

FIRE NOTE

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UNDERSTANDING COMMUNITIES LIVING WITH BUSHFIRE: THE THURINGOWA BUSHFIRE CASE STUDY

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Fire agencies are faced with a major challenge as cities and towns expand and more people are living in peri-urban (wildland urban interface) areas. In many peri-urban places around Australia the growing mix of people and property with bushland creates the potential for disaster. Rural fire agencies in particular are not only dealing with an increasing risk, but also a rapidly changing community.

The aim of the Understanding Communities Project is to increase community resilience to bushfires.

Preliminary research indicated that building community resilience requires an understanding of how government policy and public perceptions interact and also to understand how the expectations of service providers, communities and agencies agree and differ.

BUSHFIRE CRC RESEARCH

A case study was undertaken in peri-urban interface areas of the City of Thuringowa in northeast Queensland in 2005 (Figure 1).

The case study has helped better understand community attitudes, needs and expectations and should give fire agencies in peri-urban and rural areas of Thuringowa a better understanding of fire issues in their community.

This Fire Note provides a summary of the main results of this research. The report "Thuringowa Bushfire Case Study- Technical Report" and bulletins summarising selected topics are available at www.bushfirecrc.com

THURINGOWA BUSHFIRE CASE STUDY

Self-completion mail surveys were used to collect information from residents in the Thuringowa Rural Fire Brigade Group area on a range of social variables relating to bushfire. A total of 957 questionnaires were delivered in October 2005 and 263 completed surveys were returned by December 2005 (28% response rate).

Bushfire is often of lower concern to people in this area due to a lower frequency and impact of bushfire events than in other

parts of Australia, and because of a high seasonal risk of cyclones. This should be taken into consideration when reading this Fire Note.

HAZARD EXPERIENCE AND RISK PERCEPTION

Overall, respondents to the survey were aware of and concerned about the bushfire hazard, with most respondents stating that they had undertaken bushfire preparation activities. A majority of respondents had experienced a hazard of some kind: cyclones (74%), flooding (40%) and bushfire (37%).

Themes emerging from comments about what respondents had learnt from their experience with bushfire included the importance of preparation and knowledge about fire behaviour. Respondents with past bushfire experience tended to rate the bushfire hazard higher than those without experience.

Perceptions of risk in their locality reflected the view that overall Thuringowa has a medium bushfire hazard [however personal

PROJECT OUTCOMES - IMPLICATIONS FOR PERI-URBAN THURINGOWA

- The need to use a number of different information channels in order to disseminate bushfire information that reaches all groups in the community.
- The opportunity to increase bushfire awareness and prompt preparation (before the bushfire season) by combining appropriate information with notification of controlled burning in the locality.

- The need to target newcomers in particular, with information about bushfire and associated preparation.
- The importance of enhancing cooperation and collaboration between the Rural Fire Brigade, council, community and other groups in order to best manage the bushfire risk and ultimately increase community resilience.

▶ RIGHT: FIGURE 1. SURVEY AREA, LOCATED IN THE CITY OF THURINGOWA, NORTH QUEENSLAND, AUSTRALIA



risk may not be accurate because many respondents rated the risk to their house lower than that of their locality (Figure 2)]. This may be due to overconfidence because of a perceived preparedness for bushfire or denial of the personal risk i.e. “it won’t happen to me” (Bushnell and Cottrell, in press).

Cyclones were of greatest concern with the majority of respondents at least moderately

- Most respondents lived on house blocks of less than five acres (< 20,235 m²) (77%)
- Most described their block as ‘rural’ (67%)
- The remainder being suburban (24%) and farming/grazing property (7%).

concerned (89%). Respondents’ second hazard of concern was bushfire (72%), followed by flooding (68%) and storm surge (34%).

DOES LOCATION AND BACKGROUND AFFECT RISK PERCEPTION?

This survey did not detect any differences in terms of risk perception and preparation between people with an urban or rural background, but there were differences between those currently living on suburban size or larger blocks.

