

Provided for non-commercial research and education use.
Not for reproduction, distribution or commercial use.



This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/copyright>



Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud

The gendered dimensions of bushfire in changing rural landscapes in Australia

Christine Eriksen*, Nicholas Gill, Lesley Head

University of Wollongong, The Australian Centre for Cultural Environmental Research (AUSCCER), School of Earth & Environmental Sciences, Wollongong, NSW 2522, Australia

A B S T R A C T

Keywords:

Amenity migration
Australia
Bushfire vulnerability
Gender
Natural hazards
Risk engagement
Rural–urban interface

This paper examines gender differences in awareness, preparedness and attitudes towards bushfire amongst landholders in rural landscapes affected by amenity-led in-migration in southeast Australia. It considers the potential of conceptualising bushfire not as a gender-neutral natural phenomenon but as an important means by which traditional gender roles and power relations within rural landscapes are maintained. Landholders were found to uphold conventional views of bushfire management as “men’s business” despite changing social circumstances. Consequently, key gender differences exist within landholders’ bushfire risk awareness, bushfire knowledge, the perceived need for bushfire preparedness measures, the willingness to perform certain tasks, and the belief in personal capacity to act. We argue that covert and less visible as well as overt gender roles and traditions are important factors in understanding landholders’ engagement with bushfire management. When gendered dimensions of bushfire are investigated in the context of hegemony, a paradox emerges between women choosing not to take control of their own bushfire safety and women being denied the opportunity to take control. The complex and contradictory actions and attitudes to bushfire that materialise through an analysis of gendered social experiences complicate attempts to create more gender-sensitive frameworks for bushfire management. The tenacious and embedded nature of gender role divisions within both public and private spheres was furthermore found to act as economic, social and political stumbling blocks for empowerment opportunities. Using a mixed-methods research approach, this paper maps out gendered dimensions of bushfire through landholders’ narratives and actions. The implications of these dimensions for bushfire management have direct relevance to recent international discussions of the vulnerability of the growing number of people living in bushfire-prone rural–urban interface areas.

© 2010 Elsevier Ltd. All rights reserved.

1. Introduction: a gender beacon

During research on the significant factors that influence landholders’ relationship with bushfire in changing rural landscapes in Australia, gendered dimensions of bushfire management stood out like a beacon in their effect on landholders’ level of preparedness for bushfire. Few would dispute that bushfire over time has played a significant role in the shaping of not just Australian flora and fauna but also of Australian culture (Pyne, 1991; Collins, 2006). The importance of bushfire for moulding and upholding gender roles within Australian society is, however, rarely discussed. This paper focuses on the gender dimensions of results from research investigating landowners’ perceptions of bushfire and the significant factors that influence landowners’ relationships with bushfire. It considers the potential of conceptualising bushfire not as a gender-neutral natural phenomenon but as an important means by which

traditional gender roles and power relations within rural landscapes are maintained. We investigate gender differences in awareness, preparedness and attitudes towards bushfire amongst landholders in rural landscapes affected by amenity-led in-migration in southeast Australia. Understanding gendered dimensions of bushfire is an important issue internationally with the traditionally male-dominated field of emergency management grappling with the safety needs of the growing number of people living in bushfire-prone rural–urban interface areas, and the predicted increase in high fire danger weather with climate change (Bowman et al., 2009; CSIRO, 2007; IPCC, 2007; Lucas et al., 2007). The February 2009 bushfires in Victoria and the August 2009 wildfires in California in areas strongly characterised by amenity-led in-migration provide vivid examples of the potential for loss under such circumstances (BCRC, 2009; Clode, 2010; Kissane, 2010).

During the past decade a heightened awareness has developed within both academia and emergency services of the impact of gender role divisions on, for example, sustaining volunteer memberships of rural bushfire brigades (Beatson et al., 2008; McLennan and Birch, 2005); the ability of women to make

* Corresponding author. Tel.: +61 242213721; fax: +61 242214250.
E-mail address: livingwithfire@gmail.com (C. Eriksen).

informed decisions during bushfire events (Goodman and Proudley, 2008; Proudley, 2008); and the importance of gender relations within families and communities in dealing with natural hazards such as bushfire, drought, or flooding (Alston, 1995; Cox, 1998; Enarson, 2001; Fordham, 1998). This awareness, however, has to date rarely guided official bushfire management policy and practice nor led to the widespread development of community education programs targeting an increasingly diverse set of rural landowners. Consequently, little is currently known about bushfire awareness and actions as 'explicitly gendered social experiences' (Enarson and Scanlon, 1999, 104; Scanlon, 1998). Consistent with a range of more recent geographical and natural hazards research on gender identity and roles (Agg and Phillips, 1998; Alston, 2005; Beilin, 1997; Cottrell, 2009; Cupples, 2007; Enarson and Morrow, 1998; Little, 2002), we argue that covert and less visible as well as overt gender roles and traditions are important factors in understanding landholders' engagement with bushfire management. Taking increasing rural lifestyle diversity as our starting point (Gill et al., 2010), we focus on these issues and use the concept of hegemony to better understand gendered dimensions of bushfire.

Building on the 'Black Saturday' bushfires in Victoria, which claimed the lives of 73 women and 100 men at the average age of 48 (150 adults and 23 children under the age of 17; AAP, 2009), this paper aims to emphasize the implications of embedded gender roles on bushfire vulnerability in 21st Century changing rural landscapes in Australia. We do this by firstly considering how landholders' involvement with the processes of bushfire management impacts on their subjectivities and leads to the reproduction of certain gender identities. Secondly, we examine the nature of bushfire safety education programs to demonstrate how local gender roles, and consequently gender vulnerability, are reinforced by patriarchal structures within emergency and other official agencies. This paper is neither a denigration of the significant work by men within emergency services nor an undervaluing of the women who work tirelessly to make a difference within patriarchal structures, and those who do engage with bushfire management issues. Rather it maps out the gendered social experiences of bushfire through landholders' narratives of living with fire on the land.

2. Bushfire and hegemonic masculinity in rural landscapes

The cultural importance of bushfire is testified by the intensity of the ongoing controversy over the place of bushfire in the Australian landscape (Ellis et al., 2004; Pyne, 1991; Teague et al., 2009; Whittaker and Mercer, 2004), as conveyed in the quotation below:

'... Australia's bushfire [debates are] inextricably bound up with questions of identity. ... The practices of Australian fire quickly morphs into the politics of identity; geographic, professional, national. The fissures are many and cross one another, like veins in granite. City v. country; greenies v. farmers, graziers, and loggers; ecologists v. foresters; those who live off the land v. those who visit it; those who believe bushfire is ultimately an expression of a nature beyond human contrivance, and those who believe humanity can, for good or ill, profoundly alter fire's regimes. All perceive the contemporary fire scene as inappropriate; all demand that they be heard; and all recognise that bushfire forces society to choose, though what that choice means, or implies, is often as fluid and intangible as flame itself.' (Pyne, 2006, 9)

Yet distinctively missing from the above summary is any discussion of gender and bushfire. The agency of bushfire has over time helped shape Australian identity by generating community institutions, gender roles, and a sense of belonging through community involvement in times of danger. This is particularly the

case in rural areas of Australia where local rural bushfire brigades have served as communal centres since the late 19th Century (RFS, 2009). Women currently constitute 10–25 percent of fire agency volunteers in Australia, mainly in non-operational or supportive roles (Beatson and McLennan, 2005). Although there are women who fulfil the role as captain of local bushfire brigades, the gendered division of roles within most rural bushfire brigades at present reflects the traditional division of labour within rural communities, where the focus on stereotypically male qualities such as strength, stamina, grit and guts tends to render women invisible or at best as carers of men (Alston, 1995, 2005; Beatson et al., 2008; Poiner, 1990; Schaffer, 1988). This trend reflects hegemonic forms of masculinity in agricultural professions, which portrays the reliance on stereotypically male physical attributes for the control of both technology and nature (Bryant, 1999; Little, 2002). Discussions on the position of women in natural hazards and land management issues thus frequently assume a premise of dependence of women on men as a baseline for understanding. This premise builds on '[t]he equation of women with unruly and destructive natural forces against whom men marshal the forces of reason and technology[, which] is part of the cultural context within which both women and men make sense of disastrous environmental events' (Enarson and Scanlon, 1999, 106).

