

Building community–agency trust in fire-affected communities in Australia and the United States

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Abstract. As a result of the increasing environmental and social costs of wildfire, fire management agencies face ever-growing complexity in their management decisions and interactions with the public. The success of these interactions with community members may be facilitated through building community–agency trust in the process of providing public input opportunities and community engagement and education activities. Without trust, the public may become frustrated in their interactions with the agency and withhold support for management decisions. This study takes a comparative case approach using interview data from communities near the King Valley fires in Victoria, Australia, and the Bear & Booth Complex fires in Oregon, USA. Several themes emerge that are common to both sites, including components of trustworthiness and actions or activities that contribute to a trusting relationship or environment. Key findings suggest trust and trustworthiness can be addressed interpersonally and institutionally and that flexible policies are important for implementation of locally appropriate outreach and management plans.

Additional keywords: B&B Fires, citizen trust, communication, fuel reduction, King Valley Fires, public trust.

Received 1 June 2012, accepted 28 January 2013, published online 21 May 2013

Introduction

Wildfires have increased in frequency and severity in both Australia and the United States, causing considerable environmental, economic and social consequences to fire-prone communities in recent years (Victorian Government 2008; National Interagency Fire Center 2012). For example, in the Australian state of Victoria, wildfires have burned extensive areas (e.g. more than 1×10^6 ha burned in the 2002–03 and 2006–07 fire seasons) and caused significant loss of life and property (e.g. 173 lives, more than 2000 homes lost during ‘Black Saturday’ in 2009). In the US, annual wildfire areas have surpassed 1×10^6 ha every year since 2000, with six of those years topping 3×10^6 ha.

As a result of the increasing environmental and social costs of wildfire, fire management agencies face ever-growing complexity in their management decisions and interactions with the public. In both countries, agencies are challenged to find a balance among their mission and goals, institutional constraints, scientific and technical expertise, public input and concern, and competing contexts, values and political pressures (Shindler 2000; Dombek *et al.* 2004; Davenport *et al.* 2007; Jakes and Nelson 2007). Additionally, managing agencies frequently find themselves needing to work with and communicate management decisions to fire-prone communities to help them prepare for and recover from wildfire (Olsen and Shindler 2007;

CFA *et al.* 2008; Steelman 2008). Successful community–agency interactions may be facilitated through trust built in the process of providing public input opportunities and community engagement and education activities (DSE 2005; Longstaff and Yang 2008; Elsworth *et al.* 2009; Olsen and Shindler 2010). Without trust, the public may become frustrated in their interactions with the agency and withhold support for management decisions or actively oppose planned public lands activities (Shindler *et al.* 2002; Winter *et al.* 2004; Stern 2008).

An increasing number of studies examine the role of trust in facilitating constructive dialogue and decision-making, and generating public support for agency management strategies (e.g. Paton 2007; Vaske *et al.* 2007; Longstaff and Yang 2008; Stern 2008; Shindler *et al.* 2009; Toman *et al.* 2011; Smith *et al.* 2013). However, there has been little effort to bring together the lessons learned from international settings.

Literature review

Conceptually, trust may be considered a unique form of a relationship that entails vulnerability to and uncertainty about another party’s actions when one or both parties are dependent on the other to fulfil its interests (Rousseau *et al.* 1998; Mollering 2006; Earle *et al.* 2007). It is often posited that trust is based on positive expectations that the other party will fulfil

its obligations in the relationship (i.e. trust is based on perceptions of trustworthiness) (Mayer *et al.* 1995; Rousseau *et al.* 1998). Therefore, *trustworthiness* is a quality of the person being trusted whereas *trusting* is something that the person doing the trusting does (Mayer *et al.* 1995). Hence, a person's trustworthiness is likely to influence how much you trust them to do something for you. Most trust research does not distinguish between trust and trustworthiness, instead referring to 'types' or 'levels' of trust, or describing trust as part of a dispositional trait (e.g. Ryan and Klug 2005; Earle and Siegrist 2006; McFarlane *et al.* 2012; Smith *et al.* 2013). However, others have clearly delineated trust and trustworthiness as distinct concepts (Mayer *et al.* 1995; Sharp *et al.* 2012) and many trust researchers examine both concepts but do not illuminate the distinctions (e.g. Davenport *et al.* 2007; Earle *et al.* 2007).

Considerable research effort has gone into improving our understanding of how trust and trustworthiness is gained or lost. Factor analytic studies (e.g. Poortinga and Pidgeon 2003) and literature reviews (e.g. Johnson 1999) in risk management research have suggested that the trustworthiness construct can be reduced to two or three key components: (1) competence, (2) care and (3) honesty, openness or consensual values. These components mirror the seminal work of Mayer *et al.* (1995) who summarised numerous components identified in previous business studies into three key trustworthiness components of ability (i.e. competence), benevolence (i.e. care, sincerity) and integrity (i.e. honesty, openness, shared values). Earle *et al.* (2007) suggest that the characteristic of ability reflects a perception of performance, which ultimately influences perceptions of confidence, and the characteristics of benevolence (e.g. sincerity) and integrity reflect a perception relevant to morality, which influences a relational form of trust.

