



bushfire&natural  
**HAZARDS**CRC

# IMPROVING THE ROLE OF HAZARD COMMUNICATIONS IN INCREASING PREPAREDNESS AND PLANNING

A RAF Progress Report

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# PROJECT OVERVIEW

- 1) Problem Statement 1 – When examining residents' hazard preparedness, how do we capture different types of 'preparedness'?
- 2) Problem Statement 2 – How effective are different information sources in helping people plan and prepare?
- 3) Problem Statement 3 – How can communication strategies be improved to make them more effective in helping residents prepare and plan for natural hazards?

# PROJECT OVERVIEW

- ➔ 1) Problem Statement 1 – When examining residents' hazard preparedness, how do we capture different types of 'preparedness'?
- ➔ 2) Problem Statement 2 – How effective are different information sources in helping people plan and prepare?
- 3) Problem Statement 3 – How can communication strategies be improved to make them more effective in helping residents prepare and plan for natural hazards?

# PS1: MEASURING PREPAREDNESS\*

- 1) Physical Preparedness
- 2) Psychological Planning
- 3) Social Support Available for Response/Recovery
- 4) Perceived Ability to Respond/Recover
- 5) Knowledge of the Hazard

\*Report available from McNeill et al. (to be published on BNHCRC website).

# BUSHFIRE PREPAREDNESS MEASURE\*

3 subtypes:

**Safely defending (27 items)** – *“A minimum of 10,000 litres (2600 gallons) of water for fire fighting purposes only has been obtained and stored, such as in a tank, dam, or pool.”*

**Safely evacuating (6 items)** – *“Members of your household have discussed or considered how road closures and fire directions might impact on evacuation/relocation plans, and have identified alternative evacuation routes.”*

**Increasing the fire resistance of the property (23 items)** – *“Vegetation has been cleared along the boundary of the property to create a firebreak.”*

Preparedness scores = % of relevant items completed.

\*Dunlop et al., 2014; IJWF

# EMERGENCY KIT FOR FLOODS

16 items

*“You have an emergency source of lighting and warmth/cooling that could be used in the days following a flood.”*

Preparedness score = % of relevant items completed.

# PSYCHOLOGICAL PLANNING

Bushfire: 11 items (3 bushfire specific)

Flood: 12 items (4 flood specific)

*“All people who play a part in the successful execution of your bushfire/flood plan (e.g. household members, neighbours, people you plan to stay with) are aware of the plan and have agreed to their role in the plan.”*

Preparedness score = % of relevant items completed.

# SOCIAL SUPPORT AVAILABILITY

6 items for response, 6 for recovery (same for bushfires/floods)

**Response item:** *“I have neighbours, relatives or friends living in my locality who would help me relocate during a bushfire/flood if I needed it.”*

**Recovery item:** *“I have neighbours, relatives or friends living in my locality that I can turn to for advice on how to deal with my problems following a bushfire.”*

Preparedness score: Mean on a 7-point Likert scale (1=strongly disagree, 7=strongly agree)

## PS2: INFORMATION SOURCES AND PREPAREDNESS

- Bushfire online survey (N=507, 2.5 months after start fire season): NSW, SA, TAS, VIC, WA
- Flood survey (N=286, Feb 2015): NSW, QL

### Key measures:

- Use of information sources (i.e. attended community meetings, looked at websites, used a brochure over past 3 months/year)
- Personality factors, risk perceptions, motivation
- Preparedness measures

# PRELIMINARY RESULTS BUSHFIRE STUDY

	Evacuation Prep	Defence Prep	Property Prep	Planning	Social Support Response	Social Support Recovery
Total M (SD)	57% (36)	59% (26)	54% (26)	56% (35)	5.13 (1.50)	4.76 (1.39)

	SA	WA	NSW	TAS	VIC
Property M	58%	60%	52%	53%	47%

# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) 3mths	Attended meeting(s) 3mths	By SES	By Fire Service	By Other
Total (507)					
NSW (82)					
SA (145)					
TAS (128)					
VIC (76)					
WA (76)					

# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) 3mths	Attended meeting(s) 3mths	By SES	By Fire Service	By Other
Total (507)	64 (13%)				
NSW (82)	5 (6%)				
SA (145)	26 (18%)				
TAS (128)	13 (10%)				
VIC (76)	11 (15%)				
WA (76)	9 (12%)				

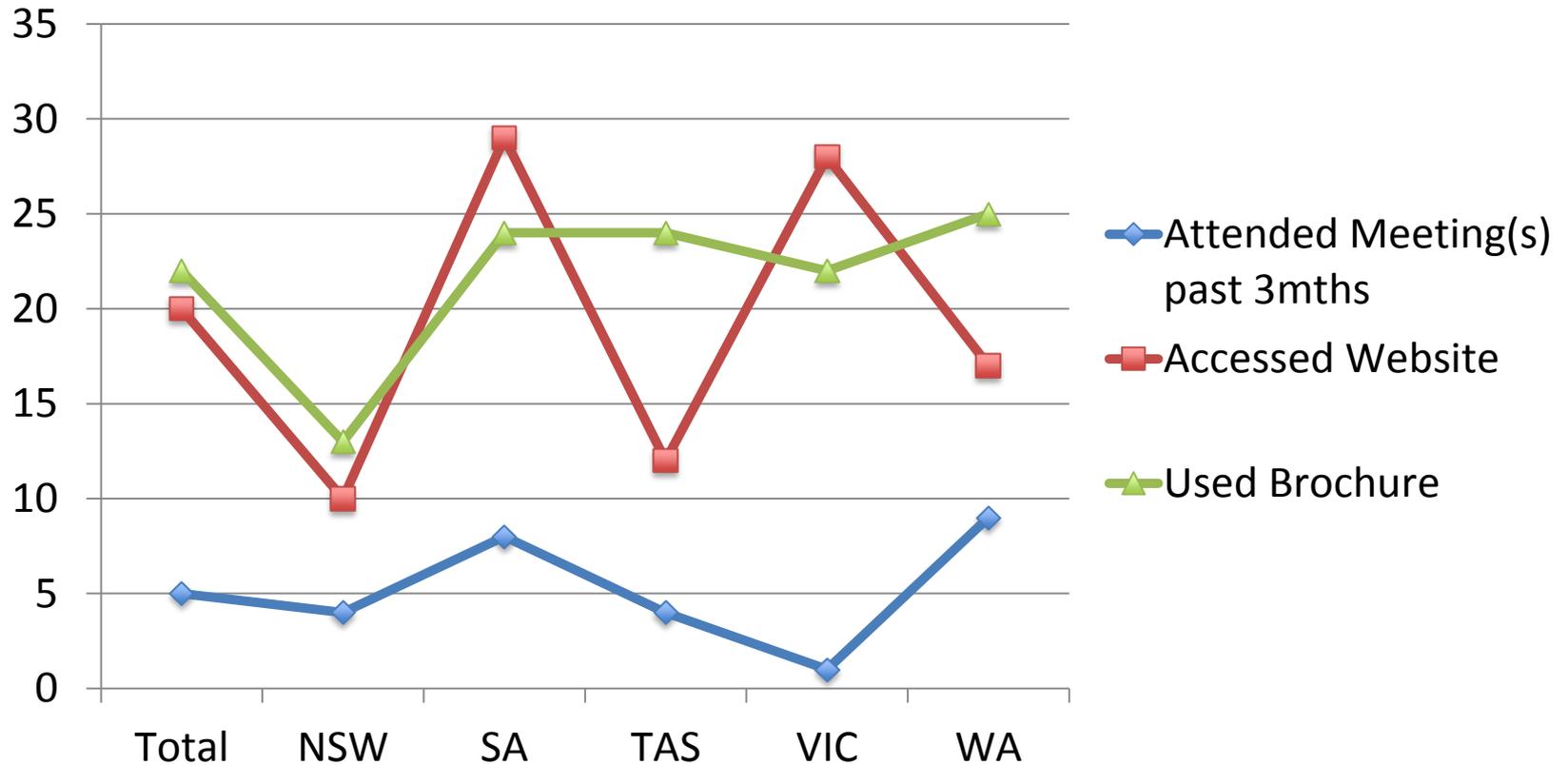
# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) 3mths	Attended meeting(s) 3mths	By SES	By Fire Service	By Other
<b>Total (507)</b>	<b>64 (13%)</b>	<b>27 (42%)</b>			
NSW (82)	5 (6%)	3 (60%)			
SA (145)	26 (18%)	11 (42%)			
TAS (128)	13 (10%)	5 (38%)			
VIC (76)	11 (15%)	1 (9%)			
WA (76)	9 (12%)	7 (78%)			

# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) 3mths	Attended meeting(s) 3mths	By SES	By Fire Service	By Other
<b>Total (507)</b>	<b>64 (13%)</b>	<b>27 (42%)</b>	<b>3</b>	<b>19</b>	<b>16</b>
NSW (82)	5 (6%)	3 (60%)	1	1	2
SA (145)	26 (18%)	11 (42%)	1	7	9
TAS (128)	13 (10%)	5 (38%)	-	4	3
VIC (76)	11 (15%)	1 (9%)	-	1	-
WA (76)	9 (12%)	7 (78%)	1	6	2

# RESPONDENTS (%) USING INFORMATION SOURCES



# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Evacuation						
Defence						
Property						
Planning						
Social Support Response						
Social Support Recovery						

Bold = Significant at  $p < .05$  level.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Evacuation	<b>75%</b>	<b>56%</b>				
Defence	<b>73%</b>	<b>58%</b>				
Property	<b>69%</b>	<b>54%</b>				
Planning	<b>78%</b>	<b>54%</b>				
Social Support Response	5.30	5.06				
Social Support Recovery	<b>5.46</b>	<b>4.69</b>				

Bold = Significant at  $p < .05$  level.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Evacuation			<b>75%</b>	<b>52%</b>		
Defence			<b>70%</b>	<b>56%</b>		
Property			<b>66%</b>	<b>52%</b>		
Planning			<b>75%</b>	<b>50%</b>		
Social Support Response			5.27	5.02		
Social Support Recovery			4.95	4.68		

Bold = Significant at  $p < .05$  level.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Evacuation					<b>74%</b>	<b>52%</b>
Defence					<b>68%</b>	<b>56%</b>
Property					<b>63%</b>	<b>52%</b>
Planning					<b>75%</b>	<b>49%</b>
Social Support Response					<b>5.34</b>	<b>5.00</b>
Social Support Recovery					<b>5.17</b>	<b>4.61</b>

Bold = Significant at  $p < .05$  level.

# PRELIMINARY RESULTS FLOOD STUDY

	Planning	Emergency Kit	Social Support Response	Social Support Recovery
Total M (SD)	41% (35)	58% (29)	4.75 (1.5)	4.65 (1.17)
NSW				
QL				

# PRELIMINARY RESULTS FLOOD STUDY

	Planning	Emergency Kit	Social Support Response	Social Support Recovery
Total M (SD)	41% (35)	58% (29)	4.75 (1.5)	4.65 (1.17)
NSW	37%	53%	4.49	4.59
QL	43%	62%	4.96	4.69

# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) past year	Attended meeting(s) past year	By SES	By Fire Service	By Council	By Other
Total (286)						
NSW (127)						
QL (159)						

# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) past year	Attended meeting(s) past year	By SES	By Fire Service	By Council	By Other
Total (286)	60 (21%)					
NSW (127)	27 (21%)					
QL (159)	33 (21%)					

