Vulnerable voices on fire preparedness: policy implications for emergency and community services collaboration

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Abstract

An investigation of household preparedness and community connections was undertaken in the NSW Blue Mountains. The research employed a qualitative approach. Upon receiving ethical approval, interviews and focus groups with a total of 31 vulnerable residents were recorded and transcribed. Data analysis included the manual coding of individual transcripts and key word queries entered into NVivo 10. Fire planning for community resilience within Australia focusses on property preparation and an emergency warning system designed to assist the evacuation decisions of residents. In this article we report on vulnerable residents and their preparedness for the October 2013 bushfires. Our findings demonstrate that the vulnerable people interviewed did not consider property preservation as a priority, and their knowledge and engagement with the warning system and evacuation procedures was limited. Of practical value, the research found local community services and emergency planning committees should collaboratively plan for vulnerable community members who are unable to take a very active role in preparing themselves or their dependents to face a bushfire or similar disaster. In addition, preparedness and warning communications should be devised and targeted to more clearly assist vulnerable people during the lead up to, and in the midst of, a disaster.

Keywords: vulnerable, preparedness, emergency, community, resilience

Introduction

This study stems from a larger research endeavour, *(names withheld)*. The overarching aim of the *(title withheld)* research is to determine the social support and networks of the most vulnerable in the community and thus inform strategies to increase community resilience. The study reported here is concerned with a qualitative exploration specifically focussed on the transcripts from interviews and focus groups with 31 vulnerable residents from the Blue Mountains in NSW. Vulnerable residents are defined as meeting one or more of the following criteria: over 65 years of age, having a chronic illness or disability, and/or living alone. Lack of support and social connection has been demonstrated to increase vulnerability (Tuohy and Stephens, 2011; Forrester-Jones et al. 2012; Phillips et al. 2010).

In the following section the events of the October 2013 fires are summarised, specifically in relation to vulnerable residents. The concept of 'shared responsibility' as outlined in the *National Strategy for Disaster Resilience* (2011) is introduced against the backdrop of what is meant by 'fire preparedness' within the Australian context.

The Blue Mountains
Located within NSW, the Blue Mountains contain 25 villages nestled in a ribbon development stretching across the top of a beautiful mountain ridge. The region is heavily forested and depends on tourism. Due to being serviced by one major arterial road and one main railway corridor, older, vulnerable and at risk members of the community face specific challenges in a disaster. These include road closures, the halt

of public transport and power outages, usually as a result of bushfire or severe storms.

In October 2013 a military exercise sparked a fire which rapidly escalated into a threat for upper and mid mountain residents, eventually destroying homes in the village of Mt Victoria. Concurrent fires destroyed homes in Yellow Rock and Winmalee, thought to be started by tree branches over power lines. In all over 200 homes were destroyed with no immediate loss of human life. On Wednesday 23 October 'residents who did not have a bush fire survival plan' were advised to leave the Blue Mountains. All Blue Mountains schools were closed so that families could stay together (Curran 2013). Vulnerable residents who were interviewed, many of whom had no means of transport and limited understanding of the unfolding situation, experienced extreme personal stress.

Within the population of approximately 80,000 residents, nearly 12,000 are over 65 years and approximately 15,000 households are living on AUD$600 or less per week (ABS 2011). This represents a significant proportion of people potentially requiring community resources to make up for what they are unable to afford or access for themselves, depending on how connected they are within the broader community. In addition, our initial investigations revealed that vulnerable residents may not be actively engaged or consulted by the relevant authorities prior to or during emergency situations, indicating a lack of appreciation for their needs. This concurs with the findings of Garlick (2015).

Situating 'community'
Within the study, 'community' is understood in terms of physical proximity rather than the global internet-mediated community. Physical proximity reflects the importance of having assistance nearby so that a speedy response can be mobilised. The geographic understanding of 'community' is reflected within the Australian *National Strategy for Disaster Resilience,* where the concept of 'shared responsibility' has been used to describe local action:

> Communities, individuals and households need to take greater responsibility for their own safety and to act on advice and other cues given to them before and on the day of a bushfire. (*National Strategy for Disaster Resilience* 2011: 3)

The *National Strategy for Disaster Resilience* (2011) sets out the agenda for shared responsibility and the need for all sectors of society to take responsibility in times of disaster, including all levels of government, business, the non-government sector and individuals. For individual households 'shared responsibility' has been interpreted as preparing the property and planning for evacuation (Keelty 2011; McLennan & Handmer 2012). To assist these activities residents are encouraged to draw on guidance, resources and policies of government and other sources, such as community organisations. The *National Strategy for Disaster Resilience* further states that:

> The disaster resilience of people and households is significantly increased by active planning and preparation for protecting life and property, based on an awareness of the threats relevant to their locality. It is also increased by knowing and being involved in local community disaster or emergency management arrangements, and for many being involved as a volunteer. (*National Strategy for Disaster Resilience* 2011: iv)

As communities work out ways to determine how resilient they are and what are the key factors in their resilience, they are also confronted with the need to recognise those who are unable to adequately support themselves in a disaster. The contribution of this research is to examine the experiences of vulnerable individuals and make recommendations that the authorities can implement to improve practices in relation to working with vulnerable members of the community.

Resilience and vulnerability applied
Santos poses the question: 'Resilience: an innate quality or dynamic process?' (2012: 5). If the *National Strategy for Disaster Resilience* (2011) is taken at face value, the Australian government believes that resilience can be grown and nurtured rather than viewed as something static and inherent within a community. The *(withheld)* researchers share this perspective.

Untangling the web of definitions and applications of the words 'resilience' and 'vulnerability' has resulted in a myriad of research publications and reports, many of which are designed to inform strategic decision-making by those tasked with planning and preparing for disasters (for example: Al-rousan et al. 2014; Twigg 2014; Boon 2013; McLennan et al. 2013). Increasingly, possibly as a result of Recommendation 3 in the report of the *2009 Victorian Bushfires Royal Commission* (Teague et al. 2010), there is a focus on 'vulnerable people' and how to plan and prepare for them should a disaster situation arise. Recommendation 3 states:

> The State establish mechanisms for helping municipal councils to undertake local planning that tailors bushfire safety options to the needs of individual communities. In doing this planning, councils should:
> ■ urgently develop for communities at risk of bushfire local plans that contain contingency options such as evacuation and shelter
> ■ document in municipal emergency management plans and other relevant plans facilities where vulnerable people are likely to be situated—for example, aged care facilities, hospitals, schools and child care centres
> ■ compile and maintain a list of vulnerable residents who need tailored advice of a recommendation to evacuate and provide this list to local police and anyone else with pre-arranged responsibility for helping vulnerable residents evacuate. (Teague et al. 2010: 1)

Although Victorian in context, the *2009 Victorian Bushfires Royal Commission* has been closely read by all Australian States and Territories, with the result that Recommendation 3 has been variously interpreted and applied (see the discussion by Garlick 2015). In most instances the application involves an organisation or a person being 'responsible' and just exactly who this person or organisation is, continues to be worked out. This is because with responsibility comes the imperative to act. Various activities within the Blue Mountains stemming from Recommendation 3 have been: delivery of public safety lectures, open days for volunteer bushfire stations, the Red Cross calling house to house, and the idea of establishing and maintaining a 'list of vulnerable residents' to contact in case of emergency.

Definitions of resilience and vulnerability centre on the capacity of an individual or community to 'spring back' after the impact of an adverse situation. The less ability to rebound after a disaster or a challenge, the greater the vulnerability.

Household preparedness
For individual households, emergency preparedness involves knowing the risks particular to the community, developing an emergency plan, and having an emergency kit in the home containing food, water, and medical supplies to shelter in place for 72 hours (Levac et al. 2012: 727). According to Paton and colleagues (2008) household preparedness means 'creating a defensible space around the home, cleaning leaves from guttering, placing metal flyscreens on windows, screening eaves, ensuring access to resources for extinguishing spot fires, and determining householder "stay or go" positions'. These measures are intended to reduce the risk of loss and injury, and facilitate coping with bushfire consequences, minimize damage and insurance costs (Paton et al. 2008: 41). Additionally, Penman et al (2013) break down the personal capacity component of preparedness into 'personal ability', 'dependents', having a 'plan' and then various issues relating to property structures such as fuel load, maintenance and landscape design.

These understandings of 'household preparedness' are included to illustrate that, for most emergency services and community organisations, bushfire preparedness priorities revolve around physical property preparations and evacuation planning for household members. Other studies have found a consistent inadequacy in the household preparedness for predictable and regularly occurring hazards (Boon, 2015; King, 2000), and as Cutter and colleagues (2000) acknowledge:

> The degree to which populations are vulnerable to hazards is not solely dependent on proximity to the potential source of the threat. Social factors such as wealth and housing characteristics can contribute to greater vulnerability on the part of some population groups. (Cutter et al. 2000: 714)

The focus of 'preparedness' in the literature and among the 'authorities' assumes it is all about the house, property, and evacuation. The research that measures household preparedness (and often finds inadequacies) is based on the same assumption (e.g. Paton et al. 2008; Penman et al. 2013; Dunlop et al. 2014; McLennan, Paton & Wright 2015). Cutter (2000) argues that these assumptions are inadequate and there are other factors that need to be taken into account when assessing vulnerability and how vulnerable people prioritise and prepare. The *Voices of the vulnerable* research is situated in this space and as such sought to describe the fire preparedness of vulnerable Blue Mountains residents, investigate their priorities and ultimately inform community resilience strategies.

