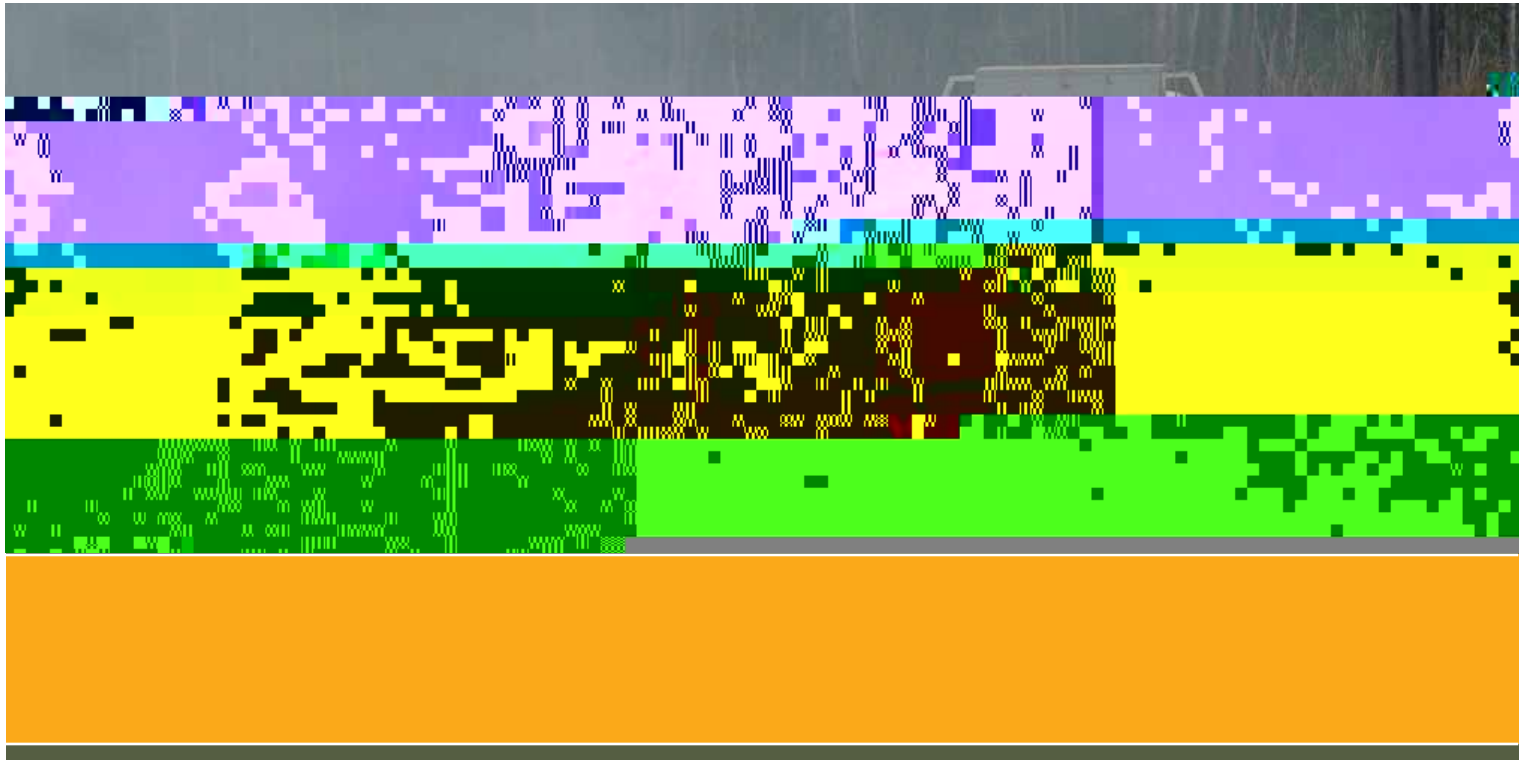




UNDERSTANDING COMMUNITIES PROJECT

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BUSHFIRE COOPERATIVE RESEARCH CENTRE
PROGRAM C: COMMUNITY SELF SUFFICIENCY FOR FIRE SAFETY

UNDERSTANDING COMMUNITIES PROJECT

Thuringowa Bushfire Case Study - Technical Report

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October 2006

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Executive Summary

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. Variables included: demographics and property/lifestyle factors; hazard experience; knowledge of local fire services, bushfire and controlled burning; perception of local hazard risks; participation in bushfire preparation activities; preferences for bushfire information; views on responsibility for bushfire-related activities; views on service providers and services provided; views on local community and risk; and involvement in community organisations. This information should give fire service providers in peri-urban and rural areas of Thuringowa, a better understanding of fire issues in the community; and it will contribute to the development of a framework that will provide the means for fire service providers around Australia to better understand fire issues in their communities.

A total of 957 questionnaires were delivered in October 2005 and 263 completed surveys were returned by December 2005 (28% response rate). A non-response bias check revealed that a number of groups may be over or underrepresented, for example

- Most respondents described their occupation as professional/management (28%), followed by tradesperson/skilled worker (19%) and office worker/white collar (15%).
- Almost half of the respondents worked full-time (47%), and a majority of those not working full-time were retired (28%).
- Most respondents owned their property either outright without a mortgage (42%) or with a mortgage (48%), therefore few respondents were renters (10%).
- A large majority of respondents had moved to their house (88%) mostly from suburban areas (61%), followed by 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%).
- The size of most respondents' house blocks was less than five acres ($< 20,235 \text{ m}^2$) (77%). Most selected residential on a rural block as the type of property they live on (67%), this was followed by residential on suburban block (24%) and farming/grazing property (7%).
- Reasons for moving to their current address was most commonly for the rural lifestyle (45%), other reasons included retirement, family, and location benefits (20%).

Hazard experience

- A majority of respondents had experienced a cyclone (74%), this was followed by flooding (40%) and bushfire (37%).
- Of those respondents who had experienced bushfire, many had felt personally threatened (44%) and most felt that their property had been threatened (62%).
- Themes emerging from comments about what respondents had learnt from their experience with bushfire included the importance of preparation and fire behaviour.

Knowledge of local fire service, bushfire and controlled burning

- Most respondents selected the Rural Fire Brigade as the type of service that would come if they rang 000 about a fire in their locality (78%).
- Most respondents selected voluntary/unpaid when asked how members of their local fire brigade are employed (62%), most others indicated that they did not

know (32%). Longer term residents (> 10 years) and those who are or have been involved in a community organisation were more likely to select voluntary/unpaid.

- Almost all respondents had some level of understanding of when the fire season falls in their locality (97%), however there was a lack of understanding of when controlled burning should be undertaken (46%).
- 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%).
- Respondents were mostly in favour of controlled burning, however there were some concerns and misconceptions.

Perception of local hazard risks

- Cyclones were of greatest concern with the majority of respondents at least moderately concerned (89%). Respondents' second hazard of concern was bushfire (72%), followed by flooding (68%) and storm surge (34%).
- Respondents tended to rate the hazard of bushfire in their locality as moderate to high, and the hazard of bushfire to their house as moderate to low.
- Respondents on larger block sizes tended to rate the bushfire hazard highest, followed by those on rural blocks. Suburban residents tended to give bushfire a low rating.
- Respondents with past bushfire experience tended to rate the bushfire hazard higher than those without experience.

Participation in bushfire preparation activities

- Respondents indicated that they were prompted to think about preparing for bushfire mostly by controlled hazard reduction burns in the area (69%), uncontrolled bushfires burning in the locality (69%) and media news of bushfires elsewhere (65%).
- 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 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%).

- Respondents more likely to undertake preparation activities were those who perceived a high risk, and some activities were more exclusive to particular demographic groups. There was also a weak link between past bushfire experience and preparedness.

Preferences for bushfire information

- 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%).
- Preferences for types of information may differ between demographic groups.

Views on responsibility for bushfire-related activities

- Almost all respondents agreed that they would rely on the local fire brigade if there was a bushfire in their locality (93%). People from urban areas and newcomers may be more reliant.
- For bushfire maintenance activities, respondents indicated that groups other than the RFB, including themselves, should take greater responsibility.
- Some respondents, such as those lacking knowledge of their RFB or those living in suburban areas, may expect the RFB or local council to take more responsibility for some bushfire maintenance activities.

Views on service providers and services provided

- 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.
- Respondents were less positive about council services, 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.
- Most respondents had property insurance (80%), however many indicated that their insurance did not adequately cover any potential loss from natural hazards (16%) or they did not know (18%).

Views on local community and risk

- Most respondents viewed others in their locality to be at risk from hazards (61%) because of the location of houses and property (e.g., close to bushland), personal constraints (e.g., age, disability), a general lack of preparedness, or a lack of knowledge or ignorance.
- Most respondents were concerned when their neighbours did not clean up their property (73%), however few talked to their neighbours about the importance of cleaning up the property (23%).
- Almost half of the respondents were in agreement with the statement that people in their locality would be able to recover from a natural disaster in a short time (42%).
- Respondents who talked to their neighbours may be more likely to perceive the bushfire risk, be more aware of controlled burns and be prompted to prepare by such controlled burning.

Involvement in community organisations

- A slight majority of respondents were currently (20%) or have been (34%) actively involved in volunteer or community organisations such as the Rural Fire Brigade, State Emergency Service, and sports, community (e.g., school and church), environmental and hob004 and uoupsTJ/C00 1 Tf0 Tc 0 Tw -1.5 -1.72 Td<00BE>Tj

Implications

- The need to utilise a number of different information sources 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 RFB, council, community and other groups in order to best manage the bushfire risk and ultimately increase community resilience.

1 Introduction

Bushfire is both a life-threatening and costly hazard in Australia. Compared to other hazards, bushfire leads to the highest rates of death (BTE, 2001). The bushfire threat

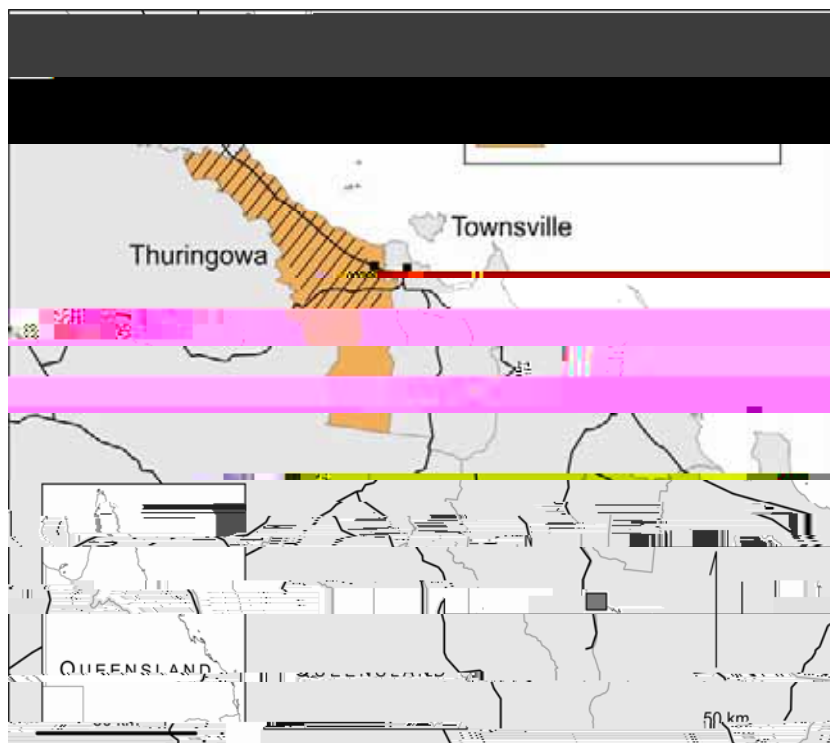
2 Methods

2.1 Overview

Data were collected using self-completion drop-off and return by mail surveys designed to gain information on a range of social variables relating to bushfire, the risk and its management. Peri-urban Thuringowa residents were randomly sampled within 10 Rural Fire Brigade areas.

2.2 City of Thuringowa

The City of Thuringowa is the twin city to Townsville in northeast Queensland (Figure 1). Thuringowa covers approximately 2000 km² of land and sea. The landscape consists of plateaus and escarpments with rugged gorges, wetland systems, coastal plains, beaches, islands and coral reefs. This includes a broad range of vegetation types including open and closed forests, woodlands, wetlands and mangroves at the coast. Thuringowa City has a population of approximately 50,000 people (Thuringowa City Council, 2006).



Thuringowa was selected as a case study for a number of reasons. Firstly, the area is prone to bushfire; it includes areas of low to high bushfire hazard risk, and the predominant risk level was medium (Rural Fire Service, 2002). Secondly, the area

notification. Both groups raised the issue of the local council's role in bushfire prevention: both groups indicated that the council should do more; and the RFB additionally identified problems with access to dumps, which may be encouraging people to dump waste in undesignated areas. Both groups also indicated a lack of legislation for bushfire prevention activities compared to other states.

An eight-page self-completion questionnaire was designed to collect data on a wide range of social factors including: demographics and property/lifestyle factors; hazard experience; knowledge of local fire services, bushfire and controlled burning; perception of local hazard risks; participation in bushfire preparation activities; preferences for bushfire information; views on responsibility for bushfire-related activities; views on service providers and services provided; views on local community and risk; and involvement in community organisations. The questionnaire was trialled in a pilot survey and appropriate changes made before the final version (Appendix C).