Respondents on larger block sizes tended to rate the bushfire hazard highest, followed by those on rural blocks. Residents on suburban size blocks tended to give bushfire a low rating. This raises a number of questions: Are residents on suburban size blocks adequately aware of the bushfire risk in their locality and to their house? Are these residents adequately preparing their properties for bushfire? For example, do they need to maintain firebreaks? Some suburban localities in Thuringowa are surrounded by bushfire-prone bushland.

A large majority of respondents had moved to their current house from suburban areas

(61%), with a smaller proportion from rural areas including farming (19%). Length of residency at their current address was mostly 15 years or less (81%) with more than one third having lived there between one and five years (34%). In peri-urban areas it is important to raise awareness of bushfire hazards and preparation in newcomers, in particular those who have moved from a suburban area.

BUSHFIRE PREPARATION

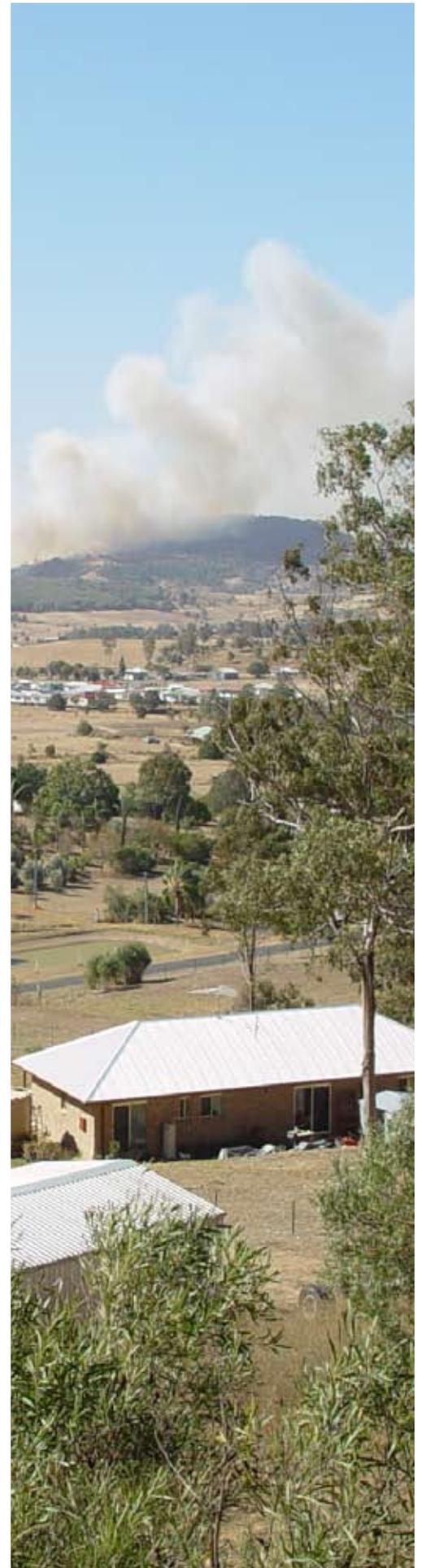
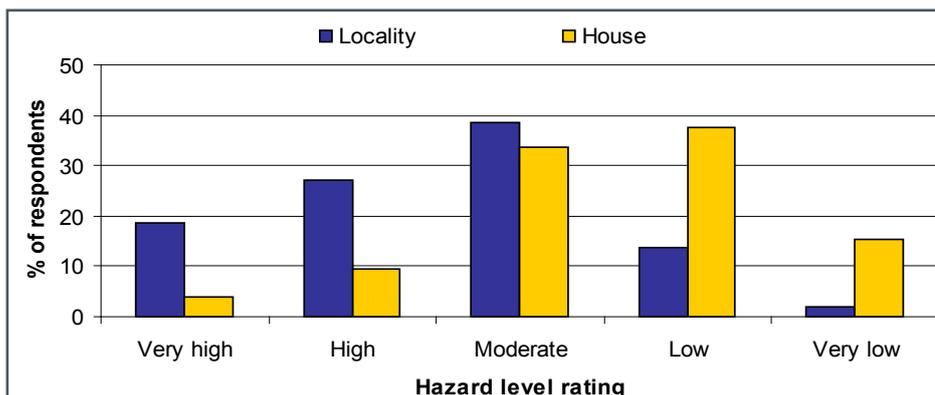
Almost all respondents (94%) stated that they undertook actions on their property to prepare for bushfire. Actions undertaken were cutting long grass (59%), clearing rubbish out of the yard (55%), cleaning leaves from gutters (44%), preparing