Research method
Ethical approval for the research was provided by Charles Sturt University. Through focus groups, survey and interviews within a participatory action framework, the project drew together information from State and Federal reports, academic research, local support groups, community centres and community members, specifically focusing on the needs of vulnerable populations within the Blue Mountains. With a similar focus to Mutch and Marlowe, who investigated the 'groups whose voices might not otherwise be heard' (2013: 385), this particular article reports the voices of the 31 vulnerable

participants. The interviews and focus groups took place between August and November 2014.

The same semi-structured questions were employed for individual interviews and focus groups. The questions were open-ended and focused on eliciting local day to day neighbourhood interactions and connections and then moved to participants' expectations and experiences in an emergency situation.

The interview and focus group participants were drawn from across the Blue Mountains of NSW. Some were survey participants from a related research project (Redshaw et al 2015) who had filled in the accompanying consent form, while others contacted the researchers after either attending the research launch or local neighbourhood centres, or through reading of the opportunity in the council bulletin, council website or local newspaper article. Participants included people who identify with a mental illness or disability which affects their day to day activities as well as older people who lived alone. Eleven interviews were held with 12 participants (one couple were interviewed together). Three focus groups were held in Katoomba. A fourth focus group was held in Springwood with a carer's group. The interviews and focus groups lasted between thirty minutes and an hour.

Interview and focus group data was transcribed and transcripts were coded and themed in relation to the interview guide in the first data analysis, and then according to key emerging themes in the next level of data analysis. All transcripts were read multiple times and key words extracted. Key word queries were also run in NVivo. Participant comments relating to the theme of fire preparedness and experience form the core data for this article.

Overview of Interview Participants
During the data collection phase 12 people were individually interviewed. The demographic information collected is displayed in Table 1.

Table 1. Overview of the 12 interview participants.

		Live alone	Spouse/ Partner	Chronic Illness
Male	4	2	2	1
Female	8	4	4	3
40-65 years	5	3	2	2
65-75 years	4	2	2	
75+ years	3	1	2	2

Overview of Focus group participants
Focus groups were utilised to create an informal and relaxed setting to encourage the participation of the more vulnerable people. In total there were 19 focus group participants and the demographic information collected is displayed in Table 2.

Table 2. Overview of the 19 focus group participants

		Live alone	Spouse/ Partner	Chronic Illness
Male	7	4	1	4
Female	12	4	8	6
25-40 years	1	1	0	1
40-65 years	9	2	5	6
65-75 years	2	2	0	1
75+ years	7	3	4	2

Data analysis

Rather than quantifying the number of mentions pertaining to a word or concept, themes are briefly described under Results in tandem with verbatim comments (Liamputtong 2009). The intention is to amplify the voices of the vulnerable. Consequently, the vocabulary in the Results section contains unquantified words such as 'a few', 'most' and 'some'. The theme of 'fire preparation and experience' is presented in relation to: having a plan, what to take, where to go, fear of being labelled, official communications and warnings, and finally, local knowledge.

Results

Overall, the voices of the vulnerable in the interviews and focus groups demonstrate that fragile community connections in daily life may become serious impediments to preparation activities when disaster threatens. To set the scene, the following excerpt encapsulates the overall participant mood when recalling the bushfire event of October 2013:

> What I do remember is just that highly strung energy that was going through the Mountains, and other neighbours that were there, so they were petrified, they had no idea what to do, whether to stay or to go, because their family lived a long, long, long, long way away. *(Interview 11, lives in a block of supported accommodation flats)*

Having a fire plan

In Australia, 'having a fire plan' is typically understood in terms of property preparations and determining the triggers for evacuation. In contrast to this generalised interpretation, 'having a plan' for most of the study participants meant something that was generated at the time of the disaster. They had not previously worked out what they would do and plans were difficult to make as they did not have much to draw on:

> I thought, well, what happens up here? Because I don't drive or anything, and how do I get out? But the bird was in the cage and I had the cat box ready and then someone said 'Well, you could put them all in the wheel barrow.' *(Interview 8)*

> What would you need if there was a fire? *(Interviewer)*
> I don't know. *(Interview 7)*

In general, those who owned their property were the ones most likely to have planned for a fire, in terms of preparing their property and working out where they would go:

> It was a dreadful day, and we had sort of plans in place whether to go or not. We'd done

everything we could to the house to look after it. *(Interview 2)*

My fire plan is just to get (husband) and go. *(FG4)*

I would stay because I'm quite convinced that it's the embers. I've got a petrol pump and fire hoses and 6500 litres of water. That would be emptied in 45 minutes. *(Interview 9, male in his 80's)*

Personal awareness that a proper plan was not really in place increased as the news of the fires spread:

We always joked that we've got a plan, but we actually don't you know. I mean, I can get K's dogs, but that's about it. *(Interview 10)*

Except in a few cases, 'having a plan' was not interpreted by participants as 'preparing the property'. Rather, being prepared meant getting ready to leave, gathering valuables and finding transport. This could be an indication of living in supported accommodation, local area housing or being renters in the general property market. Whatever their living arrangements, concern by participants for buildings and gardens was not a high priority when asked about fire preparation.

The research suggests that vulnerable residents in the Blue Mountains could benefit from community-delivered fire preparation programs which focus on lead-in time for preparations and a discussion around determining priorities.

Whether and when to leave
Although some participants said they would be happy to go, the option of leaving was not available as they had no means of transport. Most stayed in the hope that they could stay and would not have to go, while others were oblivious to what was happening–these people were in the focus groups and some lived with a great deal of support from parents or carers. They had not thought deeply about staying or leaving, expecting that someone else would just tell them what to do. As such, some participants were certain they would be notified and evacuated by the local volunteer fire service:

Look there was some concern, but I knew that we also did have my name down with the fire brigade as a vulnerable person in need of evacuation if that situation arose so that, you know, if the worst came to the worst someone should come and get me. *(FG3 Woman, over 55 years, deaf and blind)*

Some were prepared, but relying on others to tell them when to leave or as a means to leave:
And I was packed, ready to leave. And I had to organise my cat's basket to take her if the fires came. So I had to pack food and water for her. And get all my personal papers and that and my medication, I had to get, plus a change of clothes. So I was already packed to go.
And where were you going to go? *(Interviewer)*
Just wherever they said to go. *(FG1)*

We haven't got a car, so we'd have to get one of the neighbours to drive us somewhere. *(FG1)*

Well we saw the fires on TV…it came pretty close to the old cemetery, which is a couple

of blocks away. We live in local area housing, and they rang us up, they rang everybody in local area housing in the Mountains and they said if you did want to be evacuated we could arrange that. So they called us twice actually, so yeah… They just said pack all your stuff up and we'll arrange for somebody to take you. *(FG1)*

One woman in her 60s stayed an extra night because her neighbour could not leave and most of the area was 'deserted':

I stayed overnight, I would have gone Tuesday night, but I didn't because she was there. *(Interview 3)*

Another was cautious and anxious, staying in her clothes all night just in case:

Well, I slept in my clothing that night, yeah, when it was starting to, the back door was there and I did pack a bit of stuff up. *(FG1)*

Others had made some preparations, but were still unclear about what they would do:

Well I just packed some clothes in the car. *(FG2)*

So all I have to do is pack some clothes and take my cat with me. I rang up my brother and I said, 'No the fire's not near me.' Yeah, I know what to do and if anyone's got a spare car, 'Hey can I hop in it?' *(FG2)*

A letter was dropped to houses in the Lithgow area and one person with a mental illness indicated that she would follow instructions, but may need help working out what they are:

A letter put in your letter box. And for us to be ready to leave, where to assemble and, you know… If you hear a door knock you've got to be ready to be packed, I can read it, but if I don't understand I just ask my mum. *(FG1)*

For others it was difficult to work out how pressing the issue was for them:

I just thought they were a bit keen because I didn't see any smoke in the sky through the whole time. *(FG1)*

One woman in her 80s had made plans which she then failed to enact, while her husband was determined to stay and defend. She said:

I had myself packed up ready to go and when the time came I couldn't feel brave enough to take myself down to my daughter's. We had two cars. I got all uptight and G [husband] was determined to stay. *(Interview 9)*

The research found that a lack of transport options and only a vague sense of where they could go impeded evacuation for many. It was also not clear whether and under what circumstances evacuation for them was necessary as none were living in areas under immediate threat. A formal plan to mobilise local community transport options could be considered in such circumstances.

