

# Fire Technology Transfer Note

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## Wildfires and Communities: International Perspectives

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### Introduction

National and international research on natural disasters and communities was examined as the starting point for research into community resilience to, and recovery from, wildfire events for the Ensis Bushfire Research Programme. This scoping project was designed to determine what research has been carried out, and to provide background knowledge in order to understand long-term community recovery.

### Background

While wildfire is not generally a natural part of New Zealand's ecosystems, most international perspectives are relevant to the wildfire problem in New Zealand, particularly those relating to communities living on the urban fringe. Since the 1990s, the social impact of wildfire has been studied in some detail, particularly in the United States and Australia. A common approach is to apply research on disasters in general to the specific case of wildfire.

During the summer of 2004/2005, two graduate students were employed by the Bushfire Research Group under Social Science Research Centre (SSRC) studentships at the University of Canterbury to search and review documented literature. One student focused on Australasia (Kelly 2005) and the other on the rest of the world (Bones 2005). The reports present a review of the literature available on both disasters and wildfires, and their impacts on communities, up until February 2005.

By evaluating international literature on recovery mechanisms and resilience to wildfire events, methods and practice, and studying communities affected by wildfires in New Zealand, recommendations can be developed that reduce social impacts from similar events. It is hoped that this in turn will allow Rural Fire Authorities (RFAs) to increase their focus on community recovery mechanisms, and thereby enable communities and economies to recover more quickly from wildfire events in the future.

### Findings

This *Fire Technology Transfer Note* presents a summary of the key findings from these reviews, and these are listed under the groupings that follow. The complete reports are available to download free of charge from the publications section of the Ensis Bushfire Research website ([www.ensisjv.com/bushfire](http://www.ensisjv.com/bushfire)).

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**Figure 1.** International research on natural disasters and communities, particularly from the United States (left) and Australia (right) was examined as the starting point for research into community resilience to, and recovery from, wildfire events.

### Major community impacts

- Personal losses ranging from possessions with sentimental value, to the extreme impact of losing a loved one.
- Economic loss, both community-wide and personal, affecting livelihoods, income and assets.
- Conflict, due to blame regarding responsibility for the disaster or damage caused, insurance issues, etc.
- Residential dislocation or disruption of normal routine.
- Trauma due to the decision to evacuate and the process of evacuation.
- Emotional trauma, or Post-Traumatic Stress Disorder, which can result from any of the above.
- Some positive effects have been noted, including influx of aid into communities and increased focus on the need for mitigation.

### Community health effects

- Post-Traumatic Stress Disorder for both adults and children can cause anxiety, sleep disturbances and depression for months after the event.
- Increased needs for mental health intervention and care are evident during the immediate aftermath and longer periods after disasters.
- Some children experience emotional distress for a long time after a bushfire, such as the experience of having to leave their homes, fears about their parents' safety and fears about the future, as well as the actual experience of the fire.
- Early intervention lessens the distress and mitigates the risk of health problems and disorders.

### Perceptions

- Personal perceptions of fire and fire suppression techniques, largely influenced by the media, can greatly affect reactions to wildfire events.
- Philosophical perception of disasters and their causes are important; e.g. a fatalistic approach to wildfire means less mitigation and harsher effects.

### Vulnerability/resilience

- A community's vulnerability and hence ability to respond to, cope with, recover from, and adapt to hazards are influenced by economic, demographic, and housing characteristics.
- Very young, very old, disabled, single parent households, migrants, people lacking communication and language skills, new comers, and low income earners are likely to experience high levels of vulnerability to natural hazards.
- Effects of wildfire can be worsened by cognitive clashes between communities and fire agencies.
- Insurance issues can inhibit recovery (e.g. under insuring property or assets) resulting in more debt and stress.

### Community involvement

- Every community member must be self-responsible (as RFAs and emergency services are unable to protect everyone) therefore, members of the community must be aware of the best methods to protect themselves and their possessions.
- Self-involvement in preparedness leads to a lower level of trauma.
- Community involvement in wildfire mitigation is the most important method of reducing impact on communities, thereby achieving more effective mitigation.

### Community recovery

- Official recovery efforts typically run for relatively limited periods of about 12 months. However, recovery can be a very lengthy process for many groups.
- Intangible aspects of recovery (such as the loss of animals, possessions, and property or missing neighbours who were forced to move) rather than the tangible that takes the longest to restore after a disaster.

### Solutions

- A holistic approach to wildfire recovery is required.
- Solutions include transparency in agency actions, community involvement and better relations between agencies.
- It is through building communities' resilience to disasters such as wildfire that a community is more likely to recover more quickly if one does occur.



**Figure 2.** Wildfires have impacted on communities in New Zealand. For example Observatory Hill, Nelson, 1993 (left) and West Melton, Canterbury, 2003 (right).

## Conclusions and Future Research Directions

The literature review findings have provided the background knowledge to initiate research into community resilience to, and recovery from, wildfires. The key factor to increasing community resilience to wildfire events was found to be the need to involve the community in wildfire mitigation, thereby reducing the impact on the community. Building community's resilience to wildfire events is likely to enable a community to recover quicker if one does occur.

Case studies have commenced to attempt to understand these factors more clearly in New Zealand by learning from past wildfire events which have affected communities.

It is important to seek ways to facilitate communities' resilience and growth as a result of wildfire disasters. Knowledge of past disasters, and in particular wildfire events that have occurred through Australasia and the rest of the world, provides us with a background to examine beneficial recovery mechanisms to reduce social impacts for future wildfires in New Zealand.

## References

- Bones, H. 2005, *Wildfires and Communities: International Perspectives*, Ensis Bushfire Research, Forest Biosecurity and Protection, Ensis, Christchurch.
- Kelly, L. 2005. *Wildfires and Communities: Australasian Perspectives*. Ensis Bushfire Research, Forest Biosecurity and Protection, Ensis, Christchurch.

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