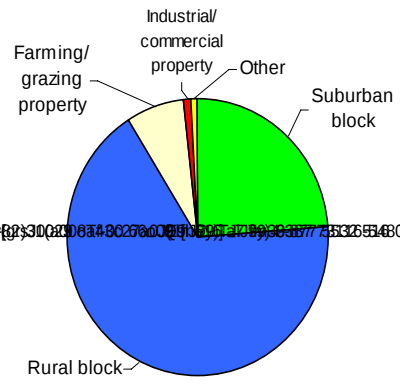
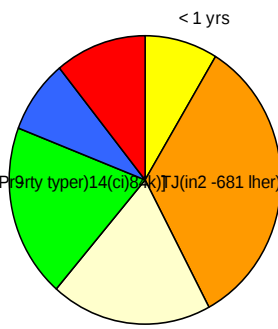
Together with the questionnaire was a detailed introduction letter explaining the purpose of the research (Appendix C), as well as a postage-paid return envelope. In total, 957 questionnaires were delivered in October 2005. The procedure involved hand-delivery to mailboxes to ensure that each RFB area was sampled randomly and equally. Respondents were required to return surveys by mail using the postage-paid return envelopes. Addresses were recorded, however such personal details were not connected with the surveys, thereby maintaining respondent anonymity and confidentiality. Each of the nine class-three RFB areas were delivered 100 questionnaires, and the class-one RFB area was delivered 57 questionnaires due to its small population size. According to which area the questionnaire was delivered, each had a letter (A to J) on the back page for RFB area identification. It should be noted that at the time of survey delivery it was bushfire season, however it had been a number of years since a significant natural hazard event, including bushfire. A reminder/thankyou postcard was sent to sampled residents three and six weeks after delivery of the questionnaire (Appendix C), and residents were further encouraged to participate through media announcements. Returned surveys were accepted until December 2005, and each was numbered as it was received for individual

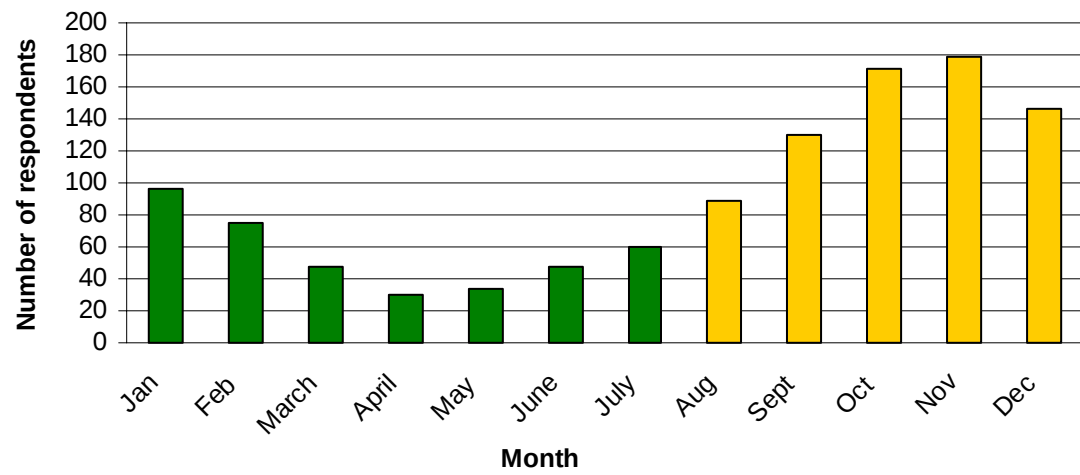
3 Results

3.1 Demographics and property/lifestyle factors

A slight majority of respondents to the survey were females (54%) (Table 7.134), and between the ages of 41-55 years (33.9%) or 56-70 years (32.3%) (Table 7.135; Figure 2a). Almost half of the respondents were living as a couple either with no children (26%) or where children had left home (23%) (Table 7.136), therefore most households were two adults (73%) and no children (71%) (Table 7.137; Table 7.138). Respondents' education level was fairly evenly divided between secondary (55%) and post secondary education (45%), however up to year 10 or a university degree were the most common education levels (30% and 22%) (Table 7.140; Figure 2b). Most

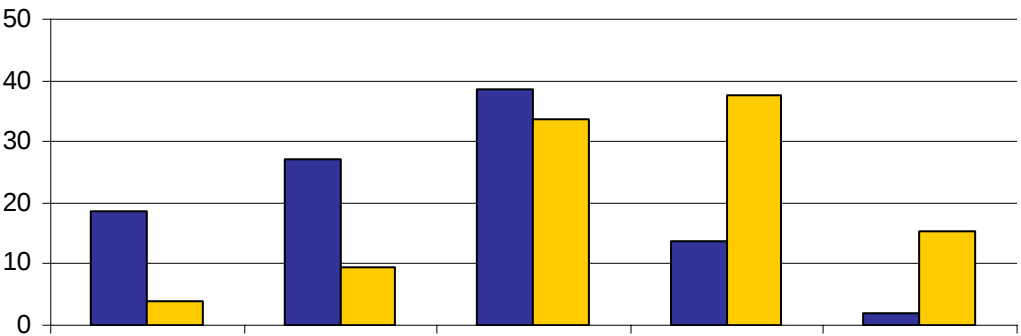
Most had moved to their current house (88%) (Table 7.116), a large majority from suburban areas (61%), followed by rural areas including farming (19%) (Table 7.117). Respondents' length of residency at their current address was mostly 15 years or less (81%) with the majority having lived there between one and five years (34%) (Table 7.1; Figure 3a). The age of their house was mostly more than 10 years (63%) (Table





Respondents were similarly asked when controlled burning should be undertaken in

very high; 9% as high; 34% as moderate; 38% as low; and 15% as very low (Table 7.59) (Figure 9).



their locality and house higher ($\chi^2 = 15.228$, d.f. = 2, $P = 0.000$ and $\chi^2 = 10.140$, d.f. = 2, $P = 0.006$).

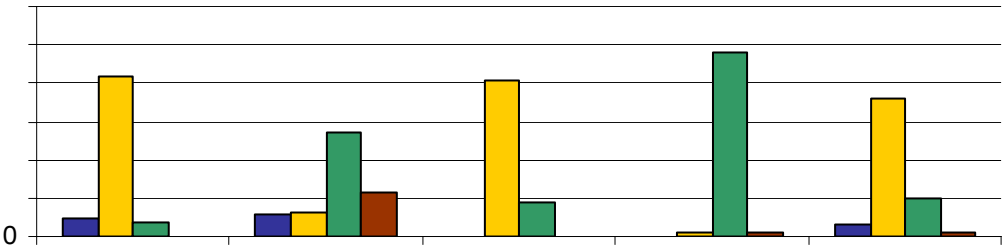
3.5 Participation in bushfire preparation activities

Most respondents indicated that there are prompts that make them think about preparing for bushfires (95%) (Table 7.37). According to what was selected (i.e., ranked 1, 2 or 3, or ticked), the prompts in order of most likely to trigger thought about preparing for bushfire were controlled hazard reduction burns in the area (69%) (Table 7.42), uncontrolled bushfires burning in the locality (69%) (Table 7.41), media news of bushfires elsewhere (65%) (Table 7.38), pamphlets in the mail (18%) (Table 7.39) and displays by the fire brigade in schools and shopping centres (18%) (Table 7.40) (Figure 10a). Other prompts included observations of favourable bushfire conditions and knowledge, experience and common sense (18%) (Table 7.43; Table 8.7). It should be noted that uncontrolled bushfires burning in the locality was most frequently selected, followed by media news of bushfires elsewhere, when solely considering the most likely prompt selected by respondents (i.e., ranked number 1).

Almost all respondents stated that they undertook actions on their property to prepare for bushfire (94%) (Table 7.47). According to what was selected (i.e., ranked 1, 2 or 3, or ticked), the actions in order of importance to respondents overall were cutting long grass (59%) (Table 7.50), clearing rubbish out of the yard (55%) (Table 7.48), cleaning leaves from gutters (44%) (Table 7.51), preparing a firebreak around the property (40%) (Table 7.49), removing branches and undergrowth around the house (35%) (Table 7.52), checking water supply and hoses (34%) (Table 7.53) and preparing Tabl

workers and household managers ($\chi^2 = 14.719$, d.f. = 5, $P = 0.013$) and households with children ($\chi^2 = 7.990$, d.f. = 1, $P = 0.005$).

responsibility (96%) (Table 7.95). Maintaining access for the fire brigade to properties was primarily viewed as the property owner’s responsibility (72%), followed by the local council (20%) (Table 7.96) (Figure 13).



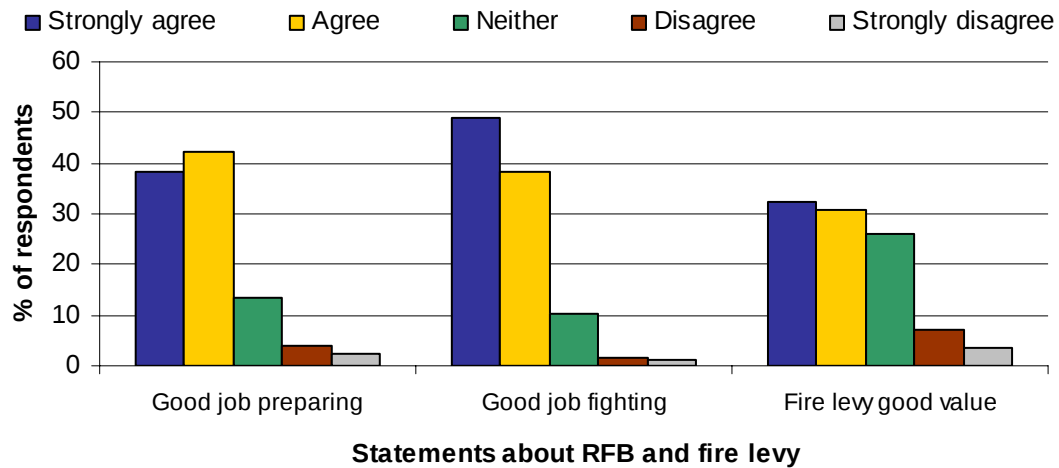
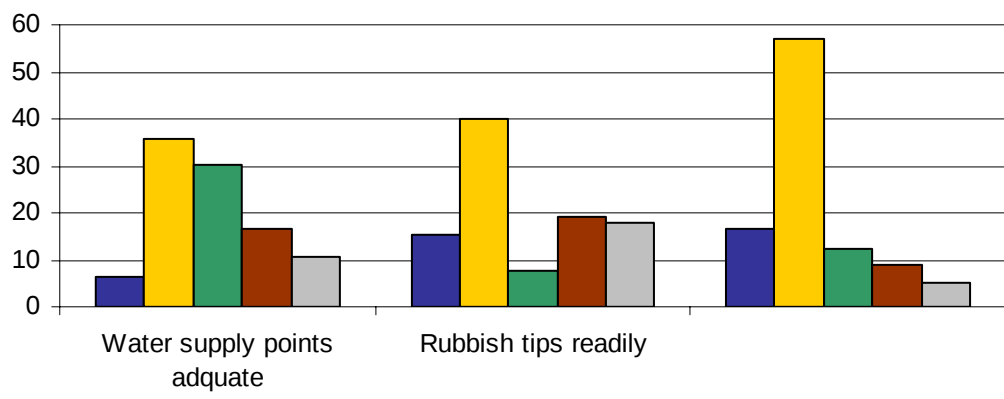


Figure 14 Respondents' level of agreement with statements about the RFB and fire levy

In terms of council services related to bushfire hazard reduction, respondents had positive perceptions to a lesser degree. Most agreed that grass is slashed in public areas (73%) (Table 7.102), and that rubbish tips are readily available (55%) (Table 7.101). However, less than half agreed that water supply points are adequate for bushfires however (42%), and many were neutral (30%) (Table 7.100) (Figure 15). Services relating to disposal of garden and household rubbish in the respondent's locality were mostly viewed as adequate (68% and 84% respectively) (e03(vrelating to dter supply p



In terms of property insurance, which includes loss from natural hazards, most respondents indicated that they were insured (80%) (Table 7.120). However, a third of those that had insurance indicated that their insurance did not adequately cover any potential loss from natural hazards (16%) or they did not know (18%) (Table 7.121). Renters were less likely than owners to have insurance, and they were more likely to not know their insurance status ($\chi^2 = 4.446$, d.f. = 2, $P = 0.000$). Comments regarding insurance were often cynical, describing frustration emanating from not being able to find adequate cover, the lack of clarity in contracts and the overall feeling of being in a no-win situation; one respondent wrote “all in insurers favour!!” (Table 8.15).

3.9 Views on local community and risk

Most respondents viewed others in their locality as at-risk from hazards (61%) (Table 7.90). Reasons provided relate to the location of other people’s houses and property (e.g., close to bushland), personal constraints (e.g., age, disability), a general lack of preparedness and a lack of knowledge or ignorance (Table 8.11). Most respondents were concerned when their neighbours did not clean up their property (73%) (Table 7.87), however few talked to their neighbours about the importance of cleaning up their property (23%) (Table 7.88). Despite this general acknowledgement of and concern for people at risk, close to half of the respondents were in agreement with the statement that people in their locality would be able to recover from a natural disaster in a short time (42%) (Table 7.89) (Figure 17).

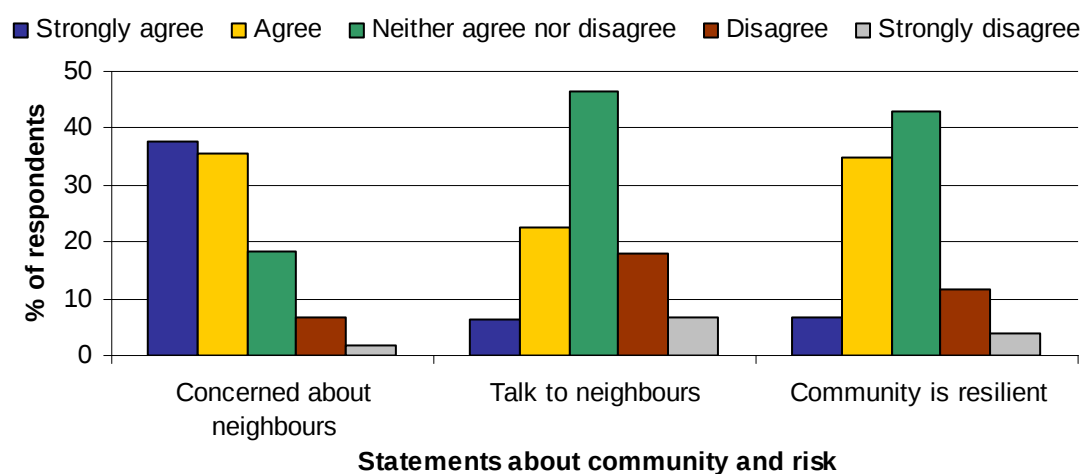


Figure 17 Respondents’ level of agreement with statements about their community and risk

Those respondents who did talk to their neighbours were more likely to perceive a higher risk to their house ($\chi^2 = 11.219$, d.f. = 4, $P = 0.024$). Talking to neighbours, or word-of-mouth, was also commonly mentioned as the means by which respondents became aware of controlled burns in their area, and these respondents also tended to be prompted by the controlled burning in their area ($\chi^2 = 9.736$, d.f. = 4, $P = 0.045$) and not uncontrolled burning in their area ($\chi^2 = 12.429$, d.f. = 4, $P = 0.014$). There were some misconceptions in regards to controlled burning amongst those who talked to neighbours: these respondents were more likely to agree that people restart the fire after a controlled burn ($\chi^2 = 12.412$, d.f. = 4, $P = 0.015$) and that people bring their rubbish to the controlled burn ($\chi^2 = 12.012$, d.f. = 4, $P = 0.017$).

