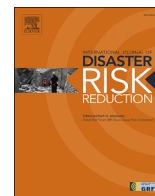


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Cohesion, corrosion and fire adaptation: The case of Boolarra in Australia

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ABSTRACT

Bushfires are becoming more frequent and intense in Australia and worldwide. This study examines how the Boolarra community in the Victorian state of Australia was impacted by bushfire in 2009. We consider the implications of the recovery process experienced by residents on future fire-adaptedness. We take a qualitative research approach using in-depth interviews with residents of Boolarra who experienced the fire and recovery period. We explore community dynamics following the aftermath of the fire. Our data demonstrates that some community members believed that the event had bolstered community cohesion, underpinned by support and practical help from each other, as well as from government and charitable organisations. In contrast, examples were also given of institutional support that appeared to lack fairness and transparency in distribution. This situation led to feelings of resentment, thus community corrosion, between those who did and those who did not benefit from the various government and charitable reparations. We argue that with the increasing prevalence of bushfires globally, there is a need to understand the cohesive and corrosive effects that elements of the recovery process can have on different community members.

1. Introduction

Bushfires have long been a grave concern for Australian rural communities. The State of Victoria is particularly vulnerable to bushfires due to 'a combination of location, climate and vegetation' [1]; p. 2). The level of risk surrounding the Black Saturday period in Victoria was described as 'complex' and difficult for emergency management. Furthermore, [1] highlight that many of the people affected by the Black Saturday bushfires also faced further vulnerability due to factors such as age (young or old), disability status or the state of their home with regard to bushfire defendability. The Black Saturday fires were a major disaster causing devastation to many communities, including the loss of 173 lives and estimated costs of more than AU\$4 billion (Gibbs et al., 2015; 2009 [2,3]). Boolarra was chosen as a case-study because it had previously been overlooked in reports and by media. This oversight was mainly due to the fact that its bushfire disaster occurred on 30 January 2009, a week before the widely reported Black Saturday fires. However, the timing of the Boolarra bushfire meant that recovery and rebuilding occurred during the same key period as the Black Saturday fires. Thus, the experiences and perspectives of the Boolarra community provide invaluable insights into community cohesion (more resilient) and corrosion (less resilient) in one Victorian bushfire-affected community in the aftermath of summer 2009.

Concentrating on the post-fire impacts in the community of Boolarra, we show how this period could have a bearing on better community fire adaptation for future events (McCool et al., 2006; [4]). Furthermore, we show that the post-fire response is a significant period of opportunity as well as recovery (Schumann 2019). We first provide an overview of the Final Report Summary (2010) of

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the landmark 2009 Victorian Bushfires Royal Commission (VBRC) and introduce Boolarra, before outlining our conceptual framework of community cohesion, corrosion and fire adaptation.

2. Victorian bushfires 2009

Victoria was described as 'tinder dry' when bushfires ravaged the State early in 2009 (2009 [3]. The conditions were likened to the 1983 Ash Wednesday fires¹ when a similar natural disaster occurred. The State, charitable organisations and the people individually responded to the immediate needs of communities and a Royal Commission was established to address the risk of future reoccurrence. The Commission aimed to assist with individual and community healing. Technically, the terms of reference for the Royal Commission were to examine the causes and consequences of the Black Saturday fires, and to make recommendations. The recommendations of the Commission were built on the premise that responsibility for safety from bushfire rested with individuals, fire agencies and all levels of government (2009 [3].

The Boolarra bushfire was one among many that occurred in Gippsland's Yarra Valley around the time of Black Saturday. These fires shared similar characteristics, including rapid and uncontrollable spread, locations proximal to forest areas with dense undergrowth (serving as fuel for fires), coming at the end of a summer of hot, dry weather conditions that compounded the situation. The Commission acknowledges that it is not possible to prevent fires completely, but there are numerous strategies that can be implemented to lessen the impacts of future bushfires. Most notably, the Commission indicated that 'the State has allowed the forests to continue accumulating excessive fuel loads, adding to the likelihood of more intense bushfires and thereby placing firefighters and communities at risk' (2009 [3]; p.15). The Royal Commission's Report also documents problems associated with the rescue and recovery processes. It cites inadequacies of recovery agencies and medical services, poorly coordinated welfare checks, inaccessible roads, loss of power and various modes of communication and impediments to the rebuilding process due to non- or under-insurance [3].

