

Wildfire preparedness: working with communities in New Zealand

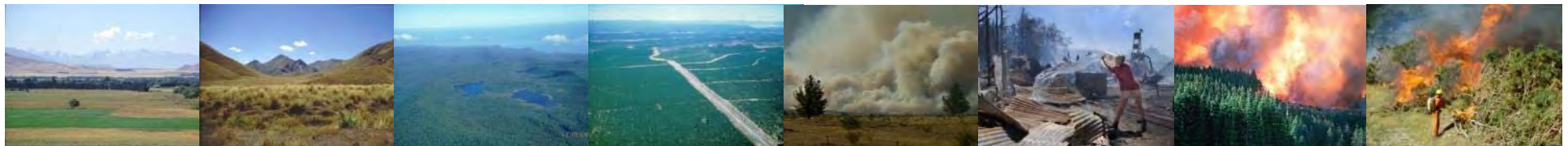
Lisa Langer, Scion, Christchurch
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Image: Joseph Johnson/Fairfax NZ

Wildfires in New Zealand

- Small frequent wildfires (10-year average 2005/06-2014/15)
 - about 4,100 fires
 - about 4,170 ha/annum
- > 99% wildland fires caused by human activity
- Most wildfires in grass or scrub
- Fire not natural part of NZ ecosystems
- Fire widely used as land management tool
- Increasing rural-urban interface.



Wildfire causes in New Zealand

25% escaped camp, bonfires and rubbish fires

19% unknown

18% land clearing burns

9% arson

7% fires involving vehicles

3% pyrotechnics/fireworks

(National Rural Fire Authority data 2016/17).

Increasing impact of wildfires on NZ communities

Recent fires affecting communities in RUI:

Port Hills, Feb 17 – 1500 people evacuated, 9 houses destroyed

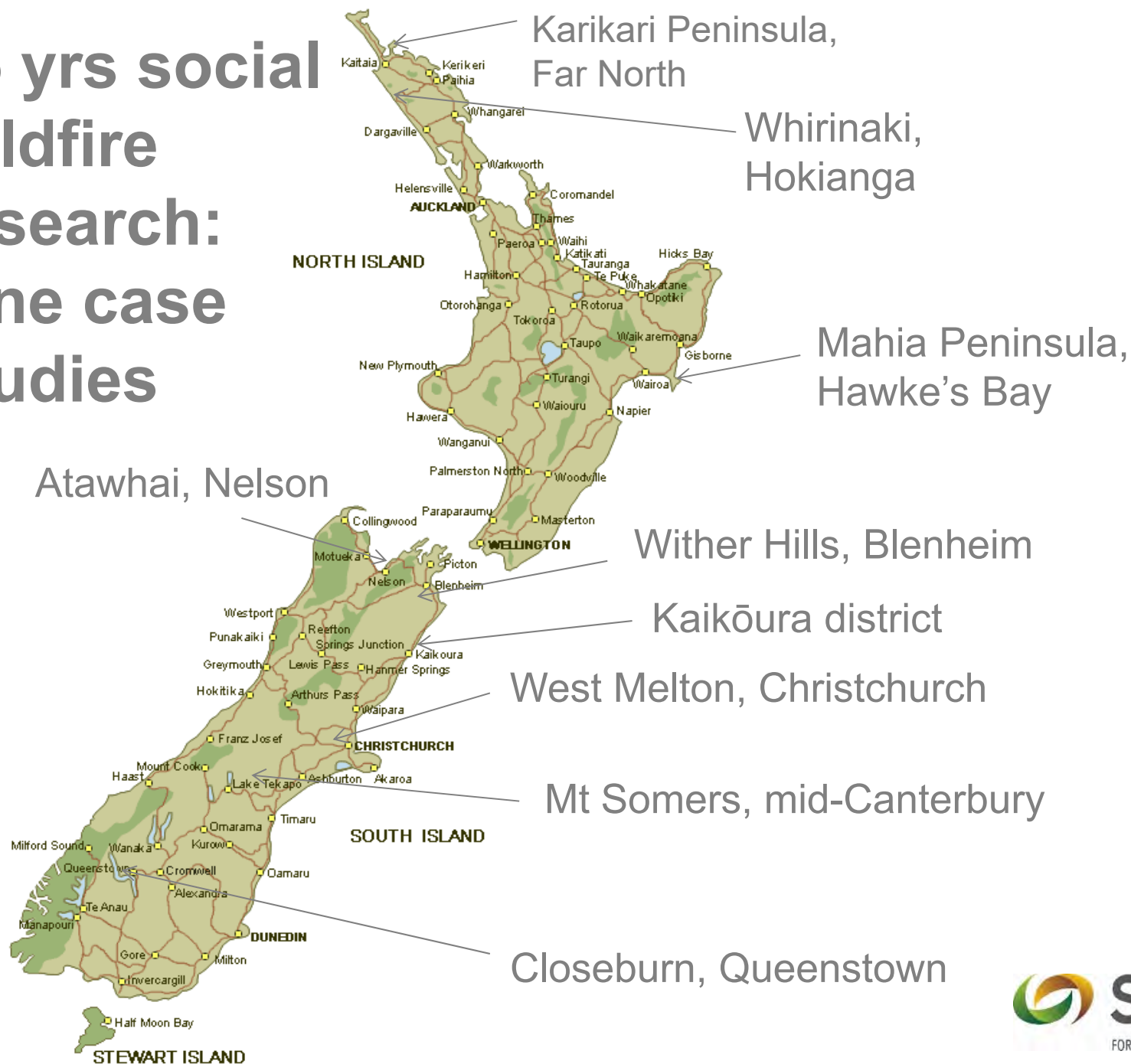
Hastings, Feb 17 – 1 house destroyed & others threatened

