Australian Fire Danger Rating System

Social Research Summary

Version 1.0

Australian Fire Danger Rating System

CONTENTS

EXECUTIVE SUMMARY

The Australian Fire Danger Rating System (AFDRS) is a nationally significant project to design and implement a new Fire Danger Rating (FDR) system for Australia. The AFDRS represents the most extensive change in the assessment and use of FDRs since they were first rolled-out in the 1960's and implements significant improvements. Importantly, the AFDRS will strengthen the ability of fire authorities to accurately communicate bushfire risk to the community, is based on updated science and data, is able to be continuously improved, will enhance agency, industry and community readiness and preparedness and contribute to improved risk management.

The South Australian Country Fire Service (SACFS) were appointed to undertake market research to help inform the public-facing design of the AFDRS. The objectives of the social research were to provide a sound evidence base for the development of a consistent national FDR system that communicates fire danger effectively, elicits a behavioural response and increases community safety. Metrix were engaged by SACFS to undertake the research. The Metrix final report is provided as **Appendix 1.**

The social research included the third largest market survey conducted in Australia and concluded that the ratings should be simplified, optimised and contain supporting messaging to enhance public comprehension and use. The social research found that the community preferred the following key design elements:
1. A system of three or four fire danger rating levels;
2. A colour palette of green, yellow, orange and red;
3. Naming the fire danger rating levels as *low*, *moderate*, *high* and *extreme*; and
4. The inclusion of supportive messaging that is clear, concise and action orientated.

The community-preferred design was tested with land and fire management agencies, and other sectors such agriculture, transport, education, health, energy providers, local government and defence. Across each State and Territory 181 people representing 90 different agencies and industry bodies participating. The design emerging from social research was endorsed in principle, noting additional work required to refine design elements and manage the change process.

This report summarises the outcomes of the AFDRS social research. The design emerging from the social research report (as shown in this report) forms one input into the final AFDRS design and further work is required to refine various design elements prior to implementation of the new AFDRS in 2022.

1 SOCIAL RESEARCH METHOD OVERVIEW

The South Australian Country Fire Service and Metrix Consulting worked with a steering group and reference group with representatives from around Australia to design and conduct market research to provide information for the public-facing design of the AFDRS.

Community members were questioned about:

- What levels of comprehension, use, update and effectiveness exists for the current system?
- What form and characteristics are required for a new AFDRS to improve community safety outcomes?

The social research was conducted in stages as shown in **Figure 1.**

| Project Immersion	STAGE 1 Benchmark Survey	STAGE 2 Qualitative Research	STAGE 3 National Survey
Desk top review	Nationwide online survey	Survey 1 results used to guide the sampling and content of qualitative research.	Data from Stages 1&2 used to identify preferred options for testing
All primary and secondary sources	Benchmarking levels of awareness, understanding and response to current Fire Danger Rating System.	Focus Groups, workshops and intercept interviews	Identify the systems which result in the highest levels of understanding and positive action
Analysis & discussion			
Co-development of survey contents and sampling composition			
July - August 2018	September 2018	October - November 2018	May 2019

Figure 1. Stages and timing.

2 BENCHMARK SURVEY

The survey was the third largest ever conducted in Australia with stage 1 surveying 5, 430 participants. The key outcomes are summarised below:

- Most recognise the fire danger rating system, but many don't understand it. It was found that 93% had prompted awareness of the system but most thought it predicts how likely a fire is to occur rather than predicting how dangerous a fire could be if it did occur.
- There is confusion over what to do when, and it was found that few people would take action below the 'Severe' rating (see **Figure 2**).
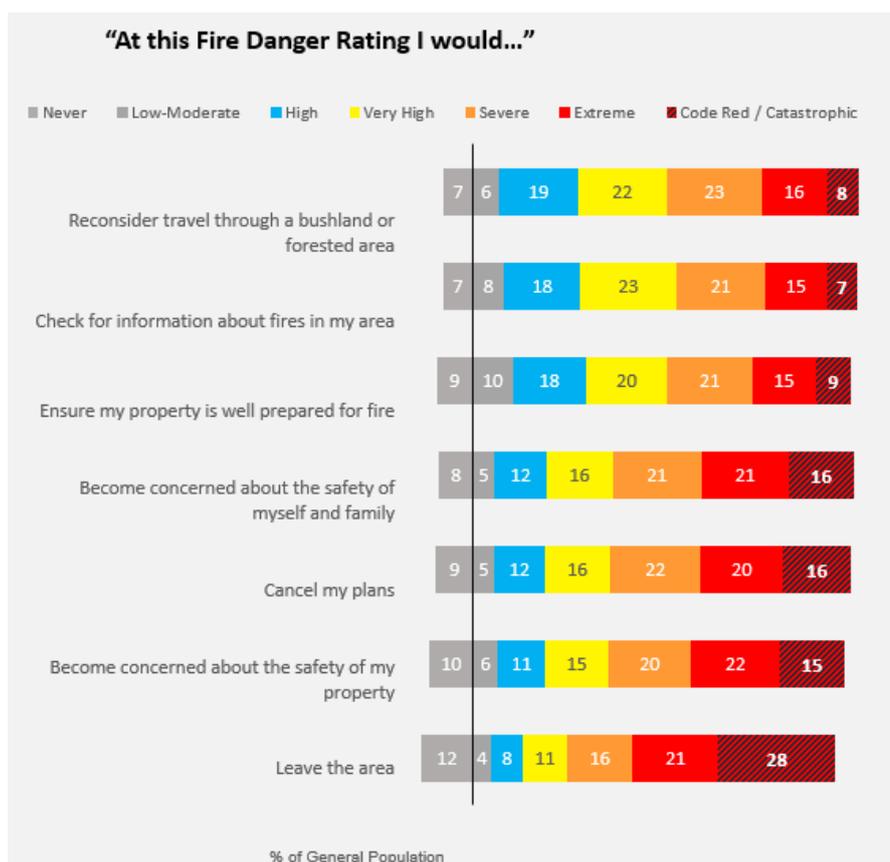
Figure 2. What people would do at different fire danger ratings.

- It was found that while the signage is recognised, most are not using the system and the majority have never taken action relating to it (see **Table 1**).

Table 1. Key finding of stage 1

Prompted awareness	93%
Incorrect understanding of purpose	61%
Feel the National Fire Danger Rating System is **relevant**	61%
Currently **use** the National Fire Danger Rating System	37%
Have taken **action** in past due to the Fire Danger Rating	34%

3 QUALITATIVE RESEARCH

Focus groups were conducted with communities between the 1 October and 22 November 2018 at 48 locations across Australia. Locations were determined in collaboration with the project steering group to encompass a variety of low, medium and high-risk areas. It was found:

- Participants almost universally described the fire danger ratings as a forecast of how likely a fire is to occur, rather than how dangerous a fire would be should one start. This causes many to confuse the system with a warning system, with many believing the highest level indicates that a fire has started.
- Participants explained that each fire danger rating should be linked to unique and distinct behaviours. Where the same behaviours were currently perceived to be required across multiple ratings, ratings were typically combined by participants.
- Participants strongly preferred a three or four-level rating system, with more levels than this seen as confusing and counterproductive.
- Participants from all groups spoke of a common perception that the fire danger rating is not updated frequently, and a belief that signage can be or has been subjected to tampering (e.g. low rating on a very hot day).
- Though it is recognised that jurisdictions have communications strategies beyond signage, participants in all locations but South Australia and Victoria failed to recall information beyond that shown through roadside signage.
- The majority of participants wanted a four-stage system from 'Low' to 'Extreme'.

4 NATIONAL SURVEY

The objective of Stage 3 was to identify a system that promotes the greatest level of comprehension and positive action. Survey data was collected nationally with 5,408 individuals and a 95% confidence level, with a maximum margin of error of ±1.33%. The results are summarised below:

- Most favoured a four-stage semicircle design with a green, yellow, orange and red colour set (see **Figures 3 and 4** below).
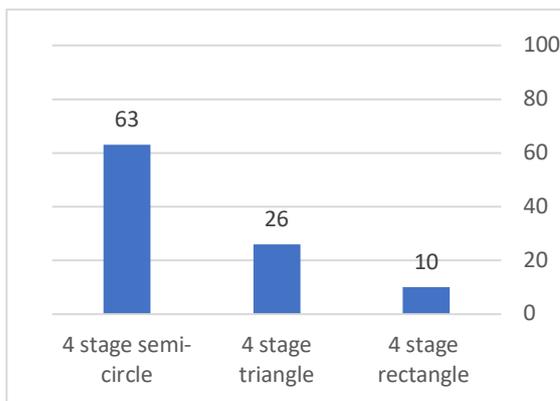

Figure 3: Shape results
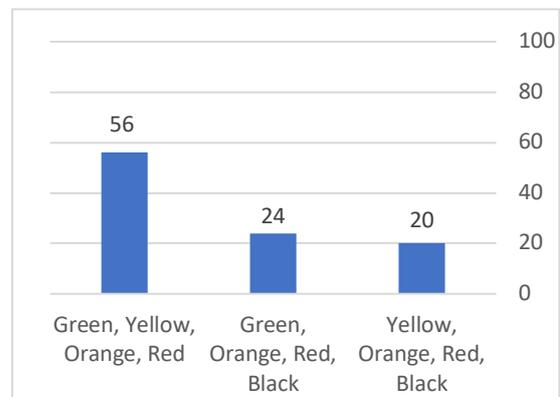
Figure 4: Colour set results

- 'Extreme' is the preferred name for the top level of the AFDRS, while 'Severe' and 'Catastrophic' were considered the next most effective words to communicate the top level.
- Clear and concise action-orientated messaging was preferred. **Figure 5** shows the top-two community-preferred wordings.


Figure 5. Action-orientated messaging for fire danger rating levels.