3. Boolarra

Boolarra is a rural township in the Latrobe Valley in Gippsland, Victoria approximately 2 h by car from the state capital, Melbourne. Fire has always been a feature of Boolarra's geography. Early in its European history when the Red Wednesday bushfire of 1898 destroyed much of the timber upon which the town's fortunes were built, it portended what was to come both with the influence of fire and willingness of the town to adapt and survive (Victorian Places 2015). The physical vulnerability to bushfire and changing social dynamics of Boolarra reflect other parts of Australia and further afield, making the town an ideal case-study site to explore social circumstances relating to bushfire recovery. A decade on from the Boolarra bushfire, our study presents the reflections of Boolarra community members. These reflections revealed how their experiences during the disaster recovery period may have impacted the community in terms of cohesion or corrosion and, in turn, contributed to the resilience of the community and its future fire adaptedness. Before presenting our findings, we review the literature relevant to the key concepts that we use to interpret the interview data.

4. Cohesive and corrosive communities

Post-disaster communities have been described as 'cohesive' and/or 'corrosive'. A cohesive community is one that is able to use the crisis event and the associated response to strengthen existing structures and increase the engagement and social cohesion of its residents, leading to the likelihood of greater community fire adaptation [5,6,7]. A corrosive community is when a crisis creates division and decreases the likelihood of community members being able to work together to improve the response to future events [5,8,7]; Picou, Marshall and Gill 2004). As our findings below illustrate, post-disaster communities may exhibit elements of both phenomena. When it comes to corrosion in a community, division may reflect the response by authorities and the way that residents experience the effect of the crisis. In traditional disaster research, it was believed that 'technological' disasters [9] - man-made crisis events such as an oil spill or chemical leak, were more likely to lead to the formation of corrosive communities (Carroll et al., 2006 [5,8,9,7]; Picou, Marshall and Gill 2004). 'Natural' disasters such as bushfires were thought less likely to engender corrosive communities [9]. However, with emerging scholarship on how bushfire impact on communities and the growing prominence of anthropogenic climate change as a contributor to the seriousness of natural events, the distinction between technological and natural disasters is no longer clear cut [10]; Mayer, Running and Bergstrand 2015; [11]; Picou, Marshall and Gill 2004). There is also evidence to show that, central to the development of corrosive communities post disaster, is the management of insurance, compensation schemes and fundraising monies (Mayer, Running and Bergstrand 2015; Picou, Marshall and Gill 2004; Eriksen and de Vet 2020). Both government and public charitable funds have the potential to influence cohesive or corrosive outcomes for communities. Key to cohesive outcomes is a perception of fairness, equity and transparency of bureaucratic approaches and the distribution of monies [10]. Inequitable access to funds has corrosive community effects. Therefore, with government and charitable payments assuming a more significant role, especially in an environment where insurers are increasingly refusing to insure people in high risk locations, the issue of community corrosion needs to be considered in bushfire research. This is because, in general, greater cohesion and engagement of the community means better adaptation to fire in the future [5].

¹ The Ash Wednesday bushfires occurred in south-eastern Australia on 16 February 1983. In a matter of hours, more than 180 fires caused widespread destruction across the states of Victoria and South Australia. Several years of severe drought and extreme weather led to Ash Wednesday, which was one of Australia's worst fire days for a century, until the Black Saturday bushfires in 2009.

5. Community diversity and social vulnerability to bushfire

Existing research demonstrates that diverse social characteristics in a community contribute to different levels of vulnerability to bushfire [12,13]. That is, 'who people are, how they got to be that way, their worldview and their perspectives about a given hazard, including prior experience with similar impacts, will influence how they respond to and recover from future events' [14]; p. 1086). Therefore, a top-down, 'one size fits all' approach becoming fire adapted does not address the increasing social diversity of communities in what is known in Australia as the urban-bush interface (UBI). The UBI refers to areas at the edge of cities where dwellings are in close proximity with flammable bushland vegetation [15]. These areas attract those who wish to reside in a natural environment, however they are exposed to the risk of bushfires. Emerging flexible approaches to bushfire recovery articulate the importance of a framework to structure responses and the need for an adaptable model that accounts for social difference - in addition to the already prioritised geographical and environmental factors [16,14,17]. These flexible approaches allow for local context and knowledge, and their influence on collective action as key considerations in planning. For example, drawing on a case study undertaken in Sydney, NSW, Australia, Preston et al. (2009) note the importance of the role of local governments and communities in relation to climate and vulnerability to bushfire disaster. They maintain that concepts such as vulnerability may not be well-understood by a lay audience unless assessment frameworks and vocabulary are familiar to those directly involved. Thus, again emphasising the central role of community and local approaches and flexible frameworks in bushfire recovery.

