National Fire Danger Rating and Multi Hazard Warning System Social Research

Research Report | Western Australia

Stages 1 to 3

November 2019

metrix

Contents

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Scope of Engagement

Project background and objectives

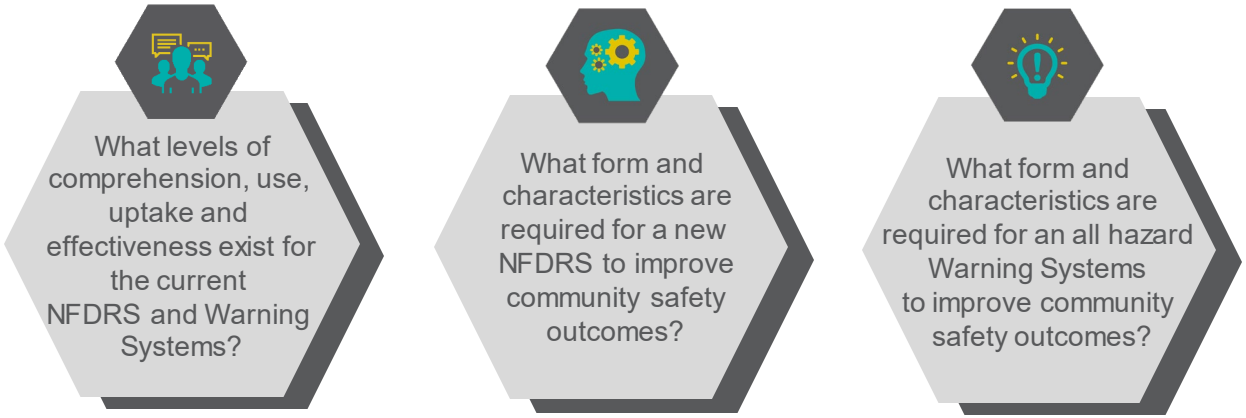
The key objective of the Social Research Project for a New National Fire Danger Ratings System (NFDRS) and Warnings System is to provide sound evidence for the development of consistent national risk and warning systems to **communicate bushfire risk and subsequently increase community safety and promote desired protective behaviours.**

This involves seeking the knowledge, views and understanding of the public themselves, rather than emergency services personnel. Specifically, the aims of this project are to identify the features of communication tools for:

- the New Fire Danger Rating System, and

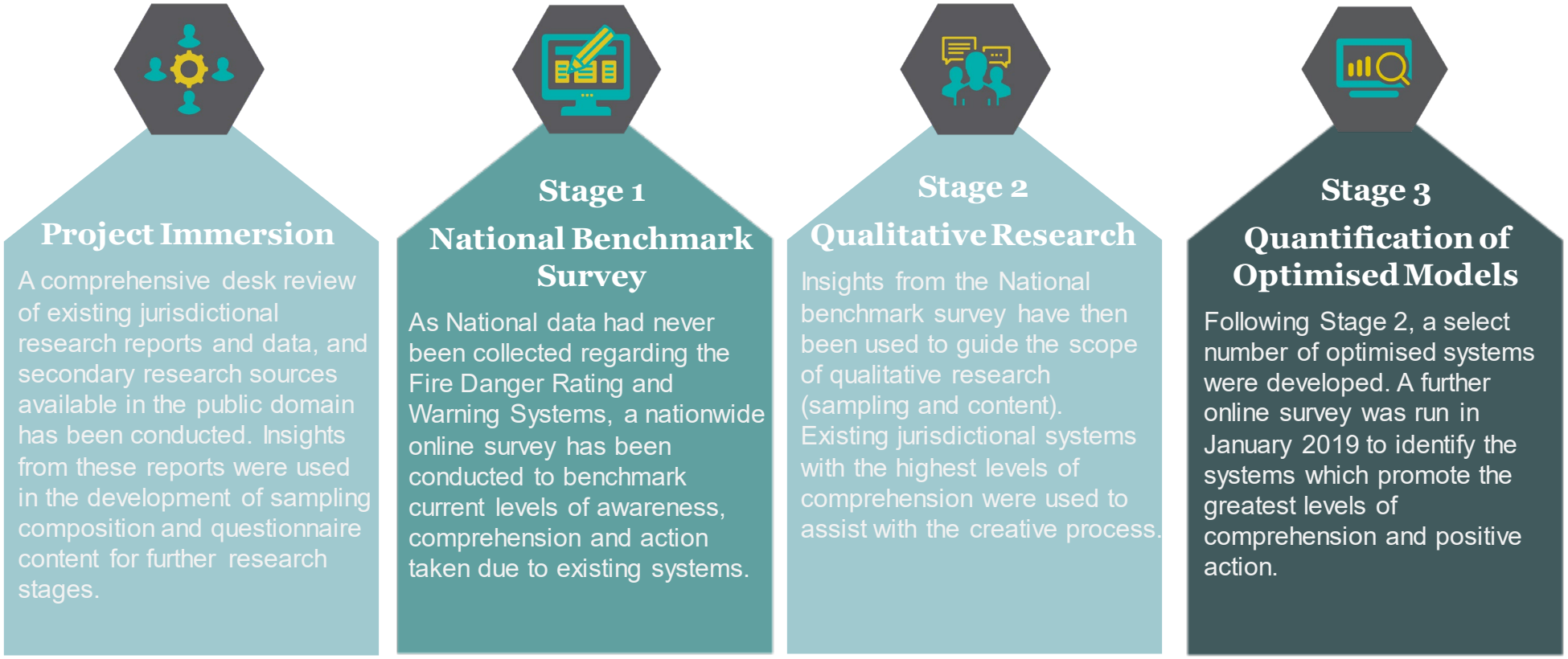
- the warning systems for fire, cyclone, flood, extreme weather and extreme heat that would best facilitate community understanding of fire and hazard risk and appropriate protective action.

Full research reports have been developed for each research stage* with analysis and findings presented at a national level. This report focuses on research findings specific to Western Australia, with comparisons to national averages where relevant.



*See page seven for a summary of research stages

A four stage methodology was developed, with this report summarising findings from Stages 1 to 3



Note: The project Steering Group (see appendix) provided input to ensure the collaborative development of questionnaires and discussion guides used in research Stages 1 through 3.

Sample summary

Stage 1

National Benchmark Survey

Fieldwork conducted from 14 to 27 September 2018.

A sample of **n=1,003 was achieved in Western Australia** providing a maximum margin of error of ±3.09% at 95% confidence.

	n=	Weighted %
Metro	503	79%
Regional	500	21%
18 – 34 years	239	31%
35 – 49 years	271	29%
50 – 64 years	257	21%
65+ years	236	19%
Male	421	50%
Female	582	50%
Total	**1,003**	**100%**

Data has been weighted by age and gender to ensure representativeness of the national and state populations.

Stage 2

Qualitative Research

Fieldwork conducted from 1 to 16 October 2018.

To maximise engagement and participation, a cash incentive between $80 and $100 was provided to participants of focus groups.

Location	Date	Attendance
Kalgoorlie	16-Oct 2018	6
Waroona	3-Oct 2018	7
Broome	8-Oct 2018	8
Albany	9-Oct 2018	8
Kununurra	12-Oct 2018	7
Newman	1-Oct 2018	8
Perth Hills	1-Oct 2018	8

Stage 3

Quantification of Optimised Models

Fieldwork conducted from 24 May and 9 June 2019.

A sample of **n=995 was achieved in Western Australia** providing a maximum margin of error of ±3.11% at 95% confidence.

	n=	Weighted %
Metro	498	79%
Regional	497	21%
18 – 34 years	295	31%
35 – 49 years	257	28%
50 – 64 years	792	81%
65+ years	203	19%
Male	418	50%
Female	577	50%
Total	**995**	**100%**

Data has been weighted by age and gender to ensure representativeness of the national and state populations.

Where variances from national figures exist, findings have been called out in slide commentary.

Key Figures Snapshot

Key figures snapshot | Fire Danger Ratings

Fire Danger Ratings | Stage 1

Understanding of the required actions to take at each level of the Fire Danger Rating System is significantly higher than the national average, except for Extreme. However, an opportunity remains to improve comprehension of the system's purpose and the required actions at each Fire Danger Rating. Four in ten don't feel the current system is relevant, and just a third are using the system.

	National	Western Australia	
Unprompted awareness	72%	**72%**	See page 12
Prompted awareness	93%	**95%**	
Understanding of the FDRS purpose:			
Predicts how likely a fire is to occur	52%	**53%**	See page 12
Predicts how dangerous a fire could be if it did occur	39%	**40%**	
Don't know	9%	**7%**	
Understanding of required actions by rating:			
Low-Moderate to High	56%	**64%↑**	See page 14
Very High to Severe	24%	**27%↑**	
Extreme	33%	**40%**	
Catastrophic/Code Red	72%	**79%↑**	
Feel the Fire Danger Rating System is relevant	61%	**63%**	See page 15
Currently use the Fire Danger Rating System	37%	**32%**	

↑↓Significant difference to National figures at 95% confidence

Optimised Fire Danger Rating | Stage 3

Familiarity with the current Fire Danger Rating System is driving an optimised and simplified version of the existing system.

Shape	National	Western Australia	
Semi – Circle	63%	67%	See page 25
Triangle	26%	26%	
Rectangle	10%	8%	
Colour Set			
Green, yellow, orange, red	56%	60%	See page 25
Green, orange, red, black	24%	21%	
Yellow, orange, red, black	20%	19%	
First 3 Levels			
Low, moderate, high	59%	60%	See page 26
Low, high, very high	41%	40%	
Top Level | Total Preference			
Extreme	65%	70%↑	See page 26
Severe	51%	55%	
Catastrophic	50%	51%	
Code Red	31%	26%↓	
Disastrous	29%	28%	
Major	22%	21%	
Maximum	19%	21%	
Code Black	17%	12%↓	
Red Flag	16%	15%	

Key figures snapshot | Warning Systems

Warning Systems | Stage 1

Prompted awareness of various Warning Systems sits between 31% (floods) and 56% (extreme weather and heat), with significantly higher levels of awareness for bushfire warnings than the national average, but significantly lower awareness for flood warnings.

Bushfire	National	Western Australia	
Prompted awareness	44%	55%↑	See page 16
Have taken action in past due to warning^	49%	52%	
Cyclone			
Prompted awareness	41%	44%	See page 16
Have taken action in past due to warning^	58%	53%	
Flood			
Prompted awareness	45%	31%↓	See page 16
Have taken action in past due to warning^	35%	23%	
Extreme Weather			
Prompted awareness	56%	56%	See page 18
Have taken action in past due to warning^	52%	60%	
Extreme Heat			
Prompted awareness	55%	56%	See page 18
Have taken action in past due to warning^	56%	58%	

↑↓Significant difference to National figures at 95% confidence

Optimised Multi Hazard Warning System | Stage 3

The proposed visual design for a Multi-Hazard Warning System is clearer than the accompanying warning names.

Shape	National	Western Australia	
Triangle 	58%	60%	See page 34
Diamond 	42%	40%	
Colour Set			
Yellow, orange, red 	35%	34%	See page 35
Yellow red, black 	36%	33%	
Blue, yellow, red 	29%	33%	
Icon Type			
Hazard specific icon that visually increases in severity as warning type increases	69%	69%	See page 34
Action icons (e.g. information 'i')	19%	21%	
Consistent hazard specific icons	12%	10%	

There is no clear preference for most effective names for level 1 and 2 warnings. See page 36 for further details.

Level to indicate danger has lessened			
Reduced threat	47%	46%	See page 37
Reduced risk	33%	35%	
All clear	20%	19%	

Awareness and Understanding of Current Systems

Topline insights from Stages 1 and 2

Natural hazards are front of mind for many across Western Australia

Kalgoorlie	Severe weather and storms and resulting flash flooding are top of mind as a natural hazard that regularly affects the community. Fallen tree limbs, lightning causing power outages, and flood damage are core concerns. Poor drainage systems are associated with flash flooding that can occur within half an hour and some have had to sandbag in the past. Bushfires are also recognised as a danger, with a large fire anticipated every 18 to 24 months. The core concern is access to the Great Eastern Highway, which has been closed during previous bushfire events, restricting access to Perth and Esperance.
Waroona	Bushfires are top of mind and cause significant concern due to the recent emergency in Yarloop. Many within the group had a direct personal experience (some with loss of property) with this emergency, or fires in 2015. Personal risk recognition is strong amongst all, regardless of living within the township or on acreage. Gusty winds referred to as 'willy willy's' are also referred to as a natural hazard, though thought to be of minimal to no danger.
Albany	Bushfires, severe storms and earthquakes are all top of mind due to recent incidents. Bushfires cause the greatest concern with residents describing events as stressful, and some having had to evacuate in the past. Those living within the township have lower recognition of personal risk comparative to those on acreage. Though severe storms and earthquakes are referenced, they are perceived to be of greater risk to property than life, minimising the concern in comparison to bushfires.
Perth Hills	Bushfires are top of mind and cause significant concern due to recent incidents in the local area, with many participants recalling the Roleystone/Parkerville bushfires. Most participants recalled personal experience with bushfires, resulting in higher levels of personal risk recognition. Severe storms are recognised as a danger, however they are perceived to be of lesser risk compared to bushfires.
Newman	Cyclones and bushfires are top of mind, however perceptions of direct impact from cyclones are limited, with most feeling the severe storms that occur as a result of the cyclone pose a greater risk. Bushfires were considered of higher risk for the surrounding areas, with many recalling fires being left to burn out, rather than fought. Flooding was recognised as a risk with many reporting concern about the town being cut off during times of floods.
Broome	Cyclones are top of mind as a natural hazard that regularly affects the community. However, perceptions of 'cry wolf' cyclones (threat of an impact, but never reach landfall) is generating complacency in the community. Floods are also of concern, particularly during wet season, with many participants recalling the China Town floods. While bushfires are recognised, participants felt the level of risk was higher for the surrounding areas, rather than the township.
Kununurra	Bushfires are top of mind, with recent bushfires occurring in the township and the surrounding areas. Floods are also perceived as a risk, with frequency of occurrence and impact causing concern; specifically that of safety, hygiene and contamination. Most participants recalled experience with recent floods and/or bushfires, raising their level of personal risk recognition.

Although awareness of the FDRS is strong, understanding of its purpose remains limited

Unprompted awareness of the FDRS is significantly higher in regional areas of WA compared to metro. However, there are no significant differences in the understanding of the FDRS by metro or regional areas.

Unprompted Awareness

National | 72%

Metro 70%

Regional 79%↑

Prompted Awareness

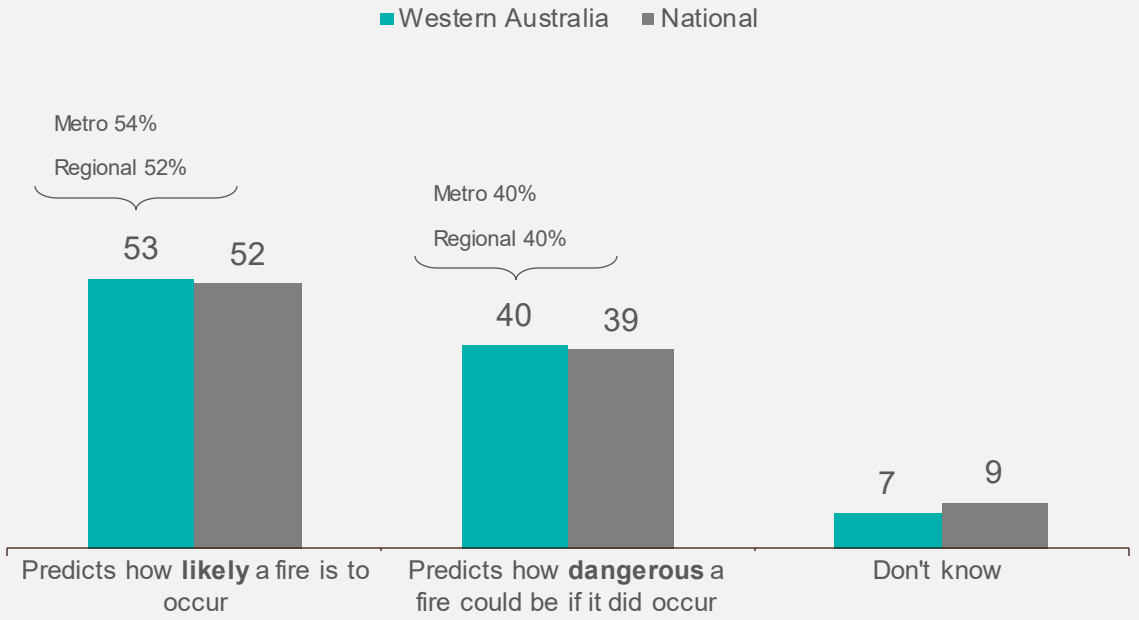
National | 93%

Metro 94%

Regional 97%

% of West Australian residents

Understanding of FDRS purpose



% of West Australian residents

WA n=1,003 | National 5,430
Q13a. Thinking about bushfires, do you recall any messaging from [jurisdiction] about days of increased bushfire risk?
Q13c. Have you seen or heard of these fire danger rating before today?
Q13b. Which of the following statements best describes what the Fire Danger Rating is?
↑↓ Significant difference to National figures at 95% confidence

