



bushfire&natural
HAZARDSCRC

COMMUNICATING AND WARNING: GETTING THE MESSAGE ACROSS MORE EFFECTIVELY

Andrew Richards – NSW State Emergency Service

Andrew Gissing – Bushfire and Natural Hazards CRC, Risk Frontiers

Tony Jarrett – NSW Rural Fire Service

Prof Kevin Ronan – Bushfire and Natural Hazards CRC, CQUniversity

Fiona Dunstan – Country Fire Service South Australia

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Australian Government
Department of Industry,
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Business
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Centres Programme

ANDREW RICHARDS, NSW STATE EMERGENCY SERVICE AND LEAD END-USER



ANDREW GISSING, CRC RESEARCHER, RISK FRONTIERS

Australia's top five natural hazard killers

Hazard	Period of coverage	Fatalities	High Risk States
Extreme heat ¹	1900-2011	4,555	Vic, NSW, SA
Flood ²	1900-2015	1,859	Qld, NSW (NT)
Tropical cyclone ⁴	1900-2015	1,216	WA, NT, Qld
Bushfire ³	1900-2011	825	Vic, NSW, SA
Wind storm ⁴	1900-2015	525	NSW, Vic, Qld

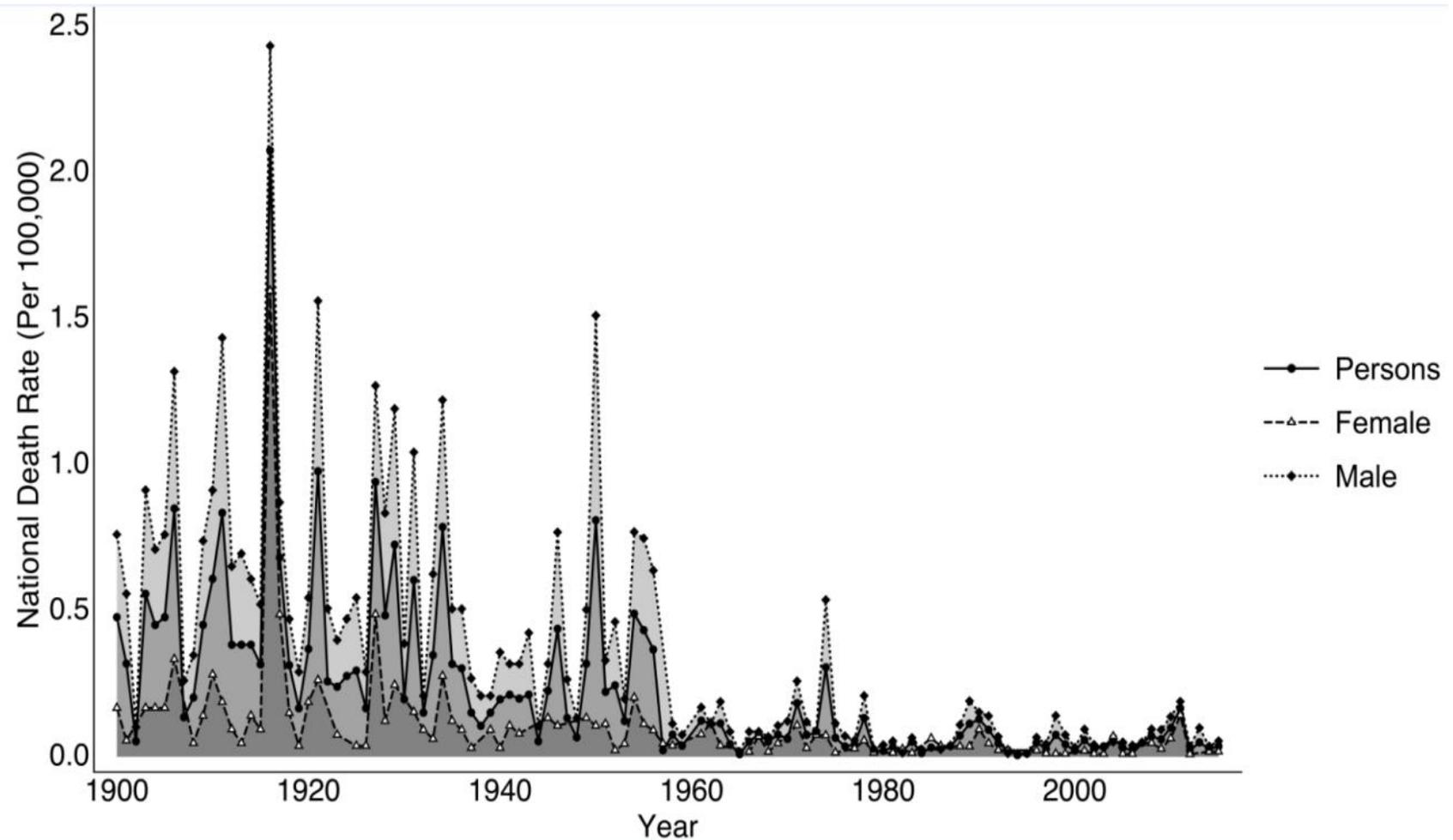
¹ Coates et al., 2014

² Haynes et al., 2016

³ Blanchi et al., 2014

⁴ Recent updates to PerilAUS (May)

Flood fatalities from 1900....