6. Fire adapted communities

'Fire adapted communities' is a concept that is increasingly becoming the focus of policy with a view to organising the many disparate facets of bushfire planning in at risk communities. Fire adapted communities are not limited to geographical spaces or nations and can inform effective ways for people to exist with the threat of future bushfires (Carroll and Paveglio 2016; Paveglio, Boyd and Carroll 2012; [18,19,20,21,17]. Recognition of the inevitability of future bushfire events due to changing climate and human habitation patterns in the UBI (increased habitation and more diverse populations) as well as lessons from past crises have informed the push towards fire adapted human communities being the ultimate goal [5,22–24]; Carroll and Paveglio 2016; [16]. For the purposes of this study, we adopt a definition from the U.S. Fire Administration which states that a fire-adapted community "is a human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire through preparation" (USFA, n.p.).

As previous research has found, to fully understand the impacts of bushfire events on a community it is necessary to separate the event temporally into before, during and after the fire (Schumann et al., 2019 [25]; McCool et al., 2006). Furthermore, the dynamics within a community vary at all three stages (McCool et al., 2006). Within this context, many studies also refer to mitigation strategies such as controlled burning and fuel reduction (Carroll and Paveglio 2016; [14,16,20,26,17]. As such, the term refers to the period 'before' the event. However, our research focused on the 'after' period and we undertake to examine how the actions and interventions that formed part of this period in Boolarra had repercussions for the community in terms of cohesion. Cohesion that, we argue, may also influence the path to future fire adaptation by affecting what happens in the 'hot moment' of the recovery and rebuilding period (Schumann et al., 2019, p. 1).

7. Methodological approach

We took an interpretivist approach to the study. That is, we were aware that as we listened and learnt about the participants' bushfire disaster experiences in Boolarra, our interpretations of their stories could not be ignored. The long-standing and adaptive nature of the interpretivist tradition is based on the role of understanding and interpretation [27]. With this in mind, qualitative, semi-structured interviews were used to encourage a balance between the participant relating their experiences and steering the conversation towards the aims of the research (Bell 1999). Interviews varied in length from 25 to 60 min. The 15 participants were recruited through a community leader in Boolarra who introduced the study to community members interested in sharing their experiences of the 2009 bushfire. This 'snow-balling' recruitment process began with connections the researchers had with community members and this led to others being introduced to the study. Potential participants were provided with the researchers' contact details to arrange a telephone interview if they were interested. The participants were mainly permanent residents of Boolarra with a small number being temporary, that is they owned holiday or weekend residences but nonetheless felt a strong connection to the town through spending much of their leisure time there. Participants were asked how the fire had impacted their lives and what coping strategies they used to overcome difficulties. They were also asked about community connections and support, and how they went about seeking help. Details of the participants were kept to a minimum to protect their anonymity. Participants were assured that pseudonyms (P1, P2 etc.) would be used if parts of their interviews were published and all socio-demographic identifiers would be removed. The interviews were audio recorded with permission and transcribed for ease of analysis. Care was taken during the interview process to allow participants to pause or discontinue if the topic was emotion triggering due to their bushfire disaster experience.

The transcripts were read and reread several times before being manually coded. The coding involved the identification of common topics among the responses from the 15 participants. Subsequently, a thematic data analysis was undertaken using NVivo. The data was then analysed for common major themes in order to understand the experience of Boolarra in the rebuilding process through the perspectives of the participants. This approach provided an understanding from the lived experience of Boolarra residents including how they developed their recovery and responses relating to community resilience. The analysis provides insights into community resilience in a post-bushfire period that could inform future bushfire recovery in other towns, in Australia and globally.

8. Findings

8.1. Community cohesion: check-ins, a helping hand and local organisations

Engagement with bushfire-prone communities is a key element in reducing vulnerability and building resilience towards the next catastrophic event [1]. Bushfires remain a fact of life for many parts of Australia and indeed other parts of the world. Indicators of community cohesion that emerged after the Boolarra fire significantly alleviated the anguish felt by many vulnerable residents following the fire, a phenomenon that has been well-documented [5,7]. Characteristics of cohesion that emerged included community members checking on each other to ensure they were coping and to offer help if needed. These practices, while relatively simple, played a crucial role in contributing to the recovery of the community. For example, one interviewee commented:

Yes, everyone has come a lot closer than they were before ... people would check up on one another on a regular basis. Like with me, I had people come and see me every couple of days. "How's it all going?" ... and I do the same. (P2)

And another interviewee observed: 'people now seem more aware of fire safety and are concerned for neighbours' (P10). In addition to providing others an opportunity to discuss their circumstances, the visits included offers of help with rebuilding tasks, such as fencing. This community expectation to check on others' well-being and to provide help where possible was key to fostering cohesion between community members. P2 indicated that fostering these norms was a duty that all were happy to fulfil. The participants agreed that the support received from others provided 'a sense of community'. For example:

I think it's just the fact that people are talking about it ... it's part of the recovery process for individuals, their mental health and everything ... I think if you have a sense of community ... everyone just getting out there, digging in, helping and all that sort of thing ... you'd be walking down the street and everyone was ready to have a chat. (P5)

In addition to the importance of being part of the community and enacting agency by assisting others [12], it was comforting that others could empathise with their experience. This open, communicative environment did not appear to be restricted by experience or specific community groups. Rather, the bushfire was perceived to have eroded some of the existing silos in the community between long term residents and incomers, thus providing an example of the potential for cohesion post-disaster [5,6,7]:

Boolarra was a funny little place! When we first got there, there were a couple of different cliques ... I think after the fires some of those barriers got broken down a bit because everyone was helping out ... I know the community is very different now from what it was back then. (P5)

Checking in with other community members meant that people got to know each other better and also make new acquaintances. These nascent networks were then able to form the foundations of a more cohesive community. The emerging networks combined with the material, practical help, started to transform vulnerabilities into resilience. The connectedness of these dimensions meant that community members were happy to receive and give help knowing many of them were experiencing similar hardships. The resilience was achieved through developing ways of coping with the psychological effects of living with risk that are a reality for communities prone to disaster events like bushfires. The new networks also allowed experiential knowledge about how individuals had prepared and fared in the bushfire, what worked and what had not, to be disseminated via story-telling [28]. Transmission of knowledge could occur concurrently with the practical tasks, providing an example of the foundations of fire adaptedness being laid during this aftermath period [12,20,14,26].

Offering practical help to each other was an integral component of the community cohesion that was evident after the fire. The help appeared to be reciprocal, according to individual situations and ability to help at a particular time in the recovery. P5 experienced significant property loss and subsequent financial struggles relating to a newly renovated home:

I wasn't able to save my house, but we tried to save other people's where we could ... That was the first part of our contribution ... we stayed up there and were pretty heavily involved ... just to help people out where we could or just trying to recover our own property which was a mess. (P5)

P5 and other community members worked to save as many residences as possible. The perceived selflessness to leave one's residence once it was beyond saving to then focus on assisting others was highly regarded by participants and a key element of the community cohesion that was generated within the social process of the disaster [8,7]; Picou, Marshall and Gill 2004). Consensus was that those who were able to help others in need did not hesitate to do so. The help that residents were given was described in terms of mental health impacts as well as appreciation of practical help, a catalyst to their own actions and contributor to community cohesion more broadly. The experience of P2, who lost fencing in the fire, bears this out:

[T]hey ... buil[t] a rural fence ... they did the first run and they said, right that's how we do it, now you can do it. You need a hand, or you need advice, give me a call. That was also the mental stimulation [for me] to get back into action again.

P2 suggests that assistance from community members and others helped transition individuals into the rebuilding process and disaster recovery [29]; McCool et al., 2006). P3 and 4 also observed the kindness of community organisations that provided equipment, psychological stimulus and a flexible approach [12] towards recovery:

The Rotary picked out so many families, they did a collection of the things that you need like shovels and spades and wheelbarrows and garden tools and things like that, which was wonderful, boot sizes and jackets the right size ... [There] would have probably been about \$2,000 worth of stuff on there! It was wonderful. (P3)

There was a lot more done by smaller groups than what there was by the bigger groups. Which surprised me ... We got tools donated by school programs ... brand new! ... And Country Women's Authority (CWA) ... associations, all over the place donated blankets ... sent lingerie (laughs), but that's okay it's the thought that counts! (P4)

Echoing Paveglio, Boyd and Carroll's framework (2017), local and community-based organisations played a key role contributing to community cohesion, their actions valued similarly to community members helping each other:

As soon as something like ... [the fire] ... happens, the Rotary, Lions Club, CWA and all those smaller groups are on board ... which is fantastic, and stock groups like Stockland and they're a food group ... they'll do food for animals and fencing and stuff like that. (P4)

