



## Vulnerability to bushfires in rural Australia: A case study from East Gippsland, Victoria

Joshua Whittaker<sup>a,c,\*</sup>, John Handmer<sup>a,c</sup>, David Mercer<sup>b</sup>

<sup>a</sup> Centre for Risk and Community Safety, School of Mathematical and Geospatial Sciences, RMIT University, Melbourne, Australia

<sup>b</sup> School of Global Studies, Social Science and Planning, RMIT University, Melbourne, Australia

<sup>c</sup> National Climate Change Adaptation Research Facility (NCCARF), Australia

### ABSTRACT

**Keywords:**  
Vulnerability  
Disaster  
Rural  
Bushfire  
Wildfire  
Livelihoods  
Community

This paper investigates the nature and causes of vulnerability to bushfires in the Wulgulmerang district of East Gippsland, Victoria, in south-eastern Australia. In 2003 bushfires devastated the small population of this isolated farming district, destroying homes, agricultural assets and public infrastructure. The fires also adversely affected the health, livelihoods and social lives of many local people. The paper examines: (i) how and why people were exposed to hazards during the bushfires; and (ii) how and why people were differentially capable of coping and adapting to the fires' impacts. Qualitative methods were primarily used to investigate these questions, including semi-structured interviews with residents and landholders of the district and others who responded to the fires in an official or unofficial capacity. Vulnerability is shown to arise from the circumstances of people's everyday lives, which are shaped by factors both within and beyond their control. Local pressures and challenges – such as drought, declining farm incomes, depopulation, and the inaccessibility of essential services – are shown to increase people's exposure to hazards and reduce their capacities to cope and adapt. The paper demonstrates the fundamental importance of sustainable livelihoods and regional economic vitality to the long-term goal of vulnerability reduction.

© 2011 Elsevier Ltd. All rights reserved.

### 1. Introduction: the Wulgulmerang bushfire disaster

On January 30, 2003, bushfires (or wildfires) triggered a major disaster in the Wulgulmerang district of East Gippsland, Victoria. Initially it was reported that six homes, the local service station, and a sports pavilion had been destroyed (Hodgson and Papadakis, 2003). However, it soon became apparent that the fires had wrought far greater damage and destruction, and that the long-term impacts on the district's small population would be profound. Three weeks later an article in Melbourne's *The Age* newspaper described the unfolding disaster (Miller, 2003). Thousands of sheep and cattle had been killed and more than twenty hay, wool and machinery sheds destroyed. With large sections of internal and boundary fencing missing, and little pasture or hay to feed surviving animals, many graziers were forced to reduce livestock numbers or accept the additional costs of buying feed or agistment. Wild dogs posed a further threat to stock, particularly

sheep, as they ventured out from the surrounding national parks in search of prey. The fires had occurred in a context of longstanding drought, from which many graziers were still recovering. Local people complained that they had not received firefighting support and had been forgotten by government. 'Red tape' was said to be hampering recovery, with a roadblock 60 km away said to be holding up deliveries of desperately needed hay and blocking insurance assessors, donated goods and outside support. This was a community 'feeling forgotten', 'hanging in there – just – thanks to the kindness of strangers', which would now have to 'wait and see what happens next' (Miller, 2003: 4).

This paper investigates vulnerability to bushfires in the Wulgulmerang district of East Gippsland, Victoria, in south-eastern Australia. It examines why the people of Gelantipy, Seldom Seen, Wulgulmerang, Black Mountain and Suggan Buggan ('the Wulgulmerang district') were so profoundly affected by the bushfires of January 30, 2003. Australian bushfire research has traditionally focused on the physical properties of fire hazards and disasters, with relatively little consideration of how cultural, economic, political and social factors shape vulnerability. This paper therefore contributes to the growing body of research that seeks to redress this imbalance (e.g. Gill, 1994; Whittaker and Mercer, 2004;

\* Corresponding author. Centre for Risk and Community Safety, GPO Box 2476, RMIT University, Melbourne 3001, Australia. Tel.: +61 3 9925 2418; fax: +61 3 9925 2454.

E-mail address: [joshua.whittaker@gmail.com](mailto:joshua.whittaker@gmail.com) (J. Whittaker).

Cottrell, 2005; Handmer and Haynes, 2008; Eriksen et al., 2010). It also seeks to contribute to the wider literature on economic and social change in rural places. Neo-liberal policies that encourage economic deregulation, increased trade competitiveness, privatisation of state-owned assets and reduced government service provision (Tonts and Haslam-McKenzie, 2005) have undermined the social and economic sustainability of many towns and regions in rural Australia (Cocklin and Dibden, 2005). These changes have reduced the capacities of many rural communities to mitigate, cope with and recover from natural hazards such as drought and bushfires, as well as a range of other shocks and stresses.

This paper understands the causes and impacts of the Wulgulmerang disaster through the lens of human vulnerability. It examines factors that shaped people's exposure to hazards and their capacities for coping and adapting to impacts. Vulnerability is shown to arise from the circumstances of people's everyday lives (Eriksen and Gill, 2010), which are shaped by factors both within and beyond their control. Local pressures and challenges – such as drought, declining farm incomes, depopulation, and the inaccessibility of essential services – are shown to increase people's exposure to hazards and reduce their capacities to cope and adapt. The paper demonstrates the fundamental importance of sustainable livelihoods and regional economic vitality to the long-term goal of vulnerability reduction.