5 SUMMARY OF OUTCOMES

The social science research strongly showed that the community preferred an optimised and simplified version of the existing system with the following features:

- Four levels;
- A colour palette of green, yellow, orange and red;
- Levels names of low, moderate, high and extreme;
- Supporting messaging that is clear, concise and action orientated.

The community-preferred design is show in **Figure 6** below.
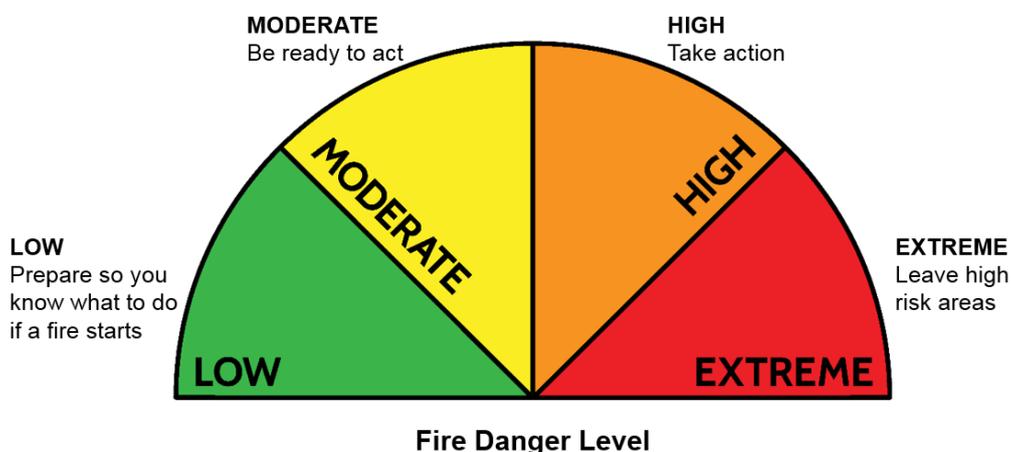
Fire Danger Level
Figure 6. Community-preferred design

6 WHERE TO FROM HERE?

The community-preferred design emerging from the social research is not a finalised design. Substantial work is required to refine various design elements and to develop a community messaging approach for each rating level. In addition significant work is required in all jurisdictions across many sectors, including fire and land management, education, health, transport, agriculture and forestry, utilities (electricity, gas, water) and local government to prepare for the implementation of the new AFDRS including:

• Changes to legislation, regulations and policy;
• Changes to agency procedures and other doctrine;
• Changes to information systems and web pages;
• Training of agency personnel, contractors and volunteers;
• Engagement with external stakeholders;
• Community education and awareness raising; and
• Changes to infrastructure including signage.

As well as changing how fire danger ratings are communicated, the new AFDRS will change how they are calculated. The existing fire danger rating system is based on science that is more than 60 years old, is not updateable and the two fire behaviour models currently used to calculate ratings are only directly relevant for one third of Australia's vegetation types. As science has improved, so has our ability to more accurately predict fire behaviour and the threat to the community across a broader range of vegetation types. The new AFDRS will use the latest science, knowledge and data, as well as eight fire behaviour models to build a better system to deliver more accurate information on fire danger to Australians. The development of new information technology infrastructure to accurately and rapidly calculate the new ratings is a significant aspect of the AFDRS project that will take two years to complete.

It is important to ensure that the new system is constructed and fully tested prior to implementation of the AFDRS, and that all sectors in each jurisdiction have had sufficient time to make changes to prepare for the implementation of the AFDRS. A comprehensive implementation project is underway to coordinate the changes required and to facilitate the earliest possible introduction of the new AFDRS. The new AFDRS is planned to be implemented in 2022.

Appendix 1

National Fire Danger Rating System Social Research

Summary National Fire Danger Rating System Research Report Stages 1 to 3

June 2019

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NFDRS and Warnings Social Research Overview

Background and Methodology

The key objective of this research is to inform the development of the New National Fire Danger Rating System (NFDRS) and Warning Systems for natural hazards. The aim is to better communicate hazard risk by using community input and subsequently promote positive behaviours and increase community safety.

The focus of this report is to detail the optimised NFDR system that best promotes positive community action.

CURRENT STATE	FUTURE STATE	
What levels of comprehension, use, uptake and effectiveness exist for the current NFDRS and Warning Systems?	What form and characteristics are required for a new NFDRS to improve community safety outcomes?	What form and characteristics are required for an all hazard Warning Systems to improve community safety outcomes?

Progress to Date
All stages of research have been conducted;
- a comprehensive desk review of existing jurisdictional research reports and data,
- national benchmark survey of awareness and comprehension,
- qualitative focus group investigation to optimise systems, and
- final quantification of optimised models through a national survey.

National Fire Danger Rating System Key Insights | Stage 1

Though prompted recognition of Fire Danger Rating signage is high, people show limited understanding of its purpose and desired actions. Less than four in ten currently use the system to plan days in summer, and only a third have taken action due to the Fire Danger Rating in the past.

Prompted awareness	93%
Incorrect understanding of purpose	61%
Feel the National Fire Danger Rating System is **relevant**	61%
Currently **use** the National Fire Danger Rating System	37%
Have taken **action** in past due to the Fire Danger Rating	34%

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 - Semi – Circle	63%
Colour Set - Green, yellow, orange, red	56%
First 3 Level Names – Low, moderate, high	59%
Top Level Name - Extreme	65%

See appendix for definition of the National Fire Danger Ratings

Contents

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Executive Summary

Key figures snapshot

Fire Danger Ratings | Stage 1

Though prompted awareness is high, understanding of the Fire Danger Rating System's purpose and desired actions is limited. Less than four in ten currently use Fire Danger Ratings to plan days in summer, and only a third have taken action due to the Fire Danger Rating in the past.

Unprompted awareness	72%	See page 15
Prompted awareness	93%	
Understanding of required actions by rating:		
Low-Moderate to High	56%	
Very High to Severe	24%	See page 17
Extreme	33%	
Catastrophic/Code Red	72%	
Feel the Fire Danger Rating System is relevant	61%	See page 20
Currently use the Fire Danger Rating System	37%	
Have taken action in past due to the Fire Danger Rating	34%	See page 21

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

Semi – Circle	63%	
Triangle	26%	See page 40
Rectangle	10%	

Colour Set

Green, yellow, orange, red	56%	
Green, orange, red, black	24%	See page 40
Yellow, orange, red, black	20%	

First 3 Levels

Low, moderate, high	59%	See page 41
Low, high, very high	41%	

Top Level | Total Preference

Extreme	65%	
Severe	51%	
Catastrophic	50%	
Code Red	31%	
Disastrous	29%	See page 41
Major	22%	
Maximum	19%	
Code Black	17%	
Red Flag	16%	

Executive Summary

The three stages of research comprise a comprehensive engagement framework with a **statistically robust evidence base at its core.** The consistent finding throughout is that the perceived complexity of the current Fire Danger Rating System:

- **Prohibits widespread awareness and comprehension;** and
- **Presents a barrier to widespread, positive behavioural outcomes**.

There was near-universal agreement that the current system requires **optimising, re-framing and simplification** to promote better understanding and the adoption of behaviours promoting personal and community safety. In the absence of change, it is highly unlikely that we will witness positive shifts in behaviour.

Simplification (reducing the number of ratings to four), combined with **optimisation** (clear, supporting behavioural messaging), whilst retaining **familiarity** (through consistency of shape) **will:**

- **Promote greater levels of awareness and visibility** (visible change)**;**
- **Promote greater levels of comprehension;** and
- **Promote more positive behavioural outcomes** (clear linkage between rating and behavioural requirement).

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Background and Methodology

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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 warnings 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.

This report presents the key findings from all stages of research focusing on the development of a National Fire Danger Rating System only.

CURRENT STATE

What levels of comprehension, use, uptake and effectiveness exist for the current NFDRS and Warning Systems?

FUTURE STATE

What form and characteristics are required for a new NFDRS to improve community safety outcomes?

What form and characteristics are required for an all hazard Warning Systems to improve community safety outcomes?

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A four stage methodology has been developed, with this report summarising findings from stages 1 to 3

Project Immersion

A comprehensive desk review of existing jurisdictional research reports and data, and secondary research sources available in the public domain has been conducted. Insights from these reports were used in the development of sampling composition and questionnaire content for further research stages.

Stage 1

National Benchmark Survey

As National data has never been collected regarding the Fire Danger Rating and Warning Systems, a nationwide online survey has been conducted to benchmark current levels of awareness, comprehension and action taken due to existing systems.

Stage 2

Qualitative Research

Insights from the National benchmark survey have then been used to guide the scope of qualitative research (sampling and content). Existing jurisdictional systems with the highest levels of comprehension were used to assist with the creative process.

Stage 3

Quantification of Optimised Models

Following Stage 2, a select number of optimised systems were developed. A further online survey was run in January 2019 to identify the systems which promote the greatest levels of comprehension and positive action.

FOCUS OF THIS REPORT

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The stage 1 benchmark survey was conducted with 5,430 individuals

To provide a consistent and comparable overview, an online survey was conducted nationally. This provides a benchmark of awareness, comprehension and effectiveness of the current Fire Danger Rating System and Warning Systems for all hazards. Survey data was collected between the 14 and 27 September 2018.

A final sample of **n=5,430** was achieved, providing a maximum margin of error of ±1.33% at 95% confidence. Data was weighted by age and gender to ensure representativeness at a national level, and within each jurisdiction.