Community organisations proved to be influential in rebuilding in the post-fire community. Local organisations were perceived to have anticipated their needs far better than the larger institutions, at least in the initial stages of recovery. This outcome reflects the centrality of community as a focus for both the disaster event and the recovery [26]. Often, this was in the form of quick decisions regarding material donations and practical interventions such as the CWA goods packages. This help also extended to community members assisting one another with compensation applications and making sure all those affected were claiming what they were entitled to. Examples such as this demonstrate the link between the community structure, cohesion and becoming fire adapted (Paveglio, Boyd and Carroll 2017). The support needed to be in place to enable vulnerable people to position themselves mentally and practically to tackle the institutions that would provide the crucial elements of resilience building. The thought of having to deal with this process alone would have made the path to recovery difficult to access:

[A]fter the fires, we all went and met with everyone ... [to see] who can do what ... what they could apply for ... it was really good actually you don't know, like no one has been taught before. Yeah, they send people out to talk to you, and say okay well, your house has burnt down, go to your insurance but we can't do everything ... you don't know what you can claim for and what you can't because you're not one of those people that did that on a regular basis. And we don't claim for stuff from Centrelink² or anything like that, I wouldn't have a clue what people could apply for. (P4)

The Boolarra community demonstrated an ability to recognise vulnerabilities among themselves and respond in reciprocal ways to provide practical, material and psychological support after the bushfire. It was believed that 'people who are connected to someone who left [the area] are struggling more' (P15), reinforcing that 'the community networks were critical for people' (P13). Checking on other community members and offers of help led to community cohesion and provided the basis to develop a fire adapted community, reflecting what has been written about enhancing the effectiveness of approaches to bushfire adaptation elsewhere [12].

Local community organisations also arranged social events. Several participants highlighted these events as important for maintaining the positive 'community spirit' they experienced after the bushfire. P2 described the community building cohesion as the most important part of recovery after the fire:

[The community] organised things like a nice barbecue ... The meat was donated from the local butcher's shop and people would talk about their problems ... That's still going on now ... we had an Australia Day [event] earlier this year, and there were over 2,000 people there. People around the area come to see how Boolarra is going. (P2)

After the fires ... the local 4WDs (Four Wheel Drive Club) offered to come and do the fences ... they bought materials and came and did the fencing, and we just put on a big lunch. You know, morning teas and everything like that so we always had something nice to eat ... Yeah, the Morwell 4WD club came out and did that ... (P3)

The community, including individuals and local organisations, created an environment of support that was a bastion against the pressures of the crisis that had occurred. The social events enabled vulnerable residents to transition to the mindset required for rebuilding and seeking financial aid and redress. In addition to social events forming part of a practical rebuilding framework and networking opportunity, they also appeared to stimulate mindset change within the community allowing individuals to respond to their adversity and begin to put measures in place for better preparation next time. Through this lens, the aftermath of the fire became more than just a series of events. Rather, it was a constantly evolving social process that changed the community fundamentally [26]; Paveglio, Boyd and Carroll 2017).

8.2. Community corrosion: drawing inwards

Despite a general perception of cohesion in the community of Boolarra [5,6,7], a small number of participants explained that not everyone felt supported by the community response. Corrosion also emerged after the Boolarra fire, whereby the crisis created division which could prevent community members working together in readiness for future crises [10,5,8,7]; Picou, Marshall and Gill 2004). Of course, the crisis was likely to be experienced differently within the same community depending on individual characteristics and circumstances. For example, the following perception was in stark contrast to most:

We just recovered ourselves really ... just new fencing we had done ... we're just not really community-oriented, as far as belonging to the community we are pretty much to ourselves ... (P6)

² Centrelink is the Federal Government organisation via which Australians apply for social security benefits.

Thus, the heartening elements of community cohesion previously discussed cannot be assumed to have been experienced in the same way and with the same impacts by all community members post-disaster or during any point in the recovery. The way that crisis events can diversely impact people in the same community, often according to socio-economic factors, has been highlighted in other studies of bushfire experiences [30,12,28]. In some circumstances, it appeared that a 'them and us' mentality developed following the fire when it was seen that properties of permanent and temporary residents were considered differently in terms of compensation, thus undermining cohesion. Another key factor was the difference in treatment by the compensation teams towards renters compared with those who owned their own properties:

I kept saying to them ... "Why can't I have that available to me?" One of the things that really upset me was that, because I lived with my sister, because I didn't have a lease agreement, I wasn't entitled to the \$50,000! The community were amazing, really amazing. I can certainly say the government weren't, they were giving the money to all the wrong people. I got assistance from a woman at the Salvation Army at Morwell. She left [the Salvation Army] because she was absolutely horrified at what was happening with the funds. (P7)

These potentially corrosive factors created perceptions of difference between residents following the fire despite relative cohesion during the event itself. Judging by the participants' comments, these factors may impact resilience to future events or the potential for Boolarra to become a fire adapted community [5,6,7].