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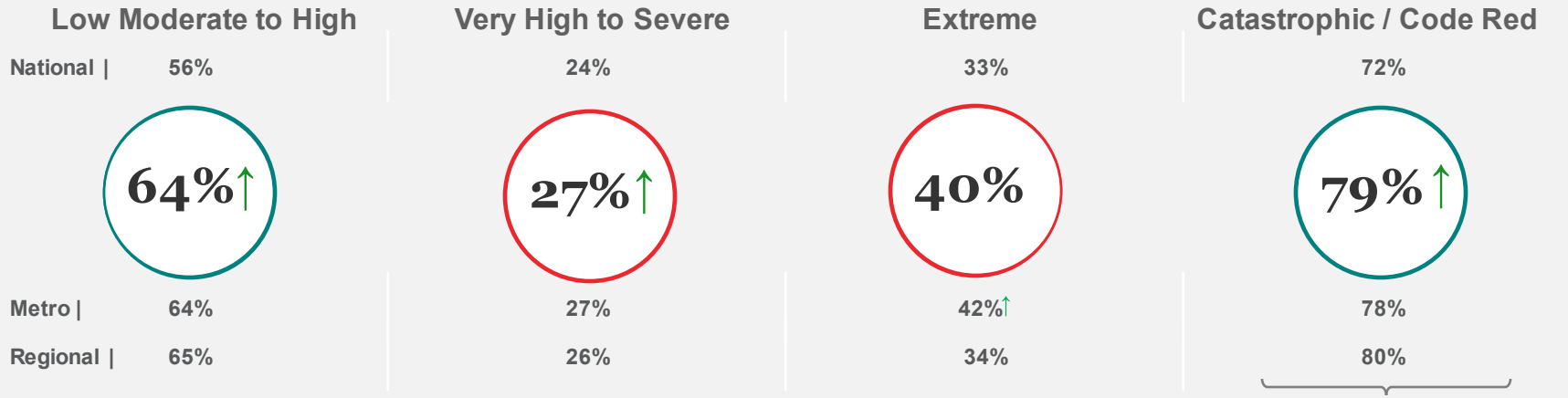
Road signage prompted awareness of the Fire Danger Rating

Kalgoorlie	Residents were aware of FDRs through road signage. The purpose of the signs is described as a daily indication of when precautions need to be taken or one needs to be prepared for bushfires. Knowledge of the system is limited with many describing it as unclear. Assumptions of required actions are made based on colours as; green = all safe, yellow = restrictions apply, red = don't light a fire.
Waroona	FDRs are referenced in relation to road signage and thought to be a prediction of how likely a fire is to occur. Two within the group check ratings through social media. Ratings are recognised to impact behaviour, though examples are focused on the inability to use machinery when working the land. There is a perception that rural people 'get it' and understand FDRs, but those living in more metropolitan locations are not aware of the system or how to use it.
Albany	All refer to the 'signs with arrows on the side of the road' when discussing FDRs. The system is thought to be simple, with many referencing passing the signs daily, but many not absorbing the information. There is recognition that the ratings affect actions and behaviours such as when open fires can be used, when permits are required, and when to simply be careful. There is some cynicism regarding the accuracy of ratings due to a perception that manual signs are not updated daily.
Perth Hills	Once prompted, most were aware of the FDR through the road signage within the community. Knowledge of the system's purpose was limited with participants assuming it was to indicate how likely it is that a fire would start on a particular day. While understanding of the desired behaviours at each level was limited, all assumed that as the rating increased, fires were not to be lit and power tools and machinery were not to be used. Overall, the current system was not encouraging participants to take action when seen.
Newman	Awareness of the FDR by name was limited, but once prompted about the road signage, all recalled the system. Beyond assumptions that fire and machinery bans were effective as the rating increase, knowledge of the system was extremely limited. Due to the recognition of the road signage, participants felt the current system was unclear and didn't provide enough information about what to do at each level.
Broome	There was a general awareness of the FDR system, predominantly in relation to the road signs. While participants were broadly aware of the system, knowledge of its purpose and the require behaviours at each level was limited. Assumptions were made that when the ratings were high, fires were not to be lit, including BBQs, however many felt these weren't adhered to throughout the community, with some participants recalling experiences where ratings were extreme and locals were burning rubbish.
Kununurra	Many reference FDRs in relation to road signage, with many assuming the system was used to predict the likelihood of a fire occurring. While participants recognised specific behaviours were required at each levels, knowledge of what those behaviours were limited to not using power tools, machinery and lighting fires. There was also strong cynicism regarding the accuracy of ratings due to a perception that manual signs are not updated regularly.

There is confusion surrounding the required behaviours for each FDR

Though significantly higher than national figures, the limited ability to correctly identify required actions (particularly from Very High to Extreme ratings) suggests limited understanding of how the community should respond to Fire Danger Ratings. Understanding of the required actions to take at Extreme is significantly higher among metropolitan residents.

% of WA residents who understand the correct protective actions at a given Fire Danger Rating



WA n=1,003 | National 5,430
Q17. Which of these actions do you believe is required when the fire danger rating is …?

↑↓Significant difference to National figures at 95% confidence

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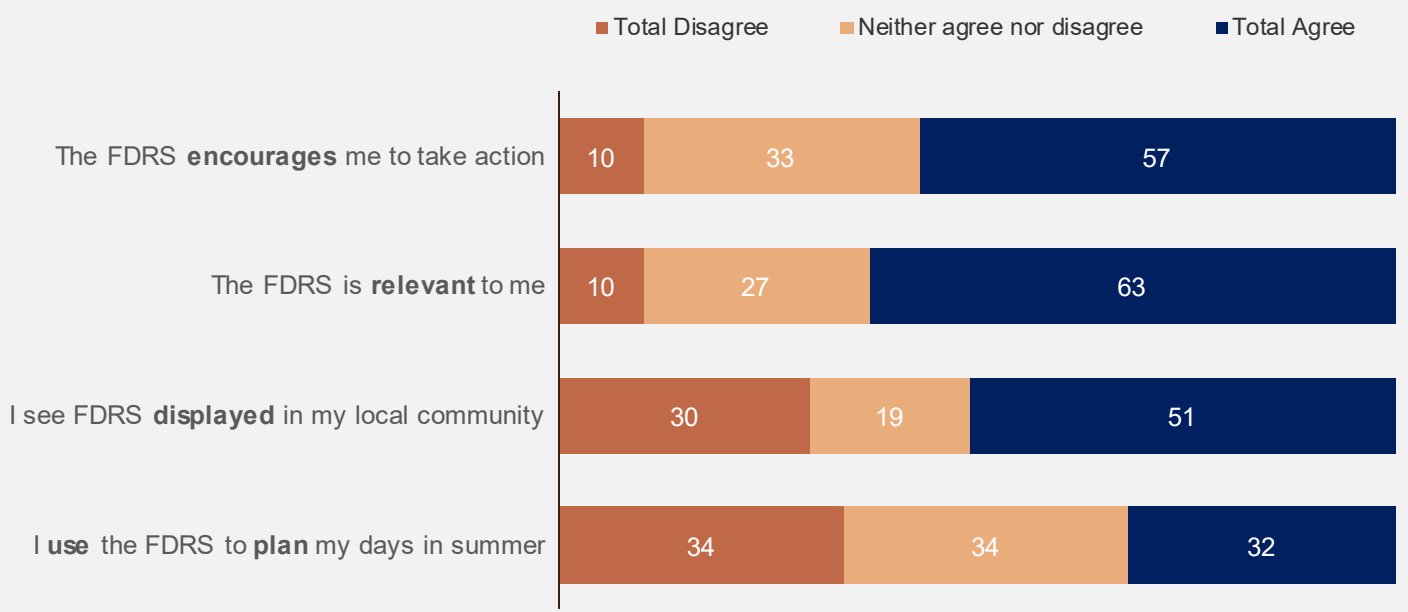
The FDRS is recognised as relevant by the majority, but few are using the system

This suggests the current FDRS is not compelling enough to motivate action, potentially driven by comprehension issues as demonstrated by an inability to correctly identify required behaviours. Use of the FDRS and sentiment is slightly higher in regional areas.

WA | Fire Danger Rating System Sentiment



% Agree and strongly agree

	WA – Metro	WA – Regional	National
The FDRS encourages me to take action	57%	60%	**59%**
The FDRS is relevant to me	61%	70%↑	**61%**
I see FDRS displayed in my local community	46%	67%↑	**49%**
I use the FDRS to plan my days in summer	31%	34%	**37%**

WA n=1,003 | National 5,430
Q13d. Thinking about the Fire Danger Rating System (FDRS) shown, how strongly do you agree or disagree with the following statements?
↑↓Significant difference to between metro and regional figures at 95% confidence

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Awareness of bushfire warnings is significantly higher than the national average

As with other jurisdictions, awareness increases amongst those who have had a personal experience with a hazard and in regional areas. Awareness of flood warnings is significantly lower in comparison to other hazards and the national average.

Bushfire Warnings Prompted Awareness

National | 44%

55%↑

Metro 51%

Regional 68%

Increases to 68% for those who have had a personal experience with a bushfire.

Have Taken Action in Past (%)

Those who have been exposed to a bushfire

National | 49%

52%

Cyclone Warnings Prompted Awareness

National | 41%

44%

Metro 38%

Regional 67%

Increases to 76% for those who have had a personal experience with a cyclone.

Have Taken Action in Past (%)

Those who have been exposed to a cyclone

National | 58%

53%

Flood Warning Prompted Awareness

National | 45%

31%↓

Metro 28%

Regional 45%

Increases to 55% for those who have had a personal experience with a flood.

Have Taken Action in Past (%)

Those who have been exposed to a flood

National | 35%

23%

% of West Australian residents

WA n=1,003 | National 5,430
Q19. Have you seen or heard of these alerts before today?
Q26. When a cyclone threatens, community alerts and/or warnings are issued. The alert/warning level changes to reflect the increasing risk to your life and advises what you need to do before, during and after a cyclone. Have you seen or heard of these alerts?
Q30. When there is danger of flooding, a flood alert and/or warning may be issued to the community. Have you seen or heard of this warning before today?

↑↓Significant difference to National figures at 95% confidence

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Understanding of the required actions for each flood warning lag compared to national averages

Though the ability to identify actions for low level bushfire warnings is significantly higher than the national average, nearly half do not understand the actions required for Watch and Act and Emergency Warning.

Understanding of required behaviour within Bushfire Warnings

	National	WA
All Clear	76%*	82% ↑
Advice	56%	64% ↑
Watch and Act	53%	50%
Emergency Warning	57%	56%

*Excluding NSW and QLD.

Understanding of required behaviour within Cyclone Warnings

	WA
All Clear	83%
Blue Alert	52%
Yellow Alert	63%
Red Alert	64%

No national comparison is available as WA uses an alternate system to other jurisdictions.

Understanding of required behaviour within Flood Warnings

	National^	WA
Minor flooding	52%	46% ↓
Moderate flooding	47%	38% ↓
Major flooding	57%	55%
Flood watch	36%	41% ↑
Flood warning	22%	22%

^Excluding VIC, SA AND Tas as alternate system used.

% of West Australian residents

WA n=1,003 | National 5,430
Q25. Which of these actions do you believe is required when the alert level is ...?

↑↓Significant difference to National figures at 95% confidence

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Awareness of extreme weather and heat warnings align with national averages

Extreme Weather Warning Prompted Awareness

National | 56%

Metro 52%

Regional 70%↑

Increases to 68% for those who have had a personal experience with a severe storm.

Have Taken Action in Past (%)

Those who have been exposed to a severe storm

National | 52%

Extreme Heat Warning Prompted Awareness

National | 55%

Metro 55%

Regional 59%

Increases to 76% for those who have had a personal experience with extreme heat.

Have Taken Action in Past (%)

Those who have been exposed to extreme heat

National | 56%

% of West Australian residents

WA n=1,003 | National 5,430

Q34. When there is danger of severe weather and thunderstorms, alerts and/or warnings may be issued to the community. Have you seen or heard of this alert and/or warning before today?

Q38. When there is danger of a heatwave, an alert and/or warning may be issued to the community. Have you seen or heard of this warning before today?

↑↓Significant difference to National figures at 95% confidence

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Perceptions of existing warnings systems

Perceptions of current Western Australian system

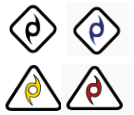
Bushfire

Those who were familiar with the existing system broadly supported it – though the use of blue was questioned.

The change of shape from diamond to triangle was confusing for many.

The flame icon was associated with hazmat icons and there was a desire for a more realistic flame.

Cyclone



Those living in northern locations were familiar with the system and supported it's use.

Due to familiarity, the colour scale of blue, yellow and red was considered effective at communicating risk.

Participants were also familiar with the cyclone icon and felt it clearly communicated what hazard the community need to be aware of.

Consistent to feedback on the bushfire warnings, the change of shape from diamond to triangle was confusing for many, with the majority feeling this required optimisation.

Perceptions of systems from other jurisdictions

Bushfire
Queensland

Participants preferred the triangle shape of the WA system over the diamonds used in the Qld system.

The yellow, orange, red colour palate was liked by the majority as it better communicated risk and was associated with bushfire.

Extreme Heat
South Australia
Victoria

The icon used in the SA system caused confusion and it was felt it didn't clearly communicate heat.

Participants liked the use of triangles in both systems, but felt the edges should be pointed to communicate risk.

Participants felt a tiered system was not appropriate for extreme heat, rather they preferred an on-off system.

Floods
Tasmania
South Australia

While participants liked the icons of the Tasmania system, they felt a house didn't need to be included as it excluded other floods such as river or tidal flooding.

The colour scheme of the SA system, specifically the dark blue, caused confusion and difficulty in interpreting the icons.

Severe Storms
South Australia

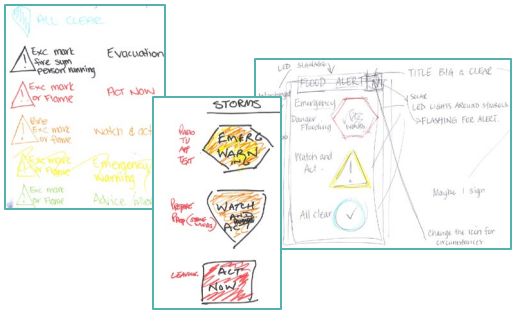
Participants liked the use of the lightning bolt storm icon, but felt additional bolts could be incorporated as the danger escalated.

While the warmer colours communicated danger, the use of blue and particular green was questioned.

Exploring Fire Danger Rating and Warning Systems

Topline insights from Stage 2 creative sessions

Exploring ratings and warnings in Western Australia



Fire Danger Rating System

- The majority created a simplified version of the existing system. The visual representation/shape used did vary between a semi-circle and rectangle, in line with other jurisdictions.
- Four levels of FDR was most common. Catastrophic and extreme were thought to mean the same thing and used interchangeably in some locations.
- A traffic light colour palette was used moving from cool to warm colours.
- All focus group locations discussed the importance of utilising technology such as LED displays to attract attention and remove the requirement for manually updating signs.
- Some also included a statement on the day to provide reassurance that ratings were being updated daily, and to clearly communicate the key desired behaviour.

Warning Systems

Overall there was a strong focus on using action oriented words when naming warnings.

Bushfire Warnings

- Most systems designed were 3 levels with a realistic style of flame icon. Colours used were generally warm colours, and reflective of the broader national view. Green was associated with all clear as a safety colour. Evacuate was seen as a standalone message to Emergency Warning.

Flood Warnings

- Three warnings levels were seen as appropriate with an icon that clearly communicated a flood (e.g. rising water or rising water with a house). A warm colour palate was used throughout, with some incorporating blue at the lowest level, due to its representation of water.

Extreme Weather Warnings

- Using three warning levels was seen as intuitive based on experience with bushfire warnings.

Extreme Heat Warnings

- Warnings related to heat were viewed as a single level of warning or 'on-off' system when required. The use of a sun icon and colour red were consistent.

An Optimised Fire Danger Rating System

Quantification through Stage 3 online survey

Development of the optimisation survey was an inclusive process between Metrix and the Project Steering Group

Workshops were held to finalise the optimisation survey bringing together findings from Stage 1 and 2 research and knowledge from subject matter experts.

Due to the need to include an out of scale level and respect the outcomes of the 2009 Victorian Bushfires Royal Commission, it was agreed that **four levels** would be used to communicate the Fire Danger Ratings.

Similarly, due to potential conflicts regarding the name of the top level, the words Code Black, Red Flag, Maximum, Major and Disastrous were included for testing. Please note these were not developed from Stage 2 insights.

The optimisation survey included four main development stages

Prior to developing their Fire Danger Rating system, respondents were provided with a description of the system's purpose along with how the system and its ratings are currently communicated. The purpose of the description was to set the scene on what the system's objectives are to assist respondents in developing a system. They were then asked to develop the following four stages.

Shape

To set the base of their design, respondents first chose their preference between a semi-circle, triangle and rectangle as the shape for the system.

Colour

Respondents then chose the colour set that best communicated the increasing fire risk and that would encourage preparatory action to stay safe. Three colour sets were developed using findings from Stage 2.

Word Set

Two word banks were developed based on findings from Stage 2 to communicate the first three levels of the system. Respondents were then required to rank their top 3 preferences for the fourth level.

Supportive Message

Finally respondents were asked to select the supportive message for each level of the system that would be most effective to encourage them to take action.

To limit order bias, the order of choosing the colour and word sets was rotated for each respondent.

Please note that the questionnaire has been included in the appendix (page 53).