## 2. Vulnerability to environmental hazards

### 2.1. Environmental hazards

Environmental hazards arise from the interaction of natural and social systems. Hazards are distinguished from 'extreme' events or processes in nature, which are not necessarily hazardous to people (Burton et al., 1978). Although environmental processes and events such as bushfires are often referred to as 'hazards', they are only hazards when they threaten human life, assets or other values we want to protect (Hewitt, 1997). This perspective recognises the benefits environmental processes provide, as well as the fact that hazards are often created when people occupy locations or engage in activities to exploit those benefits and resources (Burton et al., 1993). Conversely, hazards may be created where people are compelled by social, economic or political circumstances to occupy locations or engage in land uses and activities where potentially harmful processes and events may occur (Mustafa, 1998).

Geographical hazards research has historically focused on the range of human responses to environmental hazards. In their influential text, *The environment as hazard*, Burton et al. (1993: 31) proposed that human responses to hazards could be explained by examining 'the ways in which people (1) recognize and describe a hazard, (2) consider how they might deal with it, and (3) choose among the actions that seem to them available'. In this view, hazard response is first and foremost a matter of perception – both of hazards and of opportunities to 'adjust'. Consequently, hazards research has been strongly influenced by psychological theories of perception and decision-making (Kasperson and Dow, 1993). A number of studies have adopted this approach to understand individual perceptions and responses to wildfire hazards (Winter and Fried, 2000; McCaffrey, 2004; Martin et al., 2009).

A theoretical turn in human geography during the 1970s and 1980s (see Peet and Thrift, 1989) sparked sustained critique of natural hazards research. Research was shown to reduce complex human behaviour to individual perceptions and decisions, failing to take account of the social, economic and political contexts in which people act, and the myriad of factors that enable and constrain individual action (Ball, 1975; O'Keefe et al., 1976; Waddell, 1977; Torry, 1979; Walker, 1979; Hewitt, 1980, 1983; Watts, 1983). These

critiques laid the foundation for a radically different approach to hazards and disaster research. Increasingly, researchers examined the role of social, political and economic systems in creating hazards, and in influencing – often undermining – people's capacities to protect themselves, cope and adapt.

### 2.2. Human vulnerability

In the contemporary social sciences, the causes and impacts of environmental hazards and disasters are understood primarily through concepts of human vulnerability and resilience. The meaning and usage of these terms are highly varied, even within disciplines. In the context of global environmental change, 'vulnerability' has been used to refer to characteristics of individuals, societies, ecosystems, technological systems, and a range of other social and ecological units (Dow, 1992). The term has also been used to describe characteristics of buildings, infrastructure, livelihoods, settlement locations, regions and economies (Wisner et al., 2004). Some have suggested that the language of vulnerability is disempowering, and are careful to define vulnerability as a process or social space rather than a status (Watts and Bohle, 1993; Pelling, 2003), or emphasise people's capacities and resiliencies (Hewitt, 1997; Handmer, 2003; Fordham, 2004). Despite the diversity of perspectives on vulnerability and resilience, all share a common concern: the susceptibility of human beings to harm from events, processes and changes in their physical and social environments. Research de-naturalises hazards and disasters by demonstrating that their causes are inherently social, and their impacts socially differentiated.

Nevertheless, vulnerability and resilience are different concepts with different ways of framing human–environment interactions (Adger, 2006; Miller et al., 2010). The ecological origins of resilience (e.g. Holling, 1973) are reflected in recent research on the resilience of social–ecological systems (e.g. Berkes and Folke, 1998; Folke, 2006; Walker and Westley, 2011). Concepts of vulnerability, as used in hazards and disaster research, emerged from a broader range of disciplines and perspectives in the social sciences, most notably hazards geography and anthropology (e.g. Hewitt, 1983). In this tradition, we employ a concept of vulnerability to understand the causes and impacts of the Wulgulmerang bushfire disaster. This concept of vulnerability entails two fundamental components that must be examined: (i) hazard exposure; and (ii) coping and adaptive capacities.

#### 2.2.1. Hazard exposure

Hazard exposure is fundamental to vulnerability, since people can only be vulnerable in relation to a specific impact or set of impacts (Kelly and Adger, 2000). It is ultimately concerned with people's locations and activities relative to harmful environmental processes or events. As such, social scientists often assume that exposure is a matter for physical scientists, involving technical assessments of magnitudes, frequencies, probabilities and other hazard characteristics (Dow, 1992). However, any investigation of hazard exposure also requires analysis of how natural and social systems interact to put people at risk. This point is well made by Mustafa (1998: 290), who notes that 'Exposure is a function of the socially determined physical location of the communities at risk, as well as the human decisions and societal structures that imperil the community'.

Social science research confirms that the powerless and marginalised often inhabit the most hazardous locations, are compelled to engage in hazardous livelihood strategies, and receive the least protection from the state (Cannon, 2000; Pelling, 2003; Wisner et al., 2004). However, all people are exposed to hazards in the courses of their everyday lives. For instance, many high bushfire

Download English Version:

<https://daneshyari.com/en/article/92477>

Download Persian Version:

<https://daneshyari.com/article/92477>

[Daneshyari.com](https://Daneshyari.com)