

Building community self sufficiency for fire safety

Kellie Watson talks with researchers from the Bushfire Cooperative Research Centre about new research into Community Self Sufficiency for Fire Safety

Introduction

Fire is very much a part of the Australian landscape. The events in Canberra in 2003 highlighted for Australians that bushfires are a very real threat for some urban, rural and urban-interface communities across Australia and New Zealand. How these communities prepare for bushfires and the role of communities and individuals in reducing bushfire risk is a focus of the Bushfire Cooperative Research Centre's (CRC) *Community Self Sufficiency for Fire Safety* program, which is looking beyond the smoke and flames, to the communities who have experienced fire or are at risk.

The *Community Self Sufficiency for Fire Safety* program, lead by Professor John Handmer from RMIT University, is addressing key questions around building community self sufficiency and resilience in the face of bushfire risk.

The program is seeking answers to the following types of questions: How do communities and individuals prepare for bushfires? What is the economic cost of bushfire to communities? How do fire agencies evaluate community education programs? What makes and motivates bushfire arsonists? Why and how do community members decide to stay or go early and what is the role of media in communicating bushfire risk?

These questions are the focus of a collaborative research effort of social scientists, psychologists, social geographers, economists and criminologists from seven research organisations and six fire agencies across Australia.

The Bushfire CRC

The Bushfire CRC was established in July 2003 to undertake research that will assist fire agencies to reduce bushfire risk to communities in an economically and environmentally sustainable way. The research is a multidisciplinary approach to bushfire research—29 research projects are structured into four research program areas focusing on the physical, ecological, community and health aspects of bushfires.

With funding support from its key partners and the Federal government-funded *Cooperative Research Centre Program*, the Bushfire CRC is a collaborative research program between universities, fire, land management and emergency services agencies and research organisations. The Bushfire CRC also provides financial and research support for research higher degree students. PhD and Masters students are linked into the research projects and participate in all workshops and events—building a new generation of bushfire researchers trained in the social sciences.

Meeting the research needs of fire and land management agencies

The *Community Self Sufficiency for Fire Safety* program is divided into six distinct research projects.

The projects, according to Kevin O'Loughlin (Bushfire CRC CEO), are focusing on the key research questions of fire and land management agencies.

To ensure that the research is focused on the needs of end user agencies, O'Loughlin says that researchers work closely with staff from fire and land management agencies, "ensuring a strong end user engagement in the research."

With the *Community Self Sufficiency for Fire Safety* program Research Leader Professor John Handmer works directly with John Gledhill, Chief Officer of the Tasmania Fire Service. "The relationship is a core part of the Bushfire CRC research process" adds O'Loughlin.

Bushfire CRC Research Projects

Evaluating the *stay or go early approach*

A major focus of Bushfire CRC's research is evaluating the implementation and community understanding of the *stay or go early approach*. The Australian Fire Authorities Council (AFAC) has a national community safety policy known as the *Stay and defend or go early* policy. If it is likely that a bushfire will threaten a property, residents are encouraged to make a decision to leave early or stay and defend the property.

Preliminary research into community understanding and implementation of the *stay or go early approach* in north eastern Victoria has revealed that there is a high level of misunderstanding about what it means to *stay or go*



Bushfire CRC researchers, students and end users, part of the Community Self Sufficiency for Fire Safety research team.

early. John Handmer and the RMIT research team have conducted a series of focus groups throughout the region. "The research has found that the evidence supports the policy, but there are issues with its implementation" says Handmer. "Leaving early and staying and defending mean different things to different people. Responsibility towards neighbours, whether people are renting or own the house, and fitness levels all appear to be factors influencing people's decision-making."

Recent research by Bushfire CRC researcher Alan Rhodes has identified that the understanding of the *stay or go* policy is not as straightforward as may be believed. "What emerged from a recent telephone survey was a significant part of the community (approximately 60 per cent of respondents) who when choosing whether to *stay or go early*, said that they would wait and see what happens and leave if they felt threatened" says Rhodes. The results, according to Rhodes, reflect a dilemma that the *stay or go early* approach poses to communities.

The next stage of the *stay or go early* research will focus on what influences householder decision making in relation to staying and defending or leaving, and why people change their minds and leave at times of highest risk, in the face of an approaching fire front. The outcomes from the research will aid fire agencies in developing community education programs around the implementation of the *Stay and defend or go early* policy.

Evaluating community education programs

One of the major tools used by fire agencies in delivering community safety outcomes, is community education. However, how do agencies evaluate the effectiveness of community education programs to ensure that they are delivering the right messages and information to target communities? The evaluation research project is lead by Professor Gerry Elsworth from RMIT and is developing a series of evaluation tools which can be used by fire agencies to evaluate program effectiveness.

Recent research into the effectiveness of the *Street FireWise* education programs of the New South Wales Rural Fire Service (NSW RFS) in the Blue Mountains involved close collaboration between researchers and NSW RFS staff. The project outcomes indicate that the effectiveness is strongly based upon the degree of community which exists in an area.

The research has also started to develop a map of the key elements of the community safety programs where "quick wins" can be made. Also the methodology is now at a stage where it can be trialled with fire and land management agencies in conjunction with the research team to build further case-studies.

Understanding communities

For fire and land management agencies to deal directly with communities, an understanding of the communities in which they work is an essential part of the communication process. The research based at James Cook University in Townsville and conducted in conjunction with staff from Queensland Fire and Rescue

Service has undertaken a series of surveys in Mt Tambourine and Thuringowa in Queensland as well as remote Indigenous communities in Cape York. Dr Alison Cottrell from James Cook University is focusing on the relationships between policy, planning and service delivery in communities in high bushfire risk areas.

