

New Zealand Rural Fire Research Workshop 2010

8 - 9 December 2010

Sudima Hotel, Christchurch Airport

PROCEEDINGS

“PROMOTING RESEARCH ADOPTION”

Scion, in conjunction with the Rural Fire Research Advisory Committee, hosted the third Rural Fire Research Workshop in Christchurch on the 8th and 9th of December 2010. The focus of the workshop was on promoting the adoption of fire research outcomes. The programme included discussion of opportunities for adoption of rural fire research under the four themes reduction, readiness, response and recovery.

The aims were to:

- Present the latest progress in rural fire research in New Zealand.
- Provide examples of research implementation by fire agencies.
- Ensure that research outcomes are embraced by fire managers.
- Ensure that the needs and priorities of fire managers are being satisfied by the Scion Rural Fire Research programme.
- Encourage fire managers to actively participate in the direction and scope of research activities within the Scion Rural Fire Research programme.



Day 1, Wednesday 8 December (0930 – 1800 hrs)

Opening & Welcome (1000 – 1120)

Chair: Richard Parker, Scion

Welcome. Murray Dudfield (NRFA and Chair of RFRAC)

[Scion Update](#). Brian Richardson (Scion)

Keynote speaker:

[Disaster research for mitigation and preparation -The 2009 Victorian bushfires.](#)

Jim McLennan (La Trobe University/ Bushfire CRC)

Jim's presentation began with an overview of the disastrous 7 February 2009 Victorian bushfires. It then described the research response of Australasian fire and emergency services agencies, and associated organizations, as coordinated by the Bushfire CRC. A summary of the 'big picture' findings by the Bushfires Research Task Force for the 2009 Victorian Bushfires Royal Commission and supplementary findings concerning survival under extreme bushfire conditions were covered.



RESILIENCE & RECOVERY (1120 - 1230)

Chair: Douglas Marshall (Local Government rep, Selwyn District Council)

[Resilience of the Mt. Somers community prior to, during and following the wildfire of January 2004.](#)

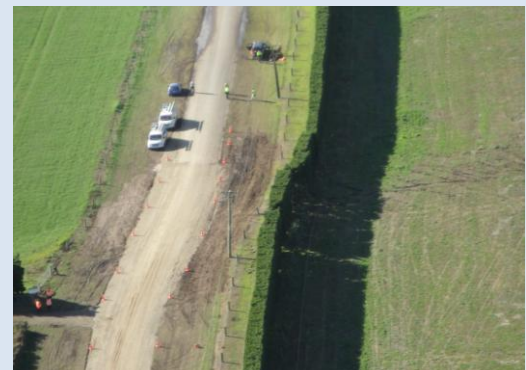
Lisa Langer (Scion)

Lisa discussed the findings from a study made of the rural community of Mt. Somers that experienced a wildfire on 5 January 2004. The study found that the interactions and relationships community residents had experienced prior to the fire helped the community deal with the wildfire. They displayed confidence that they could handle challenges that were presented to them, due in part to their location in the landscape and sense of community. Networks and relationships need to be developed to build adaptive capacity for natural disasters in the future.

[Rural Community Recovery: some perspectives from natural hazards research.](#)

Tom Wilson (University of Canterbury, Geological Sciences)

Rural and isolated communities face unique challenges when compared with urban communities for managing catastrophic natural events. During natural disasters rural communities may experience: geographic, resource and social isolation; greater lifeline fragility; low priority for lifeline restoration; reluctance to evacuate, and a greater perception of resilience than urban communities. Using examples from large snow storms, drought, volcanic eruptions, and earthquakes from New Zealand and overseas we will highlight issues and challenges faced by rural communities when preparing for, responding, and recovering from natural disasters.



REDUCTION (1330 - 1500)

Chair: Mark Boere (New Zealand Fire Service)

Assessing the general public's perception of rural fire danger communications.

Sophie Hide (Scion)

Sophie presented findings from a research project that determined the understanding of rural fire danger messages in New Zealand. The enquiry was undertaken to establish awareness, understanding of, and expected responses to warnings and messages, and knowledge and perception of publicity initiatives. Recommendations of the findings will help improve future rural fire danger communication methods.



Mitigating the risk of human caused wildfires: key findings from a Scion study of key Canterbury stakeholders.

Mary Hart (Scion Contractor)

Mary described the results from a study investigating methods for mitigating human caused wildfires for adoption by both national agencies and individuals. Methods presently used internationally and in New Zealand are highlighted for arson, maliciously lit fires, and accidental fires including escapes from fires lit for recreational purposes, fires originating in the rural-urban interface, and escaped land management fires.

Fewer wildfires in Northland - the role of research in social change.

Sioux Campbell (DOC, Northland)

The Department of Conservation is leading a community relations and social change programme in Northland to help reduce the number of wildfires and build greater community ownership. Social research is a key component of this challenging and evolving campaign.