3.10 Involvement in community organisations

A slight majority of respondents were currently (20%) or have been (34%) actively involved in volunteer or community organisations (Table 7.125; Figure 18a). Types of organisations that respondents were commonly involved in include the Rural Fire Brigade and State Emergency Service, sports, community (e.g., school and church), environmental and hobby groups (Table 8.16). Most indicated that the organisation they were involved in was in their locality (80%) (Table 7.126). Reasons for being involved included wanting to help others and being committed to their community, keeping in touch with others, being social and having fun, and having the resources to contribute (e.g., qualifications or equipment) (Table 8.17). Few respondents reported that a member of their household belonged to a fire-fighting organisation (9%) (Table 7.133).

The most commonly selected reasons (i.e., within respondents' three most imloca = 12.429045) and os

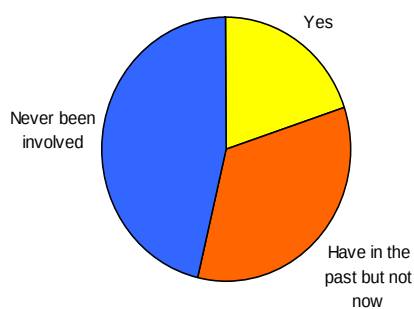


Figure 18a Respondent involvement in volunteer or community organisations



Figure 18b Reasons for not being involved in a volunteer or community organisation

Respondents who were or have been involved in community organisations were more likely to be prompted to prepare for bushfire by “other” prompts, which included observations of weather and other bushfire-season conditions, and their own initiative ($\chi^2 = 9.350$, d.f.= 4, $P = 0.044$). These respondents were also more likely to have been aware of controlled burns in their area in the last two years ($\chi^2 = 9.511$, d.f.= 2, $P = 0.009$).

3.11 Limitations

There were a number of limitations associated with this study. First, the bushfire hazard risk in Thuringowa is comparably lower than in other parts of Australia, and along with the seasonal cyclone event in this region, bushfire is often of lower salience to the community, and this may be reflected by the relatively low response rate. Secondly, a non-response bias check using chi-square tests with the 2001 Census data from the study area (ABS, 2001) revealed that a number of groups may be under or over represented: younger people (< 40 years) may be underrepresented ($\chi^2 = 28.884$, d.f.= 4, $P < 0.001$); those with year 12 or a trade may be underrepresented, and those with a TAFE or University degree overrepresented ($\chi^2 = 149.017$, d.f.= 5, $P < 0.001$); newcomers (< 1 year) and renters may be underrepresented ($\chi^2 = 14.394$, d.f.= 1, $P < 0.001$ and $\chi^2 = 8.692$, d.f.= 2, $0.05 > P > 0.01$); households with two people overrepresented ($\chi^2 = 35.807$, d.f.= 5, $P < 0.001$); and households with managers and professionals as the main wage earner may be overrepresented, and tradespersons and intermediate clerical, sales and service under represented ($\chi^2 = 44.452$, d.f.= 8, $P < 0.001$). It should be noted that the 2001 census data posed a limitation to the non-response bias check, the census collection was not synonymous with the RFB area

surveyed, therefore the census data used may not be an accurate representation of the actual population sampled. It should also be noted that a greater number of respondents stated an urban (70%) rather than rural background (21%), and most

4 Discussion

As cities and towns expand and more people move into rural areas creating peri-urban areas, where in many places around Australia the growing mix of people and property with bushland create the potential for disaster, bushfire service providers are faced with a major challenge. RFBs in particular are not only dealing with an increasing risk, but also a rapidly changing community. Peri-urban communities have been identified as complex and variable both within and between areas, and this has major implications for bushfire service delivery (Cottrell, 2005; Bushnell and Cottrell, in press). Therefore, bushfire has emerged as an important social issue, and service providers are recognising the need for tools to manage the social aspects of bushfire. The case study detailed in this report has contributed to defining parameters for developing a framework that will provide the means for service providers to better understand fire issues in their community. Through this understanding of their community, service providers can improve the efficiency and effectiveness of their

did suggest that many Thuringowa residents do not adequately perceive the bushfire risk nor adequately prepare. “City people” (i.e., residents formerly from the city thereby having an urban background) were highlighted by some community and RFB members as a group which did not understand the bushfire risk and did not prepare adequately. Although this survey did not detect any differences in terms of risk perception and preparation between people with an urban or rural background, there were differences between those currently living on suburban or larger blocks. This raises a number of questions: Are suburban residents adequately aware of the bushfire risk in their locality and to their house? Are suburban residents adequately preparing

bearing on the undertaking of some activities. It suggests that people who have the skills and/or equipment (e.g., tradespeople) may be more likely to undertake activities requiring such resources (e.g., firebreaks). It also suggests that education at the workplace or school may encourage certain types of activities; office workers and households with school-age children were more likely to have an evacuation plan in place at home. The literature additionally indicates that income can constrain bushfire preparation; if the costs are perceived to be more than the benefit, it is unlikely that a person will invest (Bushnell and Cottrell, in press). This has been found to apply to renters also, however this study did not find an influence of occupation or home-owner status on bushfire preparation.

Experience with bushfire was found to be an important factor in raising bushfire awareness and risk perception, which was also related to better preparedness. A relatively large proportion of respondents had experienced bushfire in the past, and many of these respondents indicated that they had learned the importance of preparing for bushfire from their experience. The results did not indicate that the time lapse since their bushfire experience had a bearing on level of risk perception or preparedness, however other studies have shown that risk perception (and preparedness) can lessen over time, without reinforcement (Cunningham and Kelly, n.d.). Therefore, information dissemination is important to ensure retention of lessons learned from past bushfire experience, as well as a reminder that bushfire may occur in Thuringowa.

Experience of bushfire through observations of controlled or uncontrolled fires in their locality or through reports in the media of fires elsewhere were also prompts for respondents to take action to prepare for bushfire in their locality. This suggests that various types of experiences with bushfire can be important for residents to perceive a bushfire risk and prepare for the bushfire risk, however controlled burning provides the most useful prompt for when residents should prepare. 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. Relying on media news of bushfires elsewhere is particularly dangerous because north Queensland's bushfire season is earlier in the year than the south, therefore news may not be

received until late into the bushfire season. Controlled burning is undertaken at the ideal time of year, before the bushfire season, as determined by local fire brigades, who also take into account the potential variations in conditions, such as rainfall, which can alter the bushfire season as well as the ideal time to prepare. Thuringowa respondents had a general understanding of when the normal bushfire season falls in their locality, 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. This may be achieved through providing extra information with standard notifications for controlled burning. Local fire brigades are required to notify residents of future controlled burns, and the focus groups revealed that residents felt strongly about receiving this notification.

In terms of controlled burning as a management strategy, respondents were mostly supportive, particularly those with a good perception of their local fire brigade. Although, there may be some issues or misconceptions that need addressing such as

given role themselves (e.g., renters and the unemployed). A similar minority expected the council to take responsibility. Those living on smaller allotments may also be more likely to rely on the local council. Information strategies that outline roles and responsibilities of various groups in managing the bushfire risk may be useful.

increases the bushfire risk. The RFB suggested that the illegal dumping of rubbish may indeed be the result of inadequate rubbish disposal services. Although further investigation is warranted, the council needs to be made aware of this issue, and a possible need for changes to rubbish disposal services. Many respondents also indicated that they would like to see increased enforcement at the local council level to improve maintenance of properties for hazards, this was similar although less pronounced at the state and federal government levels. Both community and RFB members in the focus groups of this case study, particularly those from other states where there is some form of legislation, felt that there is inadequate legislative enforcement in Queensland, which could provide greater protection from bushfire.

Throughout the above discussion, the importance of information dissemination to residents has been highlighted, and community members in the focus groups have indicated a desire for more information and education. However, disseminating information is not a straightforward activity, and this survey highlights a need for more strategically based information campaigns. For example, there is conflicting information from the RFB and the community in relation to information dissemination: the RFB reports that it notifies residents of controlled burns and the community reports that they do not always receive such information. The results show that just over half of the respondents, who were aware of controlled burns undertaken in the last two years, received information prior to the event. Letterbox drops/pamphlets in the mail appears to be the most common strategy to inform residents, and although this method rated highly as respondents' most useful source of information about bushfire it does not seem to be effectively informing most residents. It was thought that it may be because a number of residents have a post box at the post office, which they check more frequently than the one on their property where the pamphlets are delivered, however the results indicate that this was not the case. Anecdotal evidence suggests that residents may simply disregard the pamphlets, perhaps due to other priorities, or simply a lack of interest in reading such material. TV or radio was stated as the most, or at least one of the most useful sources of information about bushfires to most respondents, and newspapers also rated highly. Certain sources of information also were claimed to be more useful to some groups of people and not others. Therefore, disseminating information through a number of different sources, simultaneously or separately targeting appropriate groups, could be

considered in order to reach most corners of the community. It should be noted that verification of these results is required; there may be a large distance between respondent stated behaviour and observed, or actual behaviour. Furthermore, any information strategies undertaken need to be evaluated for effectiveness to avoid wasting funds.

‘Word of mouth’ appears to be an effective method of information dissemination about bushfire in Thuringowa. Respondents who talked to their neighbours were more likely to perceive a higher risk to their house. A number of respondents reported being aware of controlled burns in their area through neighbours, and these respondents were also more likely to be prompted to prepare by controlled burning in their area, rather than uncontrolled fires. Furthermore, involvement in community organisations was related to using other or independent prompts to prepare, such as observing weather conditions, which may indicate better knowledge and preparedness. However, on the other hand, these respondents also demonstrated some misconceptions in relation to controlled burns, as previously mentioned. Therefore, communication through community networks appears to be an effective way to disseminate information, although it is important to ensure that the correct messages are being transferred. Service providers need to also be aware that the cyclone hazard is of more concern than bushfire to most Thuringowa residents, and should expect that there will be some competition for attention. However, the two hazards occur at different times of the year, thus information dissemination should adhere to the appropriate season to avoid risk message saturation point. Liaising with the local council about information strategies should improve upon existing bushfire strategies through sharing of resources (i.e., RFB and council working together), as well as helping to avoid any competing bushfire and cyclone management strategies.

This study highlighted a lack of community awareness about local council arrangements for natural hazards, which is potentially a major problem. Increased liaison with the RFB could also target this issue, with a joint information strategy for example. However, service providers need to be aware that increased resident awareness of council arrangements for hazard risk mitigation may moderate risk perceptions, potentially resulting in lower individual preparedness.

Overall, liaisons between the RFB, council, community and other groups, each sharing some level of responsibility for the bushfire risk, are extremely important, especially in dynamic peri-urban communities. Policies and actions of one group have the potential to positively or negatively impact on those of another group, collaboration and cooperation between groups should promote the positive impacts.

5 Conclusion

This study clearly defined bushfire issues in Thuringowa by further exploring issues raised by RFB and community members. It identified a number of groups within the Thuringowa community that may be less resilient to bushfire and thus require more attention than other groups. It also highlighted potential strategies to address Thuringowa-based bushfire issues. Furthermore, and importantly for the Understanding Communities Project, this study, together with the Tamborine Mountain case study, provides the basis for implementing further community surveys that will provide the information necessary to develop a framework for understanding communities. This framework will enable local fire brigades around Australia to derive similar information to this case study about their own community.

Currently, in order to move forward, there is a need to develop strategies that more effectively engage the local RFB with local government and locally active community groups.

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7 Appendix A

7.1 Tables of results presenting responses to survey quantitative questions

Presented in the order that the questions appeared in the survey instrument (see Appendix C)

Table 7.1 Frequency and percent of Thuringowa residents by the number of years they have lived in their current house (Q1).

Number of years	n	%
< 1	22	8.6
1 - 5	86	33.5
6 - 10	50	19.4
11 - 15	50	19.4
16 - 20	21	8.2
> 20	28	10.9
Total	257	100

Table 7.2 Frequency and percent of Thuringowa residents by the size of the block they live on (Q2).

Block size (m ²)	n	%
< 1012	42	18.4
1013 - 4047	39	17.0
4048 - 20234	95	41.5
20235 - 40469	11	4.8
40470 - 80937	17	7.4
80938 - 202343	9	3.9
202344 - 404686	7	3.1
> 404686	9	3.9
Total	229	100.0

Table 7.3 Frequency and percent of Thuringowa residents by the type of property they live on (Q3).

Property type	n	%
Residential on suburban block	62	23.9
Residential on rural block	174	67.2
Farming/grazing property	19	7.3
Industrial/commercial property	2	0.8
Other	2	0.8
Total	259	100.0

Table 7.4 Frequency and percent of Thuringowa residents by the type of material their house is made from (Q4).

Material	n	%
Wood	23	8.75
Brick	23	8.75
Fibro	19	7.2
Cement block	116	44.1
Other	14	5.3
Combination of above	68	25.9
Total	263	100.0

Table 7.5 Frequency and percent of Thuringowa residents by the age of the house they live in (Q5).