Recent research from Luke Balcombe, a Bushfire CRC masters student at James Cook University, has highlighted the difference between communities and fire agencies. Balcombe's surveys of communities in Mt Tambourine, a high-risk urban-bushland interface, has identified that there are disparate views between expectations of communities by agencies and of agencies by communities.

The outcomes of the entire project will provide agencies with further information about the communities that they service, providing invaluable knowledge about the pressure, values, differences and needs of communities in regards to managing bushfire risk.

Another outcome, according to Balcombe, is the interaction that he has had as a student, "it has provided me with opportunity to interact with academics and fire agencies staff and gain invaluable experience in the process."

Community preparedness and risk communication

Understanding the factors that impact on individual and community preparedness is essential for effective risk communication. The program's fourth research area focuses on the relationship between preparing for bushfires and communicating risk via community engagement, the media and the Internet.

According to the project's co-leader Professor Douglas Paton from the University of Tasmania, "community dynamics influence how people make decisions regarding their relationship with bushfires. It thus

plays an important role developing acceptance of bushfire risk issues in the community." Professor Paton states that the media are an important source of information for community decision-making, forming individual intentions to prepare for bushfires, and translating these intentions into protective actions.

Media construction of bushfire risk in shaping community views and the relationships of emergency service agencies with the media is also under examination by a team of researchers at La Trobe University. The project will soon establish two PhD projects which will focus on the implications of new media forms, such as websites, palm held technologies and mobile phones in communicating during bushfire emergencies. A partner project at Melbourne University involves the use of the Internet by fire agencies as a risk communication tool.

The outcomes from the three projects will provide a model for fire and land management agencies for communicating risk and enhancing preparedness amongst at-risk communities.

Bushfire arson

Understating more about deliberately lit bushfires and identifying underlying patterns is the focus of Bushfire CRC research underway at the Australian Institute of Criminology. According to the Project Leader, Matthew Willis, "a large proportion of bushfires in Australia are deliberately lit and we are learning a lot about where and when arsonists strike." The project is analysing bushfire data from fire services and land managers across the country, as well as examining police investigation records. Willis states that the project has discovered that known bushfire arsonists can adopt a pattern of fire setting activity centring on their home or workplace and that knowing these patterns can provide valuable tools for investigators.

A successful output of the project has been the production of the *Bushfire Arson Bulletin*, providing research updates in the field of bushfire arson, to practitioners in fire and land management agencies.

The project is providing a greater understanding of why people light bushfires which will aid agencies in the development of bushfire arson prevention programs.

Economics – understanding the true cost of bushfires in Australia

The economics of bushfire and bushfire mitigation is the focus of the economics project which is examining the value of aerial fire fighting and the economics of prescribed burning jointly with the Bushfire CRC's *Fire Suppression Program* lead by Jim Gould from CSIRO/ENSIS. Both projects have produced draft models and applied the model to recent fire events.

The aim of this work is to produce better models to support management decisions, answering questions such as what is the relative cost savings by utilising more or less aircraft on a fire, and what is a cost effective amount of prescribed burning to carry out, when all values have been taken into account? By determining values such as physical assets (for example houses and infrastructure) but also some of the environmental and social assets (such as biodiversity, water quality and quantity, significant cultural sites, and disruption to people's lives) the project will document the total cost of bushfires in Australia.

Highfire—learning to live with fire in the Australian high country

Continuing the Bushfire CRC's interdisciplinary approach to research, the CRC's newest project, *HighFire*, funded by the Federal government, will study the human factors in relation to fire in Australia's high country areas. While the larger *HighFire* project will focus

on the various influences on fuels in the high country as well as ecology, water and greenhouse issues, this part of the project will look at the resilience of communities impacted on by fire and research the experience and values of local communities.

Handmer believes that “through documenting the experience of High Country communities the project will provide useful insights for practitioners and provide advice on strengthening local resilience to fire.”

Project results and international collaboration

The Bushfire CRC has a seven year research agenda, however, there are currently a number of publications that have been produced through the program. A recent special edition of the international journal *Environmental Hazards* featured Bushfire CRC research. Other publications such as presentations, fact sheets and research posters are available on the Bushfire CRC website (www.bushfirecrc.com).

Bushfire CRC researchers are increasingly making connections internationally, such as similar research programs in California, a high risk interface area with a number of similarities to Australia. The international collaboration is recognition of the value of the Bushfire CRC’s research program and adds to the Bushfire CRC’s goal of being a world leader in bushfire research according to O’Loughlin. “International collaboration can only occur when the research in the CRC is world class. The research in this program which incorporates seven of the top research organisations in social science in Australia is clearly meeting this challenge” adds Dr Richard Thornton, Research Director of the Bushfire CRC.

Handmer stresses the importance of the research outcomes focused on the needs of fire and land management agencies “will mean practical tools for the delivery of community safety programs to communicate risk and improve resilience and self sufficiency in bushfire prone areas.”

O’Loughlin believes that ultimately what will make a difference is the use of research findings by fire and land management agencies. According to O’Loughlin “the relationship developed by researchers and fire and land management agencies throughout the research process, will act as a solid foundation for the translation of research outcomes into programs on the ground and for the true fostering of community self sufficiency for fire safety.”