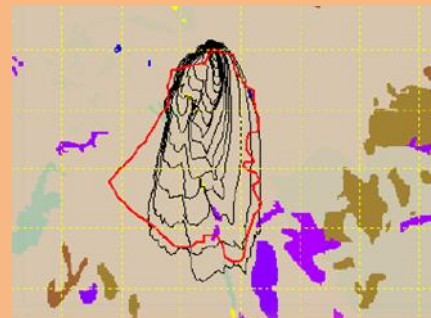
READINESS (1530 - 1700)

Chair: Mike Owen, New Zealand Defence Force

The latest in fire behaviour tools.

Veronica Clifford (Scion)

Veronica presented the latest in fire behaviour tools developed by the rural fire research team. These include: the *Manual for Predicting Fire Behaviour*, the *Fire Behaviour Toolkit*, the *Guide to New Zealand Fuels*, *grassland curing assessment using satellite imagery* and the fire growth simulation software *Prometheus*.



Use of fire behaviour tools in planning.

Dave Hunt (DOC, National)

The Department of Conservation is responsible for the management of over 30% of NZ land. It has a number of statutory and sound business practices it must follow. These include mitigation of environmental degradation, loss of habitat and biodiversity. It is required to provide soundly-based outcome measures using accurate and efficient data collection. Three processes have been identified, *Wildfire Threat Analysis*, *Fire Behaviour Simulation Modelling*, and *Fire Management Planning* to support DOC's fire management activities. The current and planned use of these was described.

Strategic Tactical Fire Management Planning (STFMP) - Multi-Agency Approach.

Heather Wakelin (DOC, Canterbury)

The new standard for Assessing Fire Hazards, set by the NRFA, requires all Rural Fire Authorities to meet a set of requirements and document them in their fire plan. The Department of Conservation is leading an approach to meeting this standard, involving multiple Rural Fire Authorities in Canterbury. This Strategic Tactical Fire Management Planning approach is in draft form, and once finalised, will include a Guideline and Template for fire planning use.

Day 2, Thursday 9 December (0830 – 1530 hrs)

READINESS (0830 - 1000)

Chair: Dave Hunt (Department of Conservation)

Ignition thresholds for grass and gorse fuels and management applications.

Heather Wakelin (Scion)

Two recently completed studies have investigated the relationships between fuel moisture and fire ignition and spread in grass and gorse fuels. Heather described these studies, and potential uses of the guidelines produced from them to support fire management decision-making.



User guide to the NZFDRS.

Grant Pearce (Scion)

A project is currently underway to develop a User Guide to the New Zealand Fire Danger Rating System (NZFDRS). This User Guide aims to provide an overview of the background and status of NZ's adoption and modification of the Canadian fire danger rating system, as well as worked examples on the use of the fire danger rating outputs to develop "trigger points" and other decision-support aids for fire management. Grant outlined progress to date on production of the User Guide, including several of the proposed worked application examples.

The behaviour of the Haines Index for the 2009/10 New Zealand fire season.

Colin Simpson (University of Canterbury)

The Haines Index was originally developed to give fire management agencies in the US a tool for predicting the potential for development of large wildland fires. Through the use of a mesoscale atmospheric model, WRF, the behaviour of the Haines Index during the 2009/10 New Zealand fire season has been investigated. From this investigation, the potential for operational utility of the Haines Index for New Zealand was discussed.



RESPONSE (1030 - 1230)

Chair: Glen Mackie (New Zealand Forest Owners Association)

[Firefighter workload/productivity.](#)

Richard Parker (Scion)

Richard presented the results of data collected at real fires to measure the workload and fire suppression productivity of rural firefighters. Developments in sensor technology and data handling methods were also discussed. Carbon monoxide exposure of rural firefighters was measured in the last fire season and the results presented and the implications examined.



[Bushfire CRC aerial suppression research.](#)

Matt Plucinski (CSIRO/Bushfire CRC)

This presentation discussed the research undertaken in the Bushfire Cooperative Research Centre's project A3.1 "*Evaluation of aerial suppression techniques and guidelines*". The project had three major research components: a strategic level operations study; wildfire suppression case studies; and field experiments. Outputs from the project including initial attack success models, a deployment decision tool and a drop assessment guide were presented, along with the recent evaluation of a large air tanker.



[NZ resource productivity/effectiveness - use and needs.](#)

Kevin Ihaka (Forest Protection Services)

Kevin discussed the current status and needs for information on resource productivity and effectiveness of NZ fire suppression resources. This included highlighting what research has been done previously, particularly relating to aerial suppression productivity and effectiveness, and what additional data and research is required.

RESEARCH ADOPTION (1330 - 1515)

Chair: Grant Pearce, Scion

[Research adoption brief introduction](#) – Grant Pearce

Four groups will be rotated through 4 topics **addressing research adoption in NZ:**

- 1) What research can be implemented? (based on what has been presented, or is available from NZ or overseas)
- 2) What are the barriers to implementation of research by end-users?
- 3) How can the research programme assist in the uptake of the research? (i.e. technology transfer activities)
- 4) What other research could be done to address end-user needs? (i.e. to support uptake of existing research findings, or new research to address other needs)

[End user group discussion sessions](#)

Workshop Closing. Murray Dudfield (NRFA and Chair of RFRAC)

Support from the following organisations through contributions to speaker travel, social function sponsorship and workshop logistical arrangements were greatly appreciated.



Department of Conservation
Te Papa Atawhai