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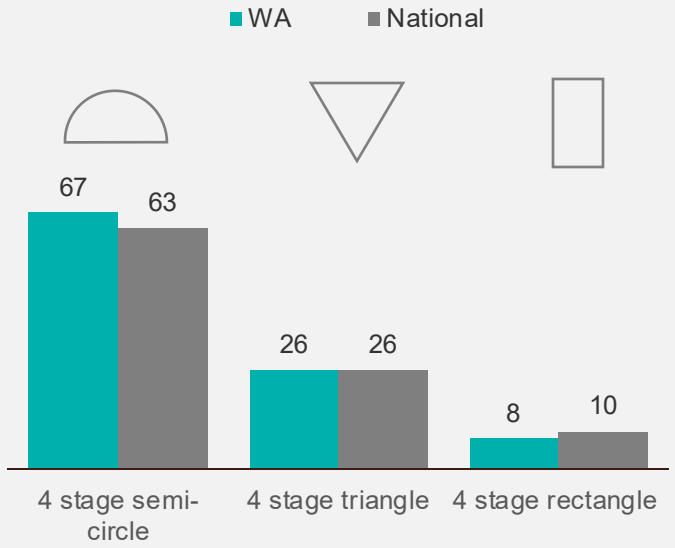
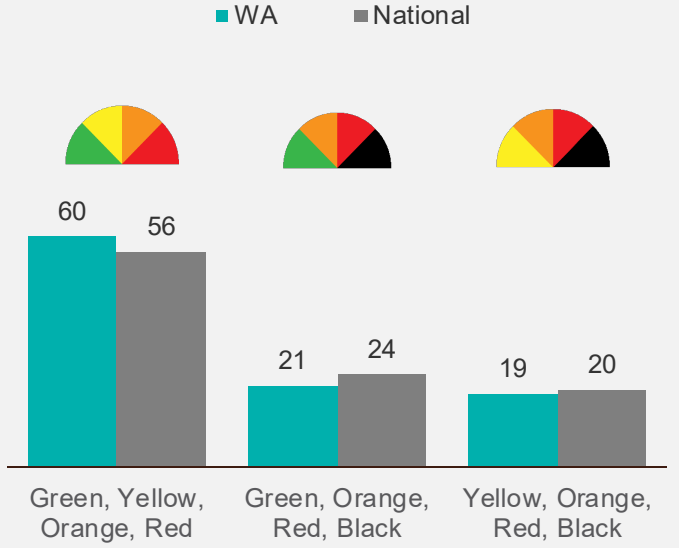
The majority feel the existing semi-circle design is most effective to visually represent FDRs

There was a slightly higher preference for the semi-circle and green, yellow, orange, and red colour palette, but differences were not significant.

Shape to Communicate the Fire Danger Rating



Colour Set to Communicate Increasing Risk



% of West Australian residents

WA n=995 | National n=5,408
Q2. Which shape would be most effective to communicate the Fire Danger Ratings?
Q3. Now, which of these colour sets best communicates increasing fire risk and would encourage you to take action and stay safe at each Fire Danger Rating?
Note: Colour set figures are for general population. Semi-circle colour images are for display purposes only.

↑↓Significant difference to National figures at 95% confidence

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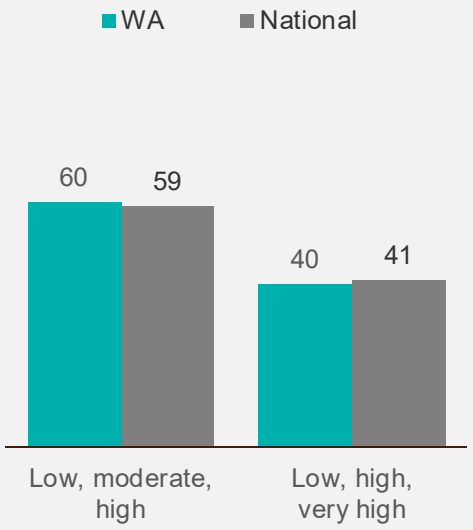
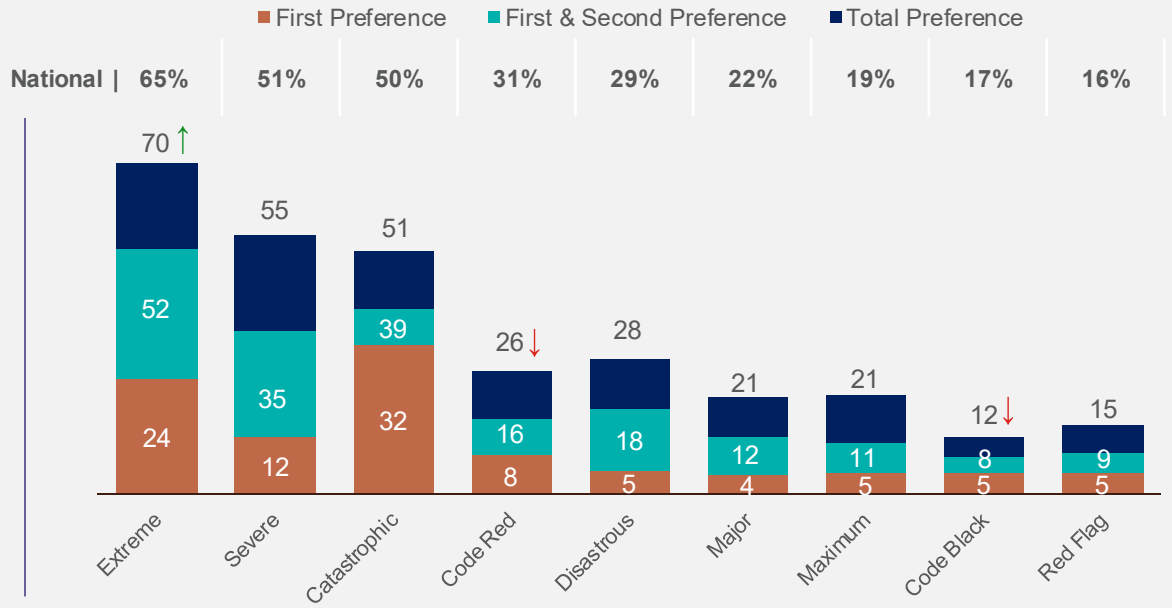
The preferred names for FDR levels is a simplified version of the existing system

In Western Australia, extreme is the preferred name for the top level of the FDR by top 3 preference, significantly higher in preference compared to national figures.

Preferred Name of Fire Danger Rating Levels



Preferred Name for Top Fire Danger Rating Level



% of West Australian residents

WA n=995 | National n=5,408
Q4a - Thinking about the purpose of this system (i.e. to effectively prompt individuals to take action), which of the following word-sets best communicates bushfire risk from least to most danger for the first 3 levels?
Q4b - Now please rank the following options from most to least preferred to communicate the highest level of bushfire danger.

↑↓Significant difference to National figures at 95% confidence

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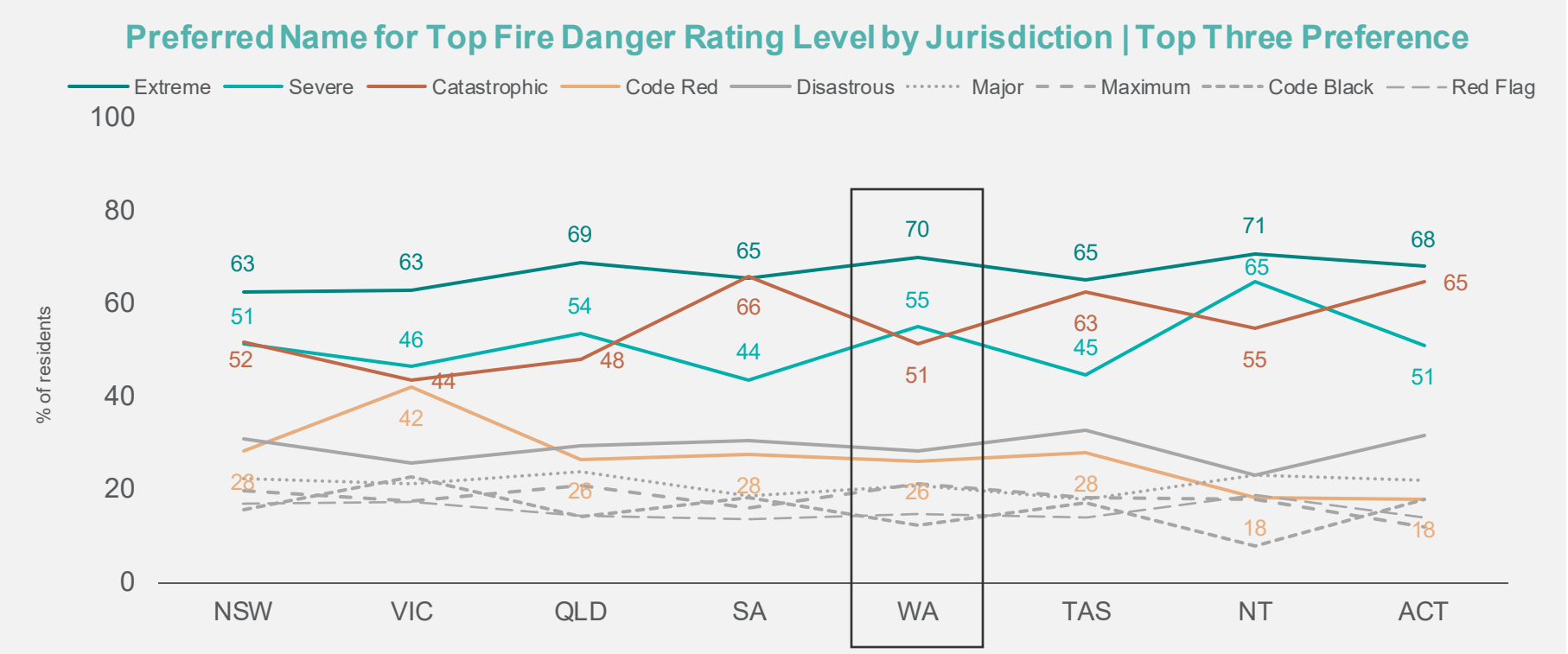
Preferred naming of the top rating is broadly consistent across jurisdictions



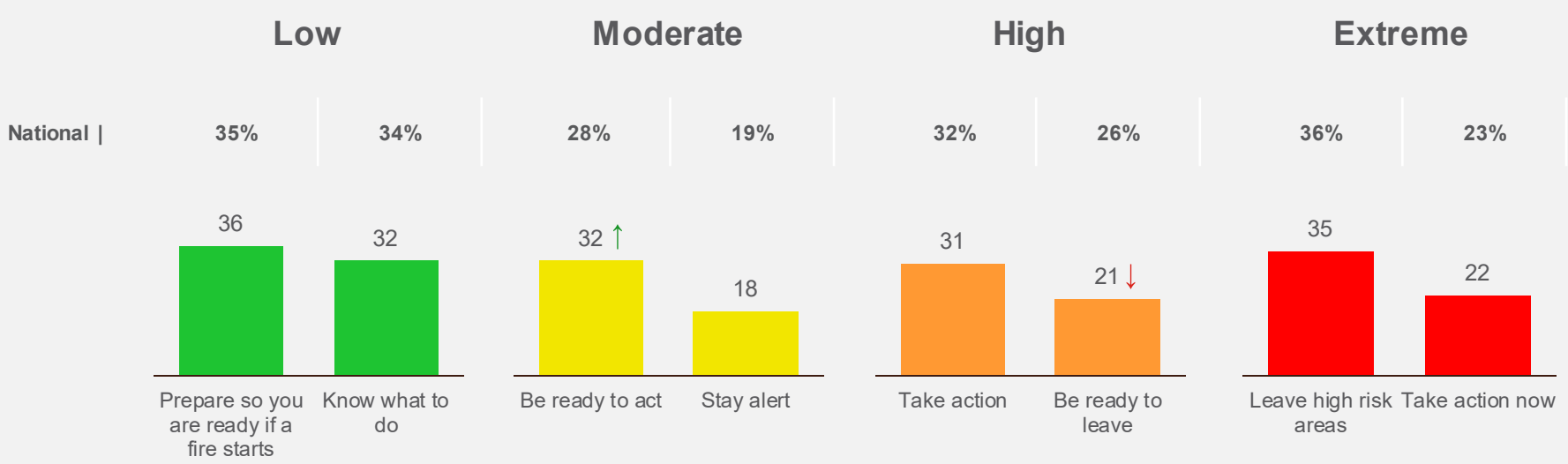
NSW n= 1,004 | VIC n= 1,007 | QLD n= 1, 001 | SA n= 1,002 | WA n= 995 | TAS n=199 | NT n= 100 | ACT n= 100
Q4b - Now please rank the following options from most to least preferred to communicate the highest level of bushfire danger.

metrix

Action orientated statements are preferred to ensure supporting messages are effective

Western Australian residents have significantly higher preference towards *'be ready to act'* to support a Moderate rating.

Top Two Supporting Messages for Desired Levels of the Fire Danger Rating



WA n=995 | National n=5,408
Q5a - Which of the following would be most effective to encourage you to take action and stay safe at each Fire Danger Rating?

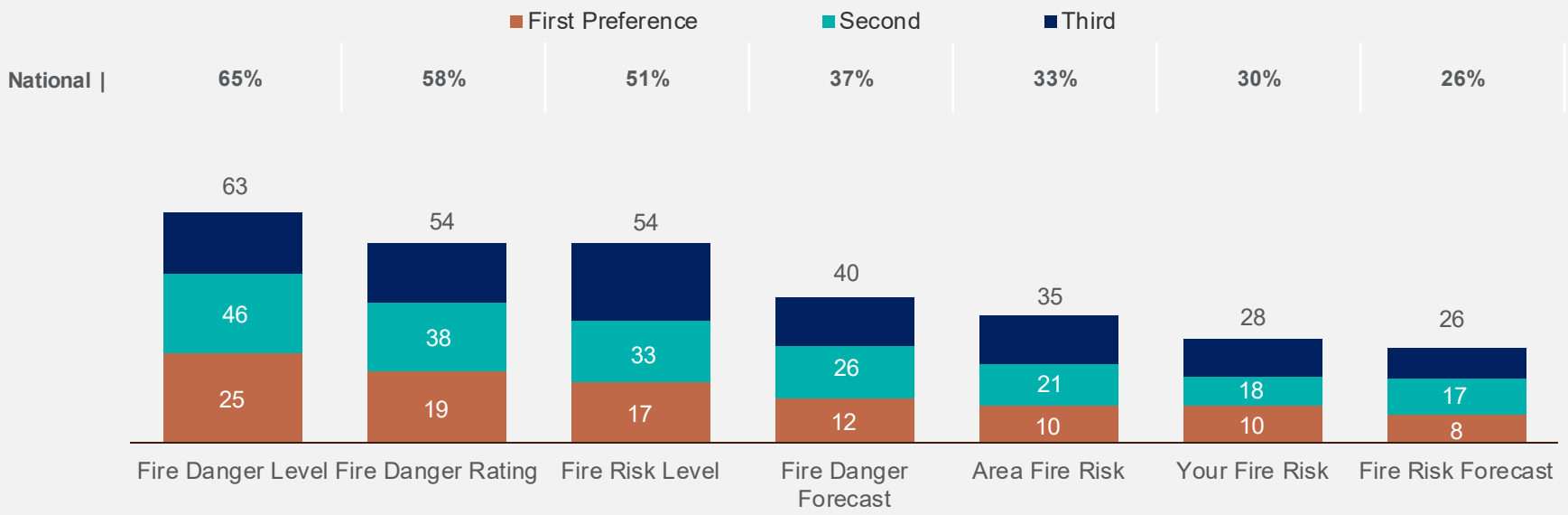
↑↓Significant difference to National figures at 95% confidence
Note: Extreme has been used to describe the highest rating as the majority preference nationally.

metrix

Fire Danger Level was the first preference for the overarching name for the system

However, it should be noted that order biases could have been experienced due to the use of the word 'level' throughout the question wording in the survey. Once the final system is agreed upon, we would recommend conducting a monadic preference question in a national omnibus to confirm these findings.

First Preference Name for the National System



SA n=1,002 | National n=5,408
Q5b - When Fire Danger Ratings are displayed on signs and other visual means, which of the following is most effective to describe ratings?

↑↓Significant difference to National figures at 95% confidence

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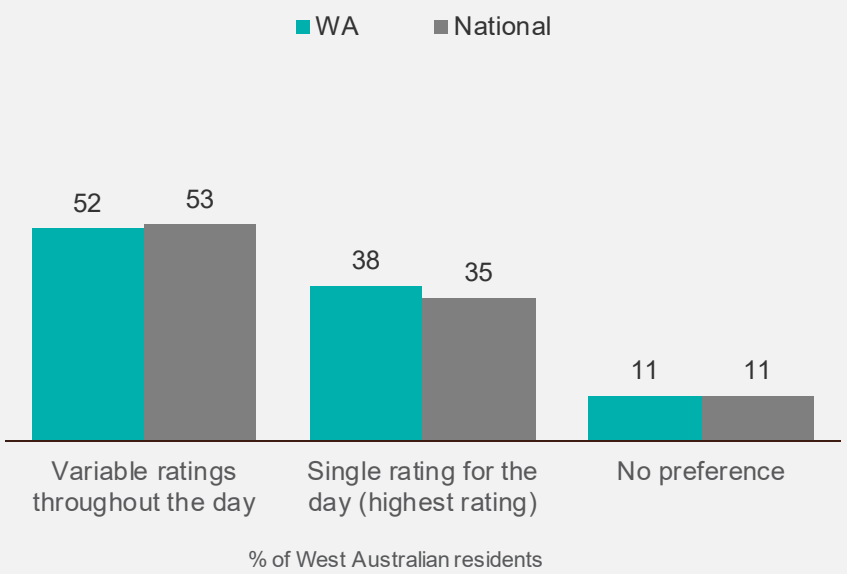
Though the majority would prefer ratings to update with conditions, there is danger in overcomplicating the system

Preference for Number of Daily Communications of Fire Danger Ratings



As found in Stage 1 and 2 of the research, there are issues surrounding the comprehension of the system. Variable messaging throughout the day has the potential to amplify these issues.

If variable messaging is to be used, this would need to be a key focus of the education and communications strategy due to its large departure from the existing system. All residents would have to re-learn how to use and respond to ratings.

WA n=995 | National n=5,408
Q5c - If the Fire Danger Rating varied throughout the day (e.g. Low in the early morning and High in the hottest part of the day) would you prefer to be told a single rating for the day (highest rating), or receive multiple ratings throughout the day?