The type, duration, history and intensity of a relationship are suggested to influence the development of trust. For example, the number of past interactions, the duration of the current relationship (Shapiro *et al.* 1992), the frequency of interactions, the emotional closeness between trustor and trustee, and the parties' relationships with mutual contacts (Burt and Knez 2006), are all relationship characteristics that are positively associated with trust. Negative events affecting relationship parties are believed to damage trust more quickly than positive events can build it (Slovic 1999), yet in other circumstances the presence of trust may provide a buffer against negative events (Earle and Siegrist 2006; McCool *et al.* 2006; Burns *et al.* 2008). Similarly, Davenport *et al.* (2007) suggest that most trust research focuses on the positives of trust because distrust is considered a barrier to effective management; however, distrust may be seen as positive when it involves a healthy scepticism and critical thinking about whether a person or agency is acting within established norms and frameworks (Parkins 2010).

Previous research in the natural resource management context has shown that trust is critical in achieving public acceptance of fire and fuels management strategies (Brunson and Evans 2005; Vogt *et al.* 2005; McCaffrey 2006; Olsen and Shindler 2010) and diminishing opposition and scepticism between communities and natural resource management agencies in collaborative planning processes (Wondolleck and Yaffee 2000; Lachapelle and McCool 2012). It is suggested that trust can act as a social lubricant in relationships (Putnam

2000) through encouraging open communication, cooperation and continuing interactions (Rousseau *et al.* 1998; Six 2005). For example, Toman *et al.* (2008a) found community participants on an agency-sponsored field trip indicated an increase in trust and good will for the United States Department of Agriculture (USDA) Forest Service in one Oregon community because of the agency's openness and opportunities for interpersonal communication with agency personnel. Synthesis work by McCaffrey and Olsen (2012) and McCaffrey *et al.* (2013) also highlight the importance of interactivity. Recent research posits that building trust also helps build a sense of ownership that is key to community wildfire plan success (Lachapelle and McCool 2012). Similarly, when community members lack knowledge about a hazard like wildfire, trust has been found to positively correlate with perceived risks and benefits of the hazard (Cvetkovich and Winter 2007). Other research has found trust correlates highly with acceptance of agency management strategies on public lands after fire (Olsen and Shindler 2010).

A range of factors at the individual, agency and institutional level may influence public trust in wildfire management agencies. Specific characteristics of agency staff, such as sincerity, commitment, inclusiveness (Shindler and Aldred-Cheek 1999), care, competence, credibility (Winter *et al.* 2004), consensual values (Earle and Cvetkovich 1995; Winter and Cvetkovich 2003), as well as beliefs about how agency staff will act and their capacity to do so (Liljeblad *et al.* 2009), are all considered to be important contributors to public perceptions of trustworthiness. Research in the context of water resource management suggests that trust built at the individual manager level may affect trust in the broader agency (Leahy and Anderson 2008). At the agency level, research suggests that trust is centred on community members' perceptions of the similarity of values between the agencies and themselves (Vaske *et al.* 2007; Winter and Cvetkovich 2008). Institutional characteristics, such as the processes used for public consultation and engagement, may also influence trusting relationships (Zucker, 1986; Rus 2005; Toman *et al.* 2008b). For example, public trust in managing agencies may be diminished if community members feel that their concerns are not effectively addressed or that they have no voice in the wildfire preparation and planning process (Olsen and Shindler 2007; Cottrell *et al.* 2008; Sharp *et al.* 2009).

Despite the growth in trust literature related to natural resource management there has been little effort to bring together the lessons learned about trust across international settings. This study accomplishes this by re-examining two existing trust studies conducted in wildfire settings, one in Australia and another in the United States, in an effort to assess whether there was variability in trust dynamics across countries. Specifically, the research questions examined by this paper include: (1) what common factors influence community-agency trust-building in wildfire management in Australia and the United States? And (2) what specific characteristics and activities do local residents and managers attribute to being trustworthy and fostering relationships?

Study areas

Two cases were examined: one in Victoria, Australia, and one in Oregon, United States (Figs 1, 2). Comparison of the cases showed that a primary purpose of each original study was to