Whitianga, Jan 17 – 4 houses destroyed & many evacuations

Karikari Peninsula, Jan 17 – 2 houses evacuated/ close to campground

Mahia Peninsula, Jan 17 – threatened homes.

15 yrs social wildfire research: nine case studies



Resilience to Nature's Challenges

Community focused research 2016-19

- Kaikōura district case study
 - Stakeholder and community engagement to plan and enhance future community resilience with focus on iwi following earthquake
- Community-based planning processes
 - integrating indigenous knowledge - Northland
- Traditional and non-traditional rural volunteering in wildfire management within a multi-hazard environment.



Photo: Otago daily times

RESILIENCE
TO NATURE'S
CHALLENGES

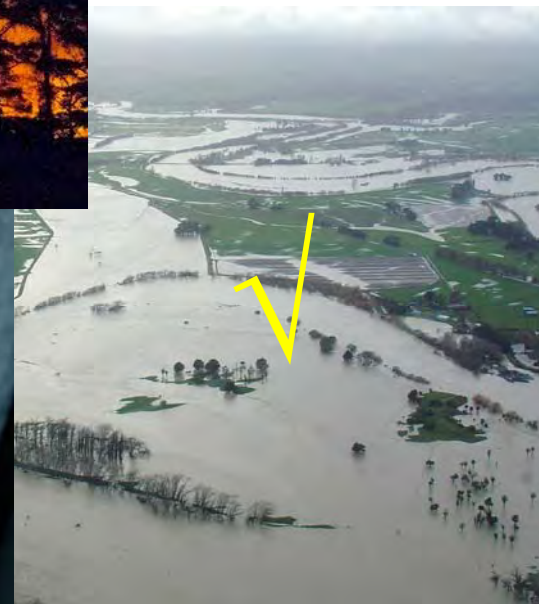
Kia manawaroa
– Ngā Ākīna o
Te Ao Tūroa

National
Science
Challenges

 **scion**[™]
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What have we learned in engaging with communities in New Zealand?

Risk awareness



Awareness of wildfire risk

Influenced by:

- Understanding of local environment
- Past wildfires
- Attachments to land
- Information passed down within whānau (extended families)
- Local volunteer fire force efforts

BUT what about awareness of urban fringe communities?





Fire used regularly for
diverse purposes



Evidence of inappropriate use of fire

- Evidence of fire use contravening fire prevention regulations including:
 - Burning during Restricted seasons without a permit
 - Burning in Prohibited seasons.



Potential wildfire ignitions.



Safe use of fire

- Influenced by
 - Risk awareness
 - Attachments to land
 - Efforts by the local fire force and residents



Encouragement:

- Abide by regulations and restrictions
- Carry out wildfire prevention initiatives.

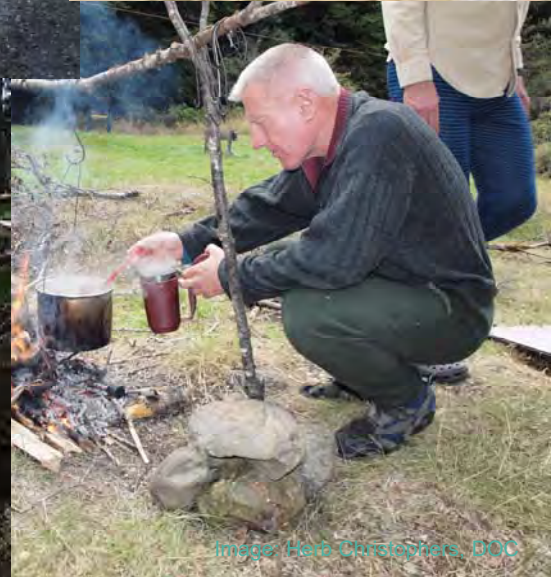


Communication of fire danger warning

- Fire and land managers – reservations about effectiveness of current fire danger warnings in NZ
- Public – most people are aware of fire danger warning signs and other communications

BUT frequently community do not understand what ratings mean or what behaviour is expected of them.





