaller planning area of the CWPP meant that individuals knew each other well at the table and had established strong relationships as a result of participation in prior planning and social events. Respondents were in agreement that the Forest Service could be trusted because of prior interactions in past planning efforts.

Implications and Conclusions

Our findings show a number of specific factors that influenced the quality of trust in both case studies. In particular, transparency, leadership, framing of risk assessments, and the scale of the plan were all significant factors that tended to influence trust occurring in the process. The planning efforts in these two cases appear to build upon or be affected by trust or mistrust resulting from myriad related antecedents and historical precedents. Our results suggest the CWPP may not by itself build trust but may serve to intensify its current manifestations. In the case of the Seeley-Swan CWPP, trust had been present by way of past interactions between individuals representing state and federal land managing agencies, fire response personnel, nongovernment organizations and homeowners and other citizens. This history of trusting relationships created a high level of social capital and relational connectedness (Nkhata et al. 2008) and allowed the current CWPP to progress with little controversy or resistance.

In comparison, the long history of acrimony in the Bitterroot Valley presented challenges in terms of trust in the current CWPP process and outcome, particularly when confronted with new issues related to the large scale of the plan, the framing of risk, issues of transparency, and the perceived leadership within public lands agencies. This lack of relational connectedness and a context of contention and acrimony ensured not only that lower levels of trust would hamper the CWPP process but also that it would be difficult to raise the levels of trust needed to produce a credible plan. Not all of the mistrust in our case studies was directed exclusively at the governing authorities whose mandates dictate wildfire management. Respondents in our case studies noted, as has been the case with a number of other studies (see, for example,

Carroll et al. 2006; Carroll et al. 2011), that mistrust also existed between various stakeholders as well as with governing agencies. For example, our respondents did discuss a lack of trust with newcomers to the area, with individuals working within the environmental community, and with corporate or timber entities with interests in the planning outcome. However, respondents in our study overwhelmingly focused their responses on the federal managing agency with a budget and authority to act on past fuels mitigation decisions, the current CWPP process, and long-term wildfire policy. Because of space constraints, we were not able to present and discuss this component of our research; we do, however, recognize the complex sociopolitical context within which the CWPP occurs and the many issues of trust apart from federal agencies that have decision-making authority to address risks associated with wildfire.

The CWPPs in the two case studies have been effective in getting local equipment certified and ensuring that communications among local officials is more efficient and effective, two issues occurring in many communities at risk. Yet, as our respondents indicated, the outcome in these communities is mixed in terms of broad political and social acceptability of the planning effort, the likelihood of litigation in the short or long term, a sense of responsibility for the plan (Lachapelle and McCool 2007), and the potential for future cooperative action. Our results suggest that CWPP will be most effective when the following conditions occur:

1. An existing foundation of trust exists. CWPP occurs within a larger social-ecological context (Anderies et al. 2004) that must be accounted for. CWPP cannot be taken as an isolated natural resource planning event, but processes, relationships and conditions existing within the planning area influence its successful application.
2. Planning occurs at scales conducive to community participation and engagement. The results suggest that planning tackles geographical sized areas that people can understand and to which they can relate.
3. Participants acknowledge previous controversy related to local natural resource issues including related issues of information sharing, transparency, and effective leadership. Acknowledging prior conflict as well as previous successes helps participants see how the present process can be strengthened.
4. Planning addresses regional issues and zoning holistically. Piecemeal and event-oriented planning (see Senge 1990) has typified many natural resource decision-making contexts. Wildland fire planning is related to development zoning in the wildland-urban interface, which in turn affects other decisions such as location of fire suppression resources, community education, and ultimately risk from wildland fire.
5. Proposed actions involve diverse fuel reduction, treatment, training, and preparedness strategies. Risk management requires a variety of actions involving different jurisdictions, fire management and suppression agencies, community organizations, and individuals. A process that allows for and encourages multiple perspectives including social, political, and technical framing of risk will serve to increase trust in both process and outcome.

The implications of this research illustrate the significance of trust as a critical condition necessary to address complex landscape-scale issues, particularly those functioning across multiple political jurisdictions. We refer to the proposition of Nkhata et al. (2008) that successful resolution of complex resource management

questions depend on high levels of relational connectedness and social capital. When either of those or both are lacking, conflicting parties adopt a variety of strategies, such as antagonistic positioning and other conflict exacerbating behaviors.

We also posit that building trust will help planning participants build a sense of ownership that is critical to successful community wildfire plans. Ownership in this context not only involves identifying needed actions but also includes helping to constructively frame and define the wildfire potential and risk to life and property. In a sense, federal, state, and local fire agencies assist citizens in collectively creating a *shared* plan for dealing with risks from wildland fire, not proposing a plan for citizens to rubberstamp. The ability to have a sense of ownership over a process and outcome necessarily requires that risk be negotiated in a process owned by all. Ownership is predicated on the notion that planning assumptions will be laid out and available for critique, hidden agendas will be exposed, creative solutions will be identified, and learning will occur: actions that require that trust be present.

As Möllering (2006) observes, we found trust to be foundational to preparing a community wildfire protection plan. Because the CWPP process is collaborative by law and by necessity, trust in one's neighbors, civil servants, firefighters, and emergency services underlies and characterizes the relationships fundamental to working together. Our study both reinforces findings of much of the research on the importance of trust in CWPP and expands it through identification of spatial scale as a factor influencing trust. We suspect that large geographic scales impede the formation of the interpersonal networks important not only in constructing what must be local strategies but also in developing shared understandings and definitions of risk. While our research identified four principal factors, it did not assess their relative importance, a gap that could be filled with future assessment.

In pluralistic societies, various constituencies often bring conflicting visions, problem frames, and courses of action to the planning table. As these results suggest, achieving the trust needed for effective planning requires more than simply holding periodic public meetings. Rather, wildland fire planning demands a deliberate emphasis on developing robust trusting relationships where perceptions, values, and knowledge can be sufficiently discussed, debated, and framed in an environment viewed as fair, inclusive, cooperative, and legitimate. Planners, officials, and residents would do well to consider the promotion of trust as a fundamental objective of public engagement in similar efforts, where citizens become integral to the design and implementation of planning processes.

Note

1. HFRA, Sec. 103 (b) (1) states, "The Secretary shall consider recommendations under subsection (a) that are made by at-risk communities that have developed community wildfire protection plans."

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