What to take
A few participants had placed important documents and valuables where they could

easily access them, while every person within the carer's focus group had thought about the person they cared for and for some this extended to considering the important documents and valuables of the person they cared for:

> I know exactly what I want- my husband, I suppose, a little bit of jewellery, a bag… And my box, my box has got my bits in it, I know that, and if I can I pick up the quilt and I throw all the photos in it, I just go, pick it up, take it into the car. That's it, that's it. That's my fire plan. *(FG4)*

> I have a briefcase where I've got my marriage certificate, death certificates and insurance, everything, and important jewellery; that's already packed. I'm out, yeah. I'm not going to be a menace to everyone else. [laughs] *(FG4)*

> My partner has a basket thing where she puts all her little bits of electronic hardware; that's got things backed up from the computer, etc., etc. So it's grab that, grab the animals, get out. *(FG4)*

Taking pets was also a strong theme:

> You know, your pets and things and just certain personal items. *(FG1)*

> We packed up the animals and had a Noah's ark on wheels down to the parents' place in Sydney with chickens, guinea pigs, cat, dogs, birds. *(FG4)*

The idea of preparing in haste and setting aside important valuables was a strong theme. Just exactly what was considered 'valuable' varied between participants. For many it was their pets. Community education programs could focus on helping people decide what to consider valuable and how best to preserve and protect whatever was identified.

Where to go
Despite most participants indicating that to leave was the main option, there was a general lack of clarity in all four focus groups and in some interviews about where people would go if they were evacuated:

> I honestly don't know. I would hope that somebody would come over and say 'Look do you need help getting out, jump in the car with all your pets' and off we go. But I don't even know where our safe area is or if there is a safe area in Hazelbrook. *(Interview 8)*

And in the Carers Focus Group a number of people commented:

> -Well, you've got to go up to Hazelbrook or something like that, up to the school or the scout hall, like you go past the fire station.
> -You should check with the fire brigade and see. We actually had a, something in our mail.
> -Well no, they did I think suggest that because at the fire station there wouldn't be enough room for everybody.
> -No, but usually a school or a hall or a club.
> -It's the main shopping centre as far as I know. *(FG4)*

Another felt certain about where he needed to go if he had to leave his home:

> Just showground, you know, very clean place. You stay there and that's the meeting

place, showground. *(FG K1)*

Considering that the interviews took place in the months following the fires, it is clear that most participants still had little or no idea about where they should or could evacuate to. This is an important point for emergency planners and media communications to consider when determining how best to assist vulnerable community members.

Official communications and warnings
There was some reference to the local volunteer fire brigade, in NSW called the Rural Fire Service (RFS), and the advantage of having the headquarters located nearby:

> We've got the RFS at the end of the street. They're not going to let their shed burn down. *(Interview 10)*

> I kept on smelling this smoke and thinking 'Oh, they must be doing burning off.' Because there was no warning about it, it wasn't on anything. *(Interview 10)*

A participant living close to other vulnerable people spoke about the physical inaccessibility of the community information meetings:

> I remember at the time it was getting pretty dangerous, they had community information sessions. A lot of people are elderly and they have chronic health conditions, so it's not a matter of 'they can just walk there'. They don't really have the money to get a taxi there either, they need their taxi money for emergencies and stuff like that. So yeah, I think in terms of dissemination of information, yeah, I don't think it was that great. *(Interview 11)*

The overriding message broadcast to all Blue Mountains residents is understood by this participant:

> So the information I got was 'If you don't feel safe, just go, just leave the Mountains, that's the best thing that you can do'. *(Interview 11)*

Organisers of community information sessions should consider not only the location of the meetings and transport for those with no means of travel, but also arrange how to communicate and update the chronically ill or elderly, and others who are unfit to travel.

Local knowledge
The region of the Blue Mountains is characterised by restricted road access options, due to only one route across the mountain. Each village is similarly characterised by a myriad of no-through roads. The benefit of this local knowledge was highlighted by participants, some of whom had put a great deal of thought into their geographical location:

> And they like you to go early because we're right at the end of Abc Drive and there's only one road, and most places there is only one road out anyway. *(FG4)*

> Other streets would cop it before here. I would stay here right through because I think first of all the wind would be going the wrong way and a fire coming up here would be more or less finger type fire, it wouldn't be driven by wind. Even the '77 fire came over the top and around and it can't do that now because there's houses there. *(Interview 9, male in his 80s)*