9. Responding to corrosion and becoming fire adapted

Three key dimensions of a fire adapted community emerged in Boolarra: Insurance, government responses and fundraising.

9.1. The role of insurance and insurance companies in bushfire adaptedness

Schumann et al. (2019, p. 19) noted 'the potential for heightened public buy-in and increased financial resources for wildfire risk reduction' in the post-fire recovery period. Nonetheless, financial redress schemes of various kinds were well known to contribute to post-disaster community corrosion under certain circumstances (Mayer, Running and Bergstrand 2015; Picou, Marshall and Gill 2004). With greater risk of bushfire events in Australia and elsewhere and the growing significance of communities becoming fire adapted, the global insurance industry is a key player [1]; Eriksen and de Vet 2020). After the Boolarra bushfire, many participants' first thoughts turned to their insurance companies or policies and to how and whether these would provide support. P5 related their experience:

The insurance companies came out and set up pop-up shops in town, so they had people on the ground. They paid out really quickly ... within two weeks I was paid out. I know they did that with a lot of people ... to allow them to start to rebuild straight away, especially the people that had lost homes ... they could know where they were at and think about what they were going to be doing. A lot of people didn't know what they wanted, and a lot of people moved away ... people who lost their houses moved away to live with family and stuff like that. I know a lot of them didn't come back. People were gone and sold the property, but I know the insurance companies came ... I've got a funny feeling the insurance companies had some psychology services with them as well.

In many cases, insurance companies served as a starting point for the rebuilding process. It was the financial assistance from insurance after the disaster that enabled the victims to start the process of rebuilding their property, creating a life for themselves which would in turn foster resilience and alleviate vulnerabilities in the longer term. That is, insurance was a key component of fire adaptedness in the post-fire period with the potential to allow residents to create fire adapted dwellings for the future (McCool et al., 2006; Eriksen and de Vet 2020).

9.2. Government responses that engender FACs

Authorities' responses to crisis can also be a trigger for community corrosion [10,5,6,7]. In the aftermath of a bushfire disaster, recovery depends on governments to be a primary catalyst towards fire adaptedness. In this Australian study, relevant government bodies included the Victorian State Government, the Federal Government and the local or municipal council. The local council in Boolarra played a significant role in contributing to the recovery process:

In relation to the local council ... we were able to dump any rubbish we wanted at the tip for free. There was a lot of junk around that we were able to take to the tip, no hassles. When it came to rebuilding the house, ... [the council] approved our building permit within seven days ... It normally takes six months and they were true to their word. Any outbuildings that were burnt and had to be replaced, like sheds or whatever, they waived the building permit ... usually you have to pay money for a building permit ... I walked in with the plans for the shed and we walked out with the stamp that said "Yep, that's approved. See you later" ... They had government departments here left, right and centre helping us. Like when it come to a new septic system, because they said this one is a little bit antiquated ... "We will assist you, you don't need a plan for the new septic ... just go for it!" (P2)

The local municipality's response and support of the community was essential in ensuring an effective transition to begin the rebuilding process, something that has been demonstrated in other research about Black Saturday 2009 (Gibbs et al., 2015) and, more recently, after Black Summer 2019–20 (Victorian Government 2020b). It was evident that the response from local government, such

as municipal councils, mostly contributed to the effectiveness of this process post-Boolarra fire. According to P2, local government representatives facilitated this process by removing the 'red tape' for basic processes and services that the bushfire victims required.