- The results demonstrated a link between risk perception and preparation; if people do not perceive the risk they are less likely to undertake preparation activities.

a firebreak around the property (40%), removing branches and undergrowth from around the house (35%), checking water supply and hoses (34%) and preparing an evacuation plan (13%). Apart from an evacuation plan, these results are consistent with normal household maintenance.

Experience of bushfire through seeing controlled or uncontrolled fires in their locality or through reports in the media of fires elsewhere were reported to be the main prompts for respondents to take action to prepare for bushfire in their locality (Figure 3). However, relying on uncontrolled fires burning in the locality or media news of bushfires elsewhere as prompts to prepare can create an unsafe situation because they usually occur when it is the bushfire season, and preparations need to be undertaken before this.

BELOW: FIGURE 2. RESPONDENTS RATING OF THE BUSHFIRE HAZARD IN THEIR LOCALITY AND TO THEIR HOUSE





KNOWLEDGE AND INFORMATION DISSEMINATION

Thuringowa respondents had a general understanding of when the normal bushfire season falls in their locality (97%), however most did not understand the ideal season for controlled burning: a majority either selected months after the ideal time or selected months that did not conform at all. This suggests a lack of understanding of the ideal time for bushfire preparation and thus a potential state of under-preparedness. Encouraging residents to view controlled burning in their locality as a prompt to prepare their homes for bushfire may address this issue.

In terms of controlled burning as a management strategy, respondents were mostly supportive, particularly those with a good perception of their local fire brigade. A majority of respondents were aware of a controlled burn in their area in the last two years (78%), and just over half had seen or received information about the controlled burn (62%).

The information sources selected as useful to respondents were TV or radio (64%), newspapers (42%), pamphlets in the mail (39%), neighbours/friends in community

(33%), local community newsletters (32%), information from the council (20%), meeting with fire brigade members (12%), information brought home by children at school (4%) and the internet (2%). However, disseminating information is not a straightforward activity, and this survey highlights a need for more strategically based information campaigns.

PERCEPTIONS OF RURAL FIRE BRIGADE AND LOCAL COUNCIL

The results demonstrated that people have a heavy reliance on the Rural Fire Brigade to protect people and property during a bushfire (93%). Those who may rely more heavily than others include those with an urban background, newcomers (< 10 years), those more concerned about the bushfire hazard and those with positive perceptions of the Fire Brigade and fire levy.

Bushfire maintenance activities were primarily seen as the responsibility of property owners and the council (Figure 4). A large majority of respondents agreed that the local fire brigade does a good job preparing for bushfires (80%) and a good job fighting bushfires (87%). Respondents were also mostly in agreement that the fire levy component of their council