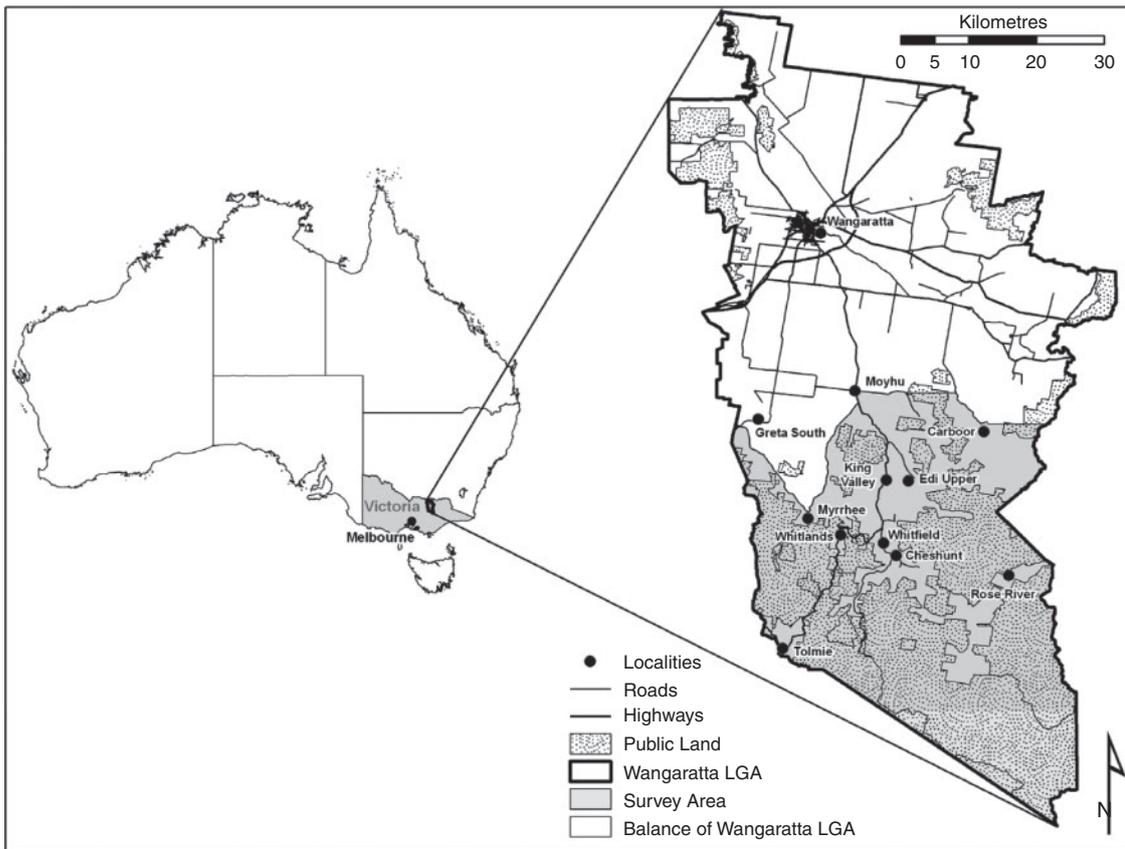


Fig. 1. Map of Australia showing Victoria and approximate location of the King Valley Fires and subsequent interviews within the Rural City of Wangaratta local government area (LGA).

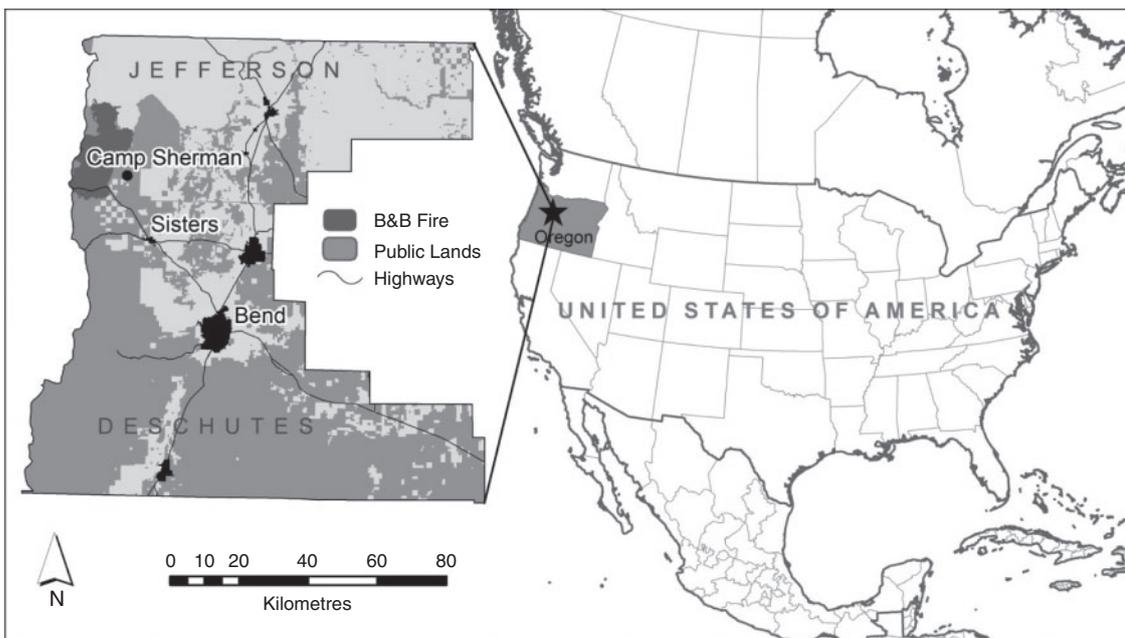


Fig. 2. Map of United States showing Oregon and approximate location of the Bear & Booth Fires and subsequent interviews.