Age (years)	n	%
< 1	1	0.4
1 - 5	20	8.0
6 - 10	42	16.7
11 - 15	51	20.3
16 - 20	46	18.3
> 20	60	23.9
Don't know	31	12.4
Total	251	100.0

Table 7.6 Frequency and percent of Thuringowa residents by whether they are concerned about hazards in their locality (Q6a).

Concerned about hazards	n	%
No	7	2.7
Yes	255	97.3
Total	262	100.0

Table 7.8 Frequency and percent of Thuringowa residents by their level of concern about bushfires in their locality (Q6c).

Level of concern	n	%
Very high	54	20.7
High	86	33.0
Moderate	48	18.4
Low	45	17.2
Very low	3	1.1
Answer ticked only	5	1.9
Not selected	20	7.7
Total	261	100

Table 7.9 Frequency and percent of Thuringowa residents by their level of concern about flooding in their locality (Q6d).

Level of concern	n	%
Very high	18	6.9
High	47	18.0
Moderate	112	42.9
Low	40	15.3
Very low	3	1.2
Answer ticked only	6	2.3
Not selected	35	13.4
Total	261	100.0

Table 7.10 Frequency and percent of Thuringowa residents by their level of concern about storm surge in their locality (Q6e).

Level of concern	n	%
Very high	15	5.8
High	34	13.0
Moderate	39	14.9
Low	110	42.2
Very low	17	6.5
Answer ticked only	6	2.3
Not selected	40	15.3
Total	261	100.0

Table 7.11 Frequency and percent of Thuringowa residents by their level of concern about landslides in their locality (Q6f).

Level of concern	n	%
Very high	1	0.4
High	0	0.0
Moderate	2	0.8
Low	14	5.3
Very low	171	65.5
Answer ticked only	2	0.8
Not selected	71	27.2
Total	261	100.0

Table 7.12 Frequency and percent of Thuringowa residents by their level of concern about other hazards in their locality (Q6g).

Level of concern	n	%
Very high	2	0.8
High	3	1.1
Moderate	2	0.8
Low	2	0.8
Very low	5	1.9
Answer ticked only	2	0.8
Not selected	245	93.8
Total	261	100.0

Table 7.13 Frequency and percent of Thuringowa residents by whether they have experienced a hazard or not (Q7a).

Experienced a hazard	n	%
Yes	213	87.7
No	30	12.3
Total	243	100

Table 7.14 Frequency and percent of Thuringowa residents by whether they have experienced a cyclone or not (Q7b).

Experienced a cyclone	n	%
Yes	179	73.7
No	64	26.3
Total	243	100

Table 7.15 Frequency and percent of Thuringowa residents by whether they have experienced a bushfire or not (Q7c).

Experienced a bushfire	n	%
Yes	90	37.0
No	153	63.0
Total	243	100

Table 7.16 Frequency and percent of Thuringowa residents by whether they have experienced flooding or not (Q7d).

Experienced flooding	n	%
Yes	95	39.1
No	148	60.9
Total	243	100

Table 7.17 Frequency and percent of Thuringowa residents by whether they have experienced a storm surge or not (Q7e).

Experienced storm surge	n	%
Yes	14	5.8
No	229	94.2
Total	243	100

Table 7.18 Frequency and percent of Thuringowa residents by whether they have experienced a landslide or not (Q7f).

Experienced a landslide	n	%
Yes	2	0.8
No	241	99.2
Total	243	100

Table 7.19 Frequency and percent of Thuringowa residents by whether they have experienced another hazard or not (Q7g).

Experienced another hazard	n	%
Yes	6	2.5
No	237	97.5
Total	243	100

Table 7.20 Frequency and percent of Thuringowa residents by the number of years ago they experienced a cyclone (Q7h).

Years ago	n	%
< 1	0	0
1 - 5	68	42.8
6 - 10	33	20.7
11 - 15	9	5.7
16 - 20	6	3.8
> 20	43	27.0
Total	159	100

Table 7.21 Frequency and percent of Thuringowa residents by the number of years ago they experienced a bushfire (Q7i).

Years ago	n	%
< 1	5	6.3
1 - 5	30	38.0
6 - 10	21	26.6
11 - 15	7	8.9
16 - 20	8	10.1
> 20	8	10.1
Total	79	100

Table 7.22 Frequency and percent of Thuringowa residents by the number of years ago they experienced flooding (Q7j).

Years ago	n	%
< 1	2	2.4
1 - 5	18	21.7
6 - 10	43	51.8
11 - 15	6	7.2
16 - 20	5	6.0
> 20	9	10.9
Total	83	100

Table 7.23 Frequency and percent of Thuringowa residents by the number of years ago they experienced a storm surge (Q7k).

		%
< 1	1	6.67
1 - 5	1	6.67
6 - 10	11	73.32
11 - 15	1	6.67
16 - 20	0	0.0
> 20	1	6.67
Total	15	100

Table 7.24 Frequency and percent of Thuringowa residents by the number of years ago they experienced a landslide (Q7l).

		%
< 1	0	0.0
1 - 5	0	0.0
6 - 10	0	0.0
11 - 15	1	50.0
16 - 20	0	0.0
> 20	1	50.0
Total	2	100

Table 7.25 Frequency and percent of Thuringowa residents by the number of years ago they experienced another hazard (Q7m).

		%
< 1	0	0.0
1 - 5	2	50.0
6 - 10	0	0.0
11 - 15	1	25.0
16 - 20	0	0.0
> 20	1	25.0
Total	4	100

Table 7.26 Frequency and percent of Thuringowa residents by whether they had felt personally threatened by the bushfire they experienced (Q8a).

		%
Yes	39	43.3
No	51	56.7
Total	90	100

Table 7.27 Frequency and percent of Thuringowa residents by whether they had felt that their property was threatened by the bushfire they experienced (Q8b).

		%
Yes	57	63.3
No	33	36.7
Total	90	100

Table 7.28 Frequency and percent of Thuringowa residents by whether they provided a comment describing how they felt personally threatened or how their property was threatened by bushfire (Q8c).

Comment provided	n	%
Yes	54	60.0
No	36	40.0
Total	90	100

Table 7.29 Frequency and percent of Thuringowa residents by whether they provided a comment describing what they learned from their experience of bushfire (Q8d).

Comment provided	n	%
Yes	74	70.0
No	16	30.0
Total	90	100

Table 7.30 Frequency and percent of Thuringowa residents by whether they know anyone who has suffered due to a bushfire (Q9).

Know anyone who has suffered due to a bushfire	n	%
Yes	66	27.3
No	176	72.7
Total	242	100

Table 7.31 Frequency and percent of Thuringowa residents by how important cyclones were when deciding to purchase or rent their current property (Q10a).

Level of importance	n	%
Very important	85	34.3
Important	63	25.4
Moderately important	63	25.4
Unimportant	32	12.9
Very unimportant	5	2.0
Total	248	100.0

Table 7.32 Frequency and percent of Thuringowa residents by how important bushfire was when deciding to purchase or rent their current property (Q10b).

Level of importance	n	%
Very important	54	23.1
Important	55	23.5
Moderately important	77	32.9
Unimportant	41	17.5
Very unimportant	7	3.0
Total	234	100.0

Table 7.34 Frequency and percent of Thuringowa residents by how important storm surge was when deciding to purchase or rent their current property (Q10d).

Level of importance	n	%
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Table 7.39 Frequency and percent of Thuringowa residents by how they ranked pamphlets in the mail as a prompt to think about preparing for bushfires (Q11c).

Ranking	n	%
First	2	0.8
Second	16	6.4
Third	25	10.0
Answer ticked only	2	0.8
Not selected	205	82.0
Total	250	100.0

Table 7.40 Frequency and percent of Thuringowa residents by how they ranked displays by fire brigades in schools and shopping centres as a prompt to think about preparing for bushfires (Q11d).

Ranking	n	%
First	2	0.8
Second	9	3.6
Third	11	4.4
Answer ticked only	2	0.8
Not selected	226	90.4
Total	250	100.0

Table 7.41 Frequency and percent of Thuringowa residents by how they ranked uncontrolled bushfires burning in their locality as a prompt to think about preparing for bushfires (Q11e).

Ranking	n	%
First	87	34.8
Second	47	18.8
Third	23	9.2
Answer ticked only	15	6.0
Not selected	78	31.2
Total	250	100.0

Table 7.42 Frequency and percent of Thuringowa residents by how they ranked controlled hazard reduction burns in their area as a prompt to think about preparing for bushfires (Q11f).

Ranking	n	%
First	43	17.2
Second	67	26.8
Third	46	18.4
Answer ticked only	17	6.8
Not selected	77	30.8
Total	250	100.0

Table 7.43 Frequency and percent of Thuringowa residents by how they ranked other factors as a prompt to think about preparing for bushfires (Q11g).

Ranking	n	%
First	27	10.8
Second	5	2.0
Third	5	2.0
Answer ticked only	7	2.8
Not selected	206	82.4
Total	250	100.0

Table 7.49 Frequency and percent of Thuringowa residents by how important ‘prepare firebreak around property’ is as an activity the

Table 7.54 Frequency and percent of Thuringowa residents by how important ‘prepare evacuation plan’ is as an activity they undertake to prepare for bushfires (Q15h).

Importance	n	%
First	10	4.0
Second	7	2.8
Third	8	3.1
Answer ticked only	8	3.1
Not selected	220	87.0
Total	253	100.0

Table 7.55 Frequency and percent of Thuringowa residents by whether they believe there are adequate services to dispose of garden rubbish/green waste (Q16a).

Adequate services	n	%
Yes	168	67.7
No	80	32.3
Total	248	100.0

Table 7.56 Frequency and percent of Thuringowa residents by whether they believe there are adequate services to dispose of household rubbish (Q16b).

Adequate services	n	%
Yes	205	84.4
No	38	15.6
Total	243	100.0

Table 7.57 Frequency and percent of Thuringowa residents by whether they provided a comment describing their opinion regarding services to dispose of rubbish (Q16c).

Comment provided	n	%
Yes	50	19.0
No	213	81.0
Total	263	100.0

Table 7.58 Frequency and percent of Thuringowa residents by how they rated the hazard of bushfire in their locality (Q17).

Rating	n	%
Very high	47	18.5
High	69	27.1
Moderate	98	38.6
Low	35	13.8
Very low	5	2.0
Total	254	100.0

Table 7.59 Frequency and percent of Thuringowa residents by how they rated the hazard of bushfire to their house (Q18).

Rating	n	%
Very high	10	3.9
High	24	9.4
Moderate	86	33.7
Low	96	37.7
Very low	39	15.3
Total	255	100.0

Table 7.65 Frequency and percent of Thuringowa residents by their level of agreement with the statement that some people restart the fire after a controlled burn (Q19f).

Level of agreement	n	%
Strongly agree	15	6.4
Agree	44	18.7
Neither agree nor disagree	102	43.4
Disagree	53	22.6
Strongly disagree	21	8.9
Total	235	100.0

Table 7.66 Frequency and percent of Thuringowa residents by their level of agreement with the statement that some people bring their own rubbish to the controlled burn (Q19g).

Level of agreement	n	%
Strongly agree	8	3.4
Agree	19	8.0
Neither agree nor disagree	119	50.4
Disagree	62	26.3
Strongly disagree	28	11.9
Total	236	100.0

Table 7.67 Frequency and percent of Thuringowa residents by whether they are aware of a controlled burn in their area in the last two years (Q20a).

Aware	n	%
Yes	201	77.6
No	58	22.4
Total	259	100.0

Table 7.68 Frequency and percent of Thuringowa residents by whether they saw signs or received information before the controlled burn (Q20b).

Signs or information	n	%
Yes	120	61.5
No	75	38.5
Total	201	100.0

Table 7.69 Frequency and percent of Thuringowa residents by whether they provided a comment describing the signs they saw or the information they received before the controlled burn (Q20c).

Comment provided	n	%
Yes	100	83.3
No	20	16.7
Total	120	100.0

Table 7.70 Frequency and percent of Thuringowa residents by their level of conformity with the ideal controlled burning season (Q21).

Conformity	n	%
Complete conformity	17	7.9
Conformity within season but 1(+) months missing	26	12.1
Conformity but 1(+) months missing and/or outside of season	74	34.4
Non-conformity	98	45.6
Total	215	100.0

Table 7.71 Frequency and percent of Thuringowa residents by which letterbox they use most of the time to check their mail (Q22).

Letterbox	n	%
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Table 7.76 Frequency and percent of Thuringowa residents by how they ranked TV or radio as their most useful source of information about bushfire (Q23e).

Ranking	n	%
First	85	32.7
Second	39	15.0
Third	29	11.1
Answer ticked only	14	5.4
Not selected	93	35.8
Total	260	100.0

Table 7.77 Frequency and percent of Thuringowa residents by how they ranked local community newsletters as their most useful source of information about bushfire (Q23f).

Ranking	n	%
First	19	7.3
Second	33	12.7
Third	23	8.8
Answer ticked only	7	2.7
Not selected	178	68.5
Total	260	100.0

Table 7.78 Frequency and percent of Thuringowa residents by how they ranked newspapers as their most useful source of information about bushfire (Q23g).

Ranking	n	%
First	15	5.8
Second	52	20.0
Third	32	12.3
Answer ticked only	11	4.2
Not selected	150	57.7
Total	260	100.0

Table 7.79 Frequency and percent of Thuringowa residents by how they ranked the internet as their most useful source of information about bushfire (Q23h).

Ranking	n	%
First	0	0
Second	1	0.4
Third	3	1.1
Answer ticked only	1	0.4
Not selected	255	98.1
Total	260	100.0

Table 7.80 Frequency and percent of Thuringowa residents by how they ranked information from council as their most useful source of information about bushfire (Q23i).

Ranking	n	%
First	7	2.7
Second	11	4.2
Third	28	10.8
Answer ticked only	6	2.3
Not selected	208	80.0
Total	260	100.0

Table 7.81 Frequency and percent of Thuringowa residents by how they ranked neighbours/friends in community as their most useful source of information about bushfire (Q23j).