Gender

FEMALE **51%**   MALE **49%**

Age

18-34	30
35-49	32
50-64	23
	15

Employment Status

RETIRED   UNEMPLOYED

FULL TIME WORKERS	PART TIME WORKERS		HOME DUTIES		STUDENT
39	20	18	11	7	5

Household Structure

8%	15%	38%	38%
Young person living at home	Single/ Couple no children	Family with children at home	Older Single/Couple no children at home

% of General Population
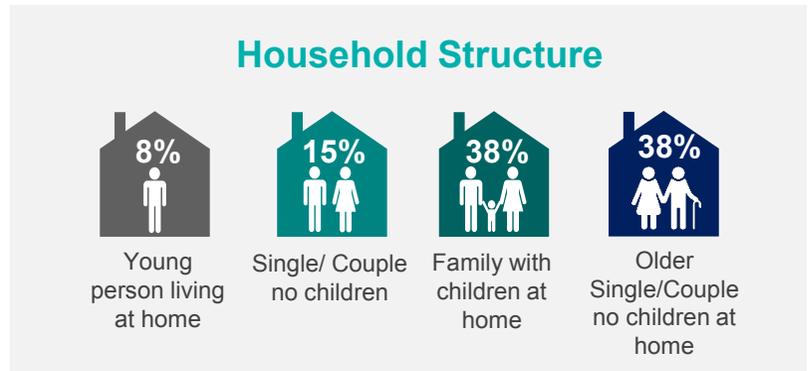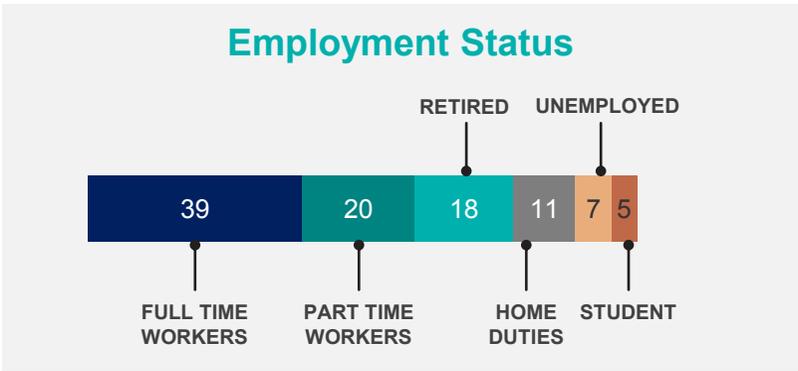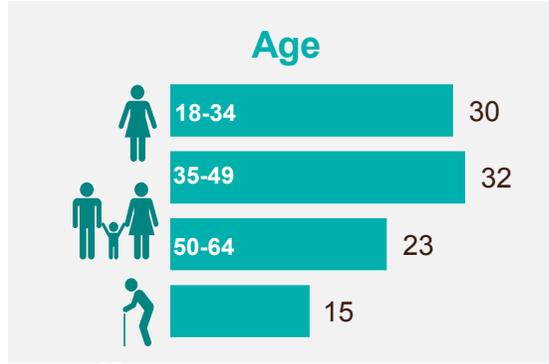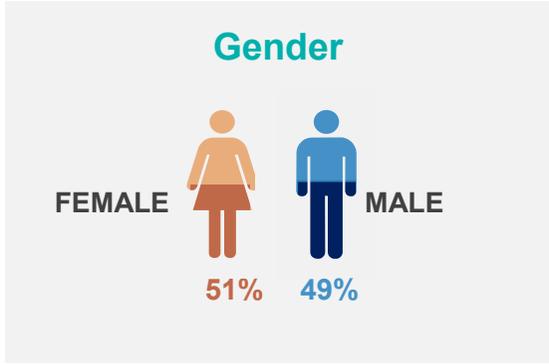
Stage 2 qualitative research was conducted in 48 locations across Australia

To provide robust insight into the required form and characteristics for a new National Fire Danger Rating and Warning Systems, 48 focus groups (plus one workshop in South Australia) were conducted with communities throughout Australia between the 1 October and 22 November 2018.

Locations were developed in collaboration with the project steering group and jurisdictional representatives, with a final sample inclusive of:

- **Medium-High Risk areas, where minor or major incidents have occurred in the past five years**
- **Medium-High Risk areas, where no incidents have occurred in the past five years**
- **Low-Risk areas**

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

To yield further insight into how communities refer to and use forecasts and warnings, video footage was captured in selected locations of community residents discussing their own personal experiences of recent emergency situations.

**Total number of participants: 340**
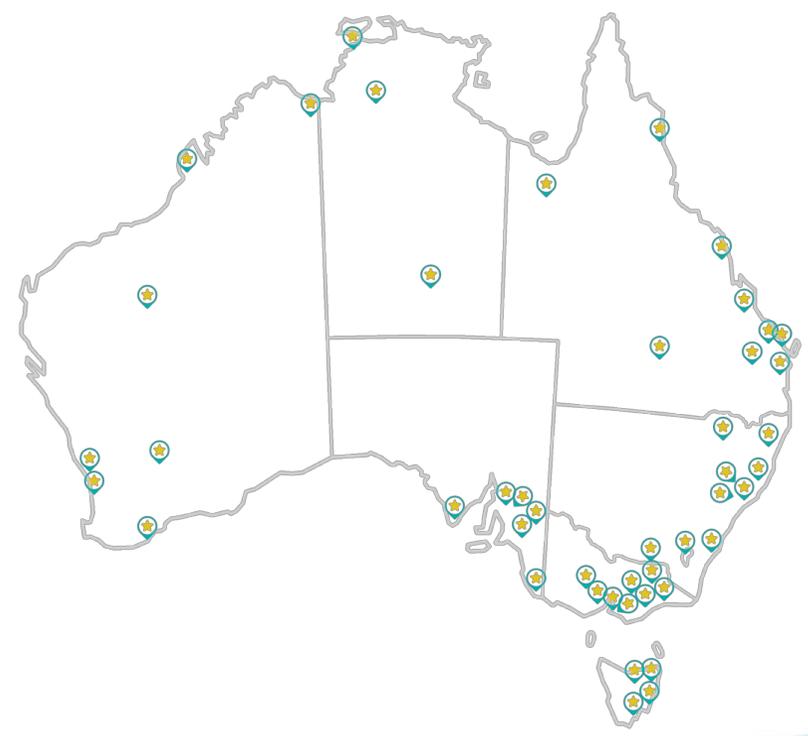
See appendix 2 on page 50 for further breakdown of groups

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The stage 3 quantification survey was conducted with n=5,408 individuals

To identify the system which promotes the greatest levels of comprehension and positive action, an online survey was conducted nationally. Survey Data was collected between the 24 May and 9 June 2019.

A final sample of **n=5,408** was achieved, providing a maximum margin of error of ±1.33% at 95% confidence. Data was weighted by age and gender to ensure representativeness at a national level, and within each jurisdiction.

Gender

FEMALE 51%   MALE 49%

Age

18-34	30
35-49	32
50-64	23
65+	15
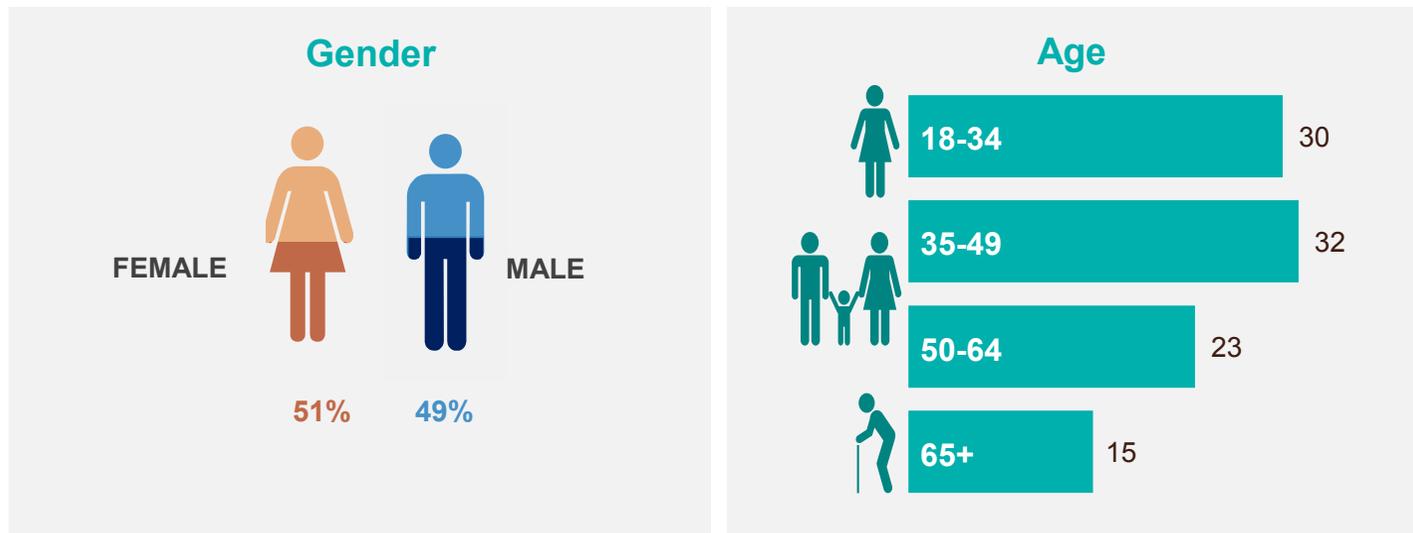
% of General Population

Research Findings

Awareness and Understanding of Fire Danger Ratings

Topline insights from stages 1 and 2

While prompted awareness of the Fire Danger Rating System is strong, it is not top-of-mind

Stage 1: National Benchmark Survey

Unprompted Awareness

72%

% General Population

Prompted Awareness

93%

% General Population

Stage 2: Qualitative Research

During focus groups, few participants mentioned the Fire Danger Rating System by name before it was prompted in the discussion. Those who did reference the system did not mention it by name, instead references were made to 'the sign on the road'. Many waved their arms, motioning in a semicircle or to represent the arm on the sign, or simply referenced 'the arrow'. Others confused the Fire Danger Rating System with various bushfire warnings, highlighting potential misattribution from Stage 1 survey data (shown left).