↑↓Significant difference to National figures at 95% confidence

metrix

An Optimised Multi Hazard Warning System

Quantification through Stage 3 online survey

Development of the optimisation survey was an inclusive process between Metrix and the Project Steering Group

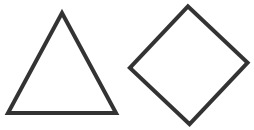
Workshops were held to finalise the optimisation survey bringing together findings from Stage 1 and 2 research and knowledge from subject matter experts.

Warning shape, icon sets and colour sets were drawn direct from research findings. Potential word sets were tested with the highest level of warning set at 'Emergency Warning'. As the majority issue was with 'Watch and Act' as an instruction, respondents were also asked a ranked preference question with both 'Advice' and 'Emergency Warning' locked.

Warning systems were designed for bushfire, cyclone, flood, extreme weather and extreme heat to ensure a multi hazard approach.

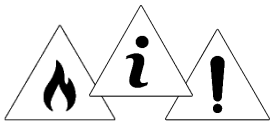
The optimisation survey included five main development stages

Prior to developing their warning system, participants were provided with a description of the system's purpose along with how warnings are currently communicated. Each participant was randomly assigned a natural hazard to create their warning system.



Shape

To set the base of their design, participants chose their preference between a triangle and diamond as the shape for the system.



Icon

Participants were asked to select an icon set from a hazard specific icon (e.g. flame), a hazard specific icon that visually showed increasing severity, or an action specific icon set (similar to that used in Victoria).

Colour

Participants chose the colour set that best communicated the escalation of warning and that would encourage action. Three colour sets were developed using findings from Stage 2.

Word Set

Word sets were developed based on findings from Stage 2 the first two levels of warning. Participants were asked two questions, a single response, and a ranked top 3 preference to understand the most intuitive warning names.

Supportive Message

Finally, participants were asked to select the supportive message for each level of warning that would be most effective to encourage them to take action.

Please note that the questionnaire has been included in the appendix (page 75).

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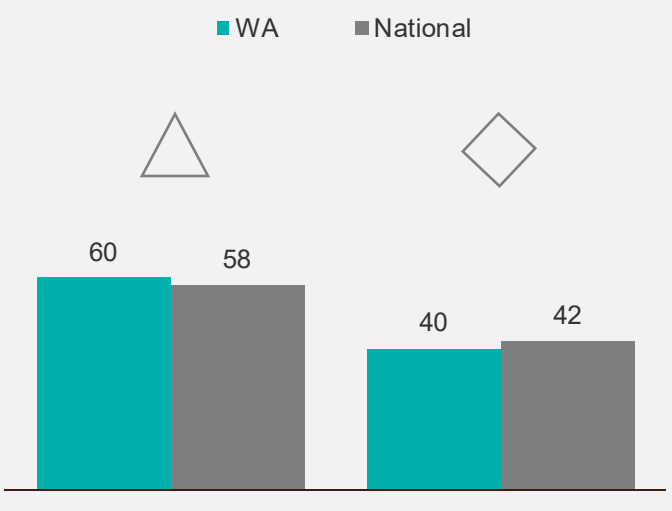
The majority feel a triangle system with hazard specific icons that increase in severity is most effective

Perceptions of the most effective shape and icon are consistent across jurisdiction and hazard type.

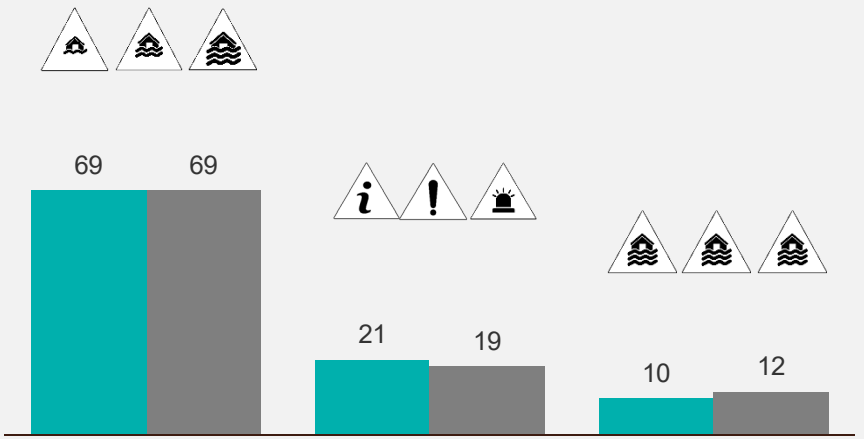
Shape to Communicate the Warnings



% of West Australian residents

Icon Set to Communicate Increasing Warning

Floods shown as example



% of West Australian residents

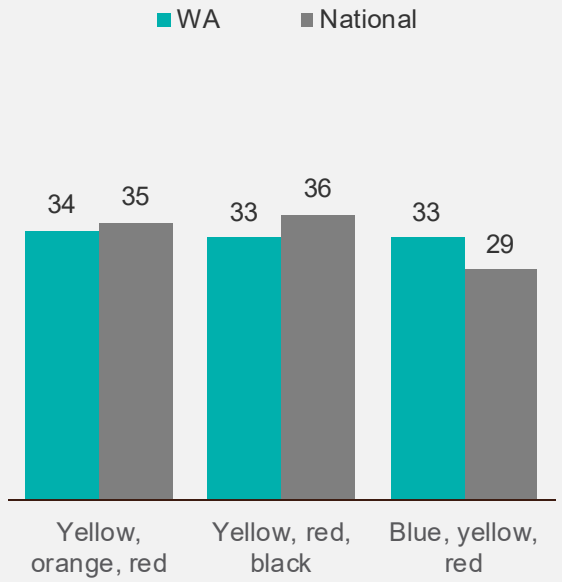
WA n=995 | National n=5,408
Q7. Which of the following variations of shape would be most effective when showing a [insert hazard] warning?
Q8. Which of the following options would be most effective when showing a [insert hazard] warning?

↑↓Significant difference to National figures at 95% confidence

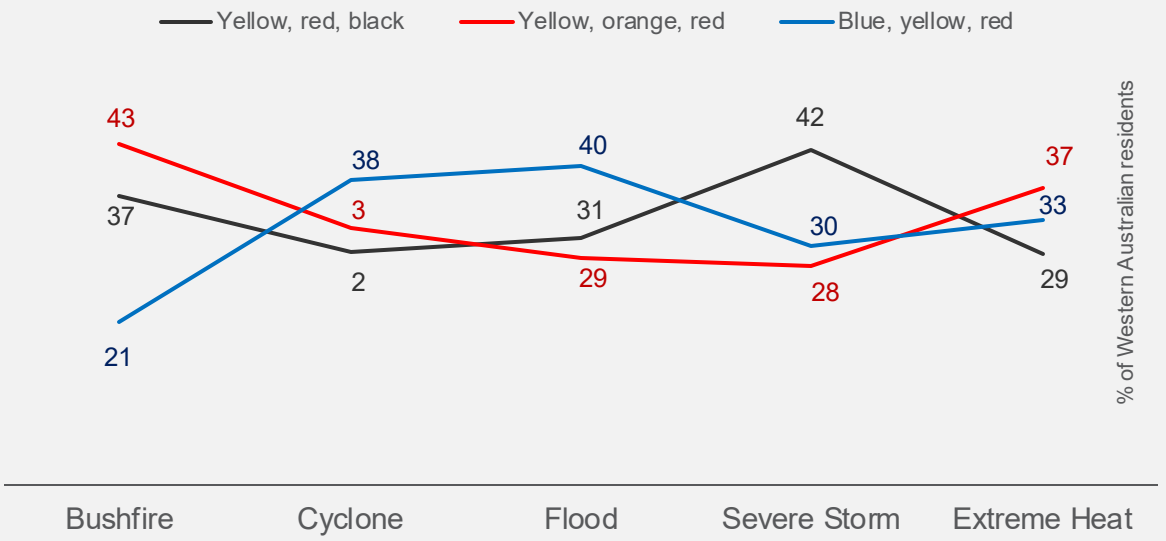
The most effective colour set varies by hazard type, though a warm palette is most intuitive for most

We recommend that a palette of yellow-orange-red is used to show escalation of risk. Red is associated with high danger, supported by previous stages of research. Black is currently used to communicate prescribed burns and showing the burn areas on mapping platforms. This aligns with Stage 2 research showing associations with burnt areas and post danger. Blue is currently used for bushfires but isn't supported in survey data, it is not recommended for use.

Preferred Colour Set



Preferred Colour Set by Hazard Type



WA n=995 | National n=5,408
Q9. Now, which of these three colour sets best communicates increasing [insert hazard] risk and would encourage you to take action when a warning is issued?

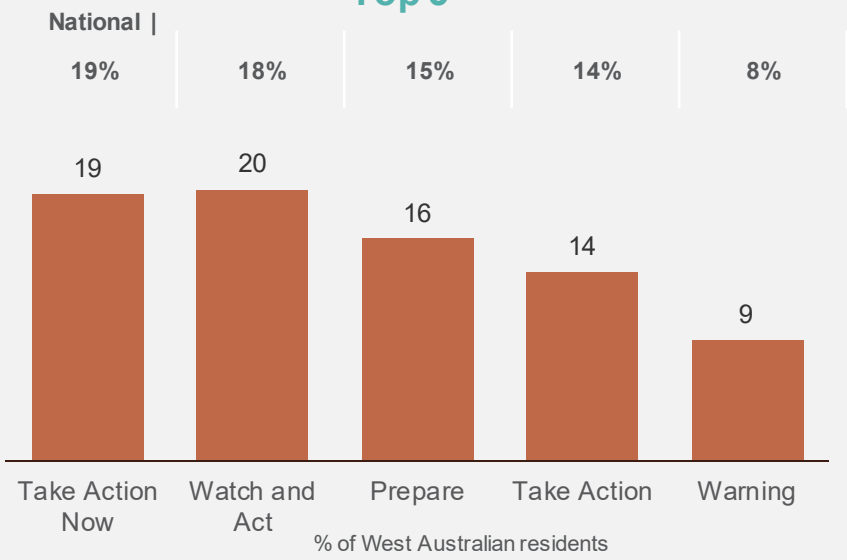
↑↓Significant difference to National figures at 95% confidence

There are no clear-cut preferences for warning names

Stage 2 research highlighted that the first level of warning is associated with alerting the community that something is happening and to seek information and/or monitor conditions. This correlates with preferences for names such as warning and alert. The most effective warning names for the second level centre around the word 'act' suggesting this is key for inclusion. Though familiar and top of mind, Stage 2 highlighted the significant confusion associated with 'Watch and Act' suggesting maintaining the name poses a risk to community understanding.

Preferred Name for First Warning Level Top 5

Preferred Name for Second Warning Level Top 5

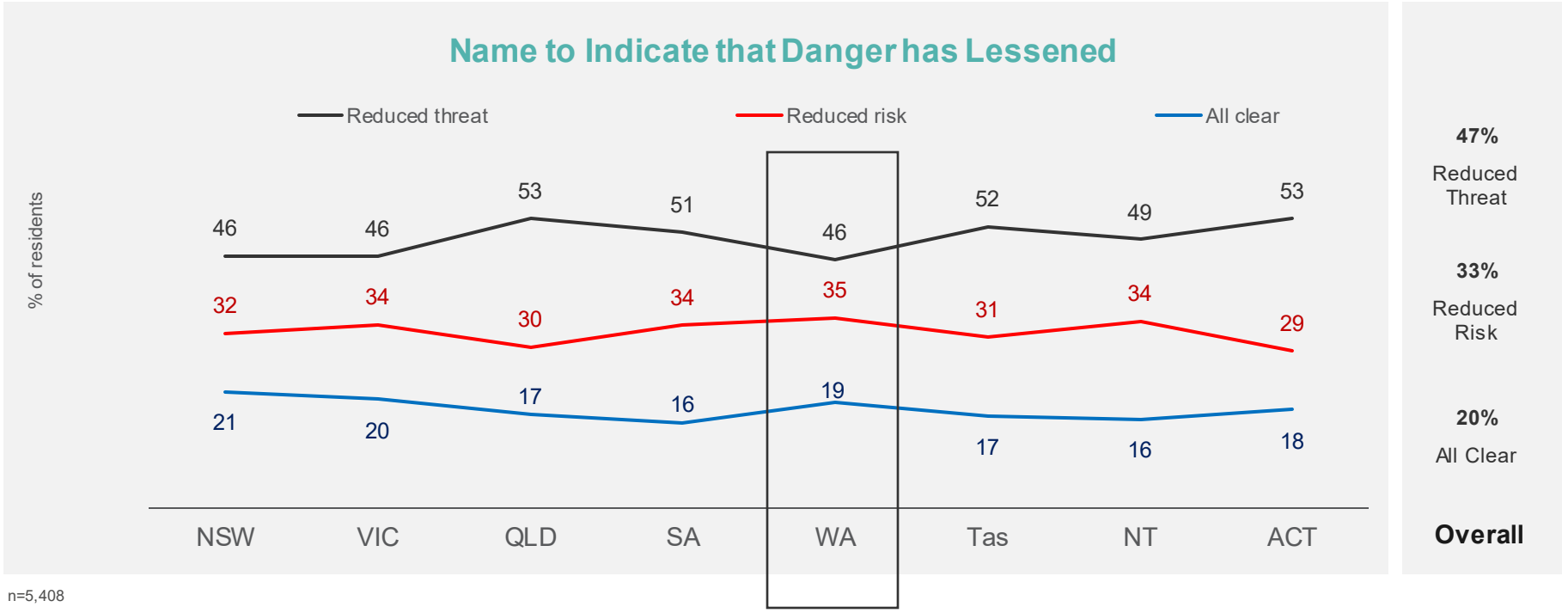


WA n=995 | National n=5,408
Q10a. If the highest level of risk is named EMERGENCY WARNING, which of the following words best communicates the first two levels?

↑↓Significant difference to National figures at 95% confidence

‘Reduced threat’ is seen to effectively communicate a warning de-escalation message

Although this is the first time a de-escalation message has been explored nationally, findings are consistent across jurisdictions. ‘Reduced threat’ is seen to be most effective for bushfires (52%), while ‘reduced risk’ is seen as most effective at communicating the danger has lessened for floods (37%) and extreme heat (40%).



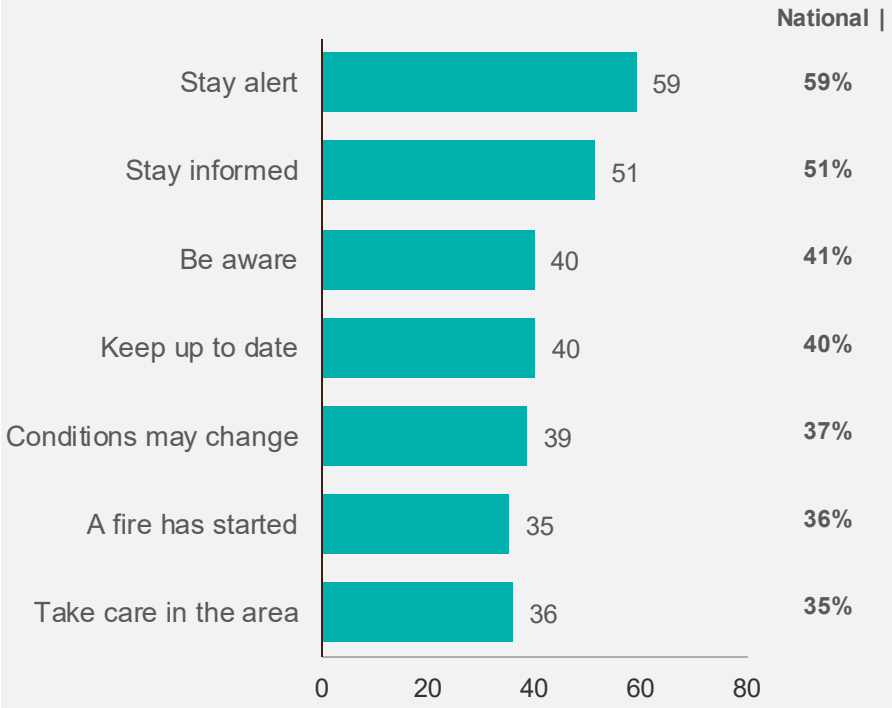
n=5,408

Q11. Which of the following options best describes the final message to indicate that the danger has lessened?

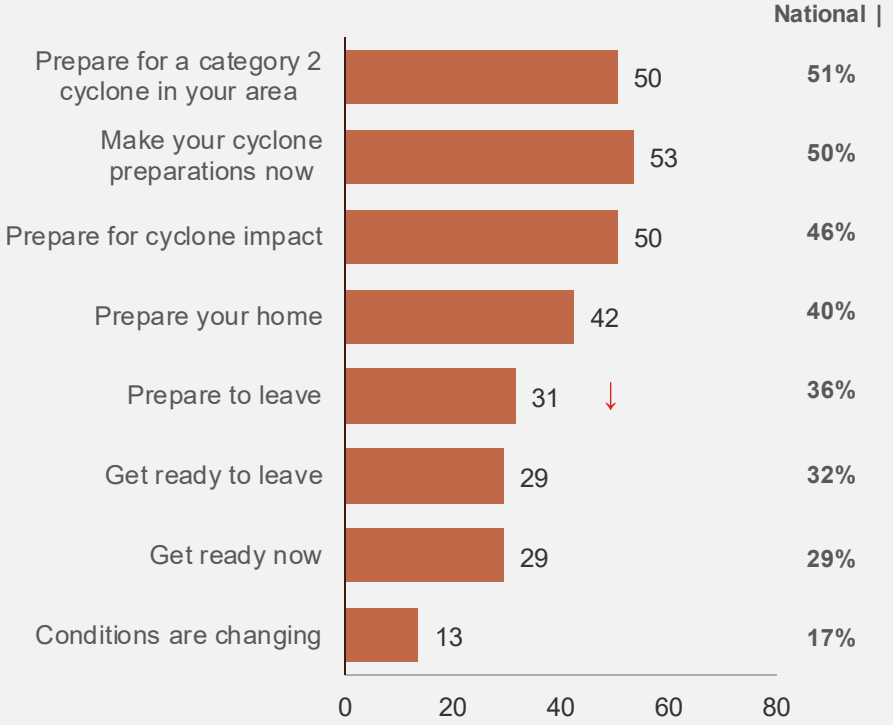
Action orientated statements are seen as most effective for supporting messages

Though there is no clear cut preference for warning level names, care should be taken to ensure language used does not overlap with supporting messages.