Ranking	n	%
First	19	7.3
Second	22	8.5
Third	40	15.4
Answer ticked only	4	1.5
Not selected	175	67.3
Total	260	100.0

Table 7.82 Frequency and percent of Thuringowa residents by their level of agreement with the statement that they would rely on the local fire brigade if there was a bushfire in their locality (Q24a).

Level of agreement	n	%
Strongly agree	139	53.9
Agree	101	39.1
Neither agree nor disagree	12	4.7
Disagree	1	0.4
Strongly disagree	5	1.9
Total	258	100.0

Table 7.83 Frequency and percent of Thuringowa residents by their level of agreement with the statement that the local fire brigade does a good job preparing for bushfires (Q24b).

Level of agreement	n	%
Strongly agree	97	38.2
Agree	107	42.1
Neither agree nor disagree	34	13.4
Disagree	10	3.9
Strongly disagree	6	2.4
Total	254	100.0

Table 7.84 Frequency and percent of Thuringowa residents by their level of agreement with the statement that the local fire brigade does a good job fighting bushfires (Q24c).

Level of agreement	n	%
Strongly agree	125	48.8
Agree	98	38.3
Neither agree nor disagree	26	10.1
Disagree	4	1.6
Strongly disagree	3	1.2
Total	256	100.0

Table 7.86 Frequency and percent of Thuringowa residents by who they would contact if they wanted to do some burning on their property (Q25).

Service provider	n	%
Local fire brigade	91	35.7
Fire warden	132	51.8
Police	1	0.4
Local council	10	3.9
Other	6	2.3
Selected more than one answer	15	5.9
Total	255	100.0

Table 7.87 Frequency and percent of Thuringowa residents by their level of agreement with the statement that they are concerned when their neighbours do not clean up their property (Q26a).

Level of agreement	n	%
Strongly agree	94	37.6
Agree	89	35.6
Neither agree nor disagree	46	18.4
Disagree	17	6.8
Strongly disagree	4	1.6
Total	250	100.0

Table 7.88 Frequency and percent of Thuringowa residents by their level of agreement with the statement that they talk to their neighbours about the importance of cleaning up their property (Q26b).

Level of agreement	n	%
Strongly agree	15	6.2
Agree	55	22.6
Neither agree nor disagree	113	46.5
Disagree	44	18.1
Strongly disagree	16	6.6
Total	243	100.0

Table 7.89 Frequency and percent of Thuringowa residents by their level of agreement with the statement that people in their locality would be able to recover from a natural disaster in a short time (Q26c).

Level of agreement	n	%
Strongly agree	17	6.8
Agree	87	34.8
Neither agree nor disagree	107	42.8
Disagree	29	11.6
Strongly disagree	10	4.0
Total	250	100.0

Table 7.90 Frequency and percent of Thuringowa residents by whether they believe that there are people in their locality that are at risk from hazards (Q27a).

People at risk	n	%
Yes	146	61.1
No	93	38.9
Total	239	100.0

Table 7.91 Frequency and percent of Thuringowa residents by whether they provided a comment explaining why they believe that there are people at risk in their locality (Q27b).

Comment provided	n	%
Yes	144	62.0
No	2	38.0
Total	146	100.0

Table 7.92 Frequency and percent of Thuringowa residents by who they believe is responsible for maintaining firebreaks around properties (Q28a).

Group	n	%
Rural Fire Brigade	23	9.7
Property owner	196	83.1
Local council	17	7.2
Parks and Wildlife Service	0	0.0
Total	236	100.0

Table 7.93 Frequency and percent of Thuringowa residents by who they believe is responsible for keeping overgrown bushland and creek beds clear (Q28b).

Group	n	%
Rural Fire Brigade	24	11.0
Property owner	27	12.4
Local council	118	54.1
Parks and Wildlife Service	49	22.5
Total	218	100.0

Table 7.94 Frequency and percent of Thuringowa residents by who they believe is responsible for clearing overgrown properties (Q28c).

Group	n	%
Rural Fire Brigade	1	0.4
Property owner	192	81.0
Local council	43	18.2
Parks and Wildlife Service	1	0.4
Total	237	100.0

Table 7.95 Frequency and percent of Thuringowa residents by who they believe is responsible for removing rubbish from public areas (Q28d).

Group	n	%
Rural Fire Brigade	1	0.4
Property owner	5	2.0
Local council	236	95.6
Parks and Wildlife Service	5	2.0
Total	247	100.0

Table 7.96 Frequency and percent of Thuringowa residents by who they believe is responsible for maintaining access for the fire brigade to properties (Q28e).

Group	n	%
Rural Fire Brigade	14	6.3
Property owner	160	72.1
Local council	44	19.8
Park and Wildlife Service	4	1.8
Total	222	100.0

Table 7.97 Frequency and percent of Thuringowa residents by whether believe there should be more, the same or less local government enforcement to improve maintenance of properties for hazards including bushfire (Q29a).

Enforcement	n	%
More	137	55.7
Same as now	106	43.1
Less	3	1.2
Total	246	100.0

Table 7.98 Frequency and percent of Thuringowa residents by whether believe there should be more, the same or less state government enforcement to improve maintenance of properties for hazards including bushfire (Q29b).

Enforcement	n	%
More	94	41.4
Same as now	127	56.0
Less	6	2.6
Total	227	100.0

Table 7.99 Frequency and percent of Thuringowa residents by whether believe there should be more, the same or less federal government enforcement to improve maintenance of properties for hazards including bushfire (Q29c).

Enforcement	n	%
More	82	36.8
Same as now	133	59.6
Less	8	3.6
Total	223	100.0

Table 7.100 Frequency and percent of Thuringowa residents by their level of agreement with the statement that water supply points are adequate for bushfires (Q30a).

Level of agreement	n	%
Strongly agree	16	6.4
Agree	89	35.6
Neither agree nor disagree	76	30.4
Disagree	42	16.8
Strongly disagree	27	10.8
Total	250	100.0

Table 7.101 Frequency and percent of Thuringowa residents by their level of agreement with the statement that rubbish tips are readily available (Q30b).

Level of agreement	n	%
Strongly agree	39	15.3
Agree	102	40.0
Neither agree nor disagree	20	7.8
Disagree	49	19.2
Strongly disagree	45	17.7
Total	255	100.0

Table 7.102 Frequency and percent of Thuringowa residents by their level of agreement with the statement that grass in public areas is slashed (Q30c).

Level of agreement	n	%
Strongly agree	42	16.4
Agree	146	57.0
Neither agree nor disagree	32	12.5
Disagree	23	9.0
Strongly disagree	13	5.1
Total	256	100.0

Table 7.103 Frequency and percent of Thuringowa residents by whether they are aware of any arrangements their local government has for natural hazards in plans for property development (Q31a).

Aware	n	%
Yes	38	15.0
No	215	85.0
Total	253	100.0

Table 7.104 Frequency and percent of Thuringowa residents by whether they are aware of any arrangements their local government has for building regulations (Q31b).

Aware	n	%
Yes	74	29.4
No	178	70.6
Total	252	100.0

Table 7.105 Frequency and percent of Thuringowa residents by whether they are aware of any arrangements their local government has for building regulations (Q31c).

Aware	n	%
Yes	60	23.8
No	192	76.2
Total	252	100.0

Table 7.106 Frequency and percent of Thuringowa residents by how they valued peace and quiet on their property (Q32a).

Value	n	%
Very high	152	60.8
High	39	15.6
Moderate	21	8.4

Table 7.110 Frequency and percent of Thuringowa residents by how they valued an other feature on their property (Q32e).

Value	n	%
Very high	5	2.0
High	2	0.8
Moderate	4	1.6
Low	4	1.6
Very low	54	21.6
Answer ticked only	2	0.8
Not selected	179	71.6
Total	250	100.0

Table 7.111 Frequency and percent of Thuringowa residents by how they valued peace and quiet in their locality (Q32f).

Value	n	%
Very high	112	55.2
High	31	15.3
Moderate	23	11.3
Low	10	4.9
Very low	5	2.5
Answer ticked only	12	5.9
Not selected	10	4.9
Total	203	100.0

Table 7.112 Frequency and percent of Thuringowa residents by how they valued space in their locality (Q32g).

Value	n	%
Very high	21	10.4
High	64	31.7
Moderate	48	23.8
Low	39	19.3
Very low	2	1.0
Answer ticked only	8	3.9
Not selected	20	9.9
Total	202	100.0

Table 7.113 Frequency and percent of Thuringowa residents by how they valued trees and bushland in their locality (Q32h).

Value	n	%
Very high	19	9.4
High	45	22.3
Moderate	65	32.2
Low	43	21.3
Very low	4	2.0
Answer ticked only	11	5.4
Not selected	15	7.4
Total	202	100.0

Table 7.114 Frequency and percent of Thuringowa residents by how they valued small community in their locality (Q32i).

Value	n	%
Very high	24	11.8
High	30	14.8
Moderate	34	16.7
Low	77	37.9
Very low	9	4.4
Answer ticked only	10	4.9
Not selected	19	9.4
Total	203	100.0

Table 7.115 Frequency and percent of Thuringowa residents by how they valued an 'other' feature in their locality (Q32j).

Value	n	%
Very high	4	2.0
High	6	3.0
Moderate	3	1.5
Low	5	2.4
Very low	43	21.2
Answer ticked only	1	0.5
Not selected	141	69.4
Total	203	100.0

Table 7.116 Frequency and percent of Thuringowa residents by whether they have always lived in their current house (Q33).

Always lived in current house	n	%
Yes	31	12.1
No	225	87.9
Total	256	100.0

Table 7.117 Frequency and percent of Thuringowa residents by what type of property they lived on before moving to their current property (Q34).

Previous property	n	%
Residential on suburban block	151	69.9
Residential on rural block	38	17.6
Farming/grazing property	9	4.2
Industrial/commercial property	2	0.9
Other	16	7.4
Total	216	100.0

Table 7.118 Frequency and percent of Thuringowa residents by why they moved to their current property (Q35).

Reason for moving	n	%
For work	14	6.9
Affordability of houses	16	7.9
Rural lifestyle	113	55.7
Operate farm/grazing property	9	4.4
Operate commercial/industrial property	1	0.5
Other	50	24.6
Total	203	100.0

Table 7.119 Frequency and percent of Thuringowa residents by whether they own or rent their current house (Q36).

	n	%
Own or rent		
Own outright with no mortgage	106	42.1
Own with a mortgage	121	48.0
Rent	25	9.9
Total	252	100.0

Table 7.120 Frequency and percent of Thuringowa residents by whether they have insurance on their property which includes loss from natural hazards (Q37a).

	n	%
Have insurance		
Yes	204	80.3
No	23	9.1
Don't know	27	10.6
Total	254	100.0

Table 7.121 Frequency and percent of Thuringowa residents by whether they feel that their property insurance adequately covers any potential loss from natural hazards (Q37b).

	n	%
Adequate cover		
Yes	134	66.0
No	33	16.3
Don't know	36	17.7
Total	203	100.0

Table 7.122 Frequency and percent of Thuringowa residents by whether they provided a comment about insurance for natural hazards (Q37c)

	n	%
Comment provided		
Yes	84	31.9
No	179	68.1
Total	263	100.0

Table 7.123 Frequency and percent of Thuringowa residents by whether they are actively involved in any volunteer or community organisation (Q38a).

	n	%
Involvement in organisation		
Yes	51	20.1
Have in the past but not now	85	33.4
Never been involved	118	46.5
Total	254	100.0

Table 7.124 Frequency and percent of Thuringowa residents by whether they provided a comment about the type of organisation they are involved in (Q38b)

	n	%
Comment provided		
Yes- involved now	49	36.0
Yes- involved in the past but not now	24	17.7
No	63	46.3
Total	136	100.0

Table 7.125 Frequency and percent of Thuringowa residents by whether they provided a comment about why they like to be involved (Q38c)

Comment provided	n	%
Yes- involved now	41	30.1
Yes- involved in the past but not now	13	9.6
No	82	60.3
Total	136	100.0

Table 7.126 Frequency and percent of Thuringowa residents by where the organisation they are involved in is located (Q38d)

Location	n	%
In the locality they live now	43	79.6
In the nearest largest town	11	20.4
Total	54	100.0

Table 7.127 Frequency and percent of Thuringowa residents by how they ranked 'I'm not

Table 7.130 Frequency and percent of Thuringowa residents by how they ranked ‘I haven’t thought about it’ as the reason for why they are not currently involved in any volunteer or community organisation (Q39d).

Ranking	n	%
Most important	15	7.8
More important	14	7.2
Important	32	16.6
Answer ticked only	2	1.0
Not selected	130	67.4
Total	193	100.0

Table 7.131 Frequency and percent of Thuringowa residents by how they ranked ‘nobody has asked me’ as the reason for why they are not currently involved in any volunteer or community organisation (Q39e).

Ranking	n	%
Most important	8	4.1
More important	13	6.7
Important	27	14.0
Answer ticked only	3	1.6
Not selected	142	73.6
Total	193	100.0

Table 7.132 Frequency and percent of Thuringowa residents by how they ranked ‘other’ as the reason for why they are not currently involved in any volunteer or community organisation (Q39f).

Ranking	n	%
Most important	40	20.7
More important	5	2.6
Important	16	8.3
Answer ticked only	0	0.0
Not selected	132	68.4
Total	193	100.0

Table 7.133 Frequency and percent of Thuringowa residents by whether any member of their household belongs to a fire-fighting organisation (Q40).

Household member belongs to fire-fighting organisation	n	%
Yes	24	9.4
No	231	90.6
Total	255	100.0

Table 7.135 Frequency and percent of Thuringowa residents by age group (Q42).

Age (years)	n	%
18 - 25	5	2.0
26 - 40	57	22.4
41 - 55	86	33.9
56 - 70	82	32.3
> 70	24	9.4
Total	254	100.0

Table 7.136 Frequency and percent of Thuringowa residents by household type (Q43).

Household type	n	%
Single person living alone	35	13.8
Couple with no children	65	25.6
Couple where children have left home	59	23.2
Family where the youngest child is < 7 yrs	33	13.0
Family where the youngest child is 7-12 yrs	19	7.5
Family where the youngest child is 13-17 yrs	18	7.1
Family of related adults	22	8.6
Household of unrelated adults	3	1.2
Total	254	100.0

Table 7.137 Frequency and percent of Thuringowa residents by the number of adults living in their household (Q44a).