However, those who lost houses that were not their main place of abode were not always adequately covered by insurance. Regardless of justification, this discrepancy and perceived unfairness in the insurance process were a key cause of corrosion in the community [5,8,7]; Picou, Marshall and Gill 2004):

... for me it was a bit painful because I felt that we were considered a little bit second rate compared to people that lost their [primary] houses, which I understood, but then some of the amounts of money I saw going to people that only lost a shed, not their house, was nearly what I was getting and I lost a house ... I haven't been back to Boolarra in two years and it took me a long time before I went back after I sold my place ... just because it was so painful for me. But every now and then I'll drive down there, the street where we had our house, and have a look around town and see if anything's changed and that sort of thing. It was funny because I never thought that would happen, I always thought I really loved that place, but yeah I suppose it broke me, I guess. (P5)

Everything that we applied for, we put in an application and you had to be living at the property, it had to be your only property. So there were all these restrictions and a lot of the properties up there are either second places for people or hobby farms or things like that, and they may not have lost everything, they may have lost only a shed or farm equipment or car or something like that. So, it was really awkward to know who to go to, to apply for the money but when you did apply and they did say no, well in our case because it wasn't our [main] place of residence, I said "Hang on, if you look at the photos, we were up there all the time and we had support letters from the local policeman, the fire brigade, the local store owner to say how often we were up there and what our involvement was up there and things like that but, you know, that doesn't make any difference to people, some people, you know, they've got a criteria to go by and, if you don't fit that criteria, well, sorry, that doesn't mean anything. (P4)

P4 and 5 had lost a second home and hobby farm in the Boolarra bushfire. As a result, they felt they were treated differently from people who had lost their primary residences. Therefore, the bushfire recovery process for them was a source of conflict and division rather than enabling them to feel closer to a community where they had spent time (Carroll et al., 2006; [31]). Such experiences gave credence to bushfire events, both natural or man-made, contributing to community corrosion [10]; Mayer, Running and Bergstrand 2015; Picou, Marshall and Gill 2004). P4 and 5's insurance policies did not reflect recent work they had undertaken on the property, so ultimately their insurance and other payouts did not cover the cost of rebuilding. Therefore, they (quite bitterly it seemed) decided to depart the town rather than rebuild following the disaster. Both these participants had another residence in Melbourne and as a consequence they were looked upon unsympathetically by insurers and governments alike in their claims and were not eligible for charity funds. This was despite having spent a lot of money in the town and providing community services such as volunteering with the local fire brigade. P4 and 5's stories demonstrate the complexity involved in the interactions between communities and other bodies in a post-disaster period [1]. Their stories also relate to the corrosion that can seep into post-disaster communities when distribution of financial assistance is perceived to be unfair [10]; 2006), with implications for recovery, resilience and fire adaptation [5].

9.3. Fundraising: The potential to create corrosive communities

Distribution of fundraising money in the aftermath of a disaster can be another key flash point (Mayer, Running and Bergstrand 2015; Picou, Marshall and Gill 2004). Negative views were expressed on the national stage about fundraising for Black Saturday, as well as distribution of those funds within Victorian communities. Relief payments available for bushfire victims were interpreted as potential opportunities to create better lives post-disaster and, as such, were fiercely contested. P3 explained:

You always build something you can sell later so you aren't wasting your money. You're only going to get one shot at this, you only get this money once in a lifetime, something that will never ever happen again, I hope, but you have to make sure you do the right thing. I've worked too hard to lose it. (P3)

P3 was satisfied that they had received an adequate amount of money in compensation for their property loss and could begin the rebuilding process. The amount included an allocation from the large amount of money raised by charitable and other fundraising appeals after the bushfire. According to participants, the eligibility criteria and the amounts of compensation provided from funds raised varied greatly between victims of the Boolarra bushfire and this had corrosive effects as has been observed in other post-disaster communities [10]:

... put it this way, I won't ever donate to the government or even some of the other groups that do after-fire fundraisers because I felt, a lot of the time, the right people didn't get the money. I felt that it was people that certainly probably weren't as deserving as others that were getting funding when they realistically didn't lose much at all. Whether it was a loophole ... if you just happened to be in Boolarra when the fires went through and nothing happened to your house, nothing happened to you, you were still able to get funding. I reckon that was wrong because there were people that really needed it and in a way we were caught like that because it wasn't our primary place of residence so we were considered entirely differently to people that lost their home, and I get that, but then there were people getting money and they lost nothing and that really annoyed me. (P5)

Perceptions of unfair treatment have been shown in previous research to be at the heart of the potential for aid money to become a source of corrosion in a post-disaster community [10]; Mayer, Running and Bergstrand 2015; Picou, Marshall and Gill 2004) and it would appear that this happened to an extent in Boolarra.