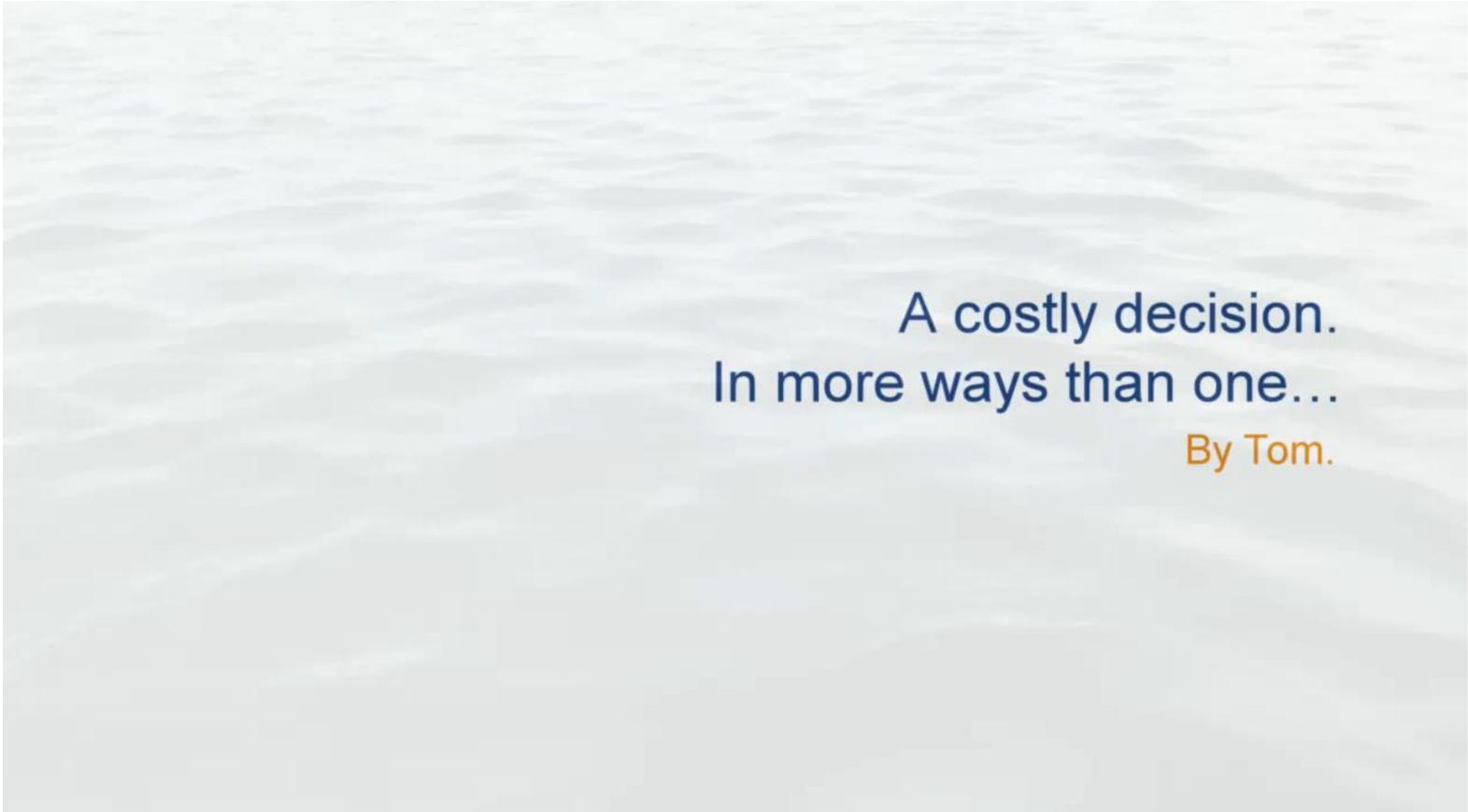






ANDREW RICHARDS, NSW STATE EMERGENCY SERVICE AND LEAD END-USER





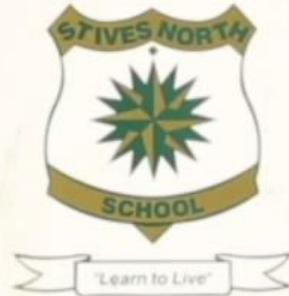
A costly decision.
In more ways than one...
By Tom.

**TONY JARRETT, NSW RURAL FIRE SERVICE AND
END-USER**

AND

**PROF KEVIN RONAN, CRC PROJECT LEADER,
CQUNIVERSITY**

NSW RURAL FIRE SERVICE



ST IVES NORTH PUBLIC SCHOOL

INCORPORATING

THE KU-RING-GAI UNIT FOR GIFTED & TALENTED

NSW RFS working in schools communities



We had massive ideas!

Students finding solutions to bush fire problems.

**FIONA DUNSTAN, COUNTRY FIRE SERVICE SA,
END-USER**

AND

**PROF VIVIENNE TIPPETT, PROJECT LEADER,
QUEENSLAND UNIVERSITY OF TECHNOLOGY**

CRC 1:

MAXIMISING IMPACT - RISK AND WARNING COMMUNICATIONS

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QUT

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TRANSDISCIPLINARY RESEARCH

Communication, risk and behaviour

- Dr Dominique Greer
- A/Prof Amisha Mehta
- Dr Paula Dootson

Law

- Prof Sharon Christensen
- Prof Bill Duncan
- A/Prof Amanda Stickley

Emergency management

- Prof Vivienne Tippett

CRC1: PROBLEMS AND OPPORTUNITIES

Evidence-based
communication

Compliance v
deviance

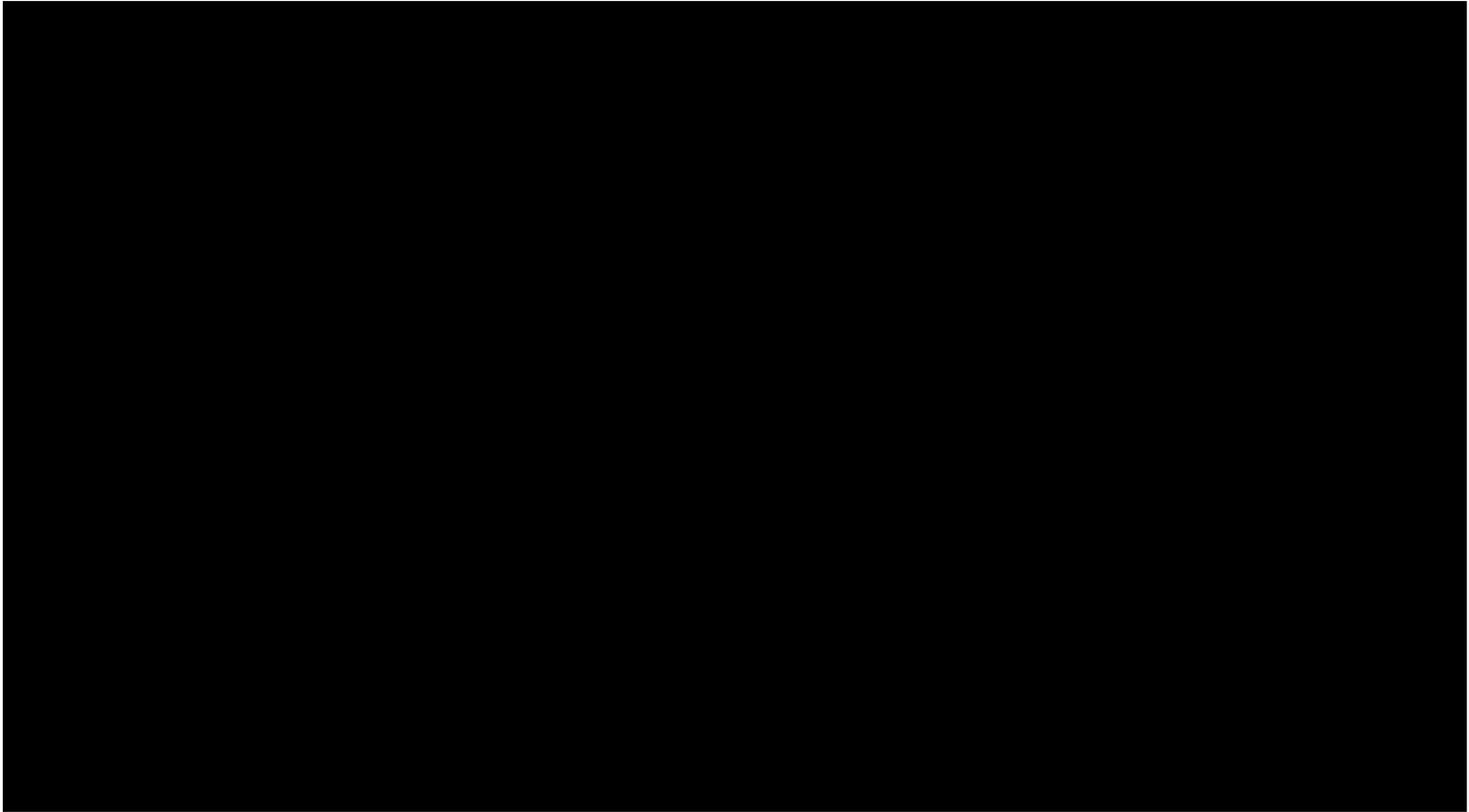
Decision-
making

Diverse
audiences

MULTIMETHOD APPROACH

- Close End-user consultation
- Social media traffic analysis
- Community focus groups
- Message compliance experiments
- Eye tracking studies
- Business owner focus groups

MESSAGE COMPLIANCE EXPERIMENTS



KEY FINDINGS

- **Emergency messages can be optimised**
 - Be very specific with instructions, avoid operational and technical terms
 - Assume preparation begins in the response phase & adjust instruction timing accordingly
 - Stylised messages increase intent for desirable protective actions
 - Message order matters
 - High gaze reference to further information section
 - Images can assist but must be congruent
- **Social Media can be effective**
 - Facilitates extra precision to updates/instructions
 - Introduce *#official* to indicate a trusted source
 - Facilitates ground truthing
- **Responsibilities for specific community subsets eg: business's**
 - How to best 'cascade' information for these users

CRC 2: BUILDING ON THE EVIDENCE

Trust

Multi-agency
messages

Ambiguity

Readiness to
act

**FIONA DUNSTAN, COUNTRY FIRE
SERVICE, END-USER**

SA CFS MESSAGES

- National Framework Scaled Advice and Warnings
- Regional Public Information and Warnings
- Messages generated through CRIIMSON
- Pushed to multiple outputs
 - CAP-AU compliant
 - CFS website
 - Social Media
 - Emails
 - RSS feeds
 - Alert SA website and App



SACFS COMMISSIONED RESEARCH

- BNHCRC Research
- McGregor Tan
- SA Fires
 - 2013-2014 Rockleigh Fires (x 3)
 - 2014 Bangor Fire
 - 2014 Eden Valley Fire
 - 2015 Sampson Flat Fire
 - 2015 Pinery Fire
- QUT research -
Message
Comprehension



REVIEW – MESSAGE COMPREHENSION

Message Type

Issued for ... towns ...

Critical call to Action

Map

More detailed actions

Next message update

For more information



WARNING MESSAGE

BUSHFIRE WATCH AND ACT MESSAGE

Message ID: 0000951
Time Message Issued: 16:37
Date Message Issued: 17/01/2017

Fire Origin / Fire Name: [WATERLOO](#)

Issued for Waterloo

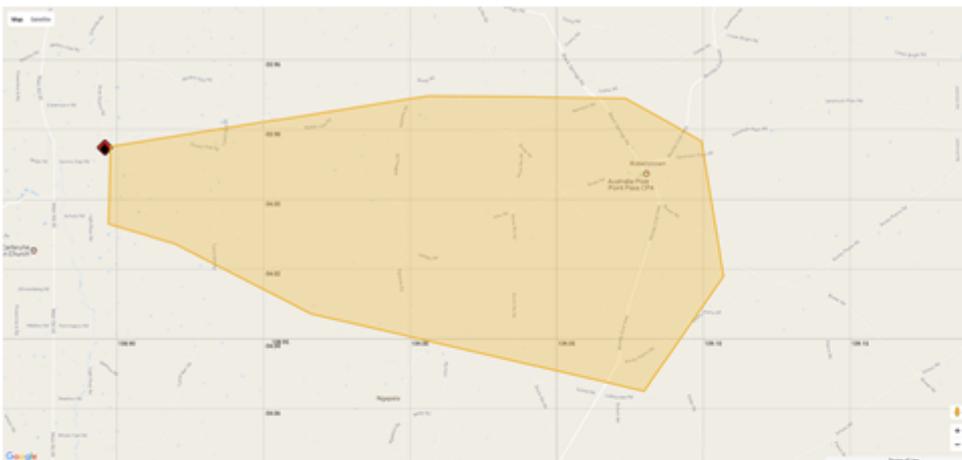
CFS advises that the bushfire burning at Waterloo in the Mid North, East of Waterloo and West of Robertstown, near Quinns Gap Rd, River Source Rd, Tothill Belt Rd, Ngapala Rd, ~~Mollers Gap Rd, Webbs Gap Rd and Exchange Rd~~ may change direction and threaten your safety.

If you are in this area you are in danger. The situation is changing quickly. There is a risk to your life and property.

Check and follow your Bushfire Survival Plan. If you are not prepared, leave now.

CFS expects a change in the wind direction between now and 6 pm. This may cause the fire to change direction and move towards the area North East of Waterloo near Tothill Belt Rd, Ngapala Rd, Mollers Gap Rd, Webbs Gap Rd and Exchange Rd.

You should not enter this area as the roads may not be safe.



Shapes on this map image indicate the Warning Area to which this message applies.
BLUE: Advice Message; **YELLOW:** Watch and Act Message; **RED:** Emergency Warning

Well prepared and actively defended homes can offer safety.

Stay tuned to your [local ABC](#) on a battery-powered radio for updates.

For information about bushfires, check the CFS website www.cfs.sa.gov.au or call the Bushfire Information Hotline on 1300 362 361.

Message Ends

This message will be updated once the situation changes or by: Jan 17 2017 18:29

SAMPLE CONTENT

Stay informed

Look and listen for information on television, radio, internet, mobile phones and by speaking with neighbours.

- CFS website www.cfs.sa.gov.au
- Bushfire Information Hotline 1300 362 361
- For hearing or speech impaired users, phone 1300 555 727 then ask for 1300 362 361
- For teletype service TTY 133 677 then ask for 1300 362 361.
- Alert SA app
- CFS on [Facebook](#) or [Twitter](#)
- On local [ABC radio](#), [FIVEaa](#), or one of our other [Emergency Broadcast Partners](#)
- Alert SA website www.alert.sa.gov.au

Do not rely on a single source for emergency warning information.

JULIE FIEDLER, HORSE SA, END-USER

AND

**DR MEL TAYLOR, PROJECT LEADER, MACQUARIE
UNIVERSITY**



**MANAGING ANIMALS
IN DISASTERS**















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ANIMAL EMERGENCY MANAGEMENT IN AUSTRALIA

An audit of current legislation, plans, policy, community engagement resources, initiatives, needs, and research dissemination

EXECUTIVE SUMMARY

Dr Neil Taylor¹*, Greg Eshelby² and Megan McCarthy³

- ¹Macquarie University
- ²RSPCA Queensland
- ³Fitcham Sydney University

*Bushfire and Natural Hazards CRC





National Government
Emergency Management Australia

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ANIMALS IN EMERGENCY MANAGEMENT

 DISASTER RESILIENT AUSTRALIA GET READY	EXERCISE DESIGNING RESPONDING TO ANIMAL EMERGENCY OUTBREAKS 5	IMPLICATIONS FOR LIVESTOCK OWNERS, PET OWNERS AND EMERGENCY PLANNERS 18	CONSIDERING THE HUMAN-ANIMAL BOND 31
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Your voice, their lives.

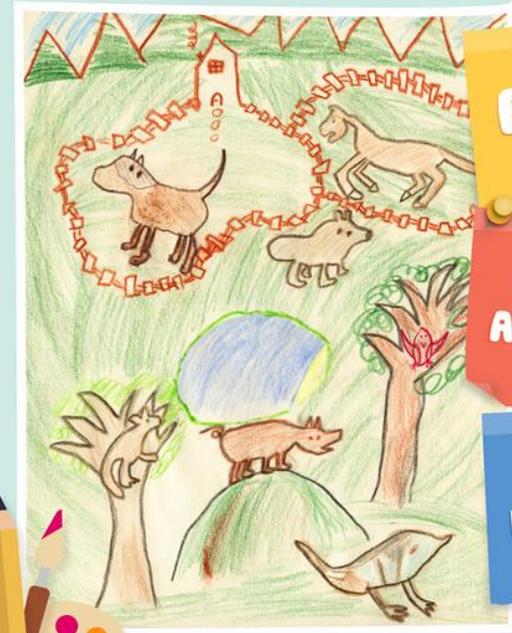


**Animals in Emergencies Survey
Blue Mountains & surrounding areas**



— 2017 —
ART COMPETITION

“MY FAVOURITE ANIMAL”



PETS

FARM ANIMALS

NATIVE WILDLIFE

Otto Umbers, Age 8

**GET YOUR PENCILS AND PAINTS OUT...
AND GET CREATING!**







Bushfire & Natural Hazards CRC
Research Driving Change - Showcase 2017
Adelaide



Managing Animals in Disasters
MAiD

Horse SA
Advocate- Communicate-Educate

A non-profit community organisation established in 1999.

Working with and for horse owners and organisations on a wide range of common interest topics including horse keeping, community facilities, biosecurity, welfare, emergency preparation.



PYT Photography

How the research has helped Horse SA

Like a signpost:

To grow understanding about the interface between people and animals in relation to disasters

To gather evidence, which is in turn, utilised for government advocacy and grant submissions

To give direction to our future work, including how to 'shape' messages, with animals becoming the trigger to take action



For example:

That there has been some success with the number of horse owners undertaking bushfire planning, but [education](#) needs to continue. Education partners include CFS, SES

Advocacy/submissions: PIRSA for the '[Animals in Emergencies](#)' planning

Build case for investment into horse owners education e.g. [My Horse Disaster Plan](#) and soon to come, online awareness course for horse owners related to large animal rescue



Large Animal Rescue

‘LAR is clearly a ‘big deal’ to animal owners, emergency response personnel. The management of large animals during disasters creates difficult operational environments that present several challenges to emergency responders.’

“As a fire service our priority is people’s life and obviously many people have significant bonds to animals, which cause A LOT of stress and angst during incidents like fire and floods”.

- ‘while large animals present challenges to rescue due to their size and weight, planning and co-ordination can be of more use than brute force and urgency’
- ‘while responders may be in leadership positions during rescues, the rescue can be effected by their communication style and approach with owners and veterinarians’

[Helping Hands, Hurting Hooves: Large Animal Rescue](#)

[What’s the Big Deal? Responder Experiences of Large Animal Rescue in Australia](#)





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'Wilson'
Kirsty Dudley

ANDREW RICHARDS, NSW STATE EMERGENCY SERVICE AND LEAD END-USER

- Where to now?
- What does the future hold?