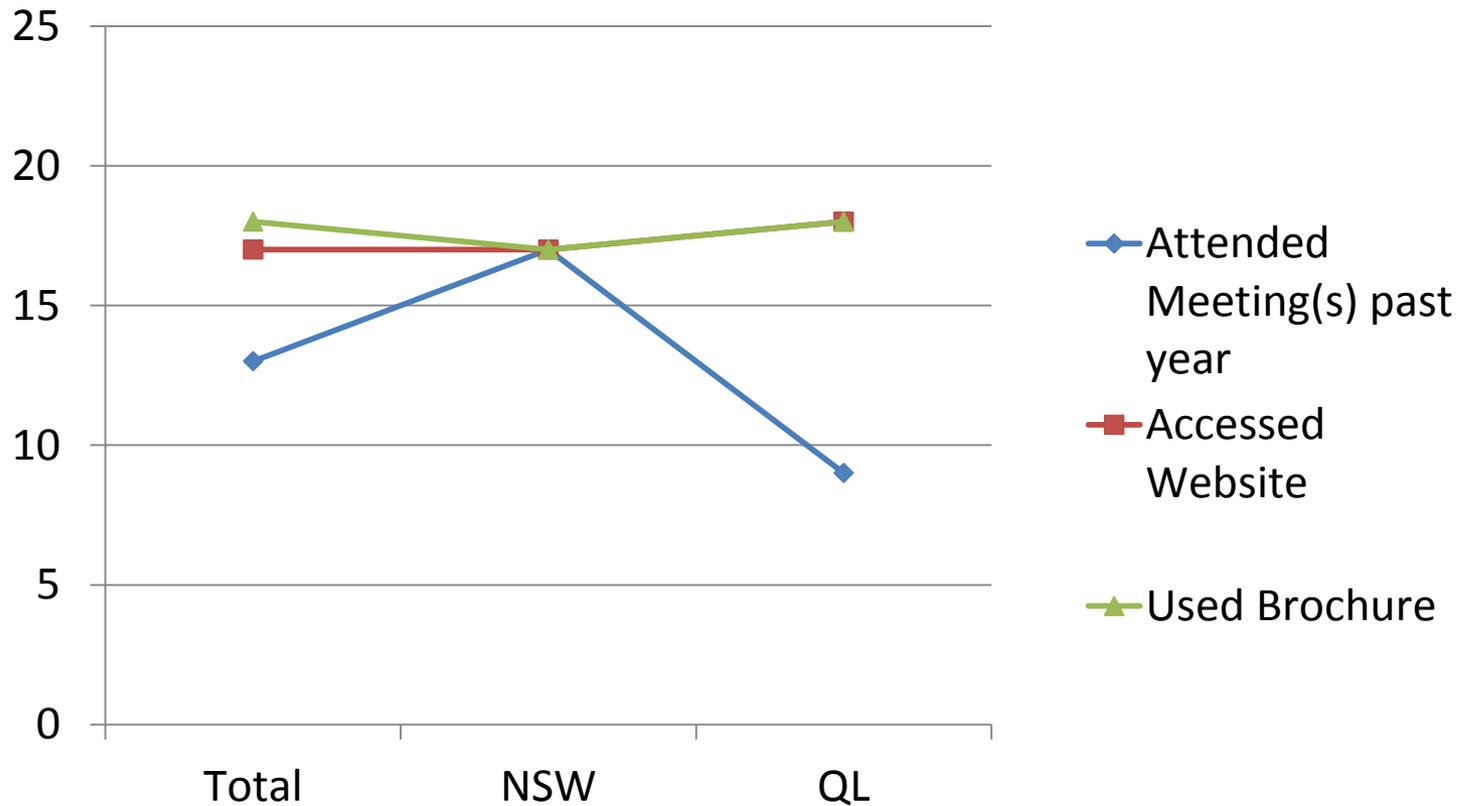
# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) past year	Attended meeting(s) past year	By SES	By Fire Service	By Council	By Other
Total (286)	60 (21%)	37 (61%)				
NSW (127)	27 (21%)	22 (81%)				
QL (159)	33 (21%)	15 (46%)				

# ATTENDING INFORMATION MEETINGS

	Aware of meeting(s) past year	Attended meeting(s) past year	By SES	By Fire Service	By Council	By Other
Total (286)	60 (21%)	37 (61%)	14	11	21	25
NSW (127)	27 (21%)	22 (81%)	10	5	11	15
QL (159)	33 (21%)	15 (46%)	4	6	10	10

# RESPONDENTS (%) USING INFORMATION SOURCES



# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Emergency Kit						
Planning						
Social Support Response						
Social Support Recovery						

Bold = Significant at  $p < .05$  level.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Emergency Kit	52%	59%				
Planning	<b>51%</b>	<b>39%</b>				
Social Support Response	<b>4.24</b>	<b>4.83</b>				
Social Support Recovery	4.76	4.63				

Bold = Significant at  $p < .05$  level.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Emergency Kit			61%	57%		
Planning			<b>52%</b>	<b>38%</b>		
Social Support Response			4.46	4.81		
Social Support Recovery			4.93	4.59		

Bold = Significant at  $p < .05$  level.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Emergency Kit					<b>67%</b>	<b>56%</b>
Planning					<b>65%</b>	<b>35%</b>
Social Support Response					4.82	4.74
Social Support Recovery					4.88	4.60

Bold = Significant at  $p < .05$  level.