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> I mean this house has been here since 1940, and there's been huge big fires. There was the '62... all the old timers say that the fire stops when it comes up from Lawson and races up the Valley 'cause of the Terrace Falls Road. It just stops there. It doesn't jump 'cause the gap is too wide. *(Interview 10)*

Others were aware of the occupants (or lack of) in their locality. Where one participant lived there were many holiday rentals which were irregularly occupied:

> They were going to start an inventory of each street as to who lived where. I don't think they ever completed it, but in our street for example, when there's so many empty homes, when you really are looking to see that the street's been emptied because of fire, it would have been a good project. *(Interview 2, female aged in 70s)*

Vulnerable participants demonstrated a considered understanding of the limitations of their immediate locality. This could be capitalised on when determining a 'known' as the launch point for community fire planning initiatives.

The research provides evidence that some community members are not able to fully participate in their own disaster planning and response activities.
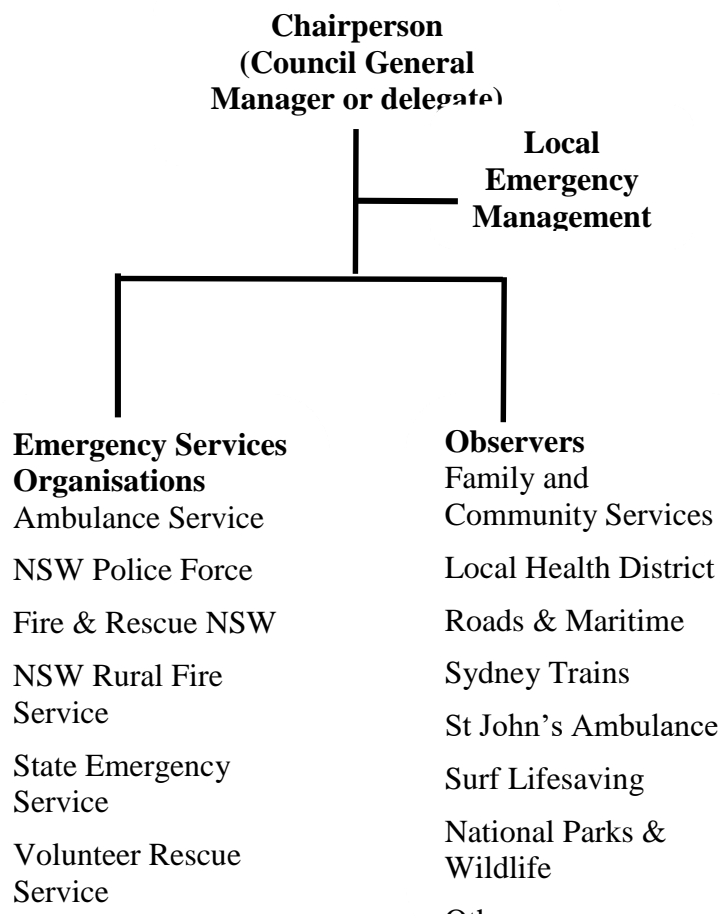
Policy implications for emergency and community services collaboration

The research provides evidence of the need for collaboration between local emergency services and community organisations when planning for vulnerable residents in disaster situations.

The formal relationship between local emergency services and community organisations in relation to disaster arrangements is legislated by the State Emergency and Rescue Management Act 1989 (SERM Act 1989). The Act establishes State, Regional and Local Emergency Management Committees, overseen by the Minister for Police, Minister for Emergency Services. Our research relates to the local level, where the Local Emergency Management Committee (LEMC) is "responsible for the preparation of plans in relation to the prevention of, preparation for, response to and recovery from emergencies in the local government area for which it is constituted" (SERM Act 1989: 29/1).

The structure of the LEMC is challenged by the findings of this research. At present, LEMC are comprised of two groups, one being the decisions makers located under the heading Emergency Services, and the other being the Observers, as illustrated in Figure 1.