Table 1. Key similarities and differences among the two study sites
DSE, Department of Sustainability and Environment; CFA, Country Fire Authority

	Bear & Booth Complex fires, Oregon, USA	King Valley fires, Vic., Australia
Size of fires (ha)	37 250	1 030 000 (includes fires outside the study area)
Ignition source	Lightning	Lightning
Approximate size of local communities	~100 000	<2000
Predominant economy	Recreation and amenity	Agriculture
Predominant land managing agency	USDA Forest Service	DSE
Predominant fire management agency – public land	USDA Forest Service	DSE
Predominant fire management agency – private land	Oregon Department of Forestry	CFA
Private area burned	~1.2% of total fire area	~2.5% of private land in local area
Evacuation policy	Evacuation mandatory on two occasions for one community. Other communities on alert.	Evacuation not mandatory. Most research participants stayed and defended their properties.

identify factors affecting community–agency interactions and trust. Further comparison of the cases showed that all involved lightning-caused, large fires that commanded considerable media attention and posed threats to fairly small, rural communities. These similarities suggested it would be useful to conduct a more formal comparison of the studies' findings to generate an understanding of common factors affecting community–agency trust across contexts and countries. Table 1 shows some of the similarities and differences of the cases.

Victoria, Australia (King Valley fires)

The King Valley study focussed on fire-affected communities in the Rural City of Wangaratta local government area, ~250 km north of Melbourne (see Fig. 1). The King Valley population is just under 2000, and the area is dominated by agricultural production, primarily premium wine grapes, dairy and beef cattle, and horticultural crops. Tourism is also important as the area is a key access point to surrounding public land.

Wildfire management in Australia is primarily state based. In Victoria, the Country Fire Authority (CFA) and the Department of Sustainability and Environment (DSE) are responsible for wildfire planning, preparation and response – the CFA on private land and the DSE on public land. The CFA has local brigades (approximately equivalent to volunteer fire departments) that are composed of volunteers drawn from the local community and are centrally organised by paid staff at the regional and state levels. The DSE is organised at the state level and staffed with paid employees. The CFA and DSE work together to manage large fires that span public–private boundaries.

Lightning ignited two rounds of fires in the King Valley in 2006–07, burning much of the public land in the southern part of the valley. In the area, no one was killed but four homes were lost and 5433 ha of private land were burned. After the fire, information about recovery services and details about issues residents were likely to encounter, such as replacing fencing and attending to stock injuries, was available at community meetings. The DSE and CFA staff also explained strategies for rehabilitating public and private land. Community organisations such as the local health department, St Vincent De Paul and financial counsellors also attended these meetings. Later, community debriefs provided opportunities for the community to provide input into existing or future emergency plans.

Oregon, United States (Bear & Booth Complex fires)

The Bear & Booth (B&B) Complex fires study focussed on fire-affected communities in the foothills of the Cascade Mountains of central Oregon (see Fig. 2), an area where recreation and amenity benefits are of high value. The large majority of the burned area was on national forest lands, though some other ownerships were also affected. Communities near the fire share similar amenity interests and have a history of citizen–agency cooperation over the last dozen years. Several communities in the region also have a strong history of timber dependent economies. The city of Bend (population 76 000) is in this area, but most other communities are considerably smaller; Sisters is one of the other biggest cities at less than 2100. Many communities are dominated by absentee owners, with a high proportion of summer rentals in many of the neighbourhoods.

Lightning caused the 37 250 ha B&B Complex Fires in summer 2003, which burned almost entirely on public land. Wildfire management on public land in the United States is predominately handled by the USDA Forest Service, though other federal, state, local, tribal and private entities often participate and cooperate as well. Post-fire management plans for effected public lands were developed from 2003–05. Numerous outreach activities were implemented during the planning phase of the B&B Fire Recovery Project, including several agency-led public field trips conducted within weeks of containment, agency-led public meetings and one-on-one discussion with feedback from key local community groups on planning choices. Overall, more than one hundred written comments were received by the public agencies regarding plans for the burned area.

Methods

Findings in this manuscript result from two distinct phases of work: (1) original individual case research and (2) joint cross-case analysis.

Phase one: original individual case research

In each of the two separate studies, semi-structured interviews were independently conducted resulting in rich, qualitative data. In both cases, a qualitative approach was chosen to provide a better understanding of participants' experiences and perceptions about trust in their own words; in other words, to address a

complex issue in its natural context (Lincoln and Guba 1985). Purposive sampling was used at both research sites, allowing the researchers to select potential participants based on relevant categories of interest and likely ability to answer the research questions (Robson 2002; Rubin and Rubin 2005). In both cases, interviews were concluded when a broad representation of participant types had participated and when interview responses became repetitive, suggesting the saturation point had been achieved for the research questions (Robson 2002).