Number of adults	n	%
1	43	16.8
2	187	73.0
3	19	7.4
4	5	2.0
5	2	0.8
Total	256	100.0

Table 7.138 Frequency and percent of Thuringowa residents by the number of children living in their household (Q44b).

Number of children	n	%
0	182	71.1
1	30	11.7
2	27	10.5
3	12	4.7
4	4	1.6
7	1	0.4
Total	256	100.0

Table 7.142 Frequency and percent of Thuringowa residents by their employment (Q48).

Employment	n	%
Full time	117	46.6
Part time	1711.999615(117)-9875(46.6)]TJET92	

8 Appendix B

8.1 Tables of results presenting responses to survey open questions

Presented in the order that the questions appeared in the survey instrument (see Appendix C). Note that XXX has been used here to replace specific names and places that were mentioned by respondents in order to protect the identity of individuals and groups.

Table 8.1 Open question responses to the type of property respondents live on (Q3).

Survey ID	Response
239	Aquaculture

Table 8.2 Open question responses to what the respondents' house is made of (Q4).

Survey ID	Response
1	Steel frame, metal outer, gyprock interior
3	Corrugated iron and timber shed

and when this fire happened it was uncontrolled as it had got away from
another burn off

42 Sick

48 Loss of life, crop, possessions

50 I was 14 years old and was at school at the time, my father was home
and I was frightened for him

54 The neighbouring property was on fire – a wind change would have
caused problems

55 Not enough water to protect property and no escape such as dugout/cave

61 Helpless as I did not have sufficient resources to fight the fire

62 Came home from shopping to find the rear 20 feet had been burnt and
several orange trees killed and some more wounded

64 The fire came to our boundary and was fought with garden hose

65 Bushland around Bluewater Creek

70 Had to relocate horses from burning paddocks

74 Sparks from flying ambers

76 As first officer of XXX Rural BFB now defunct we were in control of a
fire along Black River when the XXX BFB arrived and set up a back
burn over an area we had extinguished without contacting us then left
leaving us with a fire in front as well as behind us

79 The back half of our property was bush before we bought it. Apparently
it caught alight from the next door neighbour burning off

88 Fire came very close to house. House could have burnt down

99 One half of the 25 acre bush block we lived on was burnt out

101 Was heading towards our property

102 I wanted the fire to be allowed to burn the dead thick scrub so it is not
an issue next year. But they refused

105 Had house area well mowed & hoses ready

120 Burnt out

121 the fire was stopped 3 metres from my house

138 A little helpless until the Rural Fire Brigade got here

142 Heading in our direction then it changed direction

	added to fire intensity
220	Because bushland backs onto the rear of our property
224	Fire was along the grass at the back fenceline on a Friday afternoon, baby asleep in the house
225	Involved in rural fire brigade
238	Anxious scared
254	Fire swept <u>very</u> fast round perimeter property, dry surrounds, us in middle. This was before surrounding land was inhabited & watered. Our watered block was protection at time. Though heat ferocious
257	Buildings mainly sheds containing hay & machinery
259	The fire may have ignited trees close to the house or the house. Risks associated with fighting the fire

Table 8.6 Open question responses to what the respondent learnt from their past bushfire experience (Q8b).

Survey ID	Response
1	My fire breaks and clearing worked well. Should be more controlled burning during winter
4	That they are unpredictable and extremely dangerous
5	Be prepared – no problem
6	Don't light fires *
9	Make sure that your house is cleared of all debris
12	It spreads very fast
13	Get a longer hose
14	Make sure perimeter is clear and beware fire started by external sources
18	We needed more people to fight fires in 1963 I became a firefighter
19	Put in firebreaks
23	If possible stay with property to protect if possible *
25	Keep underbrush down
29	How dangerous and unpredictable fire can be
31	Be prepared!
34	To keep around the house clean and the paddock. Grass short
39	Maintain firebreaks and burn off yearly at the right time of the year
40	Do not fire under these conditions
41	Firebreaks should be regularly maintained and yearly controlled burn offs should be carried out on unused land
42	Make fire breaks *
45	Keep your yard clean and rubbish free
47	Never take them for granted
48	Cannot tolerate irresponsible land owners that do not put in fire breaks to prepare for a fire. There should be a law put in place to stop this. It is life threatening and makes insurance go up.
50	There are some places that are not smart to build in, it has affected my adult choices of a home location
51	Property owners are the most experienced in fighting “bush fires” *
53	It was in SA I was amazed how quickly it moved and how safe I <u>thought</u> I was because of the distance
54	Be prepared and local rural fire brigades are very capable and respond effectively
55	To have escape plan thought out <u>in advance</u> and be prepared for the

- unexpected
- 61 Get more resources. I now have my own water pump to pump water
from my swimming pool
- 62 Not to trust the rural fire brigade to do anything – e.g. do it myself
- 64 An area of about 30 feet out from boundary is kept clean
- 65 Fire and Rescue can't fight fire in XXX
- 74 Always have own fire fighting resource available when able and keep
area around house free from flammable materials
- 76 The actual fire was the result of domestic burn offs over 5 klms away.
Don't light back burns until a thorough inspection of personnel is made
- 79 Remove the bush area in the back part of our yard *
- 84 Keep weeds cleared
- 88 Keep lawn around house green all times
- 92 Keep plant and tree growth clear from the immediate vicinity of the
dwelling
- 94 It was a controlled burn off *
- 95 Extreme conservationists are idiots. Australia needs controlled bushfires
to rejuvenate
- 99 Fires were quick to respond, well organized and excellent follow up
and monitoring for 2 weeks; neighbours were very supportive; the
media were rude and intrusive

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193	Keep gutters clean, and yards tidy
194	Bush should have a controlled burn before the dry season
199	The importance of keeping fuel low, (ie, timber, grass, etc) back burning, fire breaks, controlled burn offs
203	Hazard reduction burns in the season are essential
204	Not a lot I was very young
208	Fire brake around house. I have 2.400. walkway around house (concrete)
212	Lack of fire breaks on other properties
213	National parks & vacant land be burnt almost every year
217	To conduct hazard reduction & abatement regularly
220	The rural fire brigade quickly back burned and diverted the fire
223	Keep grass mowed (particularly when dry). Regularly remove leaves from around the house
224	The importance of quick response- being alert- having a rural fire brigade & of water availability
226	Be prepared
228	Maintain fire breaks
234	Make sure fire breaks are there
237	How unpredictable fire is and how very quickly it destroys
238	Regular burn offs are important Minimising rubbish around your area
254	That fire with wind moves with <u>unbelievable</u> speed- choom- choom- choom- choom- gone. No hope to move from its path. If had not experienced, would <u>not have believed</u> .speed. burning tinders on roof & car under carport
257	More fire breaks & the width of fire breaks
259	Fire break maintenance
* Respondent did not indicate that they had experienced a bushfire before	

Table 8.7 Open question responses to what prompts respondents to think about preparing for bushfire (Q11).

Survey ID	Response
1	No prompts always prepared
5	Date, weather, fuel
6	Temp & weather
7	If countryside was properly managed with controlled burning in favourable conditions, bushfires would not occur
16	Weather conditions
18	Experience
34	Experience- how it can travel & start up quite away from orig fire
37	Reports from locals of the prevalence of bushfires in this area
48	When you live on the land you do so all the time because everything is at high risk of loss

99	Husband is with RFS
103	Onset of summer
105	We always keep our house area clear of all fire hazards
108	Personal observation of bush conditions/weather etc
113	Own initiative
118	Own initiative
121	Common sense
129	Was a member of Qld Rural Fire Brigade
134	Overgrown areas surrounding my property and the lack of controlled burns
138	When cane farmers decide to burn to protect their cane & don't care about other people.
140	Fuel build-up on council land
145	Climate + season – “dryness”
146	The dry season approaching
155	Available dead scrub
157	Neighbours who don't prepare adequately!
173	None, always keep yard & guttering clean
187	I always keep a fire break now
199	Born and bred in bush
202	Bushfires on TV
212	Drying off fire fuel
213	Apx. March every year I make fire breaks
214	Always thinking about it
225	Dry windy conditions
231	Weather conditions
233	Neighbours burning rubbish- large amount
234	No rain, dry grass
235	uncontrolled bushfires, if we had any
237	Change in temperature
239	Part of a yearly routine to prepare for bushfires
248	Watching surrounding area drying out
253	Season- drying of grass/lack of rain
257	Protection of my crops & buildings
262	I belong to rural bush fire

locality
 60 Unlike Thuringowa suburbs we are not offered the free council pre cyclone clean up
 61 Bins are too far away. Hence people dump on side of road or in bush
 62 Council tip on Herveys Range Road
 65 Bluewater tip only accepts house waste
 75 Don't like having to pay to go to dump with garden waste
 83 No service for large unwanted items
 86 The local dump is 20kms away
 101 We don't dispose as property too large
 111 Tip only open on weekends- charge \$15
 118 Tip fees!
 119 Dump only open on weekends till 4:00 pm
 124 It costs to dump your own rubbish
 136 Rubbish tip is 15 mins away & if you don't have a trailer you are in trouble
 137 Levys at dumps put people off cleaning up yards. (council rip off). *
 Should be no charge for dumping green waste
 139 We get rid of our own
 140 But green waste/tree loppings are dumped on council land because of restricted access to waste transfer station
 143 Need a trailer to take rubbish to tip- no tip in this area
 145 Tip services reduced. Less than other areas. in shire
 146 Its 30Klms to nearest tip
 151 50Klms to nearest green waste
 162 Need more free dump weekends
 167 People still dump rubbish near roadsides
 176 Tip has been closed for this use (Bluewater
 177 Councils cant pay for everything, I take rubbish to dump
 180 Council should provide vouchers for 4 free trips to refuse disposal area per year
 185 But the thuringowa Dump is a pain in the arse to use
 188 Weekends only
 201 More difficult for the widowed without family, friends or neighbours to help.
 216 Closest is at Toomulla beach
 218 More people would clear rubbish if free and open all week
 219 Tip closed
 224 Can be recycled, composted &/or carefully burnt in pit (Garden rubbish/green waste)
 234 They took all bulk bins away!!!
 235 (only open on weekends) The free service of the tip now has been stopped, so we only do our yard once every three months & do 3 trips
 237 Extra council collections would be advantageous in fire & cyclone seasons to rid property of waste
 239 No garbage disposal service / have to take it to the tip
 248 We pay rates and we still have to pay to dump rubbish – How insufficient can a council be?
 253 Everything has a cost – there is only so much in a pay packet in regional areas- we receive at least 1/3 less than capital cities but overall pay

more in expenses
262 I place green waste in bin with household rubbish

Table 8.9 Open question responses to what signs respondents saw or information they received before a controlled burn in their area (Q20).

Survey ID	Response
4	Signposted at site
5	Private advice received after burn
7	We are a small community and word of mouth is effective
9	Notified by letter drop
12	2 weeks prior QN deliver letters of warning of controlled burning
13	Newspapers
18	Notice from fire warden or first officer RFB
19	Rural fire called to house couple days ahead so we could plan on being home and prepared

103 Notice in the paper
105 It was not close to us. Just in the area.
108 letter in mail
109 Publicised in area through media
115 Signs displayed
116 Pamphlet in mail
118 1. Public notice in newspaper. 2. Smoke hazard sign on highway
123 QNI did a controlled burn a couple of weeks ago. They notified
residents prior with a letterbox drop.
124 Pamphlet in mailbox from QNI
125 Letter drop outlining dates. & contact details if more answers/info were
required.
128 Newspaper adv. Signs on roads in area
136 Received a notice in the letterbox
137 Road sign, broadcasts on radio
139 I was told
142 Notice in mailbox advising date & time
143 QNI always put notices in letter box to give plenty of notice
146 Letter in the mail from Yabulu refinery
147 I issue the permits in my area and I ask the person I grant the permit to
to talk to their neighbours
149 Fire fighter ahead & smoke hazard signs on side of hwy
153 Saunders Beach Rural Fire Brigade gave notice of a controlled burn
154 Sometime on Main highway smoke hazard signs, but usually nothing
just smoke comes in
158 Notified by neighbours + fire crew (rural)
159 Informally from neighbours – not Rural Fire Brigade who did burning
161 QNI- distribute brochures informing of time, day + area
166 Road signs

215	Signs
217	Put a flyer out with intentions to do controlled burn offs on such & such a date
219	Letter box drop
225	Local information display
226	Q.N.I. controlled of bushland
232	Notice in letterbox. Smoke hazard signs on road
234	A member of the rural fire brigade informed me
237	I am secretary for RFB so I was aware
238	Mail out from QNI
239	Can't remember
242	Roadside smoke hazard signs
248	Only signs along the road as the controlled burn was in progress. There's no need to make it a mission for the volunteers. (for previous signing)
250	Letter from QNI
251	Rural Fire Brigade told me
252	Letter in the mail saying when & where
255	Notice signs displayed
257	I was made aware by neighbours & the owners
260	Add in newspaper
261	Signage on road

Table 8.10 Open question responses to who the respondent would contact if they wanted to do some burning on their property (Q25).

Survey ID	Response
89	Do no do any burning
109	Rural fire brigade
130	Don't know
155	000 Emergency- fire
157	Do not know actually as I have approached individual fire people (they said "no permission" from other large property owners!!) to backburn
159	N/A
174	Internet
191	Not the local one, they were a menace. Might try other close one!
253	We don't burn- we compost

Table 8.11 Open question responses to why respondents think people in their locality are at risk from hazards (Q27).