"Well there is the sign on the road as you come into town that tells you how bad the fire danger is today."

- Mundaring, Western Australia

Once prompted with the name 'Fire Danger Rating System' the majority of participants were able to recall the system. However, some did require a brief description by other participants in the group (e.g. "that roadside sign that tells you the risk of the fire." Cairns, Queensland) before they were able to recall the system.

Again, the Fire Danger Rating System was predominantly linked to roadside signage during discussion without moderators prompting on channel. However, there were pockets of participants in South Australia and Victoria who linked the system to messaging observed through mass media (e.g. TV news), the workplace, and schools.

"We get a notification if the Fire Danger Rating is really bad through the school I work at. We all had to advise if we would stay at the school, or leave to prepare at home in those instances."

- Gawler, South Australia

n=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 ratings before today?

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Stage 1
National
Benchmark
Survey

Stage 2
Qualitative
Research

Few understand the purpose of the Fire Danger Ratings

Both survey and focus group participants described the Fire Danger Ratings as a forecast of how **likely** a fire is to occur. This causes many to confuse the system with a warning system, with many believing the highest level indicates that a fire has started.

Stage 1 online survey

% believe a FDR predicts how likely a fire is to occur

52%

% General Population

n=5,430
Q13b. Which of the following statements best describes what the Fire Danger Rating is?

Stage 2 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.

❌ No understanding   ✅ Good understanding

〜 Some understanding

16

There is a lot of confusion over required behaviours at each Fire Danger Rating across all jurisdictions

There is a limited ability to correctly identify required actions and this suggests limited understanding of how to respond to Fire Danger Ratings.
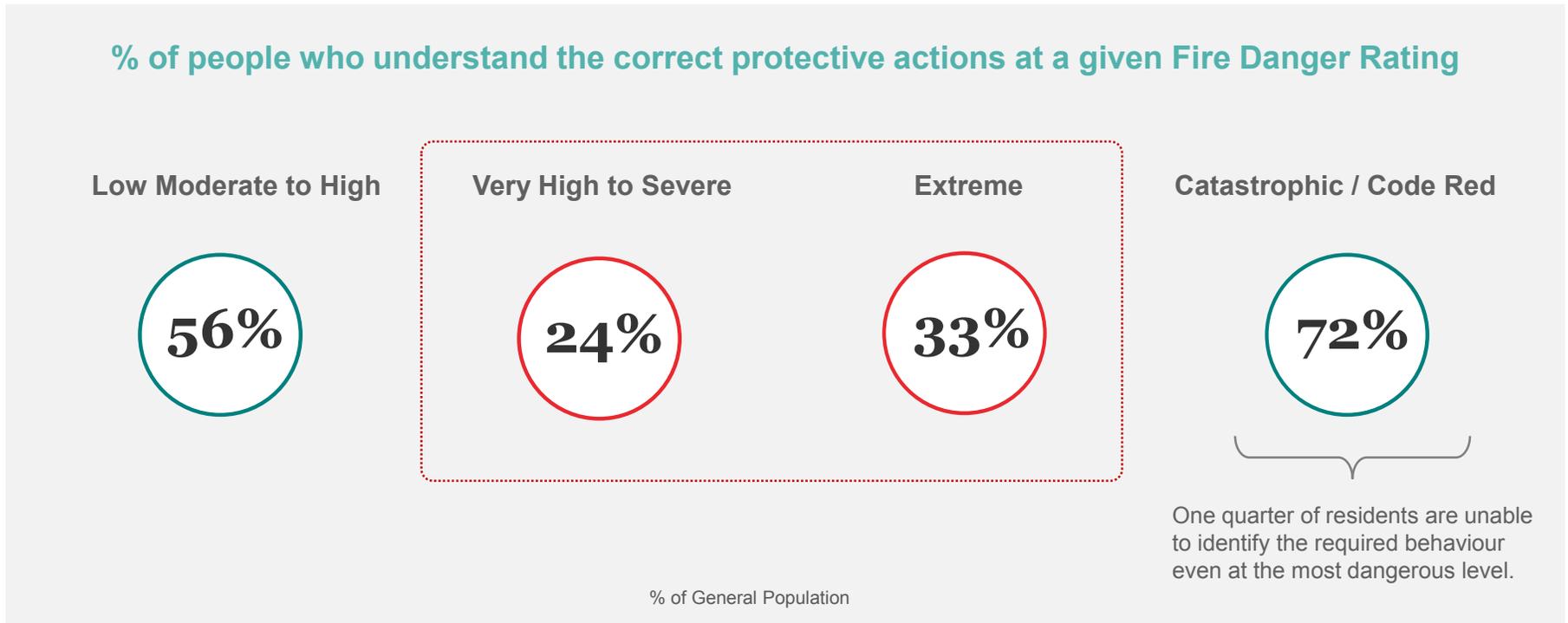
% of people who understand the correct protective actions at a given Fire Danger Rating

Low Moderate to High	Very High to Severe	Extreme	Catastrophic / Code Red
56%	**24%**	**33%**	**72%**

One quarter of residents are unable to identify the required behaviour even at the most dangerous level.

% of General Population

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Almost all don't believe that any action is required until the Fire Danger Rating passes the mid point

Observing discussions also showed there is confusion as to how Total Fire Bans operate alongside Fire Danger Ratings. At least half believe Total Fire Bans are aligned solely to the Fire Danger Rating. For example, there are only Total Fire Bans in place on Extreme and Catastrophic/Code Red days.

More than two thirds explained they feel **no actions** are needed from Low Moderate to Very High Ratings. At most, the Fire Danger Rating was felt to be a prompt to **stay aware** of the possibility of a fire. For a minority of participants this also acts as a prompt to check bushfire plans during summer months.

All participants recognised that action is required at Severe and Extreme Fire Danger Ratings, though what these actions are is not clear. Group discussion resulted in common mentions related to **fire bans** (e.g. no power tools, barbequing, open flames), and enacting **bushfire plans** (cleaning gutters, dried grass, filling buckets of water etc).

Catastrophic/Code Red ratings are linked to advice to leave the area by a minority. In Victoria some felt this was a 'too late' code where it was best to stay where you are. More than half believed this indicates an active fire in the area. Although there is some awareness that individuals should leave the area, the majority ignore this as there are no evacuation centres to evacuate to in the absence of a fire, or the risk is not thought to be 'real'.
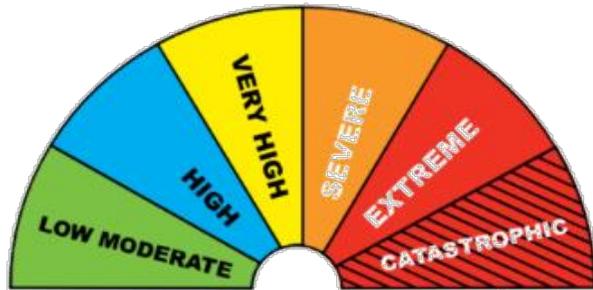
Knowledge of the required behaviours is slightly better amongst those directly impacted by restrictions (e.g. farmers) and those in high risk areas compared to the general public. However, there is still a perception that no action is needed before the mid point.

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The current Fire Danger Rating System is too complex to maximise community-wide comprehension

Scale

Most participants stated that six levels was too many to enable people to accurately recall the meaning and intended actions for each. They are unable to differentiate between many of the levels, instead mentally grouping them (e.g. under halfway = no action).

*"There's too many levels. Especially to get out a quick message on a road sign. People want to know if they can do something or not."*

- Dungog, New South Wales
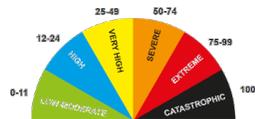
Use of numbers

No participants had an understanding of the intention or meaning of the numbers. Most assumed this to be a percentage change indicator, though a small number thought it was some kind of measurement based on temperature, wind, and other environmental considerations. Including these numbers creates additional clutter and confusion.

Rating names

All participants desired rating names that are simple, common/ everyday language. Using words that were long or unfamiliar was thought to inhibit understanding in the general community. Catastrophic caused division amongst participants with a significant number feeling this was an uncommon word that many would not understand.

Specific to visual display through signage

Shape

Approximately two thirds of participants discussed the semi circle shape as not being the most efficient way of communicating increasing danger. It was also observed that the dial (clock face) shape is also less relevant to today's community with the use of largely digital mechanisms.

Gap

The gap in the Victorian system creates confusion, with more than half of participants mistakenly believing this to mean that action is only required once the Fire Danger Rating reaches Code Red. The increasing size of the segments was also almost universally overlooked.

19

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Fire Danger Rating signage is recognised as relevant by the majority, but few are using it

This suggests the current Fire Danger Rating is not compelling enough to motivate action. This is demonstrated by an inability to correctly identify required behaviours and is potentially driven by comprehension issues.

Current use of Fire Danger Ratings

■ Total Disagree   ■ Neither   ■ Total Agree

Statement	Total Disagree	Neither	Total Agree
The National Fire Danger Rating System is relevant to me	12	27	61
The National Fire Danger Rating System encourages me to take action	11	30	59
I use the National Fire Danger Rating System to plan my days in summer	31	33	37

Those in Victoria and regional South Australia have the highest levels of self reported use of the existing system.

% of General Population

n=5,430
Q13d. Thinking about the Fire Danger Rating System (FDRS) shown, how strongly do you agree or disagree with the following statements

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The majority have never taken action due to the Fire Danger Rating before

Of those who have, most action is taken between 'very high' and 'extreme' ratings.

Actions include beginning to prepare properties and selves, changing travel or event plans and adhering to total fire ban measures.

Actions include putting bushfire plan into place, avoiding travel through high risk areas and monitoring fire information.

Percentage of population who have taken action at a given Fire Danger Rating

34% National *Overall*

Fire Danger Rating	%
Low-Moderate	2
High	5
Very High	7
Severe	8
Extreme	8
Catastrophic/ Code Red	3

% of General Population

n=5,430
Q14. Have you taken any action in the past after seeing or hearing the Fire Danger Rating level?
Q15/b. Thinking about the last time you took action, at what Fire Danger Rating level did you take action; what actions did you take?

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Low awareness and comprehension, combined with negative perceptions about forecasts and warnings, can result in inaction and inappropriate behaviour

Inaction

The majority of participants directly stated that not receiving warnings in a timely manner leads them to feel that the warning(s) are out of date and are perhaps of no or lesser relevance when received.

Poor quality or poorly displayed roadside signage e.g. faded colours, overhanging bush etc. for the Fire Danger Rating System can also diminish credibility and discourage action.

"I don't know if you've seen them around, but the fire danger rating signs around here are so faded, the red is pink!"
- Katherine, Northern Territory

Risky behaviour

It can be inferred from participant discussion that the broader community are more likely to partake in risky behaviours if they feel the Fire Danger Rating or warnings are not current or relevant.

It was observed that at least one participant per group was partaking in behaviours contradictory to the Fire Danger Rating (often unconsciously). The few making a conscious decision to ignore ratings referenced the rating remaining on the same level for an extended period of time as a key reason (despite weather conditions clearly having changed).

"It was an extreme day or something and some idiot was out on his field on the tractor. People always think they know best."
- Churchill, VIC

Lack of preparedness

It is clear from comments made by participants that the low perceived trust in forecasts and warnings reduces personal risk recognition. Almost all participants who felt this way had minimal preparation behaviours and risk recognition. However, if an individual experiences an emergency they place greater trust in warnings again.

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# Designing an Optimised System

Topline insights from stage 2 creative sessions

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# Reviewing the current Fire Danger Rating Meter

During the focus groups, participants were shown their own jurisdiction's Fire Danger Rating Meter to validate recall, review and critique. Following this, they were shown the Victorian Meter (to review the use of Code Red) and any other jurisdictions where metres have visual variances to their own. Participants were again asked to review and critique meters shown.
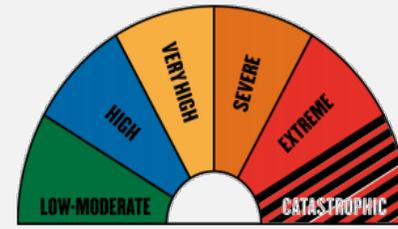

ACT

NSW

SA

QLD

TAS

NT

WA
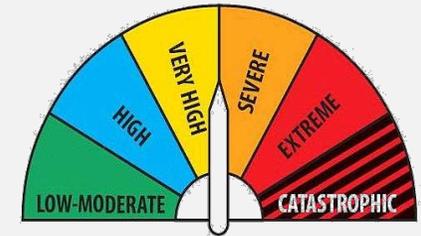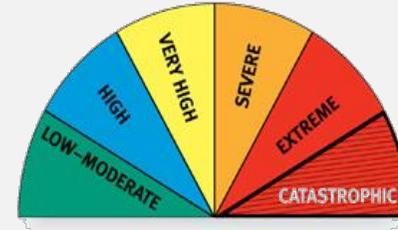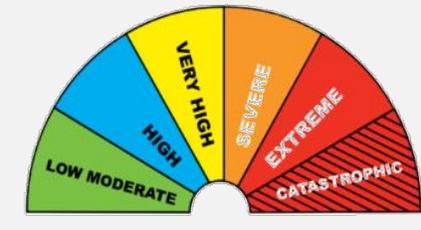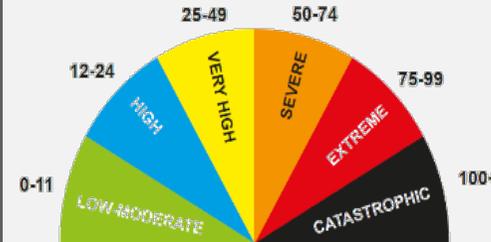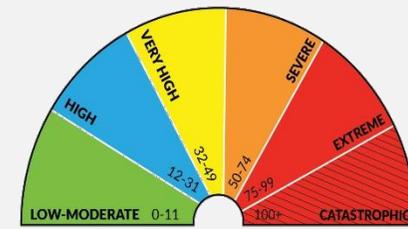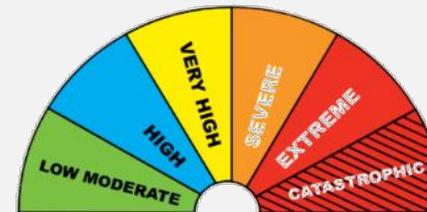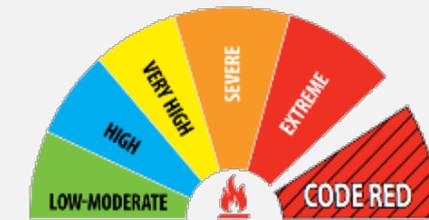
VIC

After reviewing the Fire Danger Rating System, four core strengths were highlighted by participants

Conveys increasing danger / importance

All participants explained the left to right system of increasing danger is universally understood. Combined with the cool to warm colour scheme, the system clearly communicates increasing danger to the community.

"I know green is safe, I know red is bad and orange is average but I don't know the rest."

- Bundaberg, Queensland

Familiarity

Whilst it has undergone some changes, the basic model of the Fire Danger Rating Meter has been in place for a number of years, which is observed as creating a foundation of familiarity. Although participants had some misunderstanding of the purpose of Fire Danger Ratings, most have developed a baseline understanding of the intent and meaning behind the system.

Consistency across states

While there are minor differences by jurisdiction in how Fire Danger Ratings are visually presented, the underlying model is consistent. Participants in the majority of groups discussed how this enables travellers and those moving interstate to quickly adapt and understand the local system.

"It's a commonality between states. We have an ageing population in Australia, it needs to be familiar."

- Katoomba, New South Wales

Multiple channel application

The existing system can be easily communicated across multiple channels. Whilst the core channel currently recognised by participants is roadside signage, jurisdictions such as South Australia have successfully communicated Fire Danger Ratings through online and mass media channels (i.e. TV and radio).

"The rating system is on the side of the road, but we also usually hear about it on the news the night before."

- Kingston, Tasmania

Fire Danger Ratings titles require optimisation to provide greater clarity and promote comprehension

Escalation of ratings

Low Moderate

More than three quarters of participants stated that low and moderate are too different in meaning to be combined into one rating.

Low → High

Similarly, the jump from low-moderate to high is stated to be too large and is linked to fear-mongering which diminishes the credibility of the system.

High → Very High

The use of both high and very high is thought to be unnecessary by the majority of participants.

"I don't understand why it goes from low to high in the first two. There's not enough variation between them?"

- Dungog NSW

Lack of differentiation between ratings

Discussion highlighted that several Ratings in the current system are synonyms (i.e. Severe and Extreme) by the majority of participants. This causes confusion in how the Ratings differ in severity and intended actions. A lack of differentiation is observed to lead individuals to mentally group ratings. For example Severe and Extreme are both 'bad' whilst High and Very High are both 'okay'.

"Severe and extreme mean the same thing but severe is mid-range for some reason?"

- Rockhampton, Queensland

Code Red vs. Catastrophic

Participants felt neither Code Red nor Catastrophic are an optimised name for a Fire Danger Rating.

Code Red:
- Easier to understand than catastrophic
- Americanised
- More closely related to ambulances
- Signifies that the incident has already occurred

Catastrophic:
- Difficult to understand, particularly for those with low levels of literacy, the culturally and linguistically diverse and tourist audiences
- Too long to be quickly read on a sign while driving past
- Linked to fear-mongering

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While the colour scheme communicates increasing danger, individual colour choices are questioned

Participants across all groups stated blue and green both mean 'low risk' and are viewed as the same level of danger.

Almost all participants also stated the placement of blue after green is not intuitive as blue is perceived as a 'lower risk' colour than green. Blue is also viewed as inappropriate for a High Fire Danger Rating.
"They've got high being blue? To me, blue is flooding, it's just not right." – Brisbane, Queensland

A minority spoke of yellow as difficult for many to read and is prone to fading on outdoor signage.

A minority of participants highlighted that orange and red can be difficult to differentiate if the shades are too similar.

The majority of participants advised the use of multiple shades of red in a single system diminishes its impact. Some question which red they should pay attention to.
"There's so many shades of red in the current one, you just think oh well it's not the bad red. It makes you not care as much, even though it's red." – Rockhampton, Queensland
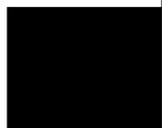
While black was associated with high danger, the majority associated this with a fire that had already occurred (i.e. representing smoke or 'charred' earth).
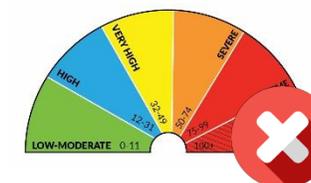
Visual signage with contrasting text colours was stated as preference as it promotes easy reading, particularly while driving at high speeds.

For this same reason, imagery with larger text is preferred and there is interest in having horizontal labels, rather than the commonly used vertical.

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Community members worked in small groups to develop optimised communications imagery for Fire Danger Rating and Warning systems

Colour palettes, shapes, words and phrases helped stimulate the creative process.
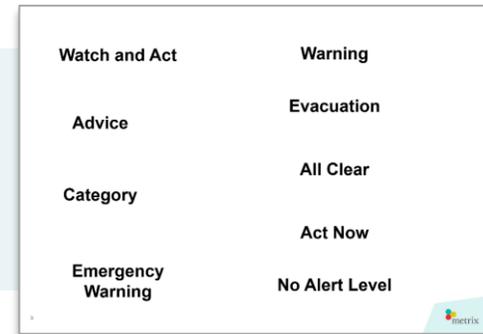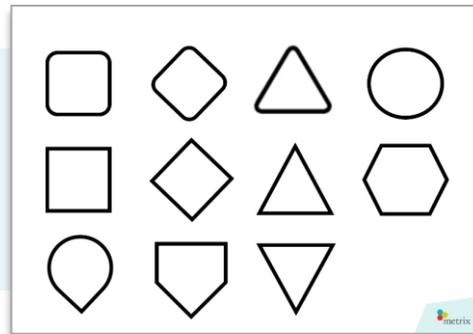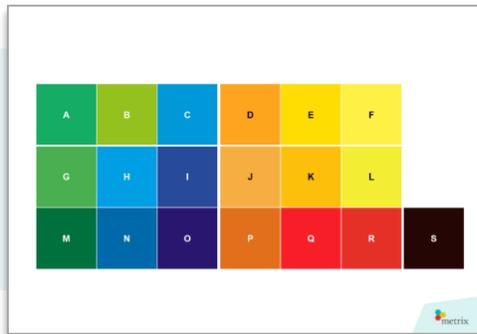
Three or four levels are viewed as most effective for the Fire Danger Rating System by participants

Participants explained that each Fire Danger Rating should be linked to unique and distinct behaviours. Where the same behaviours were currently perceived to be required across multiple ratings, ratings were typically combined by participants.

Three

A three level system was stated to be simple to understand, learn and recall by under half of participants. Comparisons are made to traffic lights or 'stop, drop and roll' systems. These participants feel a three level system would allow all ages and intellects to easily understand the meaning and associated actions with each Fire Danger Rating.

"It needs to be really simple. Even a five year old can learn three levels, they understand traffic lights."

- Bundaberg, Queensland

Four

More than half of participants chose a four level system as this retains the simplicity of a three tiered system, while increasing the likelihood of provoking action. With a three tier system, the majority of participants are unlikely to take action until the third Fire Danger Rating as this is over half-way. It was observed that the inclusion of a fourth level prompts the community to take action earlier.

More

The minority of participants familiar with the existing Fire Danger Rating System initially developed a five to six level system (or more). However these were condensed to three or four tiers in almost all cases when participants realised they can not differentiate the actions/requirements at each level. Participants explained there is only support for more than four levels if each level has a clear, separate, specific action associated with each Fire Danger Rating.

"If you have too many, that's when people lose interest and go oh there's too much going on, who cares." – Mackay, Queensland

It should be noted that a minority within the community preferred a five-to-six level system to accommodate work restrictions or cultural considerations (e.g. to accommodate cultural burning). This was more prevalent in focus groups locations with higher populations of indigenous communities and pastoral land owners. Should the scale be reduced to three or four levels, consideration will need to be given to minimising the impact on these segments.

Fire Danger Ratings need to be described with simple words, on a consistently stepped scale

The majority of participants stated a four stage system from Low to Extreme is most appropriate. Catastrophic was used to replace Extreme in a handful of cases, however this is divisive due to the perceived widespread comprehension of the word.

Low	Moderate	High	Extreme

Example of one scale used from the recommended suite

Simple

All participants stipulated that simple, easy to interpret words need to be used to reflect Fire Danger Ratings. Common terms that relate to risk were used in optimised systems to ensure easy interpretation by all groups within the community.

In a signage context, short words are also preferred as they are quicker and easier to read whilst driving, particularly at high speeds.

Consistent increases

To assist with comprehension, words need to reflect consistent increases in scale rather than large jumps between levels. The majority of participants spoke of the current increase from Low-Moderate to High as not liked.

The use of synonyms (i.e. Severe and Extreme) for different levels caused confusion for a significant number of participants and was not liked as there is no clear differentiation between Fire Danger Ratings.

Communicating Actions

Whilst simple words are preferred to indicate the Fire Danger Rating, participants recognise these don't communicate the actions required at each rating. There is a universal desire for information advising of action to be included either through sub headings (words) or icons when visually displayed. Again participants clearly stated if words are used they must be simple to ensure quick understanding without further research.

Participants in approximately a third of groups also highlighted that displaying actions is also considered important for tourists/visitors who may not be familiar with Fire Danger Ratings.

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Green is perceived as a safe colour
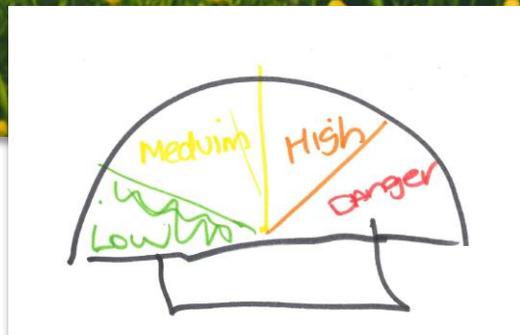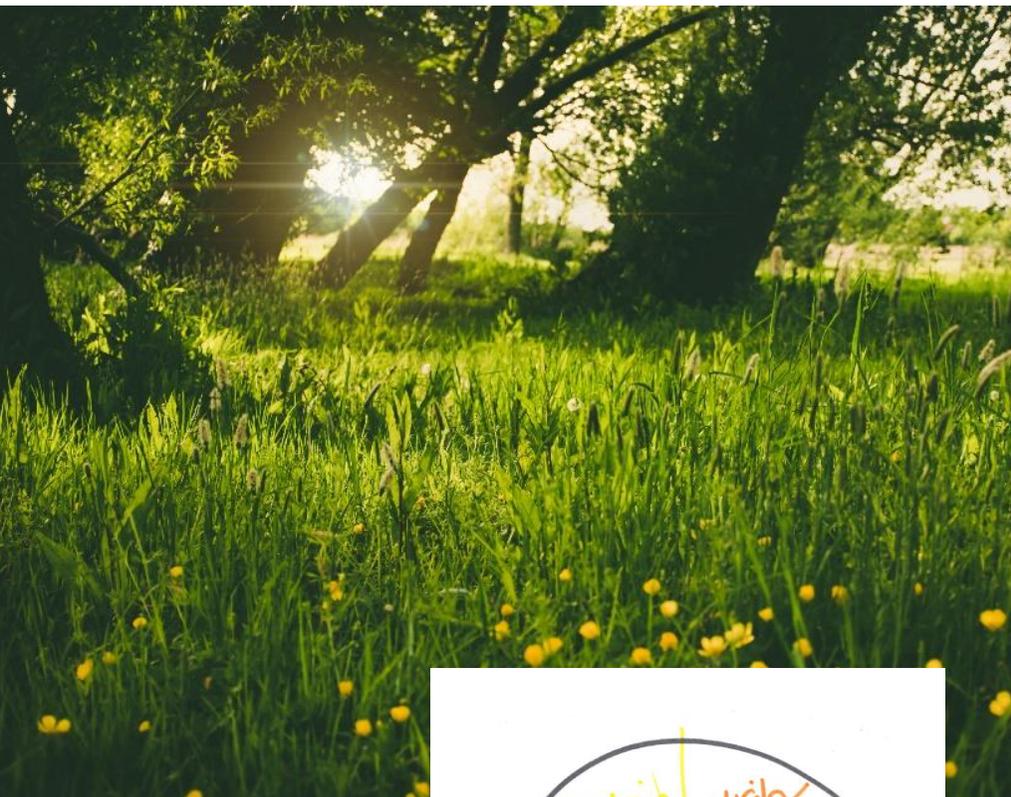
All participants stated that green is a safe colour, and is associated with very low or no level of danger.

Green is associated with lush, healthy grass. This contrasts for bushfires in particular where risk is associated with an environment that is dry and brown.

Participants across all groups also associated green with traffic lights, in terms of being ok to move forward.

The use of green :

Green was almost universally used as the lowest colour in a Fire Danger Rating System.

A minority did so due to familiarity with the current system. The majority used this due to the implied meaning of green as 'safe'.

"We chose green for the first stage of our system because it tells you that the danger has passed and you're ok to go back to normal behaviour."
- Port Lincoln, South Australia

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Yellow means caution or hazard; while orange conveys a shift, and starts to capture attention

The majority of participants state yellow is a colour that is immediately associated with caution and hazards.

Participants were familiar with the use of yellow as a warning from road signs and caution tape.

Yellow was commonly used to show middle or moderate risk in both the Fire Danger Rating and warning systems.

A minority did note visibility issues with yellow, as depending on the shade/tone used it can be difficult to see on screens or signage.

More than half of participants felt orange is an 'in between' colour, and is used to show intensifying danger.

Almost all participants relate orange to its role in traffic lights – it signifies that people need to evaluate risk and adjust their behaviour.

Orange was told to mean moderate or high risk as it is moving towards the red (danger) zone. A key concern using orange was tone; some shades can be difficult to distinguish from red.

The use of yellow :

Yellow was typically used as a mid point – on its own in a three level system or prior to orange if more levels were used.

The transition from yellow to orange conveys an ascending risk.

The use of orange :

Orange was often used interchangeably with yellow. When participants used the two together, orange conveyed a stronger level of danger.

"In the traffic lights you know that green is good you can keep driving, yellow is take caution and red is stop."

- Bundaberg, Queensland

"Green's a peaceful colour, orange is caution, it's supposed to catch your attention."

- Toowoomba, Queensland

<u>Red</u> is associated with danger; while <u>black</u> calls to mind the aftermath of danger
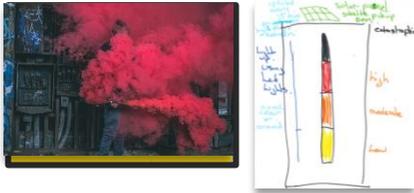
All participants stated red is thought to convey specific hazards and imminent danger.

Participants clearly state that red captures attention and encourages people to take immediate action. Participants are highly familiar with red in this context, through traffic lights, sirens, stop signs and other signage.

The majority also stated that red is a warm colour and easily associated with bushfire, though is applicable to other hazards due to its association with danger.

Participants interpreted black in two ways; it symbolises the aftermath of a fire 'burned to ash' and/or death/destruction being imminent.

For the majority black conveys the aftermath of a hazard through associations of death and destruction. In particular, it is linked to the aftermath of a bushfire, where the environment is burned to ash.

Black calls for immediate action.

The use of red :

Red was almost universally used to convey high or extreme danger. For the majority red was the highest colour selected for an optimised Fire Danger Rating System.

The use of black :

Where an additional stage beyond Extreme was used (e.g. Catastrophic), black was selected by more than three quarters of participants. A minority recalled its use in the current system.

"Red means danger – it's the most extreme level you can have. That's why we used it as the top level in our system. If you see this you need to do something straight away."

- Waroona, Western Australia

"The last one is black….it's just more serious than red, it would make me take a little bit more notice."

- Launceston, Tasmania

For the new National Fire Danger Rating Meter approximately a third of participants would retain the current shape

It is observed that this is largely driven by familiarity. Where participants know and recognises the existing shape, the tendency is to default to this. However, it was observed that the current format failed to drive desired behavioural outcomes even amongst these individuals.

"If it isn't broken why fix it?"

- Wodonga, VIC

More than half of participants expressed concerns regarding the cost (and ultimately, likelihood and execution) of a complete system overhaul to another shape. It is thought to be easier to update the content on the existing shape. Despite these considerations, generally there was agreement amongst participants that familiarity breeds complacency, for example 'I do nothing now, I'll do nothing then'.

"I'd change the shape from what is now…. I don't notice it or pay attention to it now, so it probably wouldn't change if it was kept the same."

- Mt Isa, Queensland

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The majority feel a change is required to avoid complacency and encourage action

The most common alternatives include:
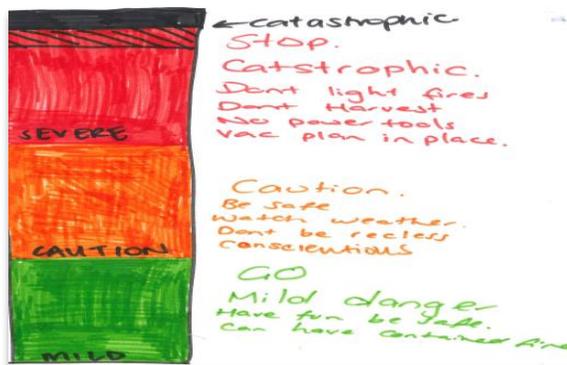
Rationale for these shape choices was stated by participants as follows:

Vertical Bar

- New and different to capture attention.

- Clearly shows escalation of risk (bottom to top).

- Better aligns with how we consume information (e.g. smartphone scrolling).

Inverted Triangle

- New and different to capture attention.

- Triangles are already associated with 'caution'

- Clearly shows escalation of risk (bottom to top).

- Higher risk levels have more space, demanding more attention.

Single Block Colour

- Tailored and relevant information is required in the digital age.

- Makes it easy to identify current level of risk.

- Requires knowledge and understanding of the whole system for context.

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Designing an Optimised System

Quantification through stage 3 online survey

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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.

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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 56).

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Perceptions on the most effective Fire Danger Rating design to drive behaviour is largely consistent across the nation

Where there are significant differences by jurisdiction to note, this is referenced in the commentary.

However, the primary research objective and focus of analysis throughout this report is to create a national system.

Jurisdictional reports will show detailed data breaks which will assist when designing an implementation and communications strategy by highlighting the areas where greater resistance to change may be met.

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

Shape preference differs slightly from stage 2 as an online survey environment prompts respondents to select the most intuitive and effective option within a set time limit. Simplifying the existing colour set to include green, yellow, orange and red is most effective to indicate increasing risk.

Shape to Communicate the Fire Danger Rating

4 stage semi-circle	4 stage triangle	4 stage rectangle
63	26	10

% of General Population

Colour Set to Communicate Increasing Risk

Green, Yellow, Orange, Red	Green, Orange, Red, Black	Yellow, Orange, Red, Black
56	24	20

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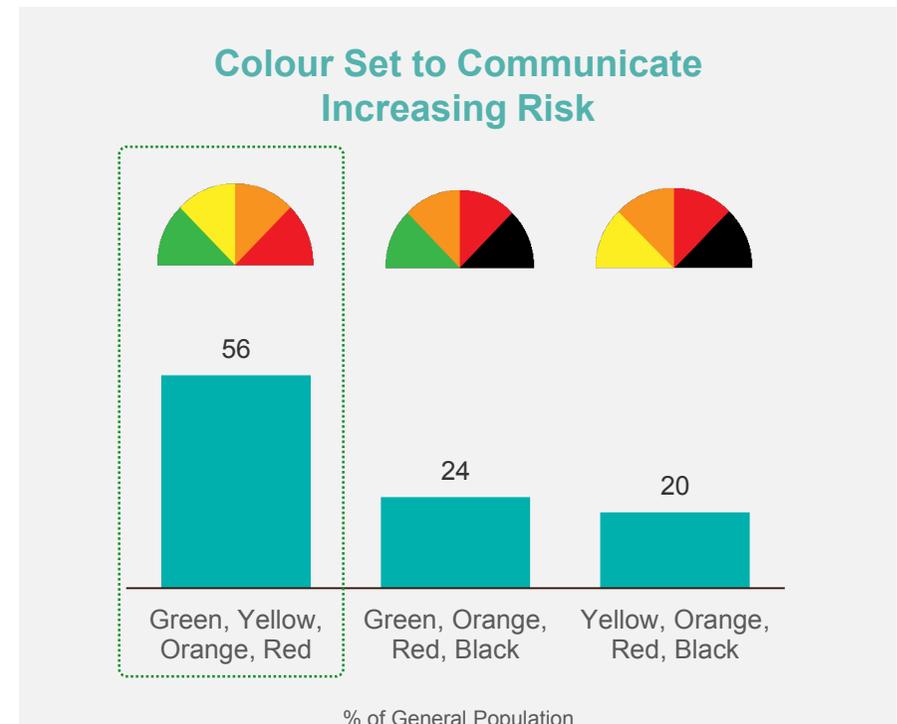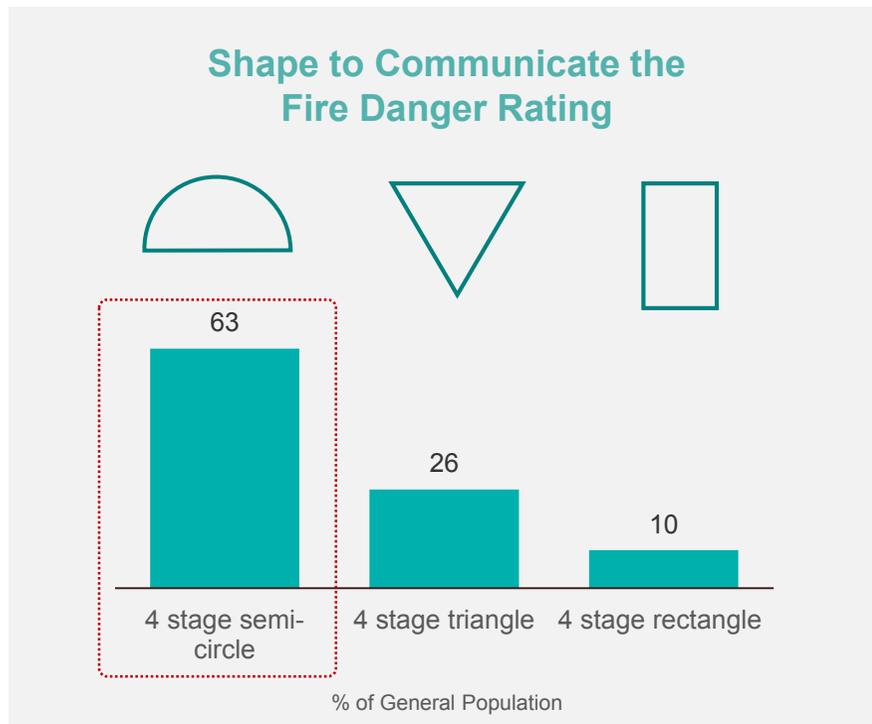
n=5,408
Q2. Which shape would be most effective to communicate the Fire Danger Ratings?
Q3. Now, which of these colour sets best communicates increasing fire risk and would encourage you to take action and stay safe at each Fire Danger Rating?
Note: Colour set figures are for general population. Semi-circle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

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

Extreme is the preferred name for the top level of the FDR by top 3 preference. While Severe and Catastrophic were considered the next most effective words to communicate the top level.

Preferred Name of Fire Danger Rating Levels

- Low, moderate, high: 59
- Low, high, very high: 41

Preferred Name for Top Fire Danger Rating Level

Legend: ■ First Preference ■ First & Second Preference ■ Total Preference

	Extreme	Severe	Catastrophic	Code Red	Disastrous	Major	Maximum	Code Black	Red Flag
Total Preference	65	51	50	31	29	22	19	17	16
First & Second Preference	47	32	37	21	18	12	10	12	11
First Preference	23	11	28	11	6	4	4	7	6

% of General Population

41

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Preferred naming of the top rating is broadly consistent across jurisdictions

South Australian residents have a marginally higher preference towards Catastrophic. However, this is not a significant difference.

Preferred Name for Top Fire Danger Rating Level by Jurisdiction | Top Three Preference

Legend: Extreme, Severe, Catastrophic, Code Red, Disastrous, Major, Maximum, Code Black, Red Flag

% of residents

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
Extreme	63	63	69	65	70	65	71	68
Severe	51	46	54	44	55	45	65	51
Catastrophic	52	44	48	66	51	63	55	65
Code Red	28	42	26	28	26	28	18	18
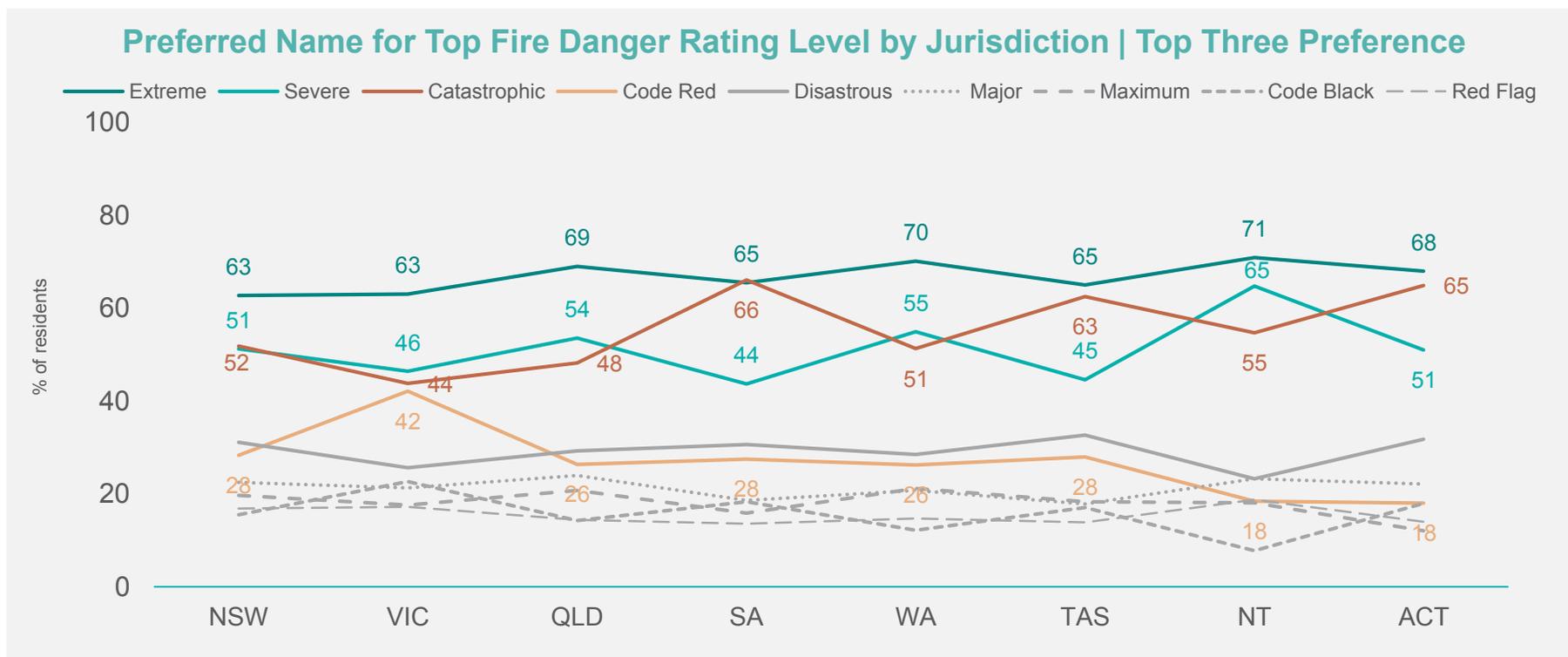
NSW n= 1,004 | VIC n= 1,007 | QLD n= 1, 001 | SA n= 1,002 | WA n= 995 | TAS n=199 | NT n= 100 | ACT n= 100
Q4b - Now please rank the following options from most to least preferred to communicate the highest level of bushfire danger.

42

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Focus on action orientated statements to ensure supporting messages are effective

While most jurisdictions preferred *'prepare so you are ready if a fire starts'* as the support message for a Low Rating, those in Victoria and the Australian Capital Territory preferred *'Know what to do'*.

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

Low

35 — Prepare so you are ready if a fire starts
34 — Know what to do

Moderate

28 — Be ready to act
19 — Stay alert

High

32 — Take action
26 — Be ready to leave

Extreme

36 — Leave high risk area
23 — Take action now

% of General Population
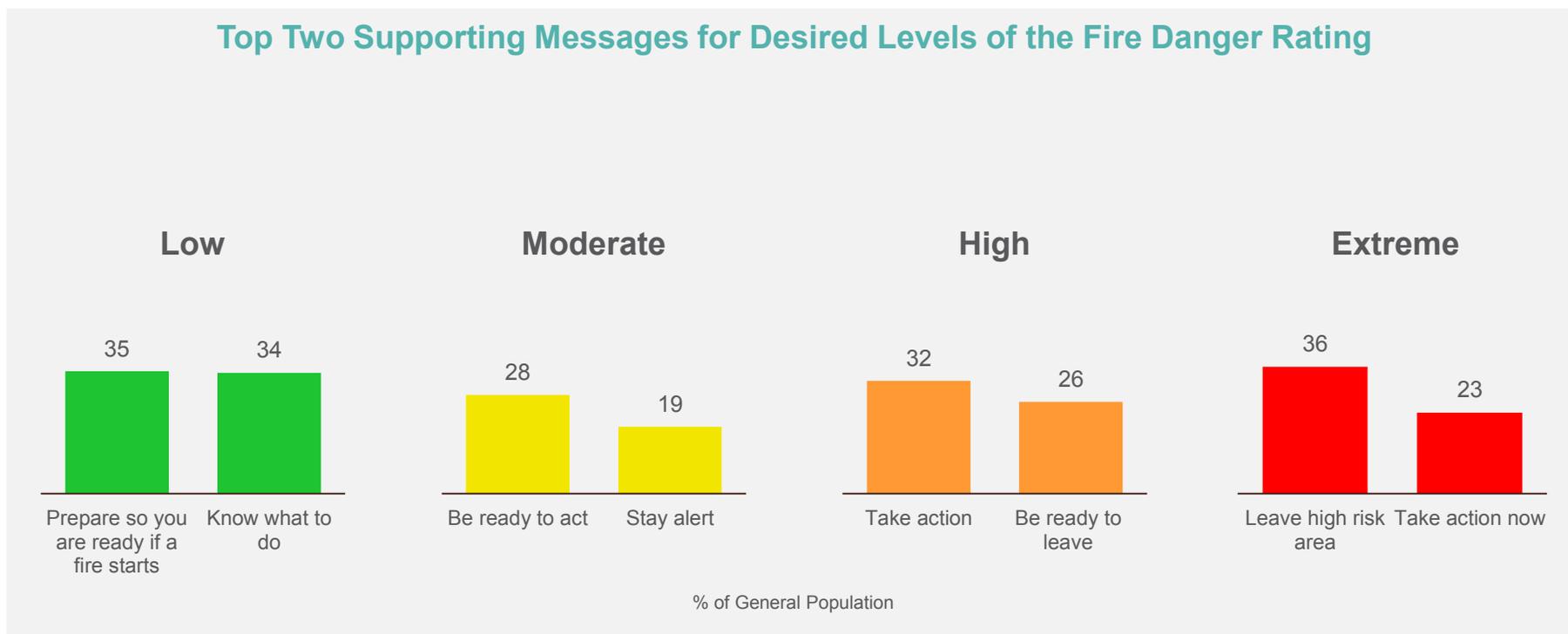
Low n=5,408 | Moderate n= 3,184 | High n= 3,184 | Catastrophic n=1,702
Q5a - Which of the following would be most effective to encourage you to take action and stay safe at each Fire Danger Rating?

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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

■ First Preference　　■ First & Second Preference　　■ Total Preference

	Fire Danger Level	Fire Danger Rating	Fire Risk Level	Fire Danger Forecast	Area Fire Risk	Your Fire Risk	Fire Risk Forecast
Total Preference	65	58	51	37	33	30	26
First & Second Preference	48	40	33	25	20	19	16
First Preference	27	20	15	12	9	10	7

% of General Population

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?

44

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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**

Variable ratings throughout the day	Single rating for the day (highest rating)	No preference
53	35	11

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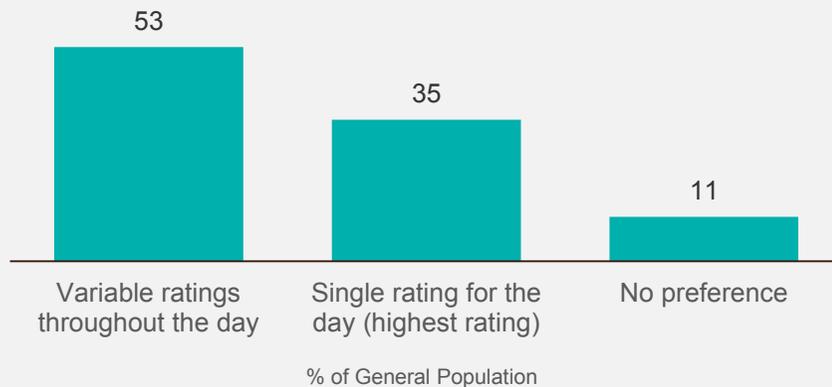
As found in Stage 1 and 2 of the research, there are issues surrounding the comprehension of the system. Variable messaging throughout the day has the potential to amplify these issues.

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 <u>use</u> and <u>respond</u> to ratings.

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?

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The proposed design for the new National Fire Danger Rating System is an optimised, simplified version of the existing system

Clear, concise, action orientated messaging should support each level of the system to encourage residents to take the required actions.

Supportive messaging should be included in the variable messaging area of physical Fire Danger Level signs and communicated during audio announcements.

Fire Danger Level

LOW · MODERATE · HIGH · EXTREME

SUPPORTIVE MESSAGE
LOW