In Victoria, 38 fire-affected residents and ten land managers were interviewed in autumn 2008 (12–18 months after the fires). In Oregon, ten fire-affected residents and five land managers were interviewed in spring 2005 (18 months after the fires). The interview protocol of both projects focussed on community–agency relationships surrounding fire and, although some aspects of the projects differed (e.g. questioning on tangentially or unrelated topics), the interview questions on trust and the ensuing discussions that took place on trust were very similar between sites. Interviews generally lasted 1 to 2 h and were recorded and later transcribed at both sites. To examine the data, both an open, inductive and iterative, deductive coding process was used (Rubin and Rubin 2005; Berg 2009). Codes were then grouped into broader themes that addressed the research questions. Further details of the individual project's analysis procedures can be found in Toman *et al.* (2008b) and Sharp *et al.* (2012).

Phase two: joint cross-case analysis

The findings in this manuscript represent a cross-case analysis (Yin 2008) of qualitative data, with the case being the individual research site. A cross-case analysis is a type of case study in which more than one case is examined where some common features are studied (Robson 2002; Yin 2008). This approach is appropriate because each research site does constitute a clear and independent case with distinct fire events and community responses, yet the cases could be examined and compared to address the research questions due to similarities in original research design and largely identical bodies of literature that informed both projects.

The researchers began working collaboratively by initially discussing potential trust-related research questions that could be answered given the respective projects and completed data collection and analysis procedures. The research questions identified in this manuscript (above) are the final set agreed upon. With these questions in mind, the researchers independently reviewed each case, noting emergent themes about building community–agency trust that were common to both cases. The researchers then worked collaboratively to compare and merge the independently generated themes. Findings presented in this paper represent the themes with the greatest amount of supporting data common to both cases.

Results

Common findings clustered around two orientations of trust: characteristics of trustworthiness and activities that contributed to a trusting atmosphere or relationship. This presentation of trustworthiness as separate from trust is supported by earlier work (e.g. Mayer *et al.* 1995; Rousseau *et al.* 1998, Sharp *et al.* 2012). Within these two orientations, several themes emerged

from the data, consistent to both the US and Australian sites, as having a positive influence on community–agency trust-building. A visual representation of the key results can be found in Fig. 3.

Characteristics of trustworthiness

Two traits arose from the collective data that constitute characteristics important to judging trustworthiness: integrity and sincerity.

Integrity

The concept of integrity emerged in a variety of ways in these interviews, all with the underlying point of the importance of shared norms and values. Overall, the data showed that community trust could not be engendered if the community did not perceive that the agency or its staff would 'do the right thing,' even if competence and skill in carrying out decisions was clearly demonstrated. It appeared that some held the sometimes erroneous assumption there would be agreement on what 'the right thing' includes. For example, this Oregon resident suggested the USDA Forest Service's actions differed from those considered appropriate by the community:

I don't believe decisions were made for the good of the land... People have spoken up loud and clear that they did not want [activity], yet the Forest Service did it anyway. I don't understand how the Forest Service makes decisions if it is obviously not for the good of the land or with the will of the people.

Other participants echoed this sentiment, questioning agency management practices when it was perceived that those practices were not the best choice for the land.

A related point emerged about openness and honesty, and being transparent in the planning and decision-making process; without transparency, community members voiced concerns that suggested they were unable to tell if the agencies were upholding their values, or if decisions were being made soundly. One community member in Oregon perceived that management plans were presented in a way that appeared to disguise the agency's true intentions:

One of the things ... I hate is when [the agency] blurs the truth. Just call a spade a spade. If the [plan] is all about economic recovery, don't talk about restoration in the Purpose and Need. Don't muddle it. I think it becomes offensive and I think it harms the credibility and trustworthiness of the agency.

Following through on promises surfaced as a very important trait of integrity in these studies. Promises could include large items such as planned infrastructure improvements, or smaller items such as returning phone calls or responding to enquiries about post-fire recovery assistance. Community members in Victoria provided examples of both positive and negative experiences with promise-keeping. For instance, an individual can positively stand out for following through:

You trusted Becky because she followed it through ... whatever she said... The trust is because she followed it through. She was the only one who did that.