Supporting message for Level 1 Bushfire Warning



Supporting message for Level 2 Cyclone Warning



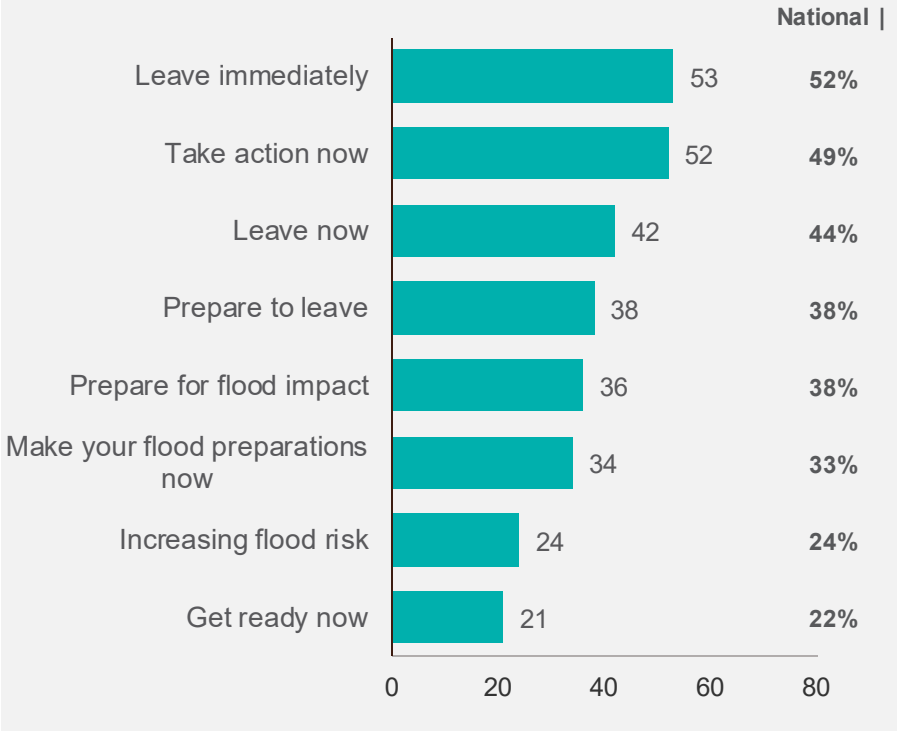
% of West Australian residents

WA n=995 | National n=5,408
Q12. For the next question you will be shown a number of scenarios. For each please select your top 3 phrases that would encourage you to take action.

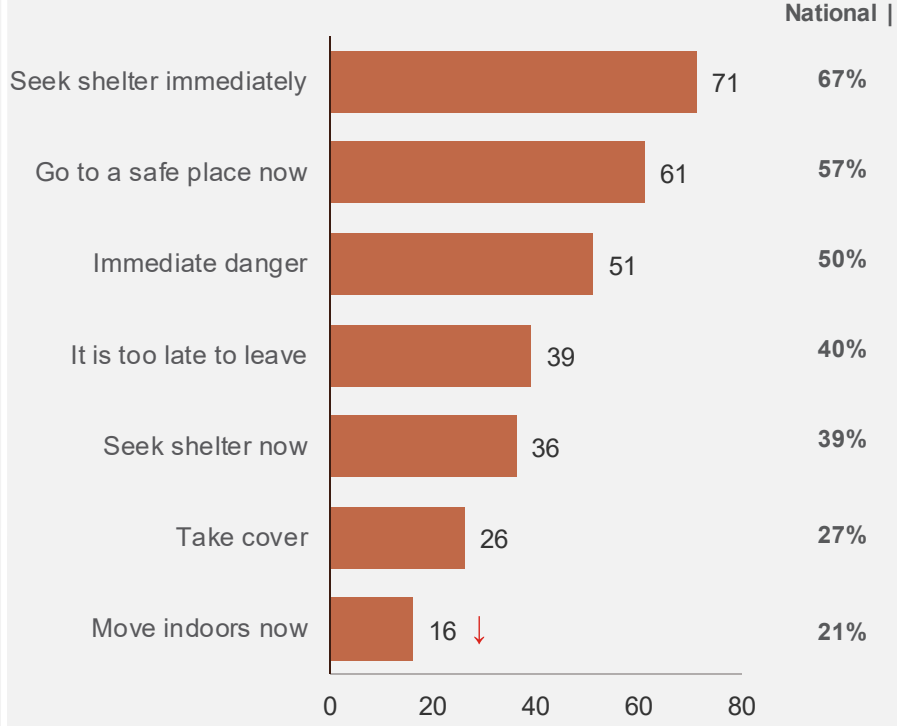
↑↓Significant difference to National figures at 95% confidence

Supporting messages for Emergency Warning situations are focused on taking immediate action

Supporting message for Level 3 Flood Warning



Supporting message for Level 3 Bushfire Warning



% of West Australian residents

WA n=995 | National n=5,408
Q12. For the next question you will be shown a number of scenarios. For each please select your top 3 phrases that would encourage you to take action.

↑↓Significant difference to National figures at 95% confidence

Appendices

Appendix 1:
Behaviour Change Model

The behaviour change model underpins thinking on hazard preparedness and response to forecast and warning systems

The natural-hazard behaviour change was developed from the transtheoretical model, but differs in three ways.

1. Recognition of risk is more **complex**, and transitions from general risk recognition, through (typically) an assessment of personal risk, to recognition of what that level of personal risk is.
2. The decision to prepare does not always follow knowledge – in some cases, it may precede it – typically where geography (at-risk location) and/or cultural background (upbringing) play a part.
3. Action is separated into two distinct categories; with the decision to take low engagement actions often made without a connection to natural hazards preparation.

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Risk recognition and behaviour is strongly influenced by the type and location of an individuals home

This is a national trend. Risk recognition is highest amongst those living in regional areas, which tend to be larger properties with stand alone homes.

Property size

Perception of risk increases with property size.

Metro / regional location

Those in regional locations tend to have greater risk recognition and actions taken regarding hazard response preparation.

Distance to bushland

For bushfires - perception of risk increases the closer distance to open bushland or grassland areas.

Home type

Those with standalone homes have greater risk recognition than those in shared buildings.

Exposure to Hazards in the Past

Where there is limited visibility of recent incidents, or an emergency warning has not been issued for a number of years, individuals become complacent and perception of risk decreases.

Distance to water

For water based hazards - perception of risk increases the closer distance to open water areas.

Aligned with previous research, recognition of personal risk from is limited across bushfires, floods and cyclones

Recognition of risk from severe storms and extreme heat is stronger, with approximately six in ten stating they have knowledge on how to respond to warnings.

Western Australia Behaviour Change Model

	Bushfire		Cyclone		Flood		Severe Storms		Extreme Heat	
	Metro	Regional	Metro	Regional	Metro	Regional	Metro	Regional	Metro	Regional
Risk Recognition	94	93	44	62	37	50	66	73	78	71
Personal Risk Recognition	37	59	21	27	16	22	66	71	65	57
Knowledge on how to respond to warnings	34	57	18	24	15	21	62	70	62	55
Decision to prepare	29	53	13	21	11	18	54	63	52	48
Future intention to prepare	19	36	7	13	6	10	37	44	36	35

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Appendix 2

Steering Group and Reference Group Members

Steering Group and Reference Group Members

Name	Jurisdiction	Agency	Position	Reference Group	Steering Group	Project group
Andrew Stark	SA	SACFS	Deputy Chief Officer			
Fiona Dunstan	SA	SACFS	Manager Information Operations			
Peta O'Donohue	SA	SACFS	Project Manager Parners in Bushfire Safety			
Amanda Leck	National	AFAC	Director, Community Safety and Resilience AFAC & AIDR			
Greg Esnouf	National	AFAC	Program Director National Fire Danger Ratings System		Changed	
Anthony Clark	NSW	NSWRFS	Director, Corporate Communications			
Nicholas Kuster	NSW	SES	Coordinator Planning, Warnings and Intelligence			
Hayley Gillespie	QLD	QFES	A/Director, Media, Communications and Engagement			
Troy Davies	QLD	QFES	Director, Volunteer Capability and Coordination, QFRS			
Christina Hanger	VIC	CFA-VIC	Senior Engagement Advisor Analysis & Strategy			
Dawn Hartog	VIC	DEWLP	Senior Advisor			
Rachel Bessell	VIC	CFA-VIC	Bushfire Research and Development			
Reegan Key	VIC	EMV	Manager, Emergency Management Community Information			
Amy Miller	VIC	EMV	Acting Manager, Emergency Management Community Information	Changed		
John Gilbert	VIC	CFA-VIC	Program Manager Research & Evaluation			
Jill Downard	WA	DFES	Director Media and Corporate Communications			
Kaylee Rutland	ACT	ACT-ESA	Acting Manager, Education Media			
Carla Mooney	National	BOM	Project Manager, National Flood Warning Infrastructure Working Group			
Sascha Rundle	National	ABC	Acting Manager, Emergency Broadcasting & Community Development			
Leighton Morvell	National	EMA	Director Capability and International	Changed		
Ailsa Schofield	NSW	SES	Senior Manager Community Planning and Readiness			
Phil Lindsay	NSW	FRNSW	Assistant Commissioner Operational Capability			
Leanne Lewis	NT	NTFRES	Staff Officer to Executive Director, NTFRES			
Colin Lindsay	SA	MFS	ACFO Community Safety & Resilience			
Mhairi Revie	TAS	TAS-SES	Regional Manager (North)			
Peter Middleton	TAS	TFS	Coordinator Community Development			
Tamsin Achilles	VIC	VICSES	Senior Advisor, Readiness & Intelligence	Changed		

Appendix 3

Focus Group Details

Focus group attendance summary | 340 participants

Jurisdiction	Location	Date	Total attendance
ACT	Gungahlin	14-Nov 2018	8
ACT	Kambah	13-Nov 2018	7
ACT	Central Canberra	15-Nov 2018	8
NSW	Batemans Bay	22-Oct 2018	6
NSW	Dungog	29-Oct 2018	8
NSW	Katoomba	26-Oct 2018	5
NSW	Moree	23-Oct 2018	6
NSW	Grafton	17-Oct 2018	6
NSW	Sydney	24-Oct 2018	5
NSW	Richmond	25-Oct 2018	5
NSW	Albury	23-Oct 2018	6
NT	Darwin	15-Oct 2018	7
NT	Katherine	16-Oct 2018	4
NT	Alice Springs	19-Oct 2018	8
QLD	Brisbane	15-Oct 2018	7
QLD	Gold Coast Hinterland	16-Oct 2018	6
QLD	Rockhampton	11-Oct 2018	7
QLD	Mt Isa	30-Oct 2018	8
QLD	Bundaberg	10-Oct 2018	7
QLD	Cairns	29-Oct 2018	8
QLD	Charleville	25-Oct 2018	8
QLD	Mackay	12-Oct 2018	7
QLD	Toowoomba	9-Oct 2018	7

Jurisdiction	Location	Date	Total attendance
SA	Clare Valley	5-Nov	8
SA	Riverland (Berri)	6-Nov	7
SA	Gawler	7-Nov	6
SA	Adelaide Hills	8-Nov	18
SA	Port Lincoln	9-Nov	5
SA	Mt Gambier	12-Nov	7
TAS	Kingston	2-Nov	8
TAS	St Helens	31-Oct	6
TAS	Launceston / Invermay	30-Oct	7
TAS	Eaglehawk Neck	1-Nov	5
VIC	Churchill	12-Nov	6
VIC	Rye/Rosebud	8-Nov	7
VIC	Horsham	19-Nov	8
VIC	Wodonga	15-Oct	7
VIC	Bannockburn	20-Nov	6
VIC	Emerald	22-Nov	8
VIC	Elwood	7-Nov	7
VIC	Bairnsdale	13-Nov	8
WA	Kalgoorlie	16-Oct	6
WA	Waroona	3-Oct	7
WA	Broome	8-Oct	8
WA	Albany	9-Oct	8
WA	Kununurra	12-Oct	7
WA	Newman	1-Oct	8
WA	Perth Hills	1-Oct	8

Appendix 4

Fire Danger Rating definition

Fire Danger Rating purpose

Definition provided by the South Australian Country Fire Service for focus groups.

The Fire Danger Rating tells you how dangerous a fire would be if one started. The higher the Fire Danger Rating, the more dangerous the fire conditions.

Fire Danger Ratings indicate how difficult it will be to control a fire under the forecast weather conditions.

It is not a predictor of how likely a bushfire is to occur.

Ratings are forecast using Bureau of Meteorology data for up to four days in advance, based on weather and other environmental conditions such as fuel load.

The Rating is your prompt to take action to stay safe.

The Fire Danger Rating should be used as an early indicator to trigger your plans.

The Fire Danger Rating table will help you understand the predicted bushfire behaviour, potential impacts and recommended actions you should take for each category level (e.g. CFS web page Fire Danger Ratings based on Appendix 3 of the National Framework for Scaled Advice and Warnings to the Community).

Fire Danger Rating purpose

Definition provided by the South Australian Country Fire Service for Stage 3 quantitative survey.

INTRODUCTION 1

The first section of questions will be asking you about Fire Danger Ratings. This is a **forecast system** used to inform the community of how dangerous a bushfire would be **if** one started. It is **not** an indicator that a bushfire has started.

There are a number of ratings that **indicate how difficult it will be to control a fire** under the forecast weather conditions. The higher the Fire Danger Rating, the more dangerous the fire conditions.

Though there are multiple Fire Danger Ratings to show increasing danger, only a single rating will be issued to show the bushfire danger for that day.

Ratings are forecast using Bureau of Meteorology data for up to four days in advance, based on weather (e.g. temperature and wind) and other environmental conditions such as how much dry grass and undergrowth there is.

The Fire Danger Rating should be used as an early indicator to trigger you to take action and stay safe.

INTRODUCTION 2

You may see or hear the Fire Danger Rating in a number of ways, including:

- Interactive online maps
- Official Websites and Apps
- Social Media (e.g. Facebook)
- TV
- Text messages
- Roadside signage
- Radio

The existing system is being reviewed to ensure the design is highly effective at **prompting you to take action** to protect against the risk of bushfires.

Research has been conducted nationally to develop a set of potential designs for the new system. **In the following questions we'd like you to select from these designs based on what you think is the most effective system to promote action.**

Appendix 5
Questionnaires

2337 – National Alerts and Warnings

Stage 1 - Online Survey

Client Contact Name:	Fiona Dunstan, Peta O'Donohue, Andrew Stark
Version:	V3 21.8.18
Methodology:	Online
Survey Length:	15 minutes

	Quotas	
STATE	METRO	REGIONAL
QLD	400	600
NSW	500	500
VIC	600	400
SA	800	200
WA	500	500
TAS	200	
ACT	100	
NT	100	
TOTAL PER VERSION	5400	

Send out all survey invitations in line with the population profile – age, gender, income, region etc.

PROGRAMMER INSTRUCTIONS

○	Denotes single response question
☐	Denotes multiple response question

Thank you for agreeing to take part in this **15** minute survey regarding alerts and warnings for **natural hazards in Australia**. All information you provide will remain completely confidential and only be used for research purposes.

When completing the survey please read each question carefully, answer the questions below as accurately as you can and select the answers that best reflect your views. Some questions allow more than one answer. There are also several opportunities to type in open-ended responses. To move to the next question, click on the next button at the bottom of the screen, please note that there is no opportunity to go back to a previous question once you have moved to the next page.

SECTION 1 – SCREENING

S1	Do you, a relative or a close friend work or have recently worked: **RANDOMISE**	In market research **Terminate** ☐ 01 In advertising or media **Terminate** ☐ 02 In emergency services (e.g. police, firefighter, ambulance) **Terminate** ☐ 03 As a volunteer in emergency services (e.g. firefighter) **Terminate** ☐ 04 For an insurance company ☐ 05 For a telecommunications provider ☐ 06 None of the above ○ 07
S2	How old are you?	Under 18 **Terminate** ○ 01 18-24 ○ 02 25-29 ○ 03 30-34 ○ 04 35-39 ○ 05 40-44 ○ 06 45-49 ○ 07 50-54 ○ 08 55-59 ○ 09 60-64 ○ 10 65+ ○ 11
S3	Are you…	Male ○ 01 Female ○ 02 Other ○ 03
S4	What is your postcode? **PROGRAMMER – RESTRICT TO NUMERIC, 4 DIGITS** **TERMINATE IF DO NOT FALL INTO AU POSTCODE RANGE**	

CREATE HIDDEN VARIABLE BASED ON LOCATION TO MATCH GEOGRAPHICAL SEGMENT

SECTION 2 – Recognition of Risk

Q1	Which of the following natural hazards do you believe are a risk in **[insert jurisdiction]**? **RANDOMISE, LOCK CODE 98 AT BOTTOM**	Bushfire ☐ 01 Cyclone ☐ 02 Flood ☐ 03 Severe Weather - Severe Storms ☐ 04 Severe Weather - Extreme Heat ☐ 05 Other (please specify) ☐ 06 None of the above ○ 98

SECTION 3 – Recognition of Personal Risk

Q2 What level of **personal risk** do you associate with each of the following natural hazards?

	a. Bushfire	b. Cyclone	c. Flood	d. Severe Storms	e. Extreme Heat
No risk to me *I feel that it is **not** a risk to me at all*	○ 1	○ 1	○ 1	○ 1	○ 1
Low risk to me I feel **very little** personal risk *(e.g. Don't live, work or travel in an at-risk area, I am well prepared, hazards are infrequent, etc.)*	○ 2	○ 2	○ 2	○ 2	○ 2
Moderate risk to me I feel **some risk** *(e.g. Hazards are unpredictable, I may be prepared, I live, work or travel in an area of some risk, etc.)*	○ 3	○ 3	○ 3	○ 3	○ 3
High risk to me I feel I am **at risk** *(e.g. Live, work or travel in a high-risk area, hazards occur frequently, I am not prepared, etc.)*	○ 4	○ 4	○ 4	○ 4	○ 4

Ask if DO NOT recognise personal risk - Codes 1-2 @ Q2

Q3 Why do you feel you are not at **personal risk** from these hazards?