# SUMMARY OF PRELIMINARY FINDINGS

- Relatively few people report awareness of community information sessions.
- Of those who are aware, attendance varies heavily per hazard and per state.
- The majority of people don't use any of the listed information sources (66.5% for bushfires, 69% for floods).
- Those who do attend meetings, use brochures, and/or use websites as information sources score significantly higher on bushfire preparedness, planning for bushfires, and planning for floods.

# END-USERS AND FEEDBACK PROVIDERS

Andrew Richards – SES NSW

Anthony Clark – RFS NSW

Ben McFadgen – SES VIC

Fiona Dunstan – CFS

Glenn Benham – SA MFS

Gregory Wild – F&R NSW

Karen Enbom – CFA

Sandra Barber – TFS

Suellen Flint – DFES

Trent Curtin – MFB VIC

Wendy Kelly – AGD

Amanda Leck – AFAC

Gwynne Brennan – CFA

John Richardson – Red Cross

Sunara Fernando – NSW RFS

Reegan Key – EMV

Paul Smith – AGD

Terri Reid – AGD

## THANK YOU

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John Richardson – Red Cross

Sunara Fernando – NSW RFS

Reegan Key – EMV

Paul Smith – AGD

Terri Reid – AGD

## THANK YOU

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Evacuation	75%	56%	75%	52%	74%	52%
Defence	73%	58%	<b>70%</b>	<b>56%</b>	<b>68%</b>	<b>56%</b>
Property	69%	54%	<b>66%</b>	<b>52%</b>	63%	52%
Planning	78%	54%	<b>75%</b>	<b>50%</b>	<b>75%</b>	<b>49%</b>
Social Support Response	5.30	5.06	5.27	5.02	5.34	5.00
Social Support Recovery	5.46	4.69	4.95	4.68	<b>5.17</b>	<b>4.61</b>

Bold = Still significant after controlling for the other 2 information sources.

# INFORMATION SOURCES AND PREPAREDNESS

	Meeting(s) Yes	Meeting(s) No	Website(s) Yes	Website(s) No	Brochure Yes	Brochure No
Emergency Kit	52%	59%	61%	57%	<b>67%</b>	<b>56%</b>
Planning	51%	39%	52%	38%	<b>65%</b>	<b>35%</b>
Social Support Response	4.24	4.83	4.46	4.81	4.82	4.74
Social Support Recovery	4.76	4.63	4.93	4.59	4.88	4.60

Bold = Still significant after controlling for the other 2 information sources.

# PERCEIVED ABILITY TO RESPOND/RECOVER

7 items for response, 7 for recovery

Per set of 7: 1 physical ability, 6 psychological ability

Highly similar items for bushfires and floods.

**Response item:** *“I feel confident in my ability to interpret general bushfire/flood warnings and communications and understand their relevance to my household’s situation.”*

**Recovery item:** *“I am capable of dealing with all the disruptions that a flood might cause in the period following the event.”*

Preparedness score: Mean on 7-point Likert scale (1=strongly disagree, 7=strongly agree)

# KNOWLEDGE

Bushfire: 5 items

Flood: 6 items

**Bushfire item:** *“An above-ground pool or water tank is a safe place to shelter if a bushfire reaches my home.”*

Scale: True/False/Not Sure

Score: Numbers of items answered correctly (0-5)

**Flood item:** *“Floodwater can be deep, fast flowing, toxic, and unsanitary, and may contain hidden debris and venomous snakes and spiders.”*

Scale: 1 = Completely unaware of this, 7 = Fully aware of this

Score: Mean score (1-7)