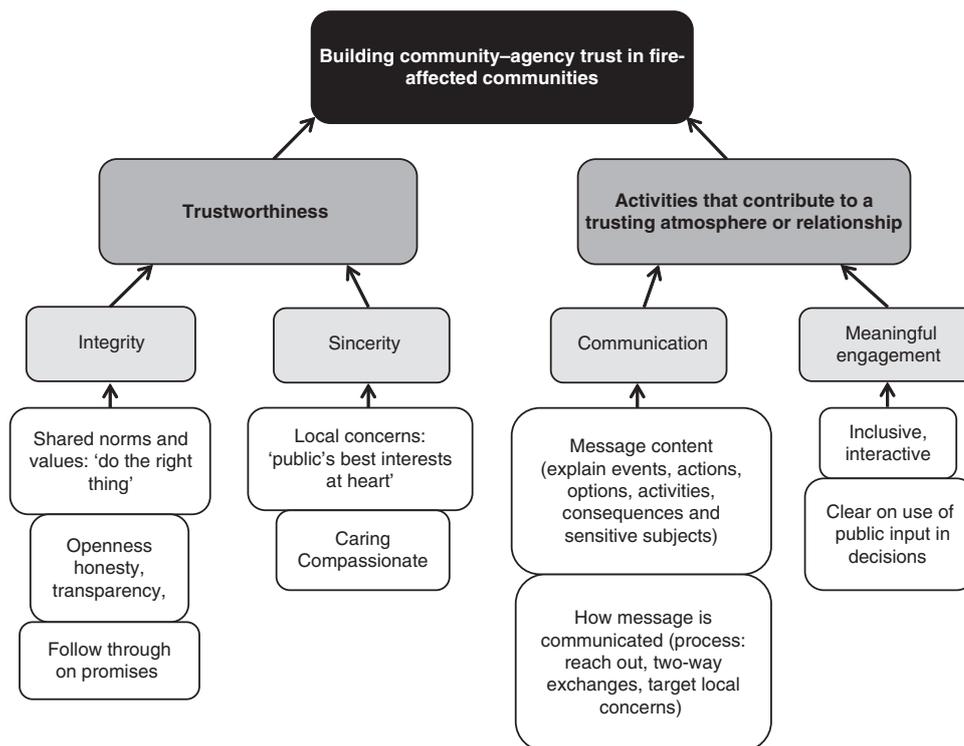


Fig. 3. Key traits and activities within orientations of trust for building community–agency trust in Oregon, US and Victoria, Australia cases.

In contrast, when community members recognise a pattern of not completing projects, agencies may lose credibility and respect as evidenced in this comment from another Victorian resident about the DSE:

We didn't have a lot of respect for the DSE at all... No one seems to make decisions. It's all this convoluted process where no one will actually say what's happening or what's going on. They'll get things started but not seem to finish them later.

As the above two examples indicate, integrity was an important characteristic not only at the interpersonal level but also at the organisational level. Indeed, some participants differentiated between a trustworthy staff member and the agency itself. For example, one Victorian interviewee who perceived animosity between the managing agency and local landowners described one particular staff member as being trustworthy and 'exceptionally good to deal with, so you don't feel obliged to treat him in the same broad brush that you would the department [that is] bound by their token bureaucracies'. At the same time, negative experiences with individual personnel can also degrade the perceived integrity of the agency. For instance, one Oregon interviewee suggested that 'bad experiences with agency staff reduces the credibility of the manager but also of the agency itself and makes you a bit more distrustful for the future'.

Sincerity

Participants in both countries frequently talked about the importance of managers being sincere, commonly referred to as

'keeping the public's best interests at heart'. For many, this meant paying attention to local concerns. A resident in Oregon explained his appreciation of this local focus:

One of the real pleasures here is that there are some real high-quality people here on the local ranger district. There are 7 to 8 people I look on as really sensitive to the environment and local concerns, plus they've been here a long time. We are lucky.

This sentiment was also echoed in Australia, particularly about the CFA's local, volunteer-based brigades. When local issues were not addressed, people also spoke up. Non-local state and national attention, both from the media and managing agencies, can create a barrier to trust. Demonstrating that a national approach does not engender trust, one Oregon resident said, 'Overall it sure smells like politics from the national level, and I really don't like that'.

Being caring and compassionate also surfaced as key to sincerity, especially in communities that recently experienced fire because of how emotional such an event can be. Participants noted that not all staff members and agencies demonstrated similar levels of sincerity. For example, one Victorian interviewee described how staff from some agencies were 'very empathetic and seemed to understand the emotional exhaustion which accompanies campaign fires'. Yet, he also said one particular agency 'did not exhibit much compassion' to residents who had experienced significant property damage. Oregon respondents echoed this sentiment, tending to recognise more locally identified agencies or personnel (e.g. local ranger

district) as being more sincere than regional or national-level personnel. For some, being caring and compassionate also meant having the integrity to be open and honest, as demonstrated by this individual from Victoria:

[It is important] for them to be open, and just to be honest. Just state when they can't do something. And state it in a – particularly after an emergency – in a way that doesn't upset you. Because you're not functioning for six months afterwards, really...

Activities that contribute to a trusting atmosphere or relationship

Two activities arose from the collective data that speak to key ways to create a trusting relationship or atmosphere: the message and process of communicating and meaningful engagement of the public. Participants from both countries endorsed these ideas by stating in multiple ways, 'it's not only what you do, but how you do it'.