RANDOMISE, LOCK CODES 4 AT BOTTOM.

	a. Bushfire	b. Cyclone	c. Flood	d. Severe Storms	e. Extreme Heat
This hazard doesn't occur in the part of **[INSERT JURISDICTION]** where I live, work or travel	☐ 1	☐ 1	☐ 1	☐ 1	☐ 1
My type of property isn't at risk of this hazard	☐ 2	☐ 2	☐ 2	☐ 2	☐ 2
This hazard has never occurred where I live	☐ 3	☐ 3	☐ 3	☐ 3	☐ 3
Other (specify)	☐ 4	☐ 4	☐ 4	☐ 4	☐ 4

SKIP TO SECTION 8 – ALERTS AND WARNINGS IF ALL CODE 1-2 @ Q2

SECTION 4 – Knowledge

INSERT NATURAL HAZARDS SELECTED CODE 3-4 AT Q2 (RECOGNISE PERSONAL RISK)

Q5 In some situations, you may receive information about the forecast or current danger of a natural hazard. These alerts and/or warnings can come from official sources (e.g. fire service), websites, the media, or by telephone…

With this in mind, how **knowledgeable** are you on how to respond and protect yourself if an **alert and/or warning** was **issued** for the following hazards?

	a. Bushfire	b. Cyclone	c. Flood	d. Severe Storms	e. Extreme Heat
I have **no** knowledge	○ 1	○ 1	○ 1	○ 1	○ 1
I have **a little** knowledge	○ 2	○ 2	○ 2	○ 2	○ 2
I have **moderate** knowledge	○ 3	○ 3	○ 3	○ 3	○ 3
I have a **high level** of knowledge	○ 4	○ 4	○ 4	○ 4	○ 4

SKIP TO SECTION 8 – ALERTS AND WARNINGS IF ALL CODE 1 @ Q5 (NO KNOWLEDGE)

SECTION 5 – Decision to Act

INSERT NATURAL HAZARDS SELECTED CODE 2-4 AT Q5 (KNOWLEDGE)

Q7 Have you taken, or are you planning to take, any action to prepare yourself to **respond** to an alert and/or warning for the following hazards?

	a. Bushfire	b. Cyclone	c. Flood	d. Severe Storms	e. Extreme Heat
Yes, I have prepared myself	○ 1	○ 1	○ 1	○ 1	○ 1
I have not prepared before, but am planning to	○ 2	○ 2	○ 2	○ 2	○ 2
No, I have no intention to prepare myself	○ 3	○ 3	○ 3	○ 3	○ 3

Ask if NOT made decision to act – Code 3 @ Q7

Q8 Why do you feel you do not need to prepare yourself to respond to an alert and/or warning for the following hazards?

RANDOMISE, LOCK CODE 97 AT BOTTOM.

	a. Bushfire	b. Cyclone	c. Flood	d. Severe Storms	e. Extreme Heat
This hazard doesn't occur in the part of **[INSERT JURISDICTION]** where I live	☐ 1	☐ 1	☐ 1	☐ 1	☐ 1
I am capable of dealing with all the disruptions this hazard might cause	☐ 2	☐ 2	☐ 2	☐ 2	☐ 2
This hazard has never occurred where I live	☐ 3	☐ 3	☐ 3	☐ 3	☐ 3
It is too difficult to prepare	☐ 4	☐ 4	☐ 4	☐ 4	☐ 4
I have other priorities	☐ 5	☐ 5	☐ 5	☐ 5	☐ 5
It's too expensive to prepare	☐ 6	☐ 6	☐ 6	☐ 6	☐ 6
It isn't my responsibility to prepare	☐ 7	☐ 7	☐ 7	☐ 7	☐ 7
I feel I need more information on how to prepare	☐ 8	☐ 8	☐ 8	☐ 8	☐ 8
Other (specify)	☐ 97	☐ 97	☐ 97	☐ 97	☐ 97

SKIP TO SECTION 8 – ALERTS AND WARNINGS IF ALL CODE 3 @ Q7 (NO DECISION TO ACT)

SECTION 7 – Ongoing Action

INSERT NATURAL HAZARDS SELECTED CODE 1-2 AT Q7 (DECISION TO ACT)

Q12 Thinking ahead, how often do you anticipate you will prepare to protect yourself when an alert and/or warning is issued for the following natural hazards?

	a. Bushfire	b. Cyclone	c. Flood	d. Severe Storms	e. Extreme Heat
Yearly or more frequently	O 1	O 1	O 1	O 1	O 1
Every 2 years	O 2	O 2	O 2	O 2	O 2
Every 3 years	O 3	O 3	O 3	O 3	O 3
Every four years	O 4	O 4	O 4	O 4	O 4
Every 5 years or less frequently	O 5	O 5	O 5	O 5	O 5

SECTION 8 – ALERTS AND WARNINGS

We'd now like to get some more information regarding natural hazard alert and/or warning systems you may be aware of.

Each natural hazard – bushfire, cyclone, flood, and severe weather (e.g. severe storms, extreme heat) – will be examined one at a time.

BUSHFIRE

Q13a Thinking about bushfires, do you recall any messaging from [jurisdiction] about days of increased bushfire risk?

- Yes, seen ***and*** heard O 01
- Yes, heard only O 02
- Yes, seen only O 03
- No, I have not seen or heard of this O 04

Q13b Which of the following statements best describes what the Fire Danger Rating is?

- Predicts how **likely** a fire is to **occur** O 01
- Predicts **how dangerous** a fire could be **if** it **did occur** O 02
- Don't know O 99

[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]
DISPLAY RATING SCALE ON THE RIGHT-HAND SIDE OF THE SCREEN

Q13c A fire danger rating system is used to advise the community of the level of **bushfire** danger on a particular day, based on the forecast weather conditions. The rating levels are: Low-moderate, High, Very High, Severe, Extreme, [Catastrophic / Code Red – Victoria only]. Have you seen or heard of these fire danger ratings before today?	Yes, seen ***and*** heard ○ 01 Yes, heard only ○ 02 Yes, seen only ○ 03 No, I have not seen or heard of this ○ 04

KEEP IMAGE OF FDRS ON SCREEN

Q13d Thinking about the **Fire Danger Rating System** (FDRS) shown, how strongly do you agree or disagree with the following statements.

RANDOMISE

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1 The FDRS is **confusing**	○ 1	○ 2	○ 3	○ 4	○ 5
2 The FDRS is **relevant** to me	○ 1	○ 2	○ 3	○ 4	○ 5
3 I **use** the FDRS to plan my days in summer	○ 1	○ 2	○ 3	○ 4	○ 5
4 The FDRS **encourages** me to **take action**	○ 1	○ 2	○ 3	○ 4	○ 5
5 The FDRS has **too many** levels	○ 1	○ 2	○ 3	○ 4	○ 5
6 I **see** FDRS **displayed** in my local community	○ 1	○ 2	○ 3	○ 4	○ 5

Q14 Have you taken any action in the past after seeing or hearing the Fire Danger Rating level?	Yes ○ 01 No ○ 02

KEEP IMAGE OF FDRS ON SCREEN
ASK IF CODE 1 @ Q14

Q15 Thinking about the **last** time you took action, at what Fire Danger Rating level did you take action; what actions did you take and why?	**RATING LEVEL** Low-Moderate ○ 1 High ○ 2 Very High ○ 3 Severe ○ 4	**ACTION TAKEN** OPEN

Please provide as much detail as possible including what the event/incident was, what you felt the warning was telling the community, and what actions you took. **PROGRAMMING NOTE – code 6 read 'Code Red' for Victoria**	Extreme ○ 5 Catastrophic ○ 6 Don't know ○ 99	

KEEP IMAGE OF FDRS ON SCREEN

Q16 Thinking about the fire danger rating system (FDRS) shown, at what level of the FDRS would you...?

RANDOMISE

		Low moderate	High	Very High	Severe	Extreme	Catastrophic	Never
	1 Become concerned about the safety of my property	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98
	2 Become concerned about the safety of myself and family	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98
	3 Check for information about fires in my area	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98
	4 Leave the area	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98
	5 Reconsider travel through a bushland or forested area	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98
	6 Cancel my plans	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98
	7 Ensure my property is well prepared for fire	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 98

EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]

DISPLAY RATING SCALE ON THE RIGHT-HAND SIDE OF THE SCREEN FOR THE FOLLOWING 3 QUESTIONS.

WA WORDING ONLY – OTHER JURISDICTIONS TO BE ADDED ONCE INFORMATION PROVIDED

RANDOMISE ORDER	
Q17a Which of these actions do you believe is required when the fire danger rating is **Low moderate to Very High**?	**YOU NEED TO ACT NOW** Put your survival first and leave bushfire risk areas O 1 **YOU NEED TO GET READY TO ACT** Only stay if you are prepared to the highest level. You must be prepared to actively defend your home if a fire starts. O 2 **CHECK YOUR PLAN NOW** Check your bushfire survival plan. If you are not prepared, leaving bushfire prone areas early in the day is your safest option. O 3 **YOU NEED TO BE AWARE** Monitor conditions and be aware action may be needed. O 4 Something else (specify) O 5 I don't know O 99
Q17b Which of these actions do you believe is required when the fire danger rating is **Severe?**	
Q17c Which of these actions do you believe is required when the fire danger rating is **Extreme?**	
Q17d Which of these actions do you believe is required when the fire danger rating is **Catastrophic?**	

Q18a Have you seen or heard messaging related to a **total fire ban**?	Yes, seen ***and*** heard O 01 Yes, heard only O 02 Yes, seen only O 03 No, I have not seen or heard of this O 04

Q18b What should an individual do (or not do) if a total fire ban was in place? *Please provide as much detail as possible including what you feel this warning is telling the community, and what actions need to be avoided or taken.*	OPEN ENDED

[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]

INSERT ALERT LEVEL IMAGE FROM SEPARATE FILE

Q19 **<u>During</u>** a **bushfire**, community alerts and/or warnings are issued for **bushfires** that threaten lives and property. The alert level changes to reflect the increasing risk to your life. Have you seen or heard of these alerts before today?	Yes, seen ***and*** heard ○ 01 Yes, heard only ○ 02 Yes, seen only ○ 03 No, I have not seen or heard of this ○ 04

KEEP IMAGE OF ALERTS ON SCREEN

Q20 Thinking about the alert/warning levels shown, how strongly do you agree or disagree with the following statements.

RANDOMISE

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1 The alert/warning levels are **confusing**	○ 1	○ 2	○ 3	○ 4	○ 5
2 The alert/warning levels are **relevant** to me	○ 1	○ 2	○ 3	○ 4	○ 5
4 The alert/warning levels **encourage** me to **take action**	○ 1	○ 2	○ 3	○ 4	○ 5
5 The alert/warning levels have **too many** levels	○ 1	○ 2	○ 3	○ 4	○ 5
6 The alert/warning levels are **closely linked** to the **Fire Danger Rating System**	○ 1	○ 2	○ 3	○ 4	○ 5

Q21 Have you taken any action in the past after seeing, hearing or receiving a **bushfire** alert and/or warning?	Yes ○ 01 No ○ 02

ASK IF CODE 1 @ Q21

Q22 How did you receive this alert and/or warning?	Landline telephone warning ☐ 1 SMS message ☐ 2

RANDOMISE, LOCK CODE 97 AT BOTTOM	Radio new alert ☐ 3 TV news alert ☐ 4 Contact from friend, family or neighbour ☐ 5 Direct contact (door knock) from emergency services ☐ 6 Internet/online (Please specify) ☐ 7 Social media (Please specify) ☐ 8 Other (specify) ☐ 97

KEEP IMAGE OF ALERTS ON SCREEN
ASK IF CODE 1 @ Q21

Q23 Thinking about the **last** time you took action, at what **bushfire** alert/warning level did you take action; what actions did you take and why? *Please provide as much detail as possible including what the event/incident was, what you felt the warning was telling the community, and what actions you took.*	**ALERT LEVEL** Advice ○ 1 Watch and Act ○ 2 Emergency Warning ○ 3 Evacuation **(FOR VIC ONLY)** ○ 4 Don't know ○ 99	**ACTION TAKEN** OPEN

DISPLAY IMAGE OF ALERTS ON SCREEN

Q24 Thinking about the alert/warning system shown, at what alert level would you...?

RANDOMISE

	Advice	Watch and Act	Emergency Warning	Never
1 Become concerned about the safety of my property	○ 1	○ 2	○ 3	○ 98
2 Become concerned about the safety of myself and family	○ 1	○ 2	○ 3	○ 98
3 Check for information about fires in my area	○ 1	○ 2	○ 3	○ 98
4 Leave the area	○ 1	○ 2	○ 3	○ 98
5 Reconsider travel through a bushland or forested area	○ 1	○ 2	○ 3	○ 98
6 Cancel my plans	○ 1	○ 2	○ 3	○ 98
7 Ensure my property is well prepared for fire	○ 1	○ 2	○ 3	○ 98

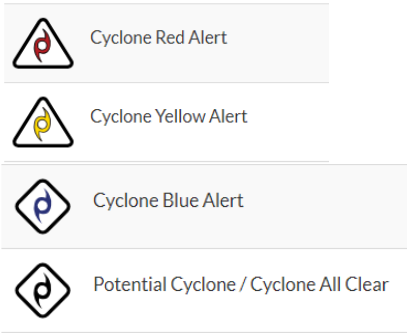
[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]

DISPLAY ALERT LEVELS ON THE RIGHT HAND SIDE OF THE SCREEN FOR THE FOLLOWING 4 QUESTIONS.
INTRODUCTION

WA WORDING ONLY – OTHER JURISDICTIONS TO BE ADDED ONCE INFORMATION PROVIDED FOR QLD, NSW AND TAS – DON'T ASK Q25a (ALL CLEAR) – NOT APPLICABLE IN QLD AND NSW AND TAS
ONLY ASK Q25e FOR VIC

RANDOMISE ORDER **Q25a** Which of these actions do you believe is required when the alert level is **All Clear?** **Q25b** Which of these actions do you believe is required when the alert level is **Advice**? **Q25c** Which of these actions do you believe is required when the alert level is **Watch and Act**? **Q25d** Which of these actions do you believe is required when the alert level is **Emergency Warning**? **ONLY FOR VICTORIA** **Q25e.** Which of these actions do you believe is required when the alert level is **Evacuation**?	**A fire has started but there is no known danger** Consult general information to keep up to date with developments O 1 **There is a possible threat to lives and homes** You need to leave the area or prepare to actively defend your home to protect you and your family O 2 **You are in danger and your area will be impacted** You need to take immediate action to survive. Listen carefully as you will be advised whether you can leave the area or if you must seek shelter O 3 **The danger has passed** The danger has passed and the fire is under control, but you need to remain vigilant in case the situation changes O 4 Something else (specify) O 5 I don't know O 6

CYCLONE



[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]

INSERT ALERT LEVEL IMAGE FROM SEPARATE FILE ONLY WA AND VIC HAVE ICONS FOR CYCLONES

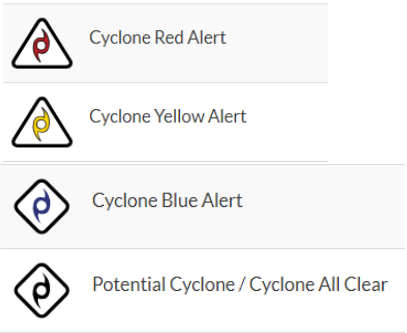
We would now like you to think about cyclones.