Effective communication:
target audience

Image: NRFA

Image: Herb Christophers, DDC

Preparedness: Tailor message to audience

- Awareness of fire risk
- Information on restrictions
- Fire prevention information
- Preparedness information.

Types of information needed by each group of fire users and non-fire users.

Messages required	Rural & semi-rural fire users	Recreational users	Cultural users	Non-fire users
Awareness of risk	✓	✓	✓	✓
Information on restrictions	✓	✓	✓	
Prevention	✓	✓	✓	
Preparedness	✓		✓	✓

Appropriate messages required in different environments

- Rural
- Lifestyle property
- Urban fringe





YouTube

Tune the method

OPEN

No fire permit needed to light a fire in the open air in this area.



RESTRICTED

A permit is required to light a fire in the open air in this area.



facebook

PROHIBITED

There is a total ban on the lighting of any fires in the open air in this area.



Changing behaviour

- Takes time
- Prolonged/ multi-pronged efforts
- Face to face engagement
- Develop appropriate social norms
- Trigger desired behaviours
- Conduits for diverse audiences
- Interactive processes to encourage individuals to plan
- Use salience of 'risk window' opportunities
- Work with community groups
- Social media.



Understanding realities of geographic communities & perceptions of responsibility

National fire agency representatives

Communities are defined according to their shared names, without considering their smaller neighbourhoods

Hope 'champion' will emerge to empower community to take on resilience activities, with minimal agency involvement

"We are trying to put that ownership back onto communities....we're certainly giving them the message very clearly that fire safety is their responsibility."

National fire agency representative

"It's finding some groups in the community, find some champions, they'll identify some issues and want to improve it and go forward from there."

National fire agency representative

Local residents

- Residents recognised distinct, separate sub-communities
- Interacted with neighbours in sub-community
- Little if any interaction with other sub-communities
- Sub-communities divided by physical location, generally had no services or facilities

- Residents recognise range of natural disaster risks, including floods and earthquakes
- Increased risk awareness and improvements following wildfire experiences, but minimal community signs of community level resilience

"[Atawhai] has got quite a few disjointed communities. We're only joined by the main road." Atawhai resident

"If there's something else out there that we can be doing, then somebody should come in and tell us."

Mahia resident

Community champions or shared efforts?

■ Fire managers

- Community becoming resilient primarily through its own efforts
- Community champions
- **BUT** very unlikely to happen in reality



■ Community

- Very few examples of any resident-driven activities beyond own properties
- Community members involved in, and integral part of a jointly developed plan, although didn't aspire to direct or lead.

Effective community engagement

Recognise community as a set of spatially and socially separate sub-communities

Ongoing agency involvement at sub-community level to ensure local fire plans are made with community involvement

Increased community resilience among residents

Examples

- Volunteer 'fire wardens' communicate messages from rural fire agencies to their sub-communities
- Residents organise working parties to reduce fuel loads
- Residents regularly communicate with rural fire agencies
- Regularly updated evacuation plans with each sub-community

"If I had to say anything was a strength...it is the fact that we do work particularly well together, we are all aware of the issues, none of the agencies are in the dark, they all know their responsibilities, and we do have a conduit into the community via the wardens."

Closeburn fire manager





Preparedness planning with Māori communities

- Future proofing comes from agencies working to:
 - Increase cultural understanding
 - Build trusting relationships with the community
 - Maintain relationships with the community
 - Identify conduits between agencies and community
 - Partner decision-making - working together
 - Formulate plan together
 - Succession planning to ensure future proofing.

Lessons for wildfire preparedness: agencies to translate research into practice

- Understand make-up of communities
- Increase cultural understanding
- Build trusting relationships with separate sub-communities
- Listen to residents
- Plan together
- Encourage / support residents to take on roles
- Do not try to devolve agencies' responsibilities to communities
- Provide on-going input
- Plan ongoing successions of key individuals o future-proof plans



Steps towards wildfire preparedness

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