Communication

Communication appeared to have a critical influence on building a trusting atmosphere or relationship in both countries. The findings suggested that trust could be built or lost through communication in two ways: (1) the information message itself and (2) how the communication process occurred. In regard to the message, interviewee comments suggested that it is vital for agency staff to explain events, actions, options, activities and consequences that have affected or have the potential to affect the community. For example, one Victorian community member desired a more thorough explanation of events following the fire:

It just absolutely amazes me ... their lack of communication, basically. Not even a letter of – not necessarily apology, but you know, an explanation: 'this is why ...'. And that doesn't seem to be really hard. To me. They would know that. They would have known that when they did it. So why is it such a big deal in telling me?

Being up front about what might be 'sensitive' subjects was also seen as important. Some individuals noted that openly addressing controversial or emotionally charged topics would make people more prepared for fire, even though some personnel were hesitant to talk about such sensitive topics. An Oregon resident explained:

The Forest Service and staff should talk about fires, because fires are going to happen and the public is starting to realise that. We need to talk clearly about how management work now will work to give us more resilience and a greater ability to absorb fire. We must plan ahead for understanding what the impacts of fire will be on the communities.

Some agency staff acknowledged that if information comes from local managers rather than regional, state or national personnel, community members seem to trust it more. In Victoria one staff member explained it well:

[At community meetings, it] probably [helps] having local members of the fire brigade giving some of the information to start with. I think that helps a lot to build trust. And also if the

whole operations are being coordinated and run reasonably locally as well ... they respond better I think than if they are just being told and it's a message coming from a lot further away and they don't know whether the one sending that message actually knows what's going on or not.

The findings suggested that the process agencies used for communication also influenced trust-building. *Process* includes reaching out to those who don't typically participate, fostering two-way communication opportunities, and targeting issues that are of concern to communities, among other things. For example, one manager in Oregon explained how they communicate with local residents:

The purpose of our public outreach efforts is to get feedback, share information, answer questions, and to build a little trust ... We focussed our communications on public issues ... don't spend as much time talking to the choir. And go after those folks who may be [affected] but don't typically come to our meetings ... And whenever possible, try to talk face-to-face. Makes you seem human, you know.

Meaningful engagement

Participants in both study sites wanted meaningful and inclusive opportunities for the public to contribute to forest and fuel management decisions. An important component of making engagement meaningful for participants is ensuring it is clear how their input will be used. A major concern of interviewees in both countries who were dissatisfied with public participation opportunities was that providing input (by written comment, public meeting, or face-to-face conversation) did not visibly influence agency decisions and actions. One Oregon community member explained:

The Forest Service has the public input process down, they just ignore responses. They already had their minds made up.

Similar comments were heard in Victoria:

The overall feeling I got was we were being listened to out of politeness rather than anything else. Basically, I think it was a PR exercise that they listen to our concerns. From what I've heard since the debriefs and that, not a lot has been taken on board.

Although a few complained of public participation requirements taking too long and delaying decisions, most interviewees felt public engagement was both meaningful and appropriately cautious. One Oregon resident expounded:

I think the public process has all been excellent – A+! Public bus tours ... gave the public a sense of what was going on and had a chance to talk about prior treatments and how they survived the fire. Their newsletters, emailings [*sic*], availability of key staff was really great. It all may have contributed to length of time a little. I've read a complaint that the team they put together was ultra-cautious and covered every base. I think that is a conservative approach ... for an area that is near and dear to a lot of people's hearts. I think that kind of cautious approach is warranted here.

Interactive and meaningful public participation activities that give community members a voice in agency decisions can

lengthen the public input process, but as the individual reflects above, it can be critical in some circumstances because of the complexity of some ecological and social systems. As one individual commented about the agency he represented: 'People really appreciated that we tried to get all the science and lots of comments'.

Discussion and management implications

This study reviewed qualitative findings from communities in two countries that have different land management approaches and quite different histories with large fire, yet these results suggest that the dynamics of trust and trustworthiness operate similarly in these different contexts. Several findings are noteworthy.

First, several of the trust and trustworthiness traits and actions uncovered in this study support prior work. The trustworthiness traits of sincerity and integrity emerged as key themes in this work and included several subthemes (e.g. similarity in values, openness, honesty), which reflect important components identified by Mayer *et al.* (1995: ability, benevolence, integrity), Johnson (1999: competence, care, consensual values) and Poortinga and Pidgeon (2003: competence, care, fairness, openness). Specific activities identified in this research that contribute to a trusting atmosphere or relationship support or parallel prior work done by Toman *et al.* (2008a, 2008b) and key points identified in synthesis work by McCaffrey and Olsen (2012) and McCaffrey *et al.* (2013). It is important to note, however, that some key stances on trust (i.e. the importance of similarity in values), emerged only as *subthemes* here, whereas other researchers have found them to be more critical in the understanding of trust.

Second, it is noteworthy that most comments from interview participants were negative. In other words, community members were quick to notice when trust was missing or when agency personnel were not behaving in a trustworthy manner. Prior research suggests there are two interpretations to consider. Other authors have highlighted the important role that scepticism or critical trust plays in risk and natural resource management (e.g. Earle *et al.* 2007, Parkins 2010), and several quotations presented here suggest some interviewees had a healthy scepticism towards the agencies. An alternative view comes from work that suggests negative events carry more weight than positive events on trust levels (Slovic 1999). Indeed, several agency staff members also referenced how difficult it is to recover from a single negative event. This interpretation suggests staff must remain diligent to avoid negative labels or experiences, even in communities that have some base level of trust already built as was the case in Oregon in this study.