Figure 1: Structure of a Local Emergency Management Committee (LEMC)

**Chairperson
(Council General
Manager or delegate)**

**Local
Emergency
Management**

**Emergency Services
Organisations**
Ambulance Service

NSW Police Force

Fire & Rescue NSW

NSW Rural Fire
Service

State Emergency
Service

Volunteer Rescue
Service

Observers
Family and
Community Services

Local Health District

Roads & Maritime

Sydney Trains

St John's Ambulance

Surf Lifesaving

National Parks &
Wildlife

The divide created by siloing the Emergency Services from the Observers on the LEMC is being challenged by the actions of organisations intent on implementing the directives of the *National Strategy for Disaster Resilience* (NSDR 2011), which endorses a 'shared responsibility' approach to disaster planning. As demonstrated by our previous study in the NSW Blue Mountains (Redshaw et al. 2015), prior to the October 2013 fires most Non-Government Organisations (NGO's) were unaware that there was such a thing as a local emergency management plan (called an EMPLAN). Conversely, most emergency services were unaware of the valuable resources and local knowledge NGO's had to contribute to disaster arrangements, especially in relation to vulnerable residents. Our previous research demonstrates that prior to the 2013 fires local NGO's were not represented as Observers on the LEMC, although larger generic organisations such as the Red Cross and Salvation Army were invited.

In this article we suggest a more integrated and connected approach to local disaster planning would have circumvented much of the angst experienced by vulnerable residents during the October 2013 fires. We base this on the intimate local knowledge which neighbourhood centres and similar local NGO's have of local vulnerable

residents, demonstrated by their capacity to connect us with vulnerable participants for the research reported in this article. We acknowledge that the formal integration of the two elements of the LEMC will require a massive paradigm shift in relation to a number of issues, including approaches to decision making and determining how and who within the community participates.

Although a place-specific qualitative exploration, the research lends itself for extrapolation to assist other similar communities. Therefore, the following recommendations move from the particular characteristics of the NSW Blue Mountains to highlight broader implications, designed to inform emergency services and community organisations operating where pockets of particularly vulnerable people are located on the urban-wildland interface.

Recommendation 1: Clarify the roles and responsibilities of community organisations and emergency services during periods of disaster
Within the Local EMPLAN there are three parts for Local Emergency Management Committees (LEMC) to complete: Administration, Community Context, and Restricted Operational Information. One purpose of the Local EMPLAN is to "clearly define roles and responsibilities of responders and community partners". The Guideline states "The community profile assists the LEMC to understand the diverse needs, values and priorities of local community and its characteristics within the broader environment. This information is critical to inform planning and emergency operations." This quote illustrates the problematic divide between emergency services and community organisations created by the separation of Emergency Services and Observers on the LEMC in that the current policy provisions in NSW are framed within an emergency service narrative where the community is to be 'consulted' and perhaps 'engaged', but not actually participate in the formulation of disaster plans. Irvin and Stansbury (2004) argue that the effort required to reach a consensus is an obstacle to 'citizen participation in decision making'. This highlights the magnitude of the paradigm shift required to establish mechanisms for genuine community participation and fulfil the mandate of the NSDR (2011) of 'shared responsibility'. (For more information on NSW EMPLANs see: https://www.emergency.nsw.gov.au/publications/guidelines-legislation-policies/local-emergency-management-planning.html).

Recommendation 2: Reframe the current thinking around individual responsibility for preparedness and readiness, to ensure that those who are unable to implement plans or engage in such activities are supported
A paradigm shift incorporating the community in the devising of local disaster plans will require the commitment of funding and resources from both the emergency and community sector. This commitment would enable continual participation. It could also provide a continuation of knowledge and lessons learned, typically lost when recovery workers leave the area when their contracts expire, usually after two years. As a start towards this endeavour, various Blue Mountains NGO's, such as local neighbourhood centres, have made building individual and community resilience a part of their core business (Katoomba Neighbourhood Centre Annual Report 2015-2016, p.25).

Recommendation 3: Use various community development strategies to ensure

household fire preparedness and generate a sense of shared responsibility within neighbourhoods

An important aspect to the problem of defining 'resilience' is the blurring of boundaries between individuals, communities and the environment. Interested parties, such as researchers, community services and various government organisations, are endeavouring to measure and explain resilience (for example Bergstrand et al. 2014; Gibbs et al. 2013; Sherrieb et al. 2010; Kirmeyer et al. 2009; Paton and Johnston 2001). The difficulty of striving for commonality of purpose and definition is illustrated when the natural and built location is determined to be 'vulnerable to fire'. This is because, although residents may consider themselves well prepared and resilient, for the emergency services the community status remains 'vulnerable to fire' due to its topographical features.