Survey ID	Response
1	Bad housekeeping on property. Houses built in river below bank and do get flooded
2	Low level properties are prone to flooding
7	Some are in flood prone areas and some would be vulnerable to storm surge
8	Some sheds built below cyclone standards would become a hazard in a strong cyclone
10	Elderly
11	Bushfire on the edge of the village – adjacent to Qld Nickel estate
13	Flooding
14	Too much bush about place
15	Some houses are on well treed/long grassed rural/residential blocks

- 17 Allowing overgrown yards to dry out year after year building up fuel for fires
- 18 Do not have firebreaks around their properties; some expect RFB to do it for them, some don't care, and expect us to look after their homes for them
- 19 Elderly, little local knowledge
- 21 They are on the fringes of the suburb closer to the bush
- 23 They are not bushfire aware and bushfire prepared
- 26 Fanatical greenies that do not agree that we should be allowed to keep long grass and scrub under control and report neighbours to local council when we do. Council approves this and threaten people with heavy fines for removing dead palm fronds and trees
- 27 Older residents. People with lung problems
- 28 Lack of water
- 30 Yards full of rubbish and long grass
- 31 Elderly, those who live alone would not be able to look after their own

- 65 Creek flooding/fire
- 66 Locality is subject to cyclones and storm surge
- 67 Overgrown lawns, dead trees untidy property
- 70 Dry grass throughout property and close to house
- 71 Uncleared house with bush too close to the house
- 72 Neighbours that are old
- 74 Because of rubbish and long grass
- 75 Too many trees close to houses
- 76 Floods because of trees growing in the bed of Black River Dve to years of less than normal rain the river is eroding its bank and could result in a course change
- 77 Palm leaves pile up – garden waste
- 78 Their properties back onto bushland
- 83 Possibly people without transport unable to leave easily as no public transport here
- 84 Long grass
- 86 Neighbour burns domestic waste products which give off toxic fumes and we has been physically sick as a result
- 88 Live near crown land that has bush (native trees and long grass)
- 89 Too many trees close to wooden houses
- 90 Some properties not kept in order
- 93 Overgrowth of grass, clippings, lack of water, general lack of maintenance
- 95 Property backs onto bushland
- 96 Properties on bush fringes
- 99 Live close to bush and overgrown, neglected properties
- 100 Some houses back fence onto bush
- 101 We all have acres of grazing area's
- 103 Rubbish up to house
- 104 They have old tyres stacked all over their property
- 105 Because they do not clean or mow regularly
- 106 Property over grown with high grasses
- 109 Dry timber on paddocks & long grass = 'fuel'
- 110 Neighbour has emphysema
- 111 Neighbour continually burns tree cuttings etc. which he brings home from his lawn mowing business
- 116 Their properties are near bush, & heavily populated with trees
- 118 Overgrown yards close to bushland. Too many trees/shrubs close to their houses. Too much rubbish or building material in their yards in the event of a cyclone.
- 119 Elderly couples which can't clean up properly
- 121 those who built in the drop alongside the Bluewater creek got flooded
- 123 Vacant blocks of land with overgrowth
- 125 Rubbish, poorly maintained/constructed structures
- 126 messy, un-mown grass
- 129 They do their own hazard reduction, don't notify fire warden or Rural Fire Brigade & laugh it off- Mexicans
- 134 We are surrounded by the bush/trees
- 135 Old homes do not look as if they could withstand a storm
- 136 Overgrown yards & stacks of timber & such

- 137 Lazy
- 139 Probably even myself?
- 142 Everybody is at risk with cyclones
- 145 Older women living on own. Lack of services/support from council.
- 146 They live like hobbits + don't clean there yards or talk with neighbours
- 147 They do not maintain good fire breaks around their properties and clean up around their homes
- 148 Built their dwellings in areas which look flood prone. Too much combustibile material around house
- 149 No education or enforcement to clean up

222	Next door neighbours are at risk from other neighbours who don't keep grass down, or clean up rubbish in yard
224	Burn offs/thoughtlessness & possibility of starting a fire by discarding still lit cigarette end out of car window etc
225	Fuel build up along fences adjoining open areas
228	Location of house- close to bush
230	Rubbish around property
232	Live on acreage surrounded by bush
233	Too many trees against their home- great amount of dry brush or bush near home- fire hazard material lying around
234	No fire breaks, they live in heavily wooded areas
235	Garden waste not got rid of
237	Overgrown & debris
238	Too much rubbish around the yard creating hazard
239	A lot of junk around the property
240	Trees could be blown into their houses in a cyclone
246	If they don't clean-up around their houses
248	Because of dump fee they store up garden waste to get value when they go to the dump
249	We live on rural blocks & some people have lots of car bodies on there blocks & I worry about fires starting around
253	We have a creek behind our property- close to our house- owned by neighbour on council (?)- Its never been maintained- who is responsible to clean it? Who do we contact?
257	Mainly in beachside areas from storm surge & flooding & Tsunami
259	Water front properties. Low lying properties

Table 8.12 Open question responses to what other features respondents value in their area at present (Q32).

Survey ID	Response
1	Security
4	Security
8	Proximity to beach
14	Beach
28	Dirt road Dirt road
49	Fantastic neighbours
54	Rural lifestyle
59	Fewer people than the city
66	Beachside
69	Neighbours
78	Barking dogs
83	Caring community
95	No known robberies/break ins
113	Shops and medical
114	Privacy
119	Tidiness & presentation of area
120	Good roads
121	Security- Low crime
126	away from suburbs & crime
129	Community spirit

133	Good neighbours
142	Wildlife
143	Access to beach walks
144	Views
145	Beach
146	The fall out from Yabulu. (smell)
152	Lifestyle
155	Creek access to animal + water lily
157	Feeling of independence Seclusion yet still have amenities
161	Beach frontage
170	Mountain views away from town
171	Neighbours not too close but far enough for privacy not too far from major shopping centres
176	Privacy Close to beaches etc
179	Not too far from town
181	No resort
188	Good lifestyle
200	Beach
201	Litter cleared up
206	Out of city bustle
208	Do your own thing
235	Only 20 min from town
242	Safe, no home invaders. No break & enters
249	We have lots of birds
257	Freshwater creek Far away enough from city
260	Beaches

Table 8.14 Open question responses to why respondents moved to their current property, if they had moved to their current house (Q35).

Survey ID	Response
7	Retirement
8	Beach lifestyle only 40 min to city
9	Retired, wanted room to breathe
11	Divorce settlement
14	Beach property
16	To operate a dog kennel (show dogs)
25	Retired to the beach
28	Retirement
32	Relocation from overseas
37	We were sick of paying off someone else's house
38	Family
41	Inherited family property
53	As a winter retreat- Dec- down S.E.Q.
57	Beachy lifestyle
60	Peace & quiet- beach life
62	Retired- peace & quiet & grow orchids etc.
70	Operate as horse training facility
79	First home we bought
81	To be close to family
82	To get out of town a bit
93	Separation from partner
95	Marriage/kids
99	To go to JCU
114	Desire to build own home
121	peace & quiet
129	Empty nest, peace & quiet, less thieves & vandals & stereo wankers
130	Moved from Victoria/heard it was a nice place
134	Live with spouse
135	We own this place
139	Mostly because 45 yrs ago we had to cross flooded creeks
142	Moved from Adelaide for family & retirement
143	Retire to beach lifestyle
144	Views
146	to have a place to raise children
151	to have a place to raise children

59 The cost may be too expensive for the average family
 62 Fully covered for damage to roof (tree over house) and fences and
 removal of trees blown over during cyclone in 2002 (?) no tree over
 house – XXX
 63 Insurance companies always have excuses for not paying up – or if they
 must pay as little as possible. Always profit before people
 66 Difficult to get
 71 Should be covered for flooding
 76 Not all insurances are clear in just what they do or do not cover
 82 Not covering flood or storm surge is a bit dodgy
 83 All in insurers favour!!
 85 The flooding interpretation in policies should be clarified
 89 You have to have good insurance and read the small print
 90 Flooding not covered
 93 There needs to be more coverage for natural hazards – its why you want
 to pay insurance!
 99 Unable to insure for storm surge or flooding – the most likely hazards in
 my area
 101 Will the insurance cover livestock
 102 All insurance should cover natural disasters
 105 Comment for “do you feel this insurance adequately covers any
 potential loss...?”: It’s as much as we can afford. “Comments?”: To
 expensive
 109 Can not get true cyclone insurance
 113 We can’t predict what insurance companies will do
 117 The insurance Co would say Act of god
 118 Too expensive for the small risk insurance companies fact
 121 insurance companies will fight against any payout
 123 Most insurers don’t have flood cover
 126 Should be cheaper
 129 Sucks
 136 It should be included as a general part of insurance
 138 The insurance companies always try to get around paying
 139 not sure don’t know much about it (can’t afford anymore)
 143 All companies should include this automatically
 144 Concern that insurance companies will be forced to review their risk
 assessment and hence premiums
 145 Insurance Coy reluctant to pay out.
 146 it should cover every hazard
 147 Insurance companies will refuse to pay if they can
 149 Back up from tide for flood water should be included
 152 Not always clear what is insurable on policy + what is able to be
 claimed when related to natural disasters
 153 Usually don’t pay for natural hazards
 154 loop holes, if they dont want to pay they wont
 155 Differtiating flood + water hazardous
 156 Flood insurance should be on all policies
 157 The insurance industry “when it comes to silly loopholes to avoid
 payments” should gov’t controlled guidelines to lock in a true & concise
 picture of insurance & liability of both sides

160 There is a large tract of land between houses, beach at Balgal Beach
which has long dead grass and is not cleared by owner
161 I seriously doubt in the event of a storm surge that our insurance would
cover our losses
162 Acts of God should be covered
165 Too expensive
166 Have seen insurance com treat people badly after claims
168 We pay for the disasters in southern Queensland
170 Flooding should be covered
173 Too many loopholes
176 In most insurance policies people are not aware of the cover provided
because of the wording + layout of the policy
180 Forget the fine print
192 No flood cover
201 Insurance Co's like to take your money but seem to find loopholes to

34	School, meals on wheels, visiting n. homes *
36	Sports *
46	Chairman Rural Fire
47	SES *
53	Environmental group *
54	Rural Fire Brigade – G (husband?)
61	Fire Brigade
64	Community Association
66	Lions International *
70	Racing and horse riding clubs *
72	Rural Fire Brigade
74	Rural Fire Brigade
76	Accommodation for seniors previously Rural Fire Brigade
79	ATO
82	Marine park coral protection
86	Bohlevale Community Centre *
88	Horse sports
94	Sporting organization
96	Canine obedience club
109	Pony club
114	Meals on wheels
120	A community association Inc.
125	Rural Fire Brigade
134	Voluntary Ambulance Officer *
137	NQ Wildlife Care
140	Rural Fire Brigade *
145	Community Support Organisation
146	Blackriver pony club
147	State Emergency Service/Rural Fire Brigade
148	Community Centre, Bush Fire Brigade *
149	Rural
152	Progress Association
153	SBRFB and community centre

213	Rural Fire Brigade
217	Rural bush fire brigade *
224	Salvation Army 2 nd hand store *
226	R.S.P.C.A.
232	Community Assoc.
237	RFB
241	Community club
246	Sporting
253	Counseling *
257	Historical society
258	Blue Water State School
260	Blue Water Community Association, Blue Water Community Church
261	Progress Assoc
262	Toolakea Progress Assn & Bush Fire Brigade

* involved in the past but not now

Table 8.17 Open question responses to why respondents like to be involved in their volunteer or community organisation (Q38c).

Survey ID	Response
7	I believe I am qualified
8	Member of community groups which enhances quality of life
18	To help communities
19	Keep in touch with local *
23	Personal stimulation and community involvement
27	Community commitment
30	Yes
36	Just for the fun, to give something back *
40	Keep myself busy and informed
54	Community responsibility *
61	The service needs volunteers for it to work
64	Keep active and friendship
66	Sense of community *
72	Community help
74	Small community and landowners pulling together *
79	Benefits me (knowledge) and the community
82	To help maintain beautiful/enjoyable locations for all to enjoy forever *
86	To know what is going on
88	have horses
94	Participate in child development
109	Small community, committed people great for friendship, value for children & families
114	To feel helpful & enjoy social contact
120	An interest
125	Assist with local community/urban group
137	Care for wildlife
145	Public duty Assist others
146	for the kids and meet others in my
147	To help the community
148	I don't like always leaving it to other people *
149	To know can rely on others & myself

152	Provider of service- Aerobics classes in local hall
154	learn, help, social *
170	We need more trees
171	To help one's community, it benefits us all *
172	Because of my kids
188	Helping the community + ourselves
193	Fellowship, friendship, support, encouragement
198	Promoting a healthier Australia
205	Helping other & social *
213	I don't like it- a small group help each other & protect the area
217	Satisfaction of giving something back to community *
224	Contact with people & is a good cause *
226	Care of animals
232	Like to help out
237	This is my community
246	People can (check this), I like helping children
253	Help those less capable of coping *
257	Because my property is of historical value
260	Meet different people
261	Be involved in community devt
262	As citizen I feel it is my duty

* involved in the past but not now

Table 8.18 Open question responses to reasons why respondents are not involved in a volunteer or community organisation (Q39).

Survey ID	Response
5	Distance. Previous wife
9	Permanently disabled
15	Too old Too tired Too bad!
17	Unaware of procedure
35	Age & health
38	Disabled
50	Husband away for long periods. I have 2 small children
54	Spent 7 years with Rural Fire Brigade- need a rest (as treasurer & firefighter)
59	Sometimes too many rules spoil the spirit of volunteering
60	The bitchyness sends people running. Its impossible to work in environment like that
70	Personal clashes with other committee persons
71	Did volunteer work when time permitted
74	Health disability
78	Was a fire warden, abused by R/Brig. member
83	Ill health prevents involvement
84	Full time carer to invalid
85	Vet affairs disability pension

Table 8.19 Additional comments (attached by respondents)

Survey ID	Response
48	I am writing this attachment because just yesterday we became victims of being burnt out . This was no accident! What caused this fire was a carefree attitude from a landowner, with a fire permit that breached his fire permit, because his fire breaks were not what was recommended by the Fire Warden. He has created this problem 3 times since owning this property. He continues with this carefree attitude and gets away with it. Since the Rural Fire Brigade was introduced they have done so much good to and for our community. But I feel the only one thing that fails this system is a small community know's everybody and this leads to cover up's in our 2 fire's. When a person takes a fire permit he is required to act on all the requirements the Fire Warden has put in place. I believe that when you don't you are breaching your permit, therefore, I strongly feel that every fire that gets away and does damage should be investigated by another body (investigative team). If found with wrong doing action should be taken. This hopefully will stop the irresponsible and carefree attitude. The Fire Investigative team should not be <u>LOCALS</u>. I also believe that all landowner's should be made to make fore break's. In a rural setting it should be law. This is my experience as a local in my area. I hope you take this information as not critical but only to make a system work better than what it is. This in turn will make our community a much safer place. Thankyou for your time for reading this.
162	I feel very strongly that property owners should be responsible for own areas. Campaigns could be put in place like with cyclone warnings. If owners do not take notice and put others at risk fines should be applied or insurance null + void due to negligence. However council should do side of roads and bushland etc. We live on rural land with town water but have no fire hydrants, all properties should have access to water. Thank you for taking an interest in bushfires, its reassuring that improvements will be made.