Q26 When a **cyclone** threatens, community alerts and/or warnings are issued. The alert/warning level changes to reflect the increasing risk to your life and advises what you need to do before, during and after a cyclone. **SHOW FOR WA ONLY** The four alert/warning stages are – blue, yellow, red and all clear. **SHOW FOR VIC ONLY** The four alert/warning levels are advice, warning, emergency warning and evacuation. **SHOW FOR ALL OTHER JURISDICTION** The five alert/warning levels are category 1-5 cyclones. Have you seen or heard of these alerts/warnings before today?	Yes, seen ***and*** heard O 01 Yes, heard only O 02 Yes, seen only O 03 No, I have not seen or heard of this O 04

Q27	Have you taken any action in the past after seeing or hearing the **cyclone** alert and/or warning level?	Yes ○ 01 No ○ 02

KEEP IMAGE OF ALERTS ON SCREEN
ASK IF CODE 1 @ Q27

Q28	Thinking about the **last** time you took action, at what **cyclone** alert and/or warning level did you take action; what actions did you take and why? *Please provide as much detail as possible including what the event/incident was, what you felt the warning was telling the community, and what actions you took.*	**WA ALERT LEVEL** Blue Alert ○ 1 Yellow Alert ○ 2 Red Alert ○ 3 Don't know ○ 99 **FOR VIC ONLY** Advice ○ 4 Warning ○ 5 Emergency Warning ○ 6 Evacuation ○ 7 Don't know ○ 99 **FOR ALL OTHER JURISIDICATION** Category 1 ○ 8 Category 2 ○ 9 Category 3 ○ 10 Category 4 ○ 11 Category 5 ○ 12 Don't know ○ 99	**ACTION TAKEN** OPEN



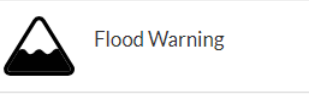
[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]

DISPLAY ALERT LEVELS ON THE RIGHT-HAND SIDE OF THE SCREEN FOR THE FOLLOWING 4 QUESTIONS.
INTRODUCTION

WA VERSION – OTHER JURISDICTIONS TO BE ADDED ONCE INFORMATION PROVIDED

RANDOMISE ORDER **Q29a** Which of these actions do you believe is required when the alert/warning level is (**For WA: All Clear/For VIC: Advice/For All other Jurisdictions: Category 1)?** **Q29b** Which of these actions do you believe is required when the alert/warning level is **(For WA: Blue Alert/For VIC: Warning/For all other jurisdictions Category 2)?** **Q29c** Which of these actions do you believe is required when the alert/warning level is **(For WA: Yellow Alert /For VIC: Emergency Warning /For all other jurisdictions Category 3?** **Q29d** Which of these actions do you believe is required when the alert/warning level is **(For WA: Red Alert/For all other jurisdictions Category 4)**? **FOR ALL JURISIDICATION EXCEPT WA** **Q29e.** Which of these actions do you believe is required when the alert/warning level is **(For VIC: Evacuation/For all other jurisdictions: Category 5)** ?	**Get ready for a cyclone** You need to start preparing for cyclonic weather ○ 1 **Take action and get ready to shelter** You need to prepare for the arrival of the cyclone ○ 2 **Take shelter from the cyclone** You need to go to shelter immediately ○ 3 **The danger has passed** Wind and storm surge dangers have passed but you need to take care to avoid the dangers caused by damage ○ 4 Something else (specify) ○ 5 I don't know ○ 99

FLOOD



[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]
WA VERSION – OTHER JURISDICTIONS TO BE ADDED ONCE INFORMATION PROVIDED

ONLY WA, VIC, SA, ACT AND TAS HAVE ICONS FOR FLOODS

Now we'd like you to think about floods.

Q30 When there is danger of flooding, a flood alert and/or warning may be issued to the community. Have you seen or heard of this warning before today?	Yes, seen ***and*** heard ○ 01 Yes, heard only ○ 02 Yes, seen only ○ 03 No, I have not seen or heard of this ○ 04

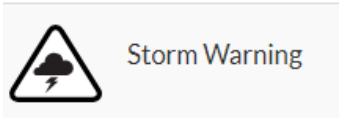
RANDOMISE ORDER **Q31a** Which of these definitions do you believe reflects an alert for **minor flooding (For SA: Flood Advice/For VIC: Advice/For TAS: Advice)**? **Q31b** Which of these definitions do you believe reflects an alert for **moderate flooding (For SA: Flood Watch and Act/ For Vic: Warning/For TAS: Act Now)**? **Q31c** Which of these definitions do you believe reflects an alert for **major flooding (For SA: Flood Emergency Warning/For VIC: Emergency Warning/For TAS: Emergency Warning)**? **Q31d** Which of these definitions do you believe reflects a **flood watch (For SA: Flood Advice – Reduce Threat/For VIC: Evacuation)**? **Q31e** Which of these definitions do you believe reflects when a **flood warning** is issued?	Low-lying areas next to water courses are inundated. Minor roads may be closed. Backyards and buildings below floor level may be affected. ○ 1 Main traffic routes may be affected. Some buildings may be affected above floor level. Evacuation of flood affected areas may be required. ○ 2 Extensive rural and/or urban areas are inundated. Many buildings may be affected above floor level. Major rail and traffic routes may be closed. Evacuation of flood affected areas may be required. ○ 3 Early advice of a developing situation that may lead to flooding ○ 4 Advice that flooding is occurring or expected to occur in a geographical area ○ 5 Something else (specify) ○ 6 I don't know ○ 7

Q32 Have you taken any action in the past after seeing or hearing the **flood** alert and/or warning?	Yes ○ 01 No ○ 02

ASK IF CODE 1 @ Q32

Q33 When and what actions did you take and why? *Please provide as much detail as possible including what the event/incident was, what you felt the warning was telling the community, and what actions you took.*	OPEN ENDED

SEVERE WEATHER | STORMS



[EXAMPLE IMAGE ONLY – SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]
WA VERSION – OTHER JURISDICTIONS TO BE ADDED ONCE INFORMATION PROVIDED
ONLY WA, VIC, ACT AND SA HAVE ICONS FOR SEVERE WEATHER

Now we'd like you to think about severe weather and thunderstorms

Q34 When there is danger of severe weather and thunderstorms, alerts and/or warnings may be issued to the community. Have you seen or heard of this alert and/or warning before today?	Yes, seen ***and*** heard ○ 01 Yes, heard only ○ 02 Yes, seen only ○ 03 No, I have not seen or heard of this ○ 04

Q35 Which of the following severe weather alerts and/or warnings have you seen or heard of before today? **RANDOMISE, LOCK CODE 99 AT BOTTOM**	Severe thunderstorms ☐ 1 Large hail ☐ 2 Sustained winds of gale force (63 km/h) or more ☐ 3 Wind gusts of 90 km/h or more ☐ 4 Very heavy rain that may lead to flash flooding ☐ 5 Abnormally high tides (or storm tides) expected to exceed highest astronomical tide ☐ 6 Unusually large surf waves expected to cause dangerous conditions on the coast ☐ 7 Widespread blizzards in Alpine areas ☐ 8 None of the above ○ 99 **FOR VIC**

	Advice ☐ 9 Warning ☐ 10 Emergency Warning ☐ 11 Evacuation ☐ 12 None of the above ○ 99

Q36 Have you taken any action in the past after seeing or hearing the **severe weather** alert and/or warning?	Yes ○ 01 No ○ 02

ASK IF CODE 1 @ Q36

Q37 Thinking about the **last** time you took action, for what type of alert and/or warning did you take action; what actions did you take and why? *Please provide as much detail as possible including what the event/incident was, what you felt the warning was telling the community, and what actions you took.*	**WARNING LEVEL** **Insert codes 1-8 @ Q35** **FOR VIC** **Insert codes 9-12 @ Q35** Don't know ○ 99	**ACTION TAKEN** OPEN

EXTREME HEAT

[SEE SEPARATE FILE FOR IMAGES BY JURISDICTION]

ONLY SA AND VIC HAVE ICONS FOR EXTREME HEAT
NO ICON TO BE SHOWN FOR ALL OTHER JURISDICTIONS

And finally, please now think about extreme heat

Q38 When there is danger of a heatwave, an alert and/or warning may be issued to the community. Have you seen or heard of this warning before today?	Yes, seen ***and*** heard ○ 01 Yes, heard only ○ 02 Yes, seen only ○ 03 No, I have not seen or heard of this ○ 04

Q39	Have you taken any action in the past after seeing or hearing a heatwave alert and/or warning?	Yes ○ 01 No ○ 02

ASK IF CODE 1 @ Q39

Q40	What actions did you take and why? *Please provide as much detail as possible including what the event/incident was, what you felt the warning was telling the community, and what actions you took.*	OPEN ENDED

SECTION 9 – FINAL PROFILING

And just a few final questions about yourself.

D1	Which of these best describes your household?	Young person living at home with parents ○ 01 Young single/couple – no children at home ○ 02 Single/couple with youngest child under the age of 6 yrs ○ 03 Single/couple with youngest child between 6 and 12 yrs ○ 04 Single/couple with youngest child 13 yrs+ ○ 05 Older single with no children at home ○ 06 Older couple with no children at home ○ 07 Other ○ 08 Prefer not to answer ○ 99

D1b	Do you identify with any of the following groups?	Person living with a disability ☐ 01 Primary carer for someone with a disability ☐ 02 None of the above ○ 98

D1c	Do you identify as?	Aboriginal ☐ 01 Torres Strait Islander ☐ 02 Aboriginal and Torres Strait Islander ☐ 02 None of the above ○ 98

D2	Which of the following best applies to you?	Own my home (no mortgage) ○ 01 Paying off my home (have a mortgage) ○ 02 Renting ○ 03 Other (e.g. live with parents/ boarding) ○ 04 Prefer not to answer ○ 99

D3	Which of these best describes your current employment situation?	Working full time ○ 01 Working part-time/casual ○ 02 Unemployed ○ 03 Student ○ 04 Retired ○ 05 Home duties ○ 06 Prefer not to answer ○ 99

D4	Do you currently have home, contents or business insurance?	Contents insurance ☐ 01 Home insurance ☐ 02 Business insurance ☐ 03 I have no insurance ○ 04

D5	What is the size of your property?	Small - Less than ¼ acre (less than 1,100m2) ○ 01 Medium - Between ¼ and 1 acre (1,010m2-4,040m2) ○ 02 Large - Between 1 and 10 acres (4,040m2-40,400m2) ○ 03 Regional – Larger than 10 acres ○ 04

D6	Which of the following property type is your home?	Standalone house ○ 01 Duplex/townhouse ○ 02 Unit/apartment ○ 03 Transportable house ○ 04

D7a	How far is your home from the nearest bushland or grassland area (an area of forest, trees, bush or	Less than 100 metres ○ 01 Between 100 and 500 metres ○ 02 Between 500 metres and 1 km ○ 03

	grasslands)?	Further than 1km ○ 04

D7b	How far is your home from the nearest river or coast	Less than 100 metres ○ 01 Between 100 and 500 metres ○ 02 Between 500 metres and 1 km ○ 03 Further than 1km ○ 04

D8	Were you born or did you spend your childhood years living in Australia?	Yes, I was born in Australia ○ 01 I was not born in Australia but spent my childhood years living here ○ 02 No, I did not move to Australia until I was an adult ○ 03 Other (specify) ○ 04

D9 What personal experience have you had with the following hazards?
RANDOMISE
LOCK CODE 6 AT THE BOTTOM

	a. Bushfire	**b. Cyclone**	**c. Flood**	**d. Severe Storms**	**e. Extreme Heat**
I **was injured** due to this hazard	☐ 1	☐ 1	☐ 1	☐ 1	☐ 1
I have had **property damage** from this hazard	☐ 2	☐ 2	☐ 2	☐ 2	☐ 2
I have had to **evacuate** due to this hazard	☐ 3	☐ 3	☐ 3	☐ 3	☐ 3
I have experienced this **close to my home** but did not have to evacuate	☐ 4	☐ 4	☐ 4	☐ 4	☐ 4
I have ongoing **trauma or stress** due to this hazard	☐ 5	☐ 5	☐ 5	☐ 5	☐ 5
I have no personal experience with this hazard	○6	○ 6	○ 6	○ 6	○ 6

IF CODE 05 AT D9 PLEASE SHOW

If anything in this survey has triggered an issue for you, please contact a support line or your trusted GP.
Life Line: 13 11 14
Beyond Blue: 1300 224 636

2337 – SA CFS – NFDRS and Warnings Systems

Stage 3 | Online Survey | Creative Optimisations of Systems

Client Contact Name:	Fiona Dunstan, Peta O'Donohue, Andrew Stark
Version:	V3 29.04.19
Methodology:	Online
Survey Length:	20 minutes

	Quotas	
Jurisdiction	**Metro**	**Regional**
QLD	400	600
NSW	500	500
VIC	600	400
SA	800	200
WA	500	500
TAS	200	
ACT	100	
NT	100	
TOTAL PER VERSION	**5400**	

NOTE – The survey will be pilot tested with n=150 from each major jurisdiction (QLD, NSW, VIC, SA, WA) giving n=750 total sample; then paused for initial FDR analysis. Should there be clear FDR designs leading amongst responses, the FDR section will be adjusted to monadic or triad testing for the remaining sample of n=4,650.

Send out all survey invitations in line with the population profile – age, gender, income, region etc.

PROGRAMMER INSTRUCTIONS

○	Denotes single response question
☐	Denotes multiple response question

Thank you for agreeing to take part in this **20-minute** survey regarding how the community receives forecasts and warnings for **natural hazards in Australia**. Please note that you may be asked about a natural hazard that is not the primary risk in your area.

All information you provide will remain completely confidential and only be used for research purposes.

When completing the survey please read each question carefully, answer the questions as accurately as you can and select the answers that best reflect your views. Some questions allow more than one answer. There are also several opportunities to type in open-ended responses. To move to the next question, click on the next button at the bottom of the screen, please note that there is no opportunity to go back to a previous question once you have moved to the next page.

SECTION 1 – SCREENING

S1	Do you or anyone you know well work or have recently worked: **RANDOMISE**	In market research	**Terminate** ☐ 01
		In advertising or media	**Terminate** ☐ 02
		In emergency services (e.g. police, firefighter, ambulance)	**Terminate** ☐ 03
		As a volunteer in emergency services (e.g. firefighter)	**Terminate** ☐ 04
		For an insurance company	☐ 05
		For a telecommunications provider	☐ 06
		None of the above	☐ 99

S2	How old are you?	Under 18	**Terminate** ○ 01
		18-24	○ 02
		25-29	○ 03
		30-34	○ 04
		35-39	○ 05
		40-44	○ 06
		45-49	○ 07
		50-54	○ 08
		55-59	○ 09
		60-64	○ 10
		65+	○ 11

S3	Are you…	Male	○ 01
		Female	○ 02
		Other	○ 03

S3	What is your postcode? **PROGRAMMER – RESTRICT TO NUMERIC, 4 DIGITS** **TERMINATE IF DO NOT FALL INTO SPECIFIC POSTCODE RANGE**	

CREATE HIDDEN VARIABLE BASED ON LOCATION TO MATCH GEOGRAPHICAL SEGMENT

SECTION 2 – NFDRS OPTIMISATION

PROGRAMMING NOTE:

- **10 SECOND TIMER ON EACH INTRODUCTION PAGE**

INTRODUCTION 1

The first section of questions will be asking you about Fire Danger Ratings. This is a **forecast system** used to inform the community of how dangerous a bushfire would be **if** one started. It is **not** an indicator that a bushfire has started.

There are a number of ratings that **indicate how difficult it will be to control a fire** under the forecast weather conditions. The higher the Fire Danger Rating, the more dangerous the fire conditions.

Though there are multiple Fire Danger Ratings to show increasing danger, only a single rating will be issued to show the bushfire danger for that day.

Ratings are forecast using Bureau of Meteorology data for up to four days in advance, based on weather (e.g. temperature and wind) and other environmental conditions such as how much dry grass and undergrowth there is.

The Fire Danger Rating should be used as an early indicator to trigger you to take action and stay safe.

Q1a	Based on this description, have you heard of the Fire Danger Rating System before today?	Yes ○ 1 No ○ 2 Don't Know ○ 99

PROGRAMMING NOTE:

- **ASK IF CODE 1 @ Q1a (YES)**
- **NUMERIC ENTRY FIELD**

Q1b	How many Fire Danger Rating levels are there in the existing system?	[ ] levels Don't Know ○ 99

INTRODUCTION 2

You may see or hear the Fire Danger Rating in a number of ways, including:

- Interactive online maps
- Official Websites and Apps
- Social Media (e.g. Facebook)
- TV

- Text messages
- Roadside signage
- Radio

The existing system is being reviewed to ensure the design is highly effective at **prompting you to take action** to protect against the risk of bushfires.

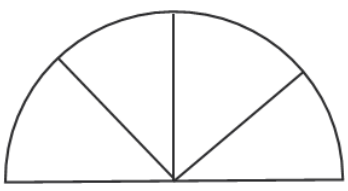
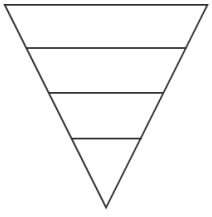
Research has been conducted nationally to develop a set of potential designs for the new system. **In the following questions we'd like you to select from these designs based on what you think is the most effective system to promote action.**

PROGRAMMING NOTE:

- **DISPLAY IMAGES WITH TEXT BELOW**
- **RANDOMISE ORDER OF SHAPES SHOWN**

Q2	Firstly, we'd like you to think about the following variations of shape when presenting Fire Danger Ratings as a sign or picture (e.g. online or roadside signage). The new system will have four Fire Danger Rating levels. Each segment within the shapes represents a level. The higher the Fire Danger Rating, the more dangerous the fire conditions. **Which shape would be most effective to communicate the Fire Danger Ratings?** *Click here to view further information on the purpose of this system.*	4 stage semi-circle ○ 1 4 stage rectangle ○ 2 4 stage triangle ○ 3

EXAMPLE IMAGES (see separate document for high resolution versions)

		
Semi-circle	Rectangle	Triangle

PROGRAMMING NOTES: Rotate the order of testing for Q3 and Q4a/b

- **Half Q3, Q4a, Q4b**
- **Half Q4a, Q4b, Q3**

PROGRAMMING NOTES:

- **DISPLAY THE 3 COLOUR OPTIONS BASED ON RESPONSE TO Q2**
- **DISPLAY IMAGES WITH TEXT OF COLOURS WRITTEN BELOW**

Q3	Now, which of these colour sets best communicates increasing fire risk and would encourage you to take action and stay safe at each Fire Danger Rating? *Click here to view further information on the purpose of this system.* **RANDOMISE**	**Show if code 1 @ Q2** Semi-circle | green, yellow, orange, red ○ 01 Semi-circle | green, orange, red, black ○ 02 Semi-circle | yellow, orange, red, black ○ 03 **Show if code 2 @ Q2** Rectangle | green, yellow, orange, red ○ 04 Rectangle | green, orange, red, black ○ 05 Rectangle | yellow, orange, red, black ○ 06 **Show if code 3 @ Q2** Triangle | green, yellow, orange, red ○ 07 Triangle | green, orange, red, black ○ 08 Triangle | yellow, orange, red, black ○ 09

EXAMPLE IMAGES (see separate document for high resolution versions)

Green, Orange, Red, Black	**Green, Orange, Red, Black**	**Green, Orange, Red, Black**
		
Green, Yellow, Orange, Red	**Green, Yellow, Orange, Red**	**Green, Yellow, Orange, Red**
		
Yellow, Orange, Red, Black	**Yellow, Orange, Red, Black**	**Yellow, Orange, Red, Black**
		
(Show if code 1 @ Q2)	*(Show if code 2 @ Q2)*	*(Show if code 3 @ Q2)*

PROGRAMMING NOTES:

- **DISPLAY IMAGE OF OPTION SELECTED AT Q3 AT TOP OF PAGE**
- **DISPLAY Q4A AND Q4B ON THE SAME PAGE**

Q4a	Thinking about the purpose of this system (i.e. to effectively prompt individuals to take action), which of the following word-sets best communicates bushfire risk from least to most danger for the first 3 levels? *Click here to view further information on the purpose of this system.* **ROTATE**	Low, moderate, high ○ 01 Low, high, very high ○ 02

Q4b	Now please rank the following options from most to least preferred to communicate the highest level of bushfire danger. **RANKED PREFERENCE – LIMIT TO 3** **RANDOMISE**	Extreme ○ 01 Severe ○ 02 Catastrophic ○ 03 Code Red ○ 04 Major ○ 05 Maximum ○ 06 Disastrous ○ 07 Red Flag ○ 08 Code Black ○ 09

Q5a An additional instruction will accompany each Fire Danger Rating. Which of the following would be **most effective** to encourage you to take action and stay safe at each Fire Danger Rating?