The 'Voices of the vulnerable' research indicates that, whatever the definition, actions to increase community resilience must be a collaborative effort between residents, local community organisations and the emergency services. Other researchers, such as Akama and colleagues (2014: 277) have highlighted how essential this collaboration is through their work on the importance of social networks in the communication of disaster risk and subsequent warning messages. Cowup (2008: 19), although writing about domestic fires, stresses that 'A partnership approach helps ensure that a range of community agencies engage with key fire safety messages for the benefit of their clients'. Cowup's comment may equally be applied to the threat of natural hazards. This is because in both situations it is the local community organisations who are most likely to be in contact with vulnerable community members, while the emergency services have the fire-preparedness content which needs to be conveyed. Taking a 'shared responsibility' approach, it is the galvanisation and purposeful strengthening of these emergency and community connections which are vital to the protection and assistance of the vulnerable.

Recommendation 4: Address the issue of transport for the more vulnerable and isolated, especially in relation to emergency meetings and evacuation

Transport is a major issue for vulnerable people. Not having a place to go, and no means to leave, were the main reasons for not leaving the NSW Blue Mountains during the October 2013 fires. The overwhelming tendency of participants was to remain and see what happens, mainly due to not envisaging alternative options. In addition, 'Emergency preparedness planning needs to take into account the age-related needs of older adults with regards to the personal and social resources available to them' (Tuohy & Stephens 2011: 15).

Within Australia the expectation of an official 'rescue' for individual households is gradually diminishing as people engage with the concept of shared responsibility and rise to the challenge of making their own household fire preparations and plan for possible evacuation. For the most vulnerable amongst the community this message does not resonate in quite the same way, as there is a dependence on the closest community connections to be the most likely sources of assistance, and this places a large burden on neighbourly responsibility. It is a hit or miss situation for the vulnerable, with their safety often depending on who they know. In some situations it is left to chance whether a neighbour remembers a person who is vulnerable or living on their own. The physical presence of a person with a warning message or offer of assistance is likely to have greater impact than messages relayed through social media

or SMS. Thus, for some people, someone *does* have to physically arrive and knock on the door, especially if there is no phone connectivity and the power is out. We recommend that local community organisations, such as neighbourhood centres and local emergency services, work collaboratively to devise ways of identifying people who are going to be affected by smoke, electricity outages, cessation of public transport, and those who do not have the resources to cope with these kinds of situations. Simply compiling a list of vulnerable people and messaging them will not be enough. As exemplified by Gray-Graves and colleagues (2011), being able to assist those who are vulnerable contributes to the overall resilience of the whole community.

Recommendation 5: Advocate for change in policy to ensure that in times of declared disaster, community members with pets can access public transport without fear of penalty

The general assumption that being prepared for bushfire is about property preparation and evacuation procedures was missed by most vulnerable people in our study, as they had a much more immediate understanding of what was important to them. Their understanding tended to be motivated by the immediacy of the crisis rather than by prior preparations or planning. We recommend that the starting point for community fire preparedness with vulnerable people needs to take into account and begin at the point of *their* priorities, most commonly personal relationships and possessions- including medications, a means of travel, and ways of moving partners and pets. Interestingly, Thompson and colleagues (2014: 24) reframe the increased vulnerability which pet ownership may bring to become a 'protective factor for natural disaster survival'. This is because pet ownership is a likely motivation towards taking action toward personal survival. We recommend that during times of declared disaster pets are permitted to travel in all forms of public transport.

Conclusion

Age, disability, chronic illness, and socio-economic conditions are all factors contributing to the social marginalisation of vulnerable people. In these situations it is not only willingness to act that is important in the face of disaster, it is also differences in the capacity and varying abilities of individuals and/or households to access resources, which needs to be taken into account by local community organisations and emergency services involved in warning, evacuation and response activities. Identifying vulnerable people within the community who are most under resourced, lack community connection, social participation and support in their everyday lives and linking them within their community is identified as a major factor of importance for enhanced community resilience. The existing strengths and capacities of vulnerable people need to be recognised and acknowledged by local community organisations through providing assistance for their self-identified needs. These may be as diverse as irrational fears, worry over lack of finances to meet emergency disaster needs, and transport for daily living *(author names withheld)*.

This article sought to voice the experiences and fire preparedness of 31 vulnerable residents in relation to the October 2013 NSW Blue Mountains Bushfires. The findings emphasise the need for adjustment in the preparation expectations placed on vulnerable people because some are incapable of planning effectively for themselves. Recommendations were generalised. In order to encourage timely and effective fire

preparation by and for vulnerable residents, the research indicates a common operating definition of 'shared responsibility' for local community organisations and emergency services is needed. We also call for a more holistic involvement of the local community in the determination of local disaster arrangements, meaning a reformulation of the composition and broadening of mission of the LEMC. We suggest the level and roles of community participation in the disaster domain currently occupied by the emergency services will require further research to avoid a tokenism approach.

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(information withheld)

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