10. Discussion and conclusion

The views shared by our participants suggested that the community was developing a fire adapted approach through reciprocal support and being a part of the community. It was also shown that local organisations played an important role. It was clear that these important processes did not happen alone, but were part of broader social processes [8,7]; Picou, Marshall and Gill 2004). Moreover, community cohesion was needed in order to provide the stimulus for effective action, change and recovery [5]. Affected residents needed care and support in all domains, and local people and groups in Boolarra were the catalysts for fulfilling this role. For those who had experienced property loss or damage, removing procedural barriers associated with rebuilding also empowered community members to embark on the recovery process [10]. However, to provide appropriate support for the community, participants indicated that governments must first make the effort to understand the greatest community needs and how they could be alleviated. By doing this, greater fire adaptedness would be achieved in the long term, encouraged by what happened during the post-fire period (Carroll and Paveglio 2016; Paveglio, Boyd and Carroll 2012; [20,21,17]).

Fundraising augments the resources available to people that may have lost almost everything, enabling communities to work towards fire adaptedness. Clearly, it is important for such funds to be fairly allocated [10]. Given the vulnerabilities of those affected by such an event, it is not difficult to understand why perceptions of unfair distribution abound. Fundraising could provide the means to enable affected residents to re-build their home and decrease the level of vulnerability to future bushfires by augmenting the level of fire adaptedness (Paveglio, Boyd and Carroll 2017). Furthermore, those unimpacted by a disaster can show support for affected communities and contribute to cohesion beyond the affected town. Timely and transparent distribution and perceptions of fairness, as well as prescribed criteria for allocation, remain key to this mechanism's success [10]. With the frequency and intensity of bushfire events increasing, many people in fire prone areas may find themselves unable to afford or even access insurance to recoup their losses in future events. Therefore, fundraising may grow to be increasingly relied on by governments seeking to fill the pot of money available to rebuild communities in ways that decrease vulnerability to bushfire and enhance disaster recovery processes and resilience for the longer term goal of fire adaptedness. Our findings suggest it is imperative this process is carefully implemented, and that those giving and receiving funds are assured of a fair process for all concerned, thus lessening the likelihood of developing a corrosive community [10]. Our work reinforces the broader global literature and demonstrates the value of conceptualising community experiences of and responses to bushfire disasters as linked across different nations.

At the time of the fire in 2009, Boolarra's population had a mean age of 45 with many employed in the region's fuel generation industry, farming, education and trades [22]. The population was, therefore, not as exposed to the socioeconomic vulnerabilities documented elsewhere as contributing to loss around Black Saturday [1]. Nonetheless, changes to the Boolarra population and the perceived differences between permanent and temporary residents of the town and renters versus homeowners impacted social cohesion after the fire, possibly affecting the town's capacity to become maximally fire adapted and resilient into the future. These factors reduced community cohesion and raised vulnerability. The changes signalled a shift in the social mix of the town, with contrasts between life-long residents, new permanent residents originally from the city and those who were not permanent residents but indicated strong commitment to the town and its social life, including volunteering as fire-fighters for the Country Fire Authority (CFA). In addition, corrosiveness stimulated by the distribution of raised funds may well have impacted the process of resilience building and the town's capacity to become a fire adapted community [5,8,7]; Picou, Marshall and Gill 2004), an essential attribute for the future of Boolarra. Bushfire events are already a significant part of Australian summers and likely to become more so with the growing effects of climate change on drought and fire seasons (Climate Council 2019). Therefore, finding better ways for fire-prone communities to adapt in the face of future events is a top priority in disaster planning and preparedness [10]; Mayer, Running and Bergstrand 2015; Picou, Marshall and Gill 2004).

Our results cannot be generalised too broadly given the small scale of our study. Nonetheless, the findings provide useful insights that should be considered in responses to future bushfire events. Above all, there is an urgency for communities to be fire adapted so they will be better placed to deal with future bushfire crises (Carroll and Paveglio 2016; [20,21]). There is a need for further, more expansive research to help communities become more fire adapted and reduce the corrosion that hampers this process [5]. The study also highlighted the need for further scrutiny of fundraising and the perception of some community members that funds were not distributed fairly. There has been previous controversy concerning the issue of fundraising during the Australian Black Summer bushfires of 2019-20, particularly in relation to the those who believed they did not receive their fair share [32]. This was also a problem noted in the aftermath of the Black Saturday fires more broadly [32]. An association between the distribution of funds and corrosive communities suggests a need for further research. As the 2009 Victorian Bushfires Royal Commission highlighted (2010), there were many things that could have been done better and many issues to work through. Accounting for the local, social and community components could hold the key to mitigating the corrosive effects of certain policies and build towards more effective fire adaptedness in Australia and further afield.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data that has been used is confidential.

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