Third, the importance of being open and honest in communication and behaviour was a subtheme to integrity in this analysis, but it also emerged in several other places and quotations throughout the work suggesting it may be an important underlying premise to acknowledge in community–agency interactions in fire-affected communities. Although primarily occurring at the interpersonal level, these data seemed to illustrate that openness and honesty could also have an effect on how trusted agencies are as a whole. This supports earlier work by Davenport *et al.* (2007) and Leahy and Anderson (2008) whose research respectively linked interpersonal trust with agency trust in federal management of grasslands and water resources.

A fourth noteworthy point is that many of these same traits and actions can also be addressed at the institutional level. Although much community–agency interaction occurs on-the-ground and in person, these findings suggest that agency rules, regulations, strategies and protocols also have the potential to promote interpersonal trust building. For example, participants in this study spoke positively about field trips, a sentiment that echoes previous research (Toman *et al.* 2008a). Although field trips tend to be more resource intensive than some other communication activities, this research and others agree they are worthwhile and can lead to better relationships (Toman *et al.* 2008a). The implication here is that supervisory and institutional support for staff on these endeavours is often necessary for such activities to occur, and when they do it may foster improved relationships and trust.

A related point is the importance of flexible policies that can be moulded to fit local contexts, a sentiment highlighted by participants from both countries. Some respondents perceived that local agency staff were constrained from doing their jobs by national or state-level restrictions. The importance of flexible policies also manifested in relation to public engagement, as some believed that policies limited how managers could collect information and what could actually be considered during planning and decision making, even naming state or national-level policies as the obstacle here. Although true in some circumstances, this and other research suggests that is not always the case. For example, Shindler *et al.* (2009) found that among survey respondents in the Great Lakes region of the United States, the majority did not agree that local staff were prohibited from doing their job because of national-level restrictions. One possible explanation of this difference is that communities that have experienced a recent fire (e.g. Victoria and Oregon) may have a fresher memory of the urgency of post-fire activities and associated frustrations when 'red tape' seems to get in the way. In contrast, communities without a large, recent fire event would not have that urgency and associated frustration to draw from in recent memory when assessing whether local staff are constrained by national-level restrictions. Further research is warranted to investigate this relationship.

Finally, these findings speak to the effect of prior events and stages of the fire cycle on current impressions of trust and trustworthiness. Several quotations presented here reference or imply prior actions or the history of interactions when talking about current levels of trust and trustworthiness, and this message emerged even more clearly from the interviews taken as a whole. This all supports prior research on the importance of the number of past interactions, the duration of the current relationship (Shapiro *et al.* 1992), as well as the emotional closeness and frequency of interaction on trust in a relationship (Burt and Knez 2006).

It is important to acknowledge possible biases or oversights within this research. Although much of the findings are in line with prior work in fire, natural resource and risk literature, some caveats of the methodological approach must be considered as potentially influencing the results. The original cases were developed independently and conducted in different years. Though both targeted trust, the interviews were conducted as part of separate and, at the time, unrelated projects. The protocols were not identical on all subjects, which may have led participants to interpret some questions differently. However, to

minimise the effect this may have, the authors met in person on several occasions to conduct the joint analysis and were mindful of having different protocols.

This study suggests that in fire-affected communities, trust and trustworthiness appear to operate in many similar ways across two sites in different countries, highlighting the importance of taking these concepts into account in land management practices. The findings also demonstrate that trust and trustworthiness are not mysterious processes but are in fact shaped by every day activities. In other words, personnel are largely already doing most of the work and engagement where trust and trustworthiness could be influenced. With acknowledgement and recognition of the opportunity to influence trust in these every day activities, they could be adapted in a locally appropriate way to achieve desired change in the agency–community relationship. An overarching recommendation might be to ensure resources are allocated, including personnel time and institutional support, for developing long-term relationships and plans for outreach and land management. Additionally, the themes identified here are useful for improving understanding of community and agency behaviour about future fuel reduction practices and fire events.

Acknowledgements

The authors thank the journal Associate Editor and two anonymous reviewers for very thorough and constructive comments that have greatly improved this piece. The authors also thank the research communities in Oregon and Victoria for their time and cooperation. They thank Bruce Shindler for guidance and review on the development of this manuscript, and Keith Olsen and Simon McDonald for creating cartographic images. The Australian research was funded by Charles Sturt University, and Dr Sharp contributed to this paper while funded by The National Centre for Groundwater Research and Training, Australia. The USA research was funded by the Pacific Northwest Research Station, US Department of Agriculture, Forest Service. Dr Olsen contributed to this paper while funded by the Joint Fire Science Program and the US National Science Foundation.

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