

Rural Community Recovery from Natural Hazards

Making the Link...

Rural Fire Research Workshop: 8 December 2010

Tom Wilson

Natural Hazard Research Centre
University of Canterbury

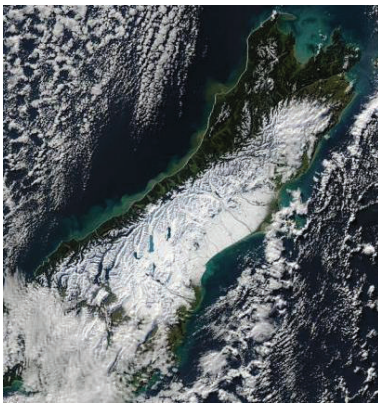
Willie Smith

School of Environment
University of Auckland

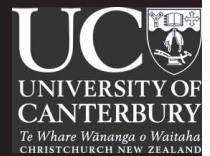
David Johnston

Joint Centre for Disaster Research
Massey Uni/GNS Science

With contributions from **Lisa Langer** (Scion), **Julia Becker** (GNS), **Zach Whitman** (UC) and **Ros Houghton** (Women's Refuge)

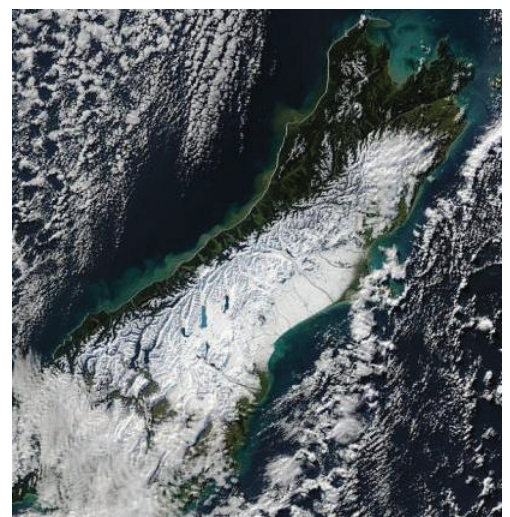


Rural Communities & Disasters
Challenges for emergency management



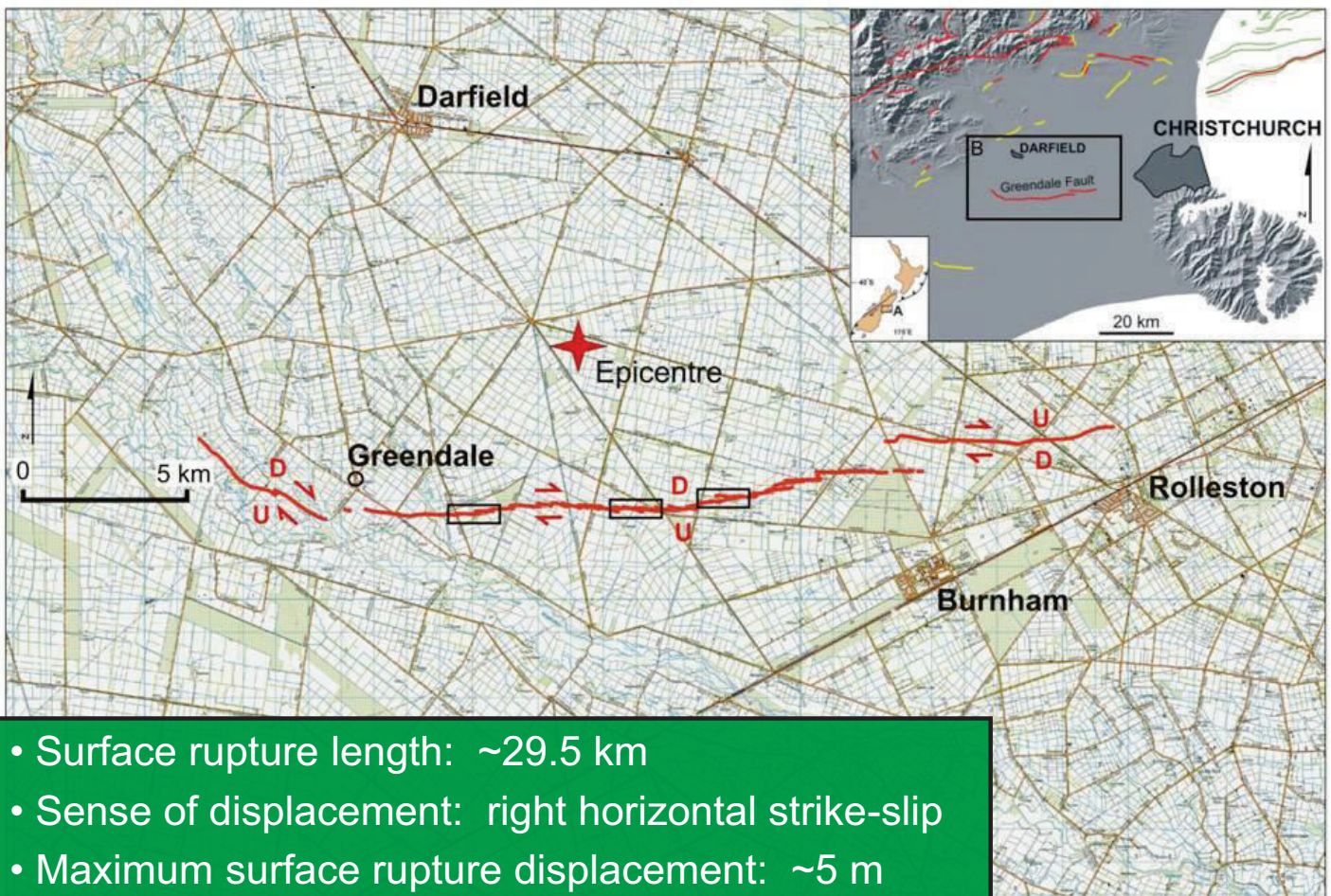
Rural Communities...assumptions?

- Strong social networks
- Greater preparedness
- High rates of volunteerism
- High adaptive capacity



Vulnerabilities

- Greater perception of resilience than urban communities...
- Geographic, resource and social isolation
- Greater exposure to lifeline disruption
- Lower priority for lifeline restoration
- Reducing rates of volunteerism
- Greater reluctance to evacuate



- Surface rupture length: ~29.5 km
- Sense of displacement: right horizontal strike-slip
- Maximum surface rupture displacement: ~5 m
- Average surface rupture displacement: ~2.5 m





Photo: David Barrell

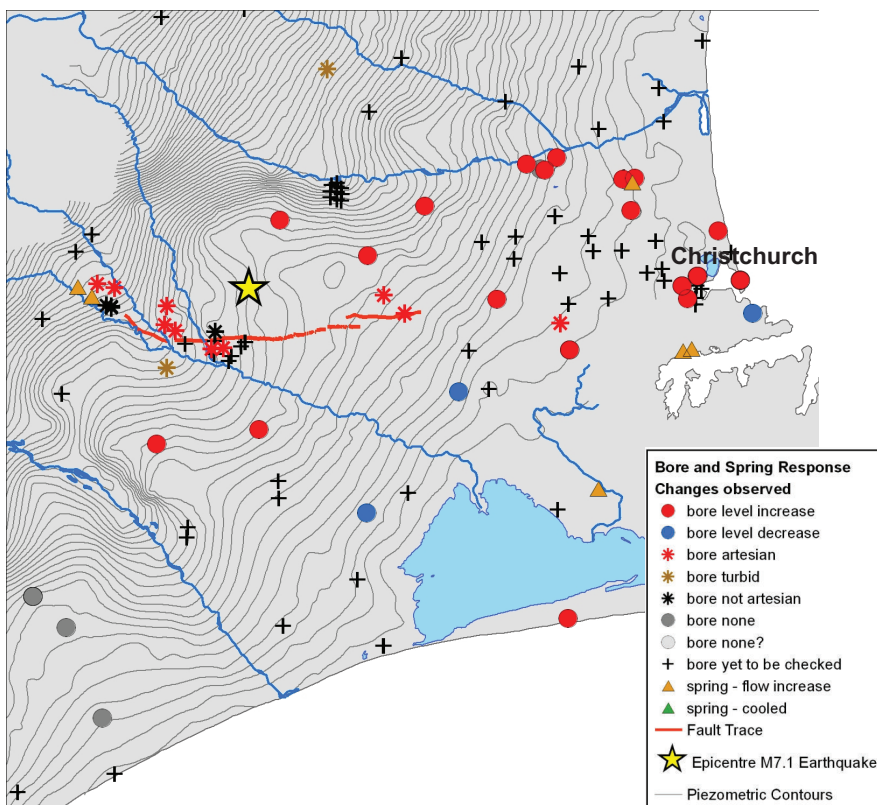


Photo: Dougal Townsend





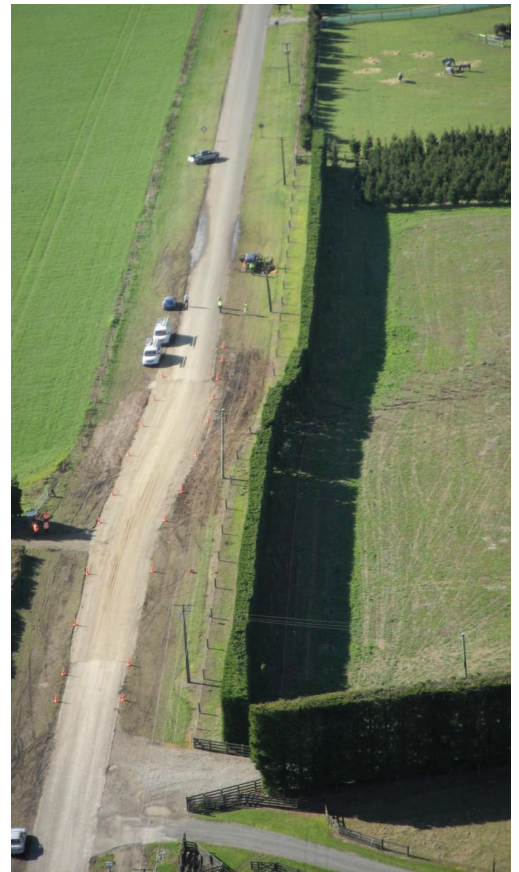
Groundwater response



- Irrigation bores went artesian near Greendale fault (+40 m). New springs & increased flow.
- Near instantaneous step-changes, mostly level increases < 4 m (red), with few decreases (blue).
- Gradual recession back to pre-earthquake levels, or to a sustained change in level.

Current Situation - 1

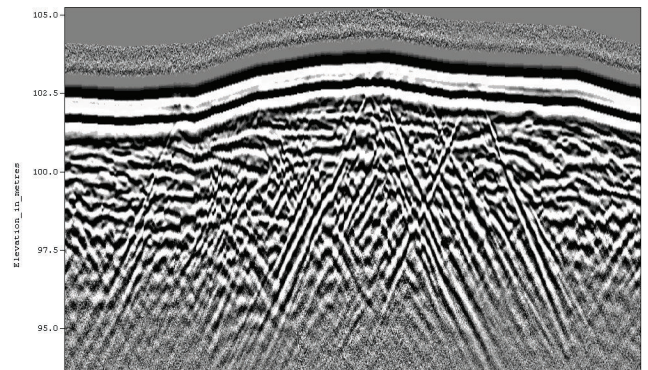
- Rapid assembly of the Rural Recovery Group
 - Selwyn DC took lead for rural Canterbury recovery
 - Allan Baird – Rural Recovery Coordinator appointed
 - MAF, Federated Farmers, North Canterbury Rural Support Trust
 - Various agri-businesses – including Irrigation NZ
- Strong response
 - Dairy sheds
 - Water supplies (domestic, livestock, irrigation)
 - Farm infrastructure (silos, farms sheds, etc.)
 - Fences
 - **Homestead**
 - Concerns about reaching the “lifestylers”



_LINK01_Elevation_Section

Current Situation - 2

- Recovery effort focused on:
 - **Groundwater supplies**
 - Insurance
 - *Fault scarp and liquefaction remediation*
 - Living in a goldfish bowl
- Very low rates of contact to the RRG.
 - Very busy time of year
 - Utilised farm agents (close personal relationships = recognizing stress)
- **The grass is still growing...**
- Generally: this is an opportunity to capture the lessons for other rural communities
 - Zach Whitman, PhD student (UC)



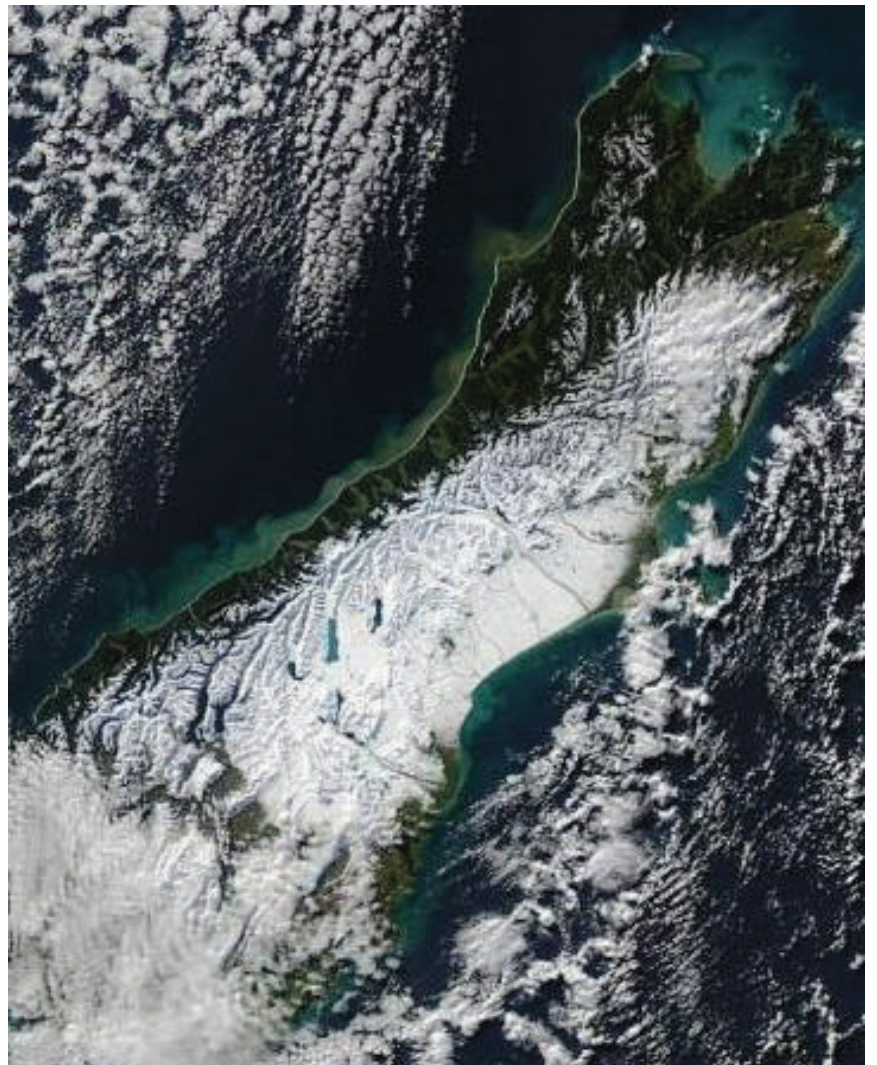
Current Situation - 3

- Lifestyle owners
- Different vulnerability
- Reduced access to equipment and capital for land rehabilitation
- Connection to the rest of the community?



2006 Canterbury Snowstorm

- **Snowstorms are a common hazard in Canterbury**
- **Major snows 1945, 1967, 1973, 1992, 1996, 2002, 2006**



Widespread impact caused major disruption to infrastructure networks

- >20,000 households lost power for up to 3 weeks
- >10,000 households lost telecommunications
- **Rural community badly impacted:** heavy snow in areas unaccustomed and poorly prepared



Isolation

- **Couldn't go anywhere:** roads were blocked and significant work commitments on the farm
 - Farm is the home...so it is difficult to leave. Difficult to **trust** someone else to relieve you for several days
- Relationships were stressed
- But inability to call social support networks (friends and relatives) significantly compounded feeling of isolation
- Loss of telecommunications was a much greater issue than the power being out...



It was essential impact assessment continued throughout the event, particularly for social welfare agencies

The situation evolved as people's needs changed

- hundreds of households without power for weeks
- farms at the bottom of restoration priorities
- working long hours in difficult conditions
- relationships became increasingly stressed...



Impact on the Rural Household

- Males initially adopted a 'she'll-be-right' attitude
- Females were much more in-tune with the reality of the struggling household
- Usually most took up offers of assistance – important for councillors, welfare agency and CDEM staff to recognise this



Impact on the Rural Household

- Social isolation of the male
 - Rural Support Trusts
 - Stock and station agents
 - Neighbours and friends
 - *Old rural bachelor*
- Social Isolation of the female
 - Telecommunications essential
 - Rural Women NZ
- Woolshed/technology transfer days
(45/46 families in a district)



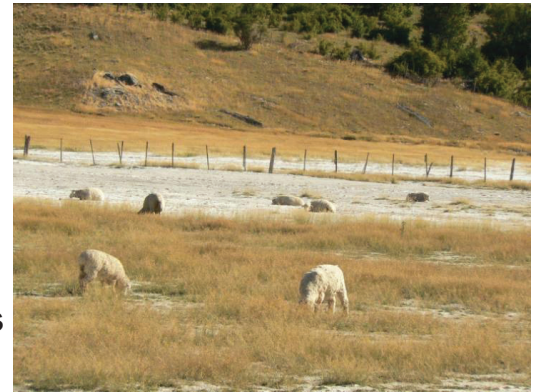
What about people who didn't attend these?

DROUGHT (gives context to the current EQ recovery...)

- Social impact was much more significant at the human level.
 - For the last 20 years sheep and beef farms have rarely made a profit
 - Low incomes with few reserves
- No one really took an interest. Farmers felt totally ignored by the media and authorities. *Problems of Chch overshadowing rural issues...*
- Stress – farmers **isolated** themselves. Couldn't work so hard...
- MAF sponsored help centres – many didn't access them.
- **Australia:** increase in on **farm accidents** and **suicides:** still occurring 12-24 months after drought and fires
 - Couldn't send the kids to private schools...
 - **Suicide is logical** ("*not going to do something silly are you...*")

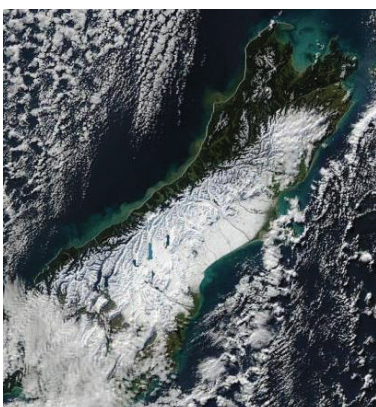
DROUGHT

- Role of the farm advisor was important – close personal relationships.
- Patterns were identical to impacts of removal of farm subsidies in the 1980's. **Halving of incomes might be the common theme....???**
- “Hollowing out” of rural NZ – there is less infrastructure in place to pull communities together and to meet.
 - The local dairy, or bank, or pub, church, or rugby/netball club.
 - Marae were effective in the North Island (first time many had been onto one...)



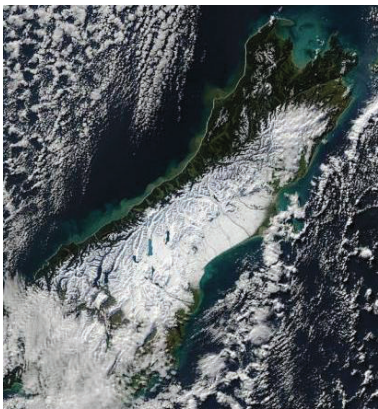
Final Thoughts - 1

- Farms with most infrastructure and development initially have the most to lose initially (disrupted services). But once restored, they have the **right tools** and typically exhibit the best long-term recovery performance (economically and socially)
- Isolation is important for both male and female family members, especially the old rural bachelors
 - Infrastructure
 - Social
- Urban/Rural interface



Final Thoughts - 2

- Rural Community is not homogenous. Most diverse they have ever been...
 - Dairy farmers are probably cash-rich (“**have the money to go on holiday...**”)
 - Sheep/Beer and Arable are not.
 - Lifestylers...
- Rural Support Trusts: Focus where there are **pre-existing problems**
- Convince farmers that it will **benefit their partner or kids** – then action occurs



**MODERN EMERGENCY MANAGEMENT
RECENT DISASTERS AND FUTURE CHALLENGES**



QUESTIONS??