9 Appendix C

9.1 Letter of Introduction to the Thuringowa Bushfire Survey

9.2 The Thuringowa Bushfire Survey

9.3 First Reminder/Thankyou Postcard

9.4 Second Reminder/Thankyou Postcard

9.1 Letter of Introduction to the Thuringowa Bushfire



Townsville campus

Townsville QLD 4811 AUSTRALIA

Telephone: (07) 4781 4111 Web: www.jcu.edu.au

Thuringowa – Case Study Survey – Bushfire Cooperative Research Centre October 2005

To: Residents of Thuringowa

This bushfire survey is being conducted by James Cook University in conjunction with the Queensland Fire and Rescue Service (QFRS).

This survey will contribute to research to improve the effectiveness of bushfire management agencies in managing the risks from bushfires and improve understanding of how various components of the community construct a picture of bushfire risk in the Thuringowa area.

Thuringowa is not considered to be a particularly fire prone area and the research is not an evaluation of fire service provision. The project will lead to a more complete understanding of how people who live in peri-urban areas and rural areas perceive bushfire risk and how fire service provision works in a particular region.

Your participation in this survey will be appreciated and the information collected will be **anonymous** and **confidential** and will be used for research purposes only. The single letter on the last page of the survey represents the Rural Fire Brigade which provides the fire service to your area.

When you have completed the survey please return it in the reply-paid envelope by **8 November 2005** to:

Bushfire CRC, Centre for Disaster Studies
Reply Paid 109
JAMES COOK UNIVERSITY QLD 4811

At the completion of the project a report will be available for the community through the Rural Fire Service and the Thuringowa Library.

Contact details – see over



If you would like further information about the project please contact the project leader:

Dr Alison Cottrell

School of Tropical Environment Studies and Geography

James Cook University

Townsville, QLD 4811.

Phone: 07 4781 4653 Fax: 07 4781 4020 E-mail: alison.cottrell@jcu.edu.au

Other members of the research team include Margaret Spillman and David Lowe.

If you have any questions regarding the ethical conduct of the research project, you may contact the Human Ethics Sub-Committee.

The contact details of the Ethics Administrator are:

Tina Langford

Ethics Administrator, Research Office

James Cook University

TOWNSVILLE QLD 4811

Phone: 07 4781 4342 Fax: 07 4781 5521 Email: Tina.Langford@jcu.edu.au

National Bushfire CRC Programs

The Bushfire Cooperative Research Centre was established on a national basis under the Commonwealth Government's Cooperative Research Centres (CRC) Program with funding provided to allow research to be undertaken in order to gain a greater understanding of the community issues concerning bushfire hazard. The Queensland Fire and Rescue Service is a Core Participant in the Bushfire CRC and will be an end user of the research outcomes.

Details of the major national programs can be found on the following web site:

<http://www.bushfirecrc.com/>

Program A - Safe Prevention, Preparation and Suppression

Program B - Management of Prescribed and Wild Fires in the Landscape

Program C - Community Self-sufficiency for Fire Safety

Program D - Protection of People and Property



...Thurgood Marshall Survey 2005

7. Have you experienced any of these hazards anywhere you have lived? ☐ Yes ☐ No

If yes, please write how many years ago:

Cyclone ☐ _____ Years ago

Bushfire ☐ _____ Years ago

Flooding ☐ _____ Years ago

Storm surge ☐ _____ Years ago

Landslide ☐ _____ Years ago

Other ☐ _____ Years ago Please describe: _____

None ☐

8. If you have experienced a bushfire before:

☐ Yes ☐ No

Did you feel personally threatened by the bushfire? ☐ Yes ☐ No

Did you feel your property was threatened by the bushfire? ☐ Yes ☐ No

If yes, please describe the hazard: _____

9. Has anyone you know (a friend, relative, colleague) suffered due to a bushfire? ☐ Yes ☐ No

10. When you were deciding to purchase or rent your current property, how important were these hazards to you?

Please tick your answers.

	Very important	Important	Moderately important	Unimportant	Very unimportant	Please
Cyclone						
Bushfire						
Flooding						

11. How prepared are you for bushfires? ☐ None ☐ Don't prepare ☐ Prepared

12. When is the bushfire season in your locality? Please write which month/s? _____

13. How many bushfires have you experienced in your locality? _____

14. How many bushfires have you experienced in your area? _____

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99. How many bushfires have you experienced in your area? _____

100. How many bushfires have you experienced in your area? _____

10. What type of fire brigade are you a member of?

☐ Rural Fire Brigade

☐ Metropolitan Fire brigade

☐ Parks and Wildlife

☐ Don't know

11. Are the members of the fire brigade in your locality?

☐ Paid full time

☐ Paid part time

☐ Voluntary/unpaid

☐ Don't know

12. What are the most important things you should do to prepare for bushfire on your property? (Rank the following from 1 to 3 with 1 being the most important)

1. Clear rubbish out of the yard

2. Prepare fire break around property

3. No action taken

4. Cut long grass

5. Clean leaves from gutters

6. Move on house and yard growth around

7. Check water supply and hoses

8. Prepare evacuation plan

22. Have you seen any signs or received information before this controlled burn?

☐ Yes ☐ No

If yes, did you see signs or receive information before this controlled burn?

If yes, please describe

ite which month/s _____ Please write

Check letter box or post box at home ☐ Check letter box or my property ☐ Check my post box at a post office ☐ Check both boxes ☐

ng the most useful.

_____ Pamphlet in mail _____ OR _____ Meeting with Fire Brigade members _____ None

_____ Information brought home by children at school

radio _____ TV or

community newsletter _____ Local

spanner _____ New

- _____ Internet
- _____ Information from council
- _____ Neighbours/friends in community

24. For your locality, please indicate how much you agree or disagree with the following...

For hazards including bushfires, please indicate how much you agree or disagree with the

Please ✓ your answers

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	
People in my locality would be able to manage them properly.						
My neighbourhood would be able to deal with them.						
People in my locality would be able to:						
manage them properly.						
deal with them.						
If Yes, why do you think they are at risk?						

32. What features do you value in your area at present?

Please rank in order from 1 to 5 with 1 being the feature you value the most to 5 the feature you value the least for your property and your locality

	Your property	Your locality
Peace and quiet	_____	_____
Space	_____	_____
Trees and bushland	_____	_____
Small community	_____	_____
Other, please describe	_____	_____

33. Have you always lived in this house?

☐ Yes ☐ No

34. If you have moved to this house, what type of property did you live on previously?

- ☐ Residential on a suburban block
- ☐ Residential on a rural block
- ☐ Farming/grazing property
- ☐ Industrial/ commercial property
- ☐ Other, please describe: _____

35. If you have moved to this house, why did you move?

- ☐ For work
- ☐ Affordability of houses
- ☐ Rural lifestyle
- ☐ Operate a commercial/industrial property
- ☐ Other please describe: _____

36. Do you own or rent this house?

☐ Rent ☐ Own outright with no mortgage ☐ Own with a mortgage

37. Do you have insurance on your property which includes loss from a natural hazard?

☐ Don't know ☐ Yes ☐ No

29. Are you actively involved in any volunteer or community organisations?

☐ Yes ☐ I have in the past but not now ☐ Never been involved

[Redacted content]

☐ Up to year 8

☐ Professional/management

☐ Business owner

☐ Self employed

☐ Office worker/white collar

☐ Tradesperson/skilled worker

☐ Household manager

☐ Other, please describe: _____

☐ Full time

☐ Part time

☐ Casual/temporary

☐ Student

☐ Retired (*this is your last question*)

☐ Not currently working (*this is your last question*)

☐ Work in nearest large town

☐ Work in State Insulin in town in a large town only

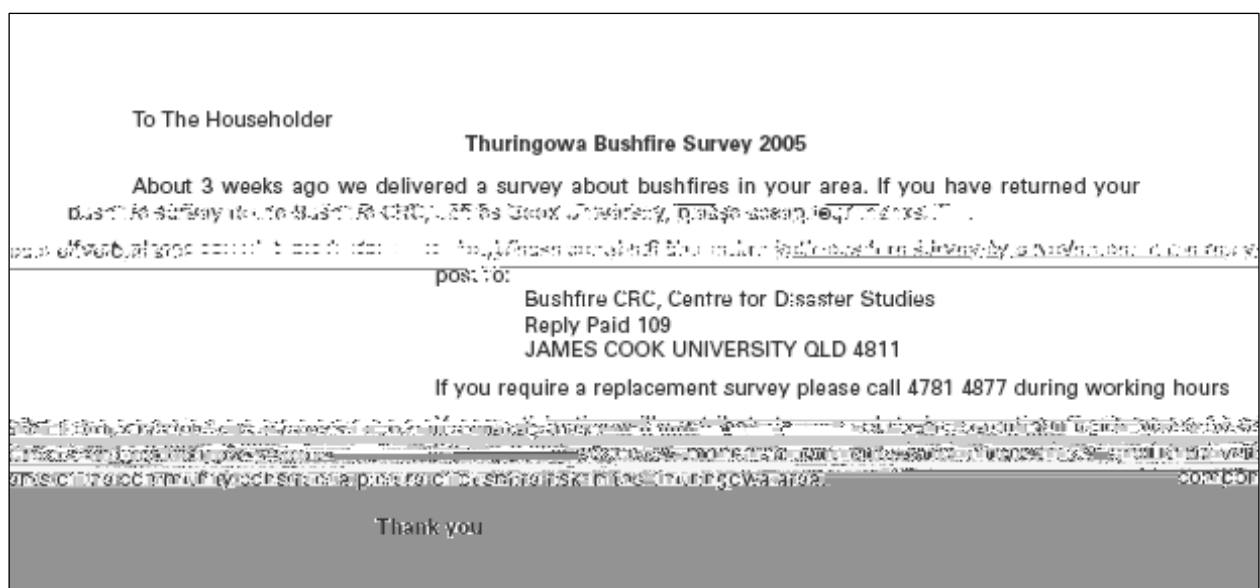
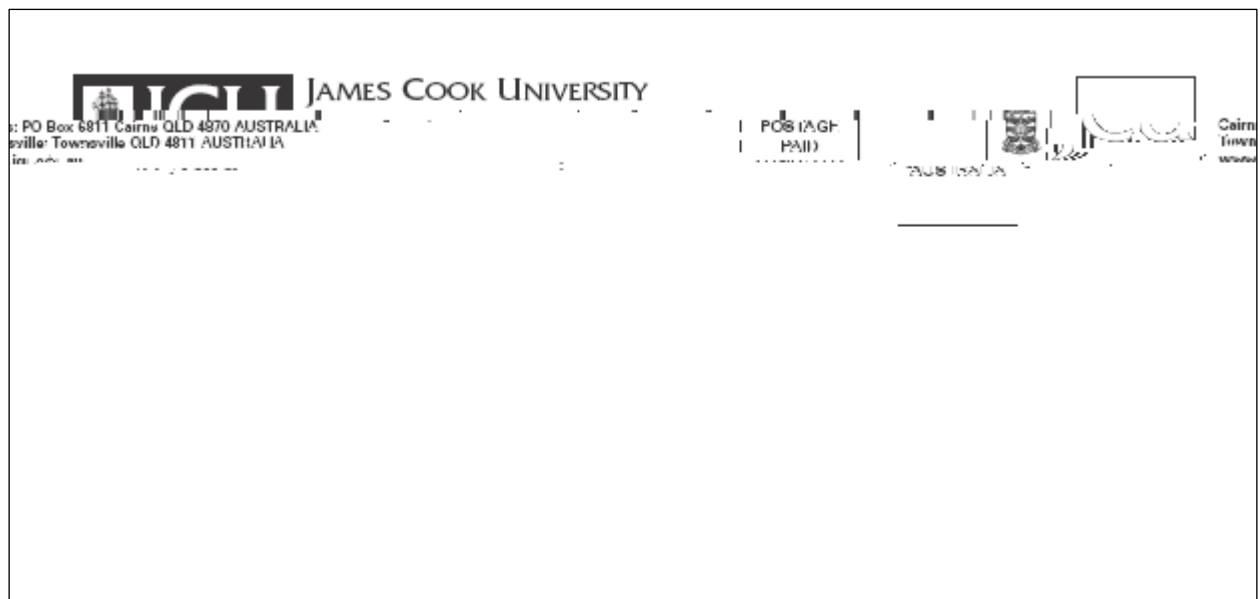
☐ Work in another locality but not in a large town

For more information about this project, obtain any questions regarding the survey, or wish to join the research team from James Cook University undertaking this project, please contact details of the research team in the reply-paid envelope to the following address: Please return this questionnaire to:

Dr Graham C. O'Brien, 1001 Mackay Street, Mackay, QLD 4740

B. J. D. 1100

9.3 First Reminder/Thankyou Postcard (side one and side two)



JAMES COOK UNIVERSITY
 Cairns: PO Box 6811 Cairns QLD 6870 AUSTRALIA

POSTAGE

To The Householder	Thuringowa Bushfire Survey 2005
In October we delivered a survey about bushfires in your area. It is not too late to return this and your cooperation in completing this survey is appreciated. If you have already returned your survey to the	
Thuringowa Bushfire Survey 2005	
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