To overcome this tendency of essentialising women as victims, it is necessary to differentiate between an ideology of dependence (see Poiner, 1990; Schaffer, 1988) and ascribed social gender identity as an inevitable consequence of hegemony (see Acker, 1973, 1991). Poiner's (1990) study of power relationships in rural Australia, emphasizes the interlocking of tradition and legitimacy by demonstrating not just how hegemonic relationships are ideologically premised but also how both the dominator and the subordinate that form the asymmetry in hegemonic relationships are encouraged to assent to it. Poiner (1990, 30) argues that 'it is the palatability and persuasiveness of the sustaining ideology(ies) which in the first instance invest structural arrangements with consent – recreated and reinforced by participation in the course of everyday life'. The gendered terrain of disaster examined in the essays edited by Enarson and Morrow (1998) furthermore demonstrates internationally how natural disasters, such as bushfire, accentuate prevailing cultural frameworks rather than promote radical societal change. This is eloquently demonstrated in Hoffman's (1998) description below of the embedded gendered role divisions that arose from the ashes of the Oakland firestorm in the US in 1991. Hoffman (1998, 57) argues that even in a locality characterised by contemporary and relatively equitable gender relations the shock of the wildfire revealed that traditional gender distinctions are 'tenacious' and readily resurface.

'... what appeared first among the survivors of the Oakland Firestorm was not the reconstitution of the life lived immediately prior to the conflagration, but rather the regeneration of old, deeply rooted cultural patterns. ... Indeed, a gender division fleshy enough, archaic enough, and poetic enough to make Claude Levi-Strauss, Marcel Griaule, Michel Foucault, and a long list of feminist theorists dance an "I told you so" jig resurfaced.' (Hoffman, 1998, 56)

The 'doing of gender' in everyday rural practices has with time ensured the normalisation of hegemonic masculinity in everyday life. As a result men are more likely than women to hold power in rural communities past and present, as knowledge and power are facilitated by discourses shaped in rural communities around hegemonic masculinity (Alston, 1995; Liepens, 1998). Research has furthermore shown how the normalisation of patriarchal relations through discursive practices is legitimised through the media (Agg and Phillips, 1998; Liepens, 2000), whilst institutional patriarchal

structures resistant to change reinforce them (Alston, 2005). The term hegemony is not without its problems, however, as it often evokes an overly monolithic conception of domination by men that disguises the intimate inner workings of culturally and historically distinct arrangements between women and men. For example, research has revealed that although women '... are disadvantaged by the existence of essentialist cultural constructions, they also draw on these notions, sometimes strategically and often unconsciously, to make sense of their lives and to construct their subjectivities in ways that are discursively present' (Cupples, 2007, 169; see also Cottrell, 2009; Cox, 1998). This suggests that a gender-sensitive analysis of bushfire has to go beyond generalised notions of gendered vulnerabilities. It should examine how the socially constructed societal expectations of women and men that underpin traditional views of bushfire management as "men's business" persists today. This sentiment is strongly reflected in the research findings presented in this paper.

Hegemonic masculinity in many rural landscapes has arguably been challenged on many fronts since the 1970s due to the demographic and structural changes associated with amenity-led migration from urban centres into rural landscapes. Amenity-led migration refers to the increasing urban-to-rural displacement of people predicated on desires for lifestyle change, affordable property, and the attraction of natural and/or coastal environmental settings (Burnley and Murphy, 2004; Hugo, 2005). It is popularly referred to in Australia as "tree- or sea-change". Amenity-led in-migration has resulted not only in population growth but also a rapid re-composition of rural populations, as urban migrants purchase land, often subdivided farmland, whilst the more traditional rural population age or decline. We will refer to these areas as changing rural landscapes. Many new rural landowners have no history of bushfire in their families. They also bring lifestyles and values more commonly associated with urban areas into rural places. Further, research into the illusions and disillusion of amenity migrants also suggests that unconsidered factors, such as bushfire, may result in a "tree-change" being a relatively short-term phenomenon for many people (see, for example, Jobses, 2000; Klepeis et al., 2009; Mendham and Curtis, 2010).

The above points, however, do not translate into straightforward cultural change reflected in ready distinctions between newcomers and longer-term landholders (Cottrell, 2005; Robbins et al., 2009). It is apparent from the study from which this paper derives that traditional gendered dimensions of bushfire and emergency services remain intact albeit amid changing social circumstances. Women tend to rely on the knowledge and ability of men for bushfire management (see also Beringer, 2000; Delaine et al., 2008; Gilbert, 2004; Proudley, 2008). This has important implications for their bushfire safety, as the lack of engagement with bushfire prevention, preparation and response, can place landholders in a vulnerable position. For example, as men drive out the gate to commute to the city for work or to fight the bushfire elsewhere, many women are left at home without the knowledge or personal capacity to respond to a bushfire if it arrives on their doorstep. Alternatively, vulnerability arises as professional and domestic demands on women are accentuated in the context of rural lifestyle living.

3. Methodology

This paper focuses on the gender dimensions of results from research investigating landowners' perceptions of bushfire and the significant factors that influence landowners' relationships with bushfire in three changing rural landscapes in New South Wales, Australia: the Oakdale area in Wollondilly Shire, Kangaroo Valley in the Shoalhaven, and Windellama on the Southern Tablelands (see Fig. 1). The three study areas all have a history of major bushfires,

although the time since last impact varies. The Oakdale area was affected by the 2001 "Black Christmas" bushfires; a big bushfire last ran through Kangaroo Valley in January 1983; whilst Windellama last experienced a major bushfire in February 1965. The study areas were also chosen due to their varying proximity to two of Australia's biggest economic and political centres – Sydney and Canberra; their varying degree of land use change and farm subdivision; their high amenity value; and the presence of significant areas of naturally vegetated land, which heightens the risk of bushfire. Their character is thus a product of the demographic changes, lifestyle preferences, agricultural restructuring and the footloose working patterns of the internet age that have shaped sea- and tree-change areas across Australia, including many of the areas worst-hit by the bushfires in Victoria in February 2009.

Amenity-led migration has resulted in an eclectic mix of full-time, part-time, new and established landholders co-existing in areas that once were almost entirely the purview of farmers (Table 1). The wide variety of landholders in the study areas reflects landholder types found in changing rural landscapes in Australia in general (Holmes, 2006; Argent et al., 2007).

The project from which this paper derives aims to examine how experiences of place, culture, events and context mediate how landowners' relate to bushfire. A major component of this research was a postal survey that established an overall picture of landowners' type and level of engagement with bushfire management. This covered topics such as respondents' experience of bushfire, the role of bushfire in their land management aims, and involvement with local bushfire brigades or environmental groups. Table 2 outlines the number of surveys delivered via letterbox-drops in relation to the actual number of private dwellings present in each study area, and the subsequent survey response rate.

Three hundred and forty-eight landholders (16%) completed the survey from February to May 2008. Two computer software programs were used to manage and analyse the quantitative data from the postal survey: FileMaker Pro 8.0v1 and SPSS 16.0 (Statistical Package for the Social Sciences). Pearson's chi-squared tests of contingencies were used to evaluate whether survey components, such as levels of bushfire experience, preparedness, perceptions of threat and personal knowledge were related to gender. The results of the postal survey were used as the basis for the selection of a purposive interview sample (Bryman, 2008; Creswell, 2007; Hay, 2005). On the back page of the postal survey, respondents could volunteer to be interviewed further on their opinions and experiences relating to bushfire and natural resource management in changing rural landscapes. Of the 348 landholders who completed the survey 165 agreed to be interviewed further. On the basis of their replies, 38 landholders were interviewed on their properties from October 2008 to April 2009 using an in-depth, interactive, semi-structured interview approach (Bryman, 2008). Basic demographic characteristics of survey and interview participants are outlined in Table 3. The 38 interview participants were selected to give a balanced sample of gender, age, place of upbringing, main or secondary residence, local rural fire brigade membership, levels of bushfire experience, property size, income generated on properties, asset protection zones (firebreaks), and personal bushfire action plans. This sampling strategy allowed interviewees to be selected purposively in terms of criteria that were central to the main research topic. The interviews were audio recorded and transcribed verbatim before being coded¹ in the Computer Assisted Qualitative Data Analysis Software (CAQDAS) NVivo v8. The interview

¹ 'A code is an abstract representation of an object or phenomenon ... ranging from being purely descriptive ... through labels for topics or themes ... to more interpretive or analytical concepts' (Bazeley, 2007, 66).

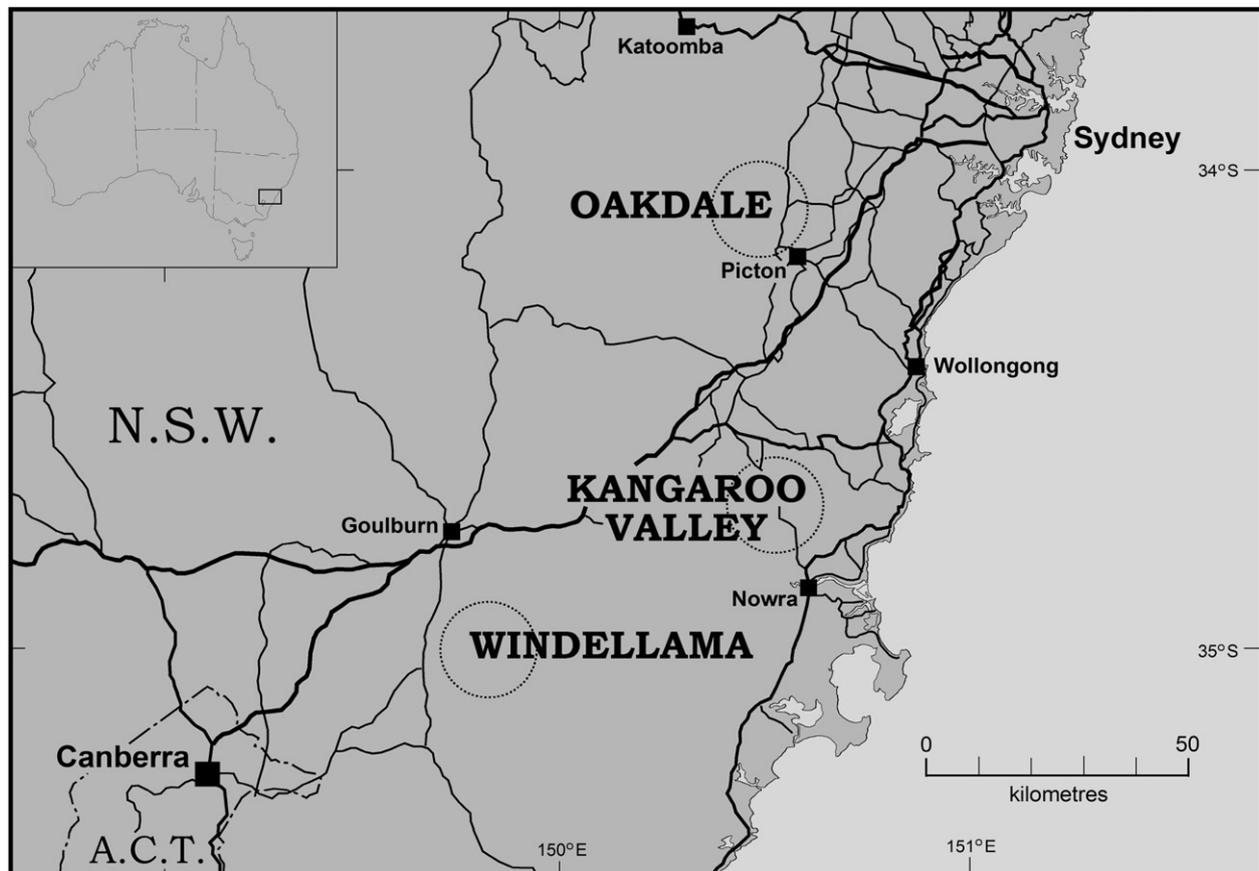


Fig. 1. Map of study areas in southeast Australia.

transcripts were coded using both a priori themes, such as community involvement, and emerging themes, such as emotional responses. The direct interview quotes used in this paper have been chosen from this data because they illustrate attitudes, beliefs and concerns shared by landholders in this study.

Given the annual threat of bushfire in Australia it is worth mentioning that fieldwork took place both during and outside the statutory Bush Fire Danger Period, which runs from October 1st to March 31st in New South Wales (RFS, 2009). During this period the public awareness of bushfire is generally heightened due to the increased media coverage of bushfire stories and the sense of bushfire danger related to hot and dry weather conditions and/or actual bushfires. While the postal survey took place at the end of a bushfire season with little bushfire activity, the interviews, on the other hand, were carried out in the months leading up to, during and after the tragic 'Black Saturday' bushfires in Victoria.

4. "It's not firewomen, it's firemen"

The overall level of bushfire experience amongst women as well as men in this study was minor with less than a quarter of survey participants having personally been affected by bushfires in the form of evacuating, defending, or experiencing loss of personal or local property. This is a manifestation of both the elapse of time since each area was last affected by major bushfires locally and the rapid increase within the last 30 years of rural properties being purchased by urban migrants (Table 3). The large percentage of current landowners who have relocated from urban or urban fringe areas has resulted in a high turnover in landowner types. This

inevitably has an impact on the type of bushfire knowledge held within the local communities as the majority of these landowners have little or no history of bushfire personally or within their families (Filmer, 2008; McGee and Russell, 2003). The embedded nature of traditional gender roles in landowners' perceptions of bushfire management was nevertheless consistently encountered during interviews, as conveyed in the quotations below.

[Wife] Talking to people in town, women seem much less concerned about [bushfire] or thinking about it than men in general ... [Husband] *Well fire fighters, it's not firewomen, it's firemen.* [Wife] I'll make them as many sandwiches as they like but I'm not going out into a bushfire and fighting it. [Husband] *I can move that fallen log a lot easier and chainsaw it up and get rid of it than [my wife] could. That's just a physical reality you have to understand.* [Wife] Maybe women are more willing to just let things go. ... We certainly know that we embrace the stereotypes of male and female roles on the land out here. (Tree-change couple, Kangaroo Valley, January 2009).

The mythical building up of the bushfire volunteer ... it's very important that we always have that mythical icon. It has to be male. We cannot have, I mean, women bake the scones and sell them to raise money but we must have that icon. Bushfire always gives us that. ... It gives us community. It gives us heroes. It gives us empathy. (Female tree-changer, Windellama, February 2009).

The above quotations illustrate the perception held by many landholders of women not as active bushfire managers but as the carers of men during bushfire by coordinating the provision of food,

Table 1
Landholder categories in the case study areas in New South Wales (adapted from Klepeis et al., 2009).

| Landholder type | Characteristics |
|--|---|
| Full-time Graziers (Windellama) Full-time Dairy/Beef Cattle (Kangaroo Valley) Full-time Livestock/Market Gardening (Oakdale area) Full-time Tourism (mainly in Kangaroo Valley) | Full-time residents; off-farm income important but their objective is to earn a living from the land. |
| Full-time Lifestylers (amenity buyers): Commuters Hobby farmers Retirees Seekers of a rural retreat | Full-time residents; off-farm income important but their objective is to earn a living from their property through tourism related activities. Full-time residents; many have a secondary residence elsewhere; main or only source of income is off-farm; amenity use; a minority seek to generate profit from farming activities. |
| Part-time Lifestylers (amenity buyers): Hobby farmers Land investors Recreationalists Seekers of a rural retreat | 'Weekenders' or occasional visitors; primary residence is elsewhere; rely on off-farm income; amenity use; a minority seek to generate profit from farming activities. |

drink, first aid, and other logistical necessities. This is consistent with the proportionally fewer women in this study who are volunteer fire fighters (6% compared to 15% of men)². Furthermore a larger proportion of men (77%)³ than women (48%)³ plan to stay and defend their property from bushfire compared with leaving well before the bushfire arrives, the two options that form the core of the Australian 'Stay and defend or leave early' policy (AFAC, 2005; Handmer and Tibbits, 2005; Tibbits and Whittaker, 2007). This matches findings from research in rural–urban interface areas in Victoria and New South Wales respectively, where 67% of men compared to 33% of women (Beringer, 2000) and 62% of men compared to 38% of women (Odgers and Rhodes, 2002) intend to stay and defend rather than leave early. Beringer (2000) argues that as a result of inadequate knowledge, women perceive bushfire to be a greater threat than men do and are therefore more inclined to evacuate. Although a higher proportion of women (16%)³ than men (7%)³ in our study were likely to leave early, no significant gender difference was recorded between overall perceptions of bushfire threat both to the local area⁴ and on individual properties.⁵ Despite this, high levels of apathy, denial, and feeling of helplessness was recorded amongst female interview participants (see Table 4).

During interviews women consistently spoke of relying on the knowledge and ability of men for bushfire management (see also Beringer, 2000; Fothergill, 1998; Gilbert, 2004). Many considered day-to-day jobs such as keeping the gutters clear of leaves, removing fallen trees and other fuel hazards, or the set-up and maintenance of water pumps and other equipment, to be the responsibility of their husband, son or other male family members. Women would often acknowledge that their property was equipped with, for example, water pumps, hoses, and sprinklers but that they did not know how to implement such systems of defence. Men, on the other hand, often expressed a preference for women and children to be evacuated. Together these gendered perspectives on everyday bushfire management were found to result in a lack of knowledge transfer between household members. This may to some extent explain why 60% of households in New South Wales have no bushfire emergency plan (Nicolopoulos and Hansen, 2009), a worrying statistic given the tragic consequences of many residents being inadequately prepared for the 'Black Saturday' bushfires in Victoria (BCRC, 2009). The tendency for women to rely on the knowledge and ability of men for bushfire management may also explain the higher level of indecision recorded in our study

among women (35%)³ compared to men (15%)³ as to their plan of action during bushfire events.

We probably had at most 30 min from when we saw the smoke to when we could see the flames. ... The boys were telling me to get in the car, take the dog and go. By the time we were done bargaining, they came back and said you can't get out. (Female tree-changer, Oakdale, December 2008)

There also seemed to be a stronger sense of doubt amongst women that bushfire would affect them personally and if it did, the need to nurture children contributed to self-doubt as to their personal capacity to act given the likely absence of male family members, good communications, electricity and water. The act of juggling the responsibilities of motherhood, commuting, full-time jobs, and household chores was an issue that surfaced frequently during interviews when women contemplated engaging with bushfire issues.

Certainly in terms of volunteering to do things, it's really difficult when you work full-time and for me it's the hours, there's no way! I can't even go to a CWA⁶ meeting. You know, they're just not designed for commuting working mummies... (Female tree-changer, Windellama, February 2009)

The above quote accentuates the need to be attentive to the range of circumstances, which form the diverse lives of women. At the same time, the embedded nature of gender in landholders' narratives of living with fire on the land highlights important gender differences in bushfire risk awareness, bushfire knowledge, the perceived need for bushfire preparedness measures, the willingness to perform certain tasks, and the belief in personal capacity to act (see also Goodman and Proudley, 2008; Paton and Wright, 2008; Cottrell, 2009). Be it the lack of knowledge transfer within households or the rigidity of embedded gender roles that prevent men and women questioning the status quo, these patterns contribute towards the disengagement by many women with bushfire prevention, preparation and response.

5. How do gendered social experiences materialise?

The increasing diversity in types of landowners and homes in changing rural landscapes is important in the context of gender and bushfire not only because home traditionally is a gendered domain but also because home often is regarded by Australians as a place of safety during bushfire. This sentiment is captured by the Australian

² $\chi^2(1, n = 348) = 7.64, p = .006$.

³ $\chi^2(1, n = 348) = 31.73, p = .000$.

⁴ $\chi^2(1, n = 348) = 3.31, p = .346$.

⁵ $\chi^2(1, n = 348) = 2.25, p = .522$.

⁶ Country Women's Association of Australia, established 1922, www.cwaa.org.au.

Table 2

Survey sample size and response rate (by authors; ABS, 2007).

| Study area name | ABS 'State-suburb' census area (ABS 2007) | Number of private dwellings (ABS 2007) | Number of surveys distributed | Targeted sample size (% of dwellings) | Number of survey responses (n) | Survey response rate (%) |
|-----------------|---|--|-------------------------------|---------------------------------------|--------------------------------|--------------------------|
| Windellama | Windellama | 302 | 348 | 115 ^a | 51 | 15 |
| Kangaroo Valley | Kangaroo Valley Upper Kangaroo River | 815 (582 + 233) | 697 | 86 | 125 | 18 |
| Wollondilly | Oakdale Orangeville Werombi | 1178 (608 + 367 + 203) | 1120 | 95 | 166 | 15 |
| Unknown | — | — | — | — | 6 | — |
| Total | — | 2295 | 2165 | 94 | 348 | 16 |

^a That a larger number of surveys were delivered than ABS identified numbers of private dwellings is likely to be caused by 46 surveys having been delivered to either properties with gates but no dwellings or dwellings included by ABS under the Lower Boro (State-Suburb).

Fire Authorities Council's catch-phrase 'Houses protect people, people protect houses' (Handmer and Tibbits, 2005). Furthermore, whether a home is '... regarded simply, as an investment, or in a more complex way, as the physical expression of self, of achievement or of one's way of life' (Fordham, 1998, 130) was found to significantly influence preparedness, response and recovery of flood disaster victims in Scotland. Research has shown that preparedness for natural hazards is influenced by personal knowledge of a particular hazard at the same time as it is well established that changed behaviour does not necessarily result from increased knowledge or community education programs (McCaffrey, 2004; McGee et al., 2009; Pannell et al., 2006; Paton and Wright, 2008; Tierney et al., 2001; Weber and Word, 2001). In agreement with findings from changing rural communities in Victoria (McGee and Russell, 2003), we found that, despite a high level of bushfire risk awareness amongst landholders, notably fewer landholders rated the threat from bushfire as high to extreme on their own property (39%) compared to the local area in general (66%). As outlined in Section 4, there was furthermore a stronger sense of doubt amongst women in this study that bushfire would affect them personally.

To understand landowners' perception of their vulnerability, McCaffrey (2004) stresses that landholders balance both the perceived risk and benefit of where they live. The higher the perceived benefit of living in a bushfire-prone area, the greater is landholders' risk tolerance. Paton et al. (2008) and Bushnell and Cottrell (2007) usefully draw attention to the operation of three types of perceptual biases to understand the rationale behind landholders' tradeoffs between risks and benefits: normalisation bias, unrealistic optimism bias, and interpretive bias known as risk compensation. Unrealistic optimism bias where people, even if they accept a need for greater preparedness, assume this applies to others but not to themselves, was noticeable amongst men in this study. Seventy-six percent of male compared to 66% of female landowners rated their property as satisfactory to very prepared for bushfire compared to only 41% of men and 50% of women considering their local community as having the same level of preparedness.⁷ Although it is possible that the more "hands-on" approach by men increases their confidence in personal preparedness, the recorded awareness in interviews of these measures by most women does not make them feel equally prepared (as highlighted Table 4).

Some landowners are irresponsible, poor managers and this puts our property at risk due to their negligence. (Anonymous survey response, 2008)

Landholders were found to use interpretive bias to balance the perceived risk of living in a bushfire-prone area with the perceived

level of bushfire safety offered by immediate environmental surroundings such as grassy paddocks, rainforest or neighbouring farms. This pattern was particularly evident amongst female interview participants many of whom voiced a worrying and unrealistic level of confidence in local farmers or the rural fire brigade providing them with timely instructions; or the ability to follow simple plans that did not take into consideration key bushfire characteristics such as loss of electricity, reduced visibility, noise hampering verbal communication, fire running up hill, or the danger of leaving late.

I'd probably go to an empty paddock with the kids and stay there instead of fighting for the house. There are a lot of high paddocks back here that are easy for us to get to. You can even take a four wheel drive up there and sit in... Not sit in your car but stay with your car quite safely. (Female weekender, Kangaroo Valley, December 2008)

During interviews women often used normalisation bias as a logical line of reasoning not to worry, as their only experience of bushfire were either visual or of minor events that they had been able to cope with. Gill (2005) highlights the problem of authorities advocating landholders to stay and defend their property if they are 'capable and prepared' when most of the recipients of this message have no or little bushfire experience with which to interpret the practical and mental levels of preparedness this message implies. 'Even well-prepared residents have left their homes at inappropriate times because they did not realise the emotional impact that a neighbourhood on fire would have on them' (Gill, 2005, 74).

No, we don't really have a plan of what we'd do but no, we wouldn't leave. I think you just sort of know the basics of 'OK, I need to make sure my gutters are clean'. I suppose if you got to a stage where you had to go ... Like, when the last one was on, the car was packed. We weren't going to be stuck. All we had to do was get in and drive off. (Female tree-changer, Werombi, April 2009)

It is clear that gendered social experiences of bushfire are materialised through complex and contradictory actions and attitudes. This complicates attempts to create more gender-sensitive frameworks for bushfire management (see also Cupples, 2007). The following section demonstrates how such attempts are complicated further by historically and culturally specific patriarchal structures within emergency services.

6. (Re)Negotiating gendered dimensions of bushfire management

The move by emergency services in Australia away from promoting large-scale evacuation of people from bushfire threatened areas has been argued to be '... a departure from the conventional paternalistic approach of emergency services in

⁷ $\chi^2 (1, n = 348) = 8.44, p = .015$.

Table 3
Basic characteristics of survey and interview participants.

| Total of each category | | Survey participants | | Interview participants | |
|-----------------------------------|------------------------------------|---------------------|-------------|------------------------|-------------|
| | | <i>n</i> | % of sample | <i>n</i> | % of sample |
| | | 348 | 100 | 38 | 100 |
| Gender | Female | 139 | 40 | 16 | 42 |
| | Male | 204 | 59 | 22 | 58 |
| | Unknown | 5 | 1 | – | – |
| Age | 18–25 | 1 | 1 | 1 | 3 |
| | 26–35 | 18 | 5 | 2 | 5 |
| | 36–45 | 60 | 17 | 11 | 29 |
| | 46–55 | 78 | 22 | 9 | 24 |
| | 56–65 | 95 | 27 | 12 | 31 |
| | 66–75 | 56 | 16 | 2 | 5 |
| | 76+ | 24 | 7 | 1 | 3 |
| | Unknown | 16 | 5 | – | – |
| Type of residence* | Full-time/Main | 301 | 86 | 28 | 74 |
| | Part-time/Secondary/Absentee | 45 | 13 | 10 | 26 |
| | Unknown | 2 | 1 | – | – |
| Type of residence prior to move | Urban | 170 | 49 | 17 | 45 |
| | Urban fringe | 46 | 13 | 4 | 10.5 |
| | Rural | 74 | 21 | 4 | 10.5 |
| | Always lived here | 7 | 2 | 3 | 8 |
| | Unknown | 6 | 2 | – | – |
| | N/A (secondary residence) | 45 | 13 | 10 | 26 |
| Years rural property owned | 0–9 | 114 | 33 | 24 | 63 |
| | 10–19 | 95 | 27 | 7 | 19 |
| | 20–29 | 78 | 22 | 5 | 13 |
| | 30+ | 37 | 11 | 2 | 5 |
| | Unknown | 24 | 7 | – | – |
| | Member of local rural fire brigade | Yes | 82 | 24 | 8 |
| | No | 266 | 76 | 30 | 79 |
| Asset Protection Zone (firebreak) | Yes | 134 | 39 | 24 | 63 |
| | No | 202 | 58 | 14 | 37 |
| | Unknown | 12 | 3 | – | – |
| Personal bushfire action plan | Yes | 148 | 42 | 15 | 39 |
| | No | 194 | 56 | 23 | 61 |
| | Unknown | 6 | 2 | – | – |

* This study does not provide insight into any potential differences between people who own their properties and people who rent their place of residence, as only a handful of renters responded to the postal survey.

NB: This study is partial with regards to the ethnic characteristics of the informants. With a handful of exceptions, the survey and interview participants were all of European-Australian descent.

dealing with large-scale emergencies ... [and] a move back to the pre-emergency service era when communities were left to take care of their own safety' (Gledhill, 2003, 1). Bushfire management, however, was the domain of men even in the pre-emergency service era, when the tradition of women staying behind to care and nurture for house and home was initiated. So whilst emergency services more recently have encouraged rural landowners and communities to be more bushfire aware and take greater responsibility for their own safety (Bushnell and Cottrell, 2007; McLennan and Birch, 2005), our study indicates that the historical role of bushfire for moulding and upholding gender roles has ensured that men rather than women have been empowered through this process (see also Beatson et al., 2008; Proudley, 2008).

Say you've got someone my age and then you are in control – because the National Parks lady was a younger lady like you, there's a certain amount of venomosity [sic] because 55 year old men with only x-amount of brain cells and so much alcohol, can only take so much and then they don't look to someone like their daughter for guidance. So whether you've got a head full of experience, until they see you do it, they are going to put you down. (Local man, Oakdale, January 2009)

Wraith's (1997, 10) focus on gender imbalance in emergency management stresses how the stereotype of 'women as victims without required competencies and devoid of power' justifies the absence of women in management positions within emergency services. Wraith (1997, 9) argues that '... the emergency

management system, as it stands with women cast outside of it, works directly against its own principles in relation to women...' in its failure to empower through participation and information sharing. This connection between knowledge and power was also highlighted during interviews:

It's a shame to look at the Victorian situation and know that they could have done more if they'd known more. We should be empowering women with knowledge so they can pass that knowledge on. If you don't give them information they are not going to ask questions. (NSW RFS Community Safety Officer, May 2009)

A prerequisite both for being informed and for having the capacity to acquire relevant knowledge is that women are given the opportunity to take control of their own safety. This, however, needs to be scrutinised in the context of the many women who choose not to take control (see Section 4). An important factor at play here appears to be the lack of gender sensitivity and focus on gender issues within the language, culture and approach of community education programs on bushfire. Gender thus is '[n]ot simply a marker of "difference" [but also] a distributive system through which women and men are differently empowered before, during, and after disaster' (Enarson and Scanlon, 1999, 118). The study from which this paper derives highlights a need for community outreach initiatives on bushfire safety that address gender issues. However, during interviews local and district level staff and volunteers of

Table 4
Summary of key emotional themes elicited amongst female interview participants.

| Questions | Key themes that emerged | Interview quotes by women that illustrate themes |
|---|--|--|
| Respondents were asked open-ended questions about perceptions of personal levels of bushfire preparedness, past bushfire experiences, how they obtain information, and particular concerns in relation to bushfire safety. (Open-ended questions facilitate structured and consistent interviewing while allowing interviewees to answer discursively in their own terms) | <p>Apathy Display of lack of interest or enthusiasm to engage with bushfire risk management. Note that awareness and concern are not included under this theme. The research revealed a 'gap' between level of risk awareness and actions (see Eriksen and Gill, in press).</p> | <p>"Yeah, I'm sorry, I can't remember how we ended up finding this stuff out but it was quite a long time ago and [he/husband] tends to be more proactive than I am in this kind of thing. It probably would have been helpful if, I can certainly ask him if he remembers how we got this stuff. But he would have gone off and done a bit of investigation I would think and I'm sure we got some stuff in the mail." "The fact that we just don't know. It's pretty distressing really. You don't know what your rights are or how you should prepare this sort of area. But I'm sure that if you wanted to access information you could probably get it on the internet. I just haven't. Could you do it for me? I could lend you my computer."</p> |
| | <p>Denial Display of failure to acknowledge an unacceptable truth or emotion or to admit it into consciousness.</p> | <p>"Like we tried to ask around about that day with the fire engines and ambulance because we had kids here. There was a huge amount of drama going down the street and we thought 'should we be here?' We kept going out checking for smoke. We couldn't see any smoke. But I'm sure they would, if we needed to... Harold! Harold [local farmer] would tell us." "[Wife] The only thing is that if there was a bushfire we'd be on our own. I don't see the Rural Fire Service coming around here. It's difficult to get to. But no, I don't spend a lot of time worrying about it really. [Husband] Oh, I think if I had the time and you knew it was coming, I think I'd prefer to see you load up and drive somewhere safe. If I didn't have the time and it was bad enough, I'd probably go with you. [Wife] You know, I think we've cleared enough. [Husband] There's so much fuel in that darl' – that'd burn. [Wife] I think there'd be a lot of embers but knowing that we've got the extra sacking under the roof tiles and things like that, I would feel fairly confident that we could put out any small burning bits and probably get through it all alright."</p> |
| | <p>Helplessness Display of feeling of being unable to defend oneself or act without the help of others.</p> | <p>"The bigger fear is that he's out somewhere. There is no mobile range here... Like, you've got to be able to talk to somebody. Like, what do I do? I can't even turn on the pumps. I have to have him telling me what to do!" "The weekend just before he went away he said, 'OK, let's do this fire pump drill so you know how to fix it' because the fire pump was to go next to the dam so we had stacks of water. I said, 'oh for God's sake, there's not going to be a fire between now and the time you come back' and he said, 'well you never know, come on, just for me, do this for me'. 'OK', says I. So we had a little fire drill with a fire pump and then he went off and there was a fire. I couldn't believe it! It was just bizarre. I still didn't know what to do because I'd had this one drill and there's a pump with all these things on it, 'yes, yes, it's all right, I know what to do!'"</p> |

the NSW Rural Fire Service consistently emphasized the difficulties of implementing community outreach programs due to the additional time commitment this puts on resources already stretched too thinly. The high turnover of landowners in changing rural landscapes and the busy lifestyles of many of these landholders furthermore increase the need for information to be structured differently or repeated often (Gill, 2005). Addressing gender issues therefore requires a policy shift within emergency services to provide more support and funding for local community education programs. Such changes need to build on Enarson and Fordham's (2001) warning that unless gender sensitivity is incorporated into the drafting of policy and legislation, changes to customary as well as statutory rights can leave women with fewer rather than more opportunities for negotiation in the context of natural disasters.

The conventional patriarchal structures of Australian fire services has to date ensured that the primary focus of local training

programs is on bushfire response rather than addressing community attitudes to bushfire (Wraith, 1997; Beatson and McLennan, 2005; Beatson et al., 2008). Support and funding priorities therefore tends to be given to operational responses. In 2008, for example, the Tasmania Fire Service could triple its community education budget by reducing its budget for fire truck replacement by two percent, whilst the South Australian Country Fire Service's annual community education budget was equivalent to two and a half fire fighting trucks (Rhodes 2008). Delaine et al. (2008) emphasize that this mindset is reinforced politically as outcomes of community education programs are less tangible than operational responses, a notion conveyed in the quotation below.

[Landowner] We need to have some 'Women preparedness classes'.

[Interviewer] That's actually been trialled in South Australia but it never went further than the trial, as far as I'm aware.

[Landowner] I'm not surprised. It probably occurred more directly, more immediately after the last batch of bushfires. The money dries up. The sympathy, emphasis and focus go to 'Oh no, we're running out of electricity, water ...' whatever the newspaper headline is for the day. Give me an immediate political response. We always call it the 'Daily Telegraph moment of truth'. What's the driver behind this according to the Daily Telegraph? Is this a policy announcement in response to the Daily Telegraph? Are we amending a policy in response to the Daily Telegraph? Because that is Australia – public, general. ... What we need is a couple of women and children burnt to death in the next bushfire. I'm so sorry but it's the tragic truth! We need the picture of the woman running down the road with kangaroos fleeing with her, hair on fire, for it to be that Daily Telegraph policy. 'Women abandoned!' Unfortunately it's an incredible driver of policy here because we have no commitment politically to the long-term. (Female landowner, Windellama, February 2009)

Isolated community outreach initiatives that challenge gender issues already exist regionally in Australia. In 1993, for example, a female staff member within the NSW Rural Fire Service developed a local training program named 'Fire Fighting for Non-Fire Fighting Women' after recognising that 'women need bushfire safety information in different formats' (Filmer, 2008, 14). A similar workshop – 'Basic Bushfire Safety Skills for Women' was successfully piloted in South Australia in early 2008 (Delaine et al., 2008). Ultimately, the transformation of such individual successful initiatives into local phenomena state and countrywide requires long-term political commitment within fire emergency services. Such long-term political commitment seems all the more pertinent with the frequency of recent tragic bushfire events in Australia, the US and Europe and with the predicted increase in high fire danger weather with climate change (CSIRO, 2007; IPCC, 2007; Lucas et al., 2007). As it stands, addressing gender issues remain a low priority within Australian bushfire safety policies and practices. Instead rural fire brigades play a key role in upholding stereotypical gender roles and identities in changing rural landscapes. Hegemonic masculinity within bushfire management is thus mutually constituted through structures of power, decision-making processes, and embedded traditions.

7. Conclusion

This article has considered the implications for bushfire management when bushfire is conceptualised not as a gender-neutral natural phenomenon but as an important agent for maintaining traditional gender roles and power relations even within changing rural landscapes. To do so we have drawn on the notion of hegemony. This revealed that the demographic and structural changes associated with amenity-led migration from urban centres to rural landscapes have done little to alter the conventional view and practice of bushfire management as "men's business". Instead key gender differences exist within landholders' bushfire risk awareness, bushfire knowledge, the perceived need for bushfire preparedness measures, the willingness to perform certain tasks, and the belief in personal capacity to act. This has important implications for bushfire management policies and community outreach programs as it demonstrates a need to address not only high levels of apathy, denial and feelings of helplessness amongst women but also a general lack of engagement by many women with bushfire prevention, preparation and response. When the gendered dimensions of bushfire are investigated in the context of hegemony, a paradox also emerges between women choosing not to take control of their own bushfire safety and women being

denied the opportunity to take and be in control. The complex and contradictory actions and attitudes to bushfire that materialise through an analysis of gendered social experiences complicate attempts to create more gender-sensitive frameworks for bushfire management. It highlights that '[g]endered vulnerability does not derive from a single factor ... but reflects historically and culturally specific patterns of relations in social institutions, culture and personal lives' (Enarson, 1998, 159).

Communicating successfully on bushfire management issues with women and men alike in changing rural landscapes requires that community outreach initiatives address gender issues ignored within the culture and approach of conventional bushfire education programs. Current education models tend to follow prevailing notions in cognitive and behavioural learning theories where results are measured as the number of fixed ideas accumulated by an individual (Eriksen and Prior, in preparation). There is therefore a tendency to focus on the dissemination of fixed ideas rather than the actual process of learning and understanding the implications of these ideas. A further challenge for bushfire management agencies is to reorient official language, policy and practical advice driven by official discourse on natural hazards management and patriarchal traditions, to meet the need for local, context specific, and interactive initiatives. These initiatives need to appeal to women and empower local communities by addressing gender roles, lifestyle, social pressure, and inadequate knowledge. Broad-brush public bushfire awareness and preparedness campaigns are unlikely to be successful as they focus on bushfire as a gender-neutral problem of a surrounding environment rather than bushfire in the context of landholders' everyday lives. They therefore rarely address local barriers and motivations for action, such as the lack of knowledge transfer within households, rigid domestic gender roles, or the traditional gender-based stereotypes that result in an under representation of women as volunteers within rural bushfire brigades.

The results also underline how the tenacious and embedded nature of gender role divisions within both public and private spheres act as economic, social and political stumbling blocks for empowerment opportunities. Gender issues are thus likely to remain invisible within Australian bushfire safety policy and practice unless conventional patriarchal structures and mindsets on bushfire management are challenged at home, within communities, in the media, as well as in emergency service systems. This paper has demonstrated both the need to make the link between gender and bushfire management more explicit and the 'practical application of interpreting landholders' complex narratives for the experiential understanding of [bushfire] that reside within them' (Waite et al., 2009, 57). Gendered dimensions of bushfire are an axis of analysis that needs further investigation. The role of women and the lack of engagement with bushfire issues by many women in this study strongly suggest that current community education strategies are not as effective as they might be as a result of a lack of acknowledgement of gender roles. To be more successful community outreach programs need to better reflect that gender is a central organising principle even in the changing social fabric of rural landscapes affected by the structural and environmental changes associated with amenity-led in-migration.

Acknowledgements

This paper is based on the results of a PhD research project at the University of Wollongong funded by the Bushfire Cooperative Research Centre, the NSW Rural Fire Service, and the GeoQuEST Research Centre. Thanks are due to the local landholders and the staff members of the NSW Rural Fire Service who contributed generously with their time, knowledge and opinions; to Ross

Bradstock for research supervision; to Peter Caputi for statistical assistance; to Richard Miller for cartographic assistance; as well as the anonymous reviewers.

References

- AAP, 2009. Black Saturday Data Reveals where Victims Died. Fairfax Digital. <http://www.theage.com.au> (accessed 23.11.09.).
- ABS, 2007. Australian Bureau of Statistics 2006 Census. www.abs.gov.au (accessed 26.09.07.).
- Acker, J., 1973. Women and social stratification: a case of intellectual sexism. *American Journal of Sociology* 78, 936–945.
- Acker, J., 1991. Hierarchies, jobs, bodies: a theory of gendered organizations. In: Lorber, J., Farrell, S.A. (Eds.), *The Social Construction of Gender*. SAGE Publications, London.
- AFAC, 2005. Position Paper on Bushfires and Community Safety. Australasian Fire Authorities Council Limited, East Melbourne.
- Agg, J., Phillips, M., 1998. Neglected gender dimensions of rural social restructuring. In: Boyle, P., Halfacree, K. (Eds.), *Migration into Rural Areas: Theories and Issues*. John Wiley and Sons, Chichester.
- Alston, M., 1995. Women on the Land: The Hidden Heart of Rural Australia. University of New South Wales, Kensington, NSW.
- Alston, M., 2005. Gender perspectives in Australian rural community life. In: Cocklin, C., Dibden, J. (Eds.), *Sustainability and Change in Rural Australia*. University of New South Wales, Sydney.
- Argent, N., et al., 2007. The amenity complex: towards a framework for analysing and predicting the emergence of a multifunctional countryside in Australia. *Geographical Research* 45 (3), 217–232.
- Bazeley, P., 2007. *Qualitative Data Analysis with Nvivo*. Sage, London.
- Beatson, R., McLennan, J., 2005. Australia's women volunteer firefighters: a literature review and research agenda. *Australian Journal on Volunteering* 10 (2), 18–27.
- Beatson, R., et al., 2008. Recruiting and Retaining Women Fire Service Volunteers. Bushfire CRC & AFAC, Melbourne.
- Beilin, R., 1997. The construction of women in Landcare: does it make a difference? In: Lockie, S., Vanclay, F. (Eds.), *Critical Landcare*. Centre for Rural Social Research, Charles Stuart University, Wagga Wagga.
- Beringer, J., 2000. Community fire safety at the urban/rural interface: the bushfire risk. *Fire Safety Journal* 35 (1), 1–23.
- Bowman, D., et al., 2009. Fire in the earth system. *Science* 324 (5926), 481–484.
- Bryant, L., 1999. The detraditionalisation of occupational identities in farming in South Australia. *Sociologia Ruralis* 39, 236–261.
- Bryman, A., 2008. *Social Research Methods*. Oxford University Press, Oxford.
- Burnley, I.H., Murphy, P., 2004. *Sea Change: Movement from Metropolitan to Arcadian Australia*. UNSW Press, Sydney.
- BCRC, October 2009. Victorian 2009 Bushfire Research Response: Final Report. Bushfire Cooperative Research Centre, Melbourne.
- Bushnell, S., Cottrell, A., 2007. Living with bushfire: what do people expect? In: King, D., Cottrell, A. (Eds.), *Communities Living with Hazard*. Centre for Disaster Studies, James Cook University, Cairns.
- Clode, D., 2010. *A Future in Flames*. Melbourne University Press, Victoria.
- Collins, P., 2006. *Burn: The Epic Story of Bushfire in Australia*. Allen & Unwin, Sydney.
- Cottrell, A., 2005. Communities and bushfire hazard in Australia: more questions than answers. *Global Environmental Change Part B: Environmental Hazards* 6 (2), 109–114.
- Cottrell, A., 2009. Women's vulnerability to a seasonal hazard: their capacity to adapt and their resilience. *Journal of Pacific Rim Psychology* 3 (1), 4–10.
- Cox, H., 1998. Women in bushfire territory. In: Enarson, E., Morrow, B.H. (Eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*. Praeger, Westport.
- Creswell, J.W., 2007. *Designing and Conducting Mixed Methods Research*. SAGE Publications, Thousand Oaks, Calif.
- CSIRO, 2007. *Climate Change in Australia*. CSIRO, Australian Bureau of Meteorology.
- Cupples, J., 2007. Gender and Hurricane Mitch: reconstructing subjectivities after disaster. *Disasters* 31 (2), 155–175.
- Delaine, D., 2008. *Fiery Women: Consulting, designing, delivering and evaluating pilot women's bushfire safety skills workshop*. In: *The International Bushfire Research Conference*. Bushfire CRC/AFAC, Adelaide.
- Ellis, S., 2004. *National Inquiry on Bushfire Mitigation and Management*. Council of Australian Governments, Canberra.
- Enarson, E., 1998. Through women's eyes: a gendered research agenda for disaster social science. *Disasters* 22 (2), 157–173.
- Enarson, E., 2001. What women do: gendered labor in the Red River Valley flood. *Global Environmental Change Part B: Environmental Hazards* 3 (1), 1–18.
- Enarson, E., Fordham, M., 2001. From women's needs to women's rights in disasters. *Global Environmental Change Part B: Environmental Hazards* 3 (3–4), 133–136.
- Enarson, E., Morrow, B.H., 1998. *The Gendered Terrain of Disaster: Through Women's Eyes*. Praeger, Westport.
- Enarson, E., Scanlon, J., 1999. Gender patterns in flood evacuation: a case study in Canada's Red River Valley. *Applied Behavioral Science Review* 7 (2), 103–124.
- Eriksen, C., Gill, N. Bushfire and everyday life: examining the awareness-action 'gap' in changing rural landscapes. *Geoforum*, in press, doi:10.1016/j.geoforum.2010.05.004.
- Eriksen, C., Prior, T. The art of learning: bushfire, amenity migration and local environmental knowledge. *The International Journal of Wildland Fire, in preparation*.
- Filmer, J., 2008. Fire fighting for non-fire fighting women. *The Australian Journal of Emergency Management* (Spring), 14–15.
- Fordham, M.H., 1998. Making women visible in disasters: problematising the private domain. *Disasters* 22 (2), 126–143.
- Fothergill, A., 1998. The neglect of gender in disaster work: an overview of the literature. In: Enarson, E., Morrow, B.H. (Eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*. Praeger, Westport.
- Gilbert, J.B., 2004. *The Bushfire Risk: Community Awareness and Perception on the Rural-urban Fringe of Melbourne*. University College London, London.
- Gill, A.M., 2005. Landscape fires as social disasters: an overview of 'the bushfire problem'. *Environmental Hazards* 6, 65–80.
- Gill, N., et al., 2010. Stewardship among lifestyle oriented rural landowners. *Journal of Environmental Planning and Management* 53 (3), 317–334.
- Gledhill, J.B., 2003. Community self-reliance during bushfires: the case for staying at home. In: *3rd International Wildland Fire Conference and Exhibition*. Sydney.
- Goodman, H., Proudley, M., 2008. Social contexts of response to bushfire threat: a case study of the Wangary fire. In: Handmer, J., Haynes, K. (Eds.), *Community Bushfire Safety*. CSIRO Publishing, Collingwood.
- Handmer, J., Tibbits, A., 2005. Is staying at home the safest option during bushfires? Historical evidence for an Australian approach. *Global Environmental Change Part B: Environmental Hazards* 6 (2), 81–91.
- Hay, I., 2005. *Qualitative Research Methods in Human Geography*. Oxford University Press, South Melbourne, Vic.; New York.
- Hoffman, S.M., 1998. Eve and Adam among the Embers: gender patterns after the Oakland Berkeley firestorm. In: Enarson, E., Morrow, B.H. (Eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*. Praeger, Westport.
- Holmes, J., 2006. Impulses towards a multifunctional transition in rural Australia: gaps in the research agenda. *Journal of Rural Studies* 22 (2), 142–160.
- Hugo, G., 2005. The state of rural populations. In: Cocklin, C., Dibden, J. (Eds.), *Sustainability and Change in Rural Australia*. University of New South Wales, Sydney.
- IPCC, 2007. *Climate Change 2007: The Physical Science Basis. Summary for Policy-makers*. Cambridge University Press, Cambridge. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.
- Jobs, P.C., 2000. *Moving Nearer to Heaven: The Illusions and Disillusions of Migrants to Scenic Rural Places*. Praeger, Westport, Conn.; London.
- Kissane, K., 2010. *Worst of Days: Inside the Black Saturday Firestorm*. Hachette Australia, Sydney.
- Klepeis, P., et al., 2009. Emerging amenity landscapes: invasive weeds and land subdivision in rural Australia. *Land Use Policy* 26 (2), 380–392.
- Liepens, R., 1998. The gendering of farming and agricultural politics: a matter of discourse and power. *Australian Geographer* 29 (3), 371–388.
- Liepens, R., 2000. Making man: the construction and representation of agriculture-based masculinities in Australia and New Zealand. *Rural Sociology* 65 (4), 605–620.
- Little, J., 2002. Rural geography: rural gender identity and the performance of masculinity and femininity in the countryside. *Progress in Human Geography* 26 (5), 665–670.
- Lucas, C., et al., 2007. *Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts*. Bushfire CRC, Australian Bureau of Meteorology, CSIRO Marine and Atmospheric Research.
- McCaffrey, S., 2004. Thinking of wildfire as a natural hazard. *Society and Natural Resources* 17 (6), 509–516.
- McGee, T.K., et al., 2009. An examination of the influence of hazard experience on wildfire risk perceptions and adoption of mitigation measures. *Society and Natural Resources* 22 (4), 308–323.
- McGee, T.K., Russell, S., 2003. It's just a natural way of life: an investigation of wildfire preparedness in rural Australia. *Global Environmental Change Part B: Environmental Hazards* 5 (1–2), 1–12.
- McLennan, J., Birch, A., 2005. A potential crisis in wildfire emergency response capability? Australia's volunteer firefighters. *Global Environmental Change Part B: Environmental Hazards* 6 (2), 101–107.
- Mendham, E., Curtis, A., 2010. Taking over the reins: trends and impacts of changes in rural property ownership. *Society and Natural Resources* 23 (7).
- Nicolopoulos, N., Hansen, E., 2009. How well prepared are Australian communities for natural disaster and fire emergencies. *The Australian Journal of Emergency Management* 24 (1), 60–66.
- Odgers, P., Rhodes, A., 2002. *Community Response to the New South Wales Bushfires 2001–2002*. The Australian Fire Authorities Council, Melbourne.
- Pannell, D.J., et al., 2006. Understanding and promoting adoption of conservation practices by rural landholders. *Australian Journal of Experimental Agriculture* 46 (11), 1407–1424.
- Paton, D., et al., 2008. Risk perception and volcanic hazard mitigation: individual and social perspectives. *Journal of Volcanology and Geothermal Research* 172, 179–188.
- Paton, D., Wright, L., 2008. Preparing for bushfires: the public education challenges facing fire agencies. In: Handmer, J., Haynes, K. (Eds.), *Community Bushfire Safety*. CSIRO Publishing, Collingwood.
- Poiner, G., 1990. *The Good Old Rule: Gender and Other Power Relationships in a Rural Community*. Sydney University Press in association with Oxford University Press, Australia, Hong Kong.
- Proudley, M., 2008. Fire, families and decisions. *The Australian Journal of Emergency Management* 23 (1), 37–43.
- Pyne, S.J., 1991. *Burning Bush: A Fire History of Australia*. Holt, New York.

- Pyne, S.J., 2006. *The Still-Burning Bush*. Scribe Publications Pty Ltd, Carlton North, Victoria.
- RFS, 2009. NSW Rural Fire Service. www.rfs.nsw.gov.au (accessed 23.11.09.).
- Robbins, P., et al., 2009. Writing the new west: a critical review. *Rural Sociology* 74 (3), 356–382.
- Scanlon, J., 1998. The perspective of gender: a missing element in disaster response. In: Enarson, E., Morrow, B.H. (Eds.), *The Gendered Terrain of Disaster: Through Women's Eyes*. Praeger, Westport.
- Schaffer, K., 1988. *Women and the Bush: Forces of Desire in the Australian Cultural Tradition*. Cambridge University Press, Cambridge.
- Teague, B., et al., 2009. 2009 Victorian Bushfires Royal Commission Interim Report. Government Printer for the State of Victoria, Parliament of Victoria.
- Tibbitts, A., Whittaker, J., 2007. Stay and defend or leave early: policy problems and experiences during the 2003 Victorian bushfires. *Environmental Hazards* 7, 283–290.
- Tierney, K.J., et al., 2001. *Facing the Unexpected: Disaster Preparedness and Response in the United States*. Joseph Henry Press, Washington.
- Waitt, G., et al., 2009. Walking practice and suburban nature-talk. *Social and Cultural Geography* 10 (1), 41–60.
- Weber, J.R., Word, C.S., 2001. The communication process as evaluative context: what do non-scientists hear when scientists speak? *Bioscience* 51 (6), 487–495.
- Whittaker, J., Mercer, D., 2004. The Victorian Bushfires of 2002–03 and the politics of blame: a discourse analysis. *Australian Geographer* 35 (3), 259–287.
- Wraith, R., 1997. Women in emergency management: where are they? *Australian Journal of Emergency Management* (January), 9–11.