Insert level 1 response from Q4a	Insert level 2 response from Q4a	Insert level 3 response from Q4a	Insert #1 response from Q4b
• Know what to do • Be aware that fires can start • Prepare so you are ready if a fire starts •	• Be ready to act • Stay informed • Know what you will do • Stay alert • Monitor conditions • Be prepared	• Take action • Be ready to leave • Conditions can change quickly • If a fire starts, take action right away • Know where you will go • Protect your life and property	• Leave high risk areas • Protect your life • Take action now • Know how to stay safe • Leave the night before or early on the day • Conditions will change quickly

Q5b	When Fire Danger Ratings are displayed on signs and other visual means, which of the following is **most effective** to describe ratings? Please rank your top three preferences. **RANKED PREFERENCE – LIMIT TO 3** **RANDOMISE**	Fire Danger Forecast ○ 1 Your Fire Risk ○ 2 Fire Risk Level ○ 3 Fire Danger Rating ○ 4 Fire Danger Level ○ 5 Area Fire Risk ○ 6 Fire Risk Forecast ○ 7

Q5c	If the Fire Danger Rating varied throughout the day (e.g. Low in the early morning and High in the hottest part of the day) would you **prefer** to be told a **single rating** for the day (highest rating), or receive **multiple ratings throughout the day**?	**Single rating** for the day (highest rating) ○ 01 **Variable ratings** throughout the day ○ 02 No preference ○ 03

SECTION 3 – WARNINGS OPTIMISATION

PROGRAMMING NOTES:

- **QUESTIONS TO BE ASKED OF ONE NATURAL HAZARD ONLY**
- **RANDOMISE SELECTION OF HAZARD**
- **Weighting of hazard to be confirmed, initial recommendation as:**
  - **30% bushfire, 25% flood, 25% cyclone, 10% severe storm, 10% extreme heat**
- **10 SECOND TIMER ON EACH INTRODUCTION PAGE**

BUSHFIRE ----------

INTRODUCTION 1

We'd now like you to think about when a **bushfire has started**.

During a bushfire, you may receive an official warning when there is a potential threat to property or life. The bushfire warning system is made up of a number of levels and the warning level increases to reflect the increasing risk to life.

These warnings act as a trigger for you to take action and protect yourself against the bushfire.

You may see or hear a warning in a number of ways, including:

- Interactive online maps
- Official Websites and Apps
- Social Media (e.g. Facebook)
- TV
- Text messages
- Radio

Warnings include information on the current bushfire situation and outline the actions individuals should take.

Q6a	Based on this description, have you heard of these Bushfire Warnings in the past?	Yes ○ 1 No ○ 2 Don't Know ○ 99

PROGRAMMING NOTE:

- **ASK IF CODE 1 @ Q6a (YES)**
- **NUMERIC ENTRY FIELD**

Q6b	Have you ever received one of these warnings before today?	Yes [ ] number received ○ 1 No ○ 2 Don't Know ○ 99

INTRODUCTION 2

The existing system is being reviewed to ensure the design is highly effective at prompting individuals to take action to protect against the bushfire that is occurring.

Focus group research has been conducted nationally to develop a set of potential options for the new warning system. **In the following questions we'd like you to select from these options to design the most effective bushfire warning system to promote action.**

When thinking about the warning system keep in mind that only one level of warning will be received at a given time rather than the full system with all levels being shown together.

CYCLONE/FLOOD/EXTREME HEAT/SEVERE STORM ----------

INTRODUCTION 1

We'd now like you to think about [**cyclones/floods/extreme heat/severe storms].** Specifically, think about if you were in an area where **[a cyclone/ a flood/extreme heat/a severe storm]** has been forecast to impact.

You may receive an official warning when there is a potential threat to property or life. The **[cyclone/flood/extreme heat/severe storms]** warning system is made up of a number of levels and the warning level increases to reflect the increasing risk to life.
These warnings act as a trigger for you to take action and protect yourself against the danger.

You may see or hear a warning in a number of ways, including:

- Interactive online maps
- Official Websites
- Social Media (e.g. Facebook)
- TV
- Text messages
- Radio

Warnings issued include information on the current situation and outline the actions individuals should take.

PROGRAMMING NOTE: SHOW FOR CYCLONE ONLY

You may have heard of terms such as Category 1, Category 2, etc. to describe the severity of cyclones. These warnings are designed to show the severity of a cyclone and differ from the community warning system we'd like you to review. Category information will be issued within the warnings we are asking you to review.

PROGRAMMING NOTE: SHOW FOR FLOOD ONLY

You may have heard of terms such as Minor, Moderate or Major Flooding to describe the severity of floods. These warnings are designed to show the severity of a flood and differ from the community warning system we'd like you to review. Severity information will be issued within the warnings we are asking you to review.

Q6a	Based on this description, have you heard of these [Cyclone/Flood/Extreme Heat/Severe Storm] Warnings in the past?	Yes ○ 1 No ○ 2 Don't Know ○ 99

PROGRAMMING NOTE:

- **ASK IF CODE 1 @ Q6a (YES)**
- **NUMERIC ENTRY FIELD**

Q6b	Have you ever received one of these warnings before today?	Yes ○ 1 No ○ 2 Don't Know ○ 99

INTRODUCTION 2

The existing system is being reviewed to ensure the design is highly effective at prompting individuals to take action to protect against potential danger.

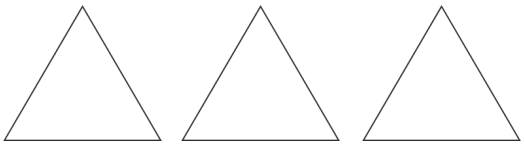
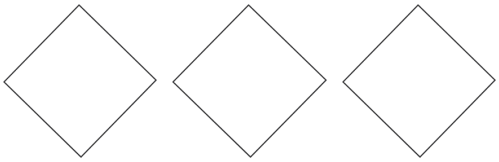
Focus group research has been conducted nationally to develop a set of potential options for the new warning system. **In the following questions we'd like you to select from these options to design the most effective warning system to promote action.**

When thinking about the warning system keep in mind that only one level of warning will be received at a given time rather than the full system with all levels being shown together.

PROGRAMMING NOTE:

- **DISPLAY IMAGES WITH TEXT BELOW**
- **ROTATE ORDER OF SHAPES SHOWN**

Q7	A core of three levels will be used for the warning system. Which of the following variations of shape would be most effective when showing a **[bushfire, cyclone, flood, extreme heat, severe storm]** warning? *Click here to view further information on the purpose of this system.*	3 stage triangle ○ 1 3 stage diamond ○ 2

 **TRIANGLES**	 **DIAMONDS**

EXAMPLE IMAGES (see separate document for high resolution versions)

PROGRAMMING NOTE:

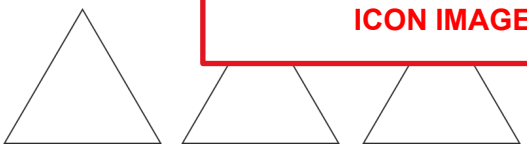
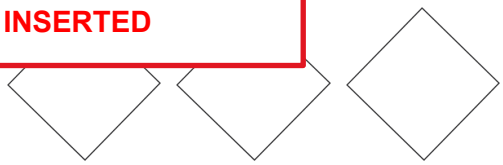
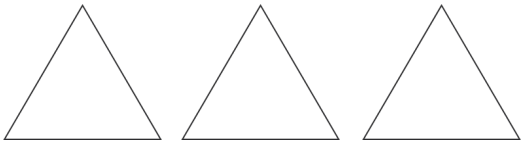
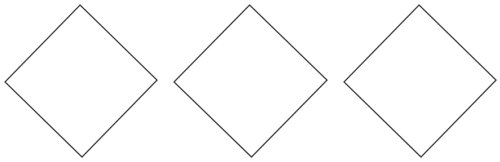
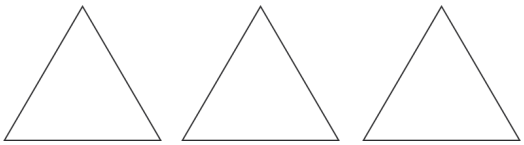
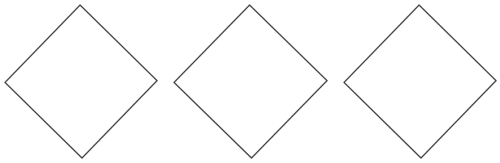
- **DISPLAY IMAGES IN SHAPE SELECTED AT Q7**
  - **IF CODE 1 @ Q7 SHOW TRIANGLES**
  - **IF CODE 2 @ Q7 SHOW DIAMONDS**
- **RANDOMISE SHOW ORDER CODES 1-4**

Q8	The warning system will use icons inside each shape when warnings are issued through visual channels (e.g. TV, social media, online interactive maps). Which of the following options would be most effective when showing a **[bushfire, cyclone, flood, extreme heat, severe storm]** warning?	Consistent hazard specific icon ○ 1 Hazard specific icons with increasing severity ○ 2 Action specific icon ○ 3

Click here to view further information on the purpose of this system.	

EXAMPLE IMAGES (see separate document for high resolution versions by hazard type)

ICON IMAGES TO BE INSERTED

 **Consistent hazard specific**	 **Consistent hazard specific**
 **Hazard specific increasing severity**	 **Hazard specific increasing severity**
 **Action specific**	 **Action specific**

PROGRAMMING NOTES:

- **DISPLAY THE SHAPE AND ICONS SELECTED BASED ON RESPONSE TO Q8 (e.g. triangles with hazard specific icons for Code 1 @ Q8)**
- **DISPLAY IMAGES WITH TEXT OF COLOURS BELOW**

Q9	Now, which of these three colour sets best communicates increasing **[bushfire, cyclone, flood, extreme heat, severe storm]** risk and would encourage you to take action when a warning is issued? *Click here to view further information on the purpose of this system.* **RANDOMISE**	Yellow, orange, red ○ 01 Blue, yellow, red ○ 02 Yellow, red, black ○ 03

EXAMPLE IMAGES (see separate document for high resolution versions)

ICON IMAGES TO BE INSERTED		
YELLOW, ORANGE, RED	**BLUE, YELLOW, RED**	**YELLOW, RED, BLACK**

PROGRAMMING NOTES:

- **DISPLAY IMAGE OF OPTION SELECTED AT Q9 AT TOP OF PAGE**
- **INSERT SINGLE RESPONSE SELECTION OPTION UNDER EACH LEVEL**

Q10a Again, thinking about the purpose of this system being to effectively prompt individuals to take action, we'd like you to think about the best words to describe each level.

If the highest level of risk is named EMERGENCY WARNING, which of the following words best communicates the first two levels?

Click here to view further information on the purpose of this system.

RANDOMISE

	Level 1	Level 2	
1 Warning	○ 1	○ 2	**Emergency Warning**
2 Advice	○ 1	○ 2	
3 Monitor	○ 1	○ 2	
4 Alert	○ 1	○ 2	
5 Act	○ 1	○ 2	
6 Prepare	○ 1	○ 2	
7 Act Now	○ 1	○ 2	
8 Watch and Act	○ 1	○ 2	
9 Take Action	○ 1	○ 2	
10 Take Action Now	○ 1	○ 2	

RANKED PREFERENCE – RANDOMISE CODES

Q10b And if the highest level of the **[bushfire, cyclone, flood, extreme heat, severe storm]** warning is named EMERGENCY WARNING and the lowest ADVICE, which are your top 3 preferences to describe the middle level?

Click here to view further information on the purpose of this system.

Please select three options.

		Level 2	
1 Warning	**Advice**	○ 2	**Emergency Warning**
2 Take Action Now		○ 2	
3 Take Action		○ 2	
4 Act		○ 2	
5 Prepare		○ 2	
6 Act Now		○ 2	
7 Watch and Act		○ 2	

Q11 In some situations an additional message will be issued once the danger of **[a bushfire/a cyclone/ a flood/extreme heat/a severe storm]** has lessened. Which of the following options best describes the final message to indicate that the danger has lessened? **RANDOMISE**	All clear ○ 1 Reduced threat ○ 2 Reduced risk ○ 3

Q12 For the next question you will be sown a number of scenarios. For each please select your top 3 phrases that would encourage you to take action.

SCENARIO 1
You are busy today with a number of errands planned. The weather is mild and winds are slowly increasing. You hear a message on the radio about a fire that has started in the region.
(LOW LEVEL) WARNING

SCENARIO 2
A cyclone is moving down the coast and will likely impact on land. It is forecast to get to Category 2. Emergency services are advising you to prepare yourselves and your property for potential impact.
(MIDDLE LEVEL) WARNING

SCENARIO 3
Major flooding is occurring in the river near your home and the river is rising. Heavier rainfall is expected this afternoon and into the evening. A warning has been issued that includes your area. Emergency services are advising everyone to leave with flooding likely to cut off more roads and damage homes tonight.
EMERGENCY WARNING

SCENARIO 4
You are visiting an area which is surrounded by bushland. It is a hot, windy day. A fire starts, and you receive a message saying the fire is heading in your direction. It is too dangerous to leave and roads have been cut off.
EMERGENCY WARNING

Which of the following phrases would best encourage you to take action in this scenario? Please rank your top three preferences.

RANDOMISE STATEMENTS

Scenario 1	Scenario 2	Scenario 3	Scenario 4
(LOW LEVEL) WARNING	(MIDDLE LEVEL) WARNING	EMERGENCY WARNING	EMERGENCY WARNING

Stay informed O 01 Stay alert O 02 Be aware O 03 A fire has started O 04 Take care in the area O 05 Keep up to date O 06 Conditions may change O 07	Get ready now O 01 Prepare for cyclone impact O 02 Conditions are changing O 03 Make your cyclone preparations now O 04 Get ready to leave O 05 Prepare your home O 06 Prepare to leave O 07 Prepare for a Category 2 cyclone in your area O 08	Leave now O 01 Prepare to leave O 02 Leave immediately O 03 Take action now O 04 Get ready now O 05 Prepare for flood impact O 06 Increasing flood risk O 07 Make your flood preparations now O 08	Seek shelter now O 01 Go to a safe place now O 02 It is too late to leave O 03 Immediate danger O 04 Seek shelter immediately O 05 Move indoors now O 06 Take cover O 07

SECTION 4 – MAP APPLICATION

PROGRAMMING NOTE:

- **DISPLAY MAP BASED ON JURISDICTION AT TOP OF PAGE**
- **DISPLAY FINAL WARNINGS SYSTEM DESIGNED**

Q13	Each state and territory has an interactive map where the community can view current warnings and incidents. The warning system you constructed is shown on the map to demonstrate this. Do you think the system you designed is optimised for visual display on a map, or would an alternative be better?	The existing design is optimised O 1 An alternative approach would be needed O 2

ASK IF CODE 2 @ Q13 (an alternate approach is required)

Q14	Why is an alternate approach required?
OPEN ENDED	

DISPLAY WARNINGS SYSTEM IMAGES IN COLOUR SELECTED AT Q9
ASK IF CODE 2 @ Q13 (an alternate approach is required)

Q15	Which of the following options would be most effective when showing warnings on an interactive online map? *Click here to view further information on the purpose of this system.*	Triangle | Consistent hazard specific icon ○ 1 Triangle | Hazard specific icons with increasing severity ○ 2 Triangle | Action specific icon ○ 3 Diamond | Consistent hazard specific icon ○ 4 Diamond | Hazard specific icons with increasing severity ○ 5 Diamond | Action specific icon ○ 6

Q15 – further information link

You may receive an official warning when there is a potential threat to property or life from a natural hazard. Natural hazards include bushfires, cyclones, floods, extreme heat and severe storms. The warning system is made up of a number of levels and the warning level increases to reflect the increasing risk to life.

These warnings act as a trigger for the you to take action and protect yourself against the danger.

You may see or hear a warning in a number of ways, including:

- Interactive online maps
- Official Websites
- Social Media (e.g. Facebook)
- TV
- Text messages
- Radio

Warnings issued include information on the current situation and outline the actions individuals should take.

SURVEY CLOSE

Thank you, this is the end of the survey.

All information you provided will remain completely confidential and only be used for research purposes. This study has been conducted in accordance with the Australian Market and Social Research Society (AMSRS) Code of Professional Behaviour which includes The Privacy Act 1998. If you have any concerns about the legitimacy of this study please contact Surveyline on 1300 364 830.

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