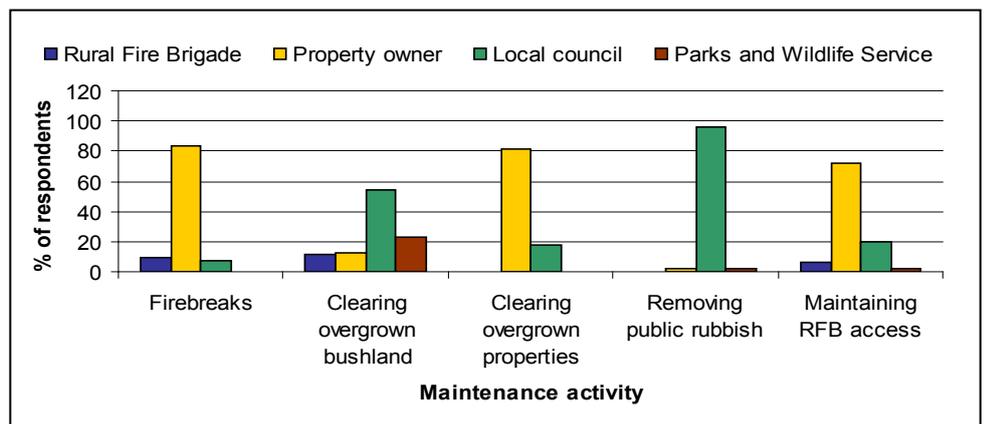
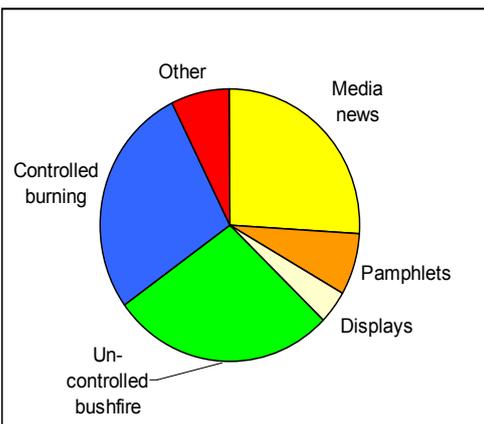
rates provides value for money (63%). Respondent satisfaction with the fire levy was linked with positive perceptions of their local brigade. Some respondents, such as those lacking knowledge of their Rural Fire Brigade or those living on suburban size blocks, may expect the Rural Fire Brigade or local council to take more responsibility for some bushfire maintenance activities.

Perceptions of the Rural Fire Brigade were very positive, however perceptions of local council services were not as positive. Fewer respondents agreed that the council was doing its job well in relation to bushfire management. Furthermore, the survey revealed that many respondents are not satisfied with the services in place to dispose of rubbish. Cost and accessibility for dumping rubbish were major issues for some respondents, for example only 68% believed that services to dispose of garden rubbish were adequate.

Respondents indicated that enforcement to improve the maintenance of properties for hazards including bushfire should increase or remain as it is now, not decrease.

◀ LEFT: FIGURE 3. PROMPTS FOR THINKING ABOUT PREPARING FOR BUSHFIRE

▼ BELOW: FIGURE 4. RESPONDENT VIEWS ON WHO IS RESPONSIBLE FOR BUSHFIRE MAINTENANCE ACTIVITIES





FUTURE DIRECTIONS

Initial parameters for the Understanding Communities project have been defined by case studies of two peri-urban regions in Queensland. Findings from these studies will be tested with case studies in other states and environments. These studies are being conducted in partnership with fire services in these states and the stakeholder reference group for this project.

A framework is being developed that will provide the means to better define community attitudes, needs and expectations. This should also lead to improvements in the efficiency and effectiveness of planning and decision-making by bushfire management agencies, and ultimately increase community resilience to bushfire.

Fire Note is published by the Bushfire Cooperative Research Centre (Bushfire CRC)

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Images courtesy of Queensland Fire and Rescue Service



Bushfire CRC is a national research centre formed in partnership with fire and land management agencies in 2003 to undertake end-user focused research.

The Centre is part of the national Cooperative Research Centres Program.

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OTHER PUBLICATIONS IN THE UNDERSTANDING COMMUNITIES PROJECT

All publications available from <http://www.bushfirecrc.com/research/c11/publicdocuments.html>

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PROJECT BULLETINS

Bulletin No. 1 - Fire risk in Aboriginal peri-urban landscapes in North Australia.

Bulletin No. 2. Indigenous Communities, Peri-urbanism and Bushfire Issues in Northern Australia.

Bulletin No. 3 – The COAG natural disasters review.

Bulletin No. 4 – Defining Communities.

Bulletin No. 5 – What's in a name – peri-urban communities?

Bulletin No. 6 – Communities living with bushfire: desktop review.

Bulletin No. 7 – Thuringowa peri-urban residents and bushfire: Do people living on different block sizes have different values, knowledge, perceptions and expectations?

Bulletin No. 8 – Thuringowa peri-urban residents and bushfire: Do people who own or rent their homes have different values, knowledge, perceptions and expectations?.

Bulletin No. 9 – Thuringowa peri-urban residents and bushfire: How knowledgeable are people?

Bulletin No. 10 – Thuringowa peri-urban residents and bushfire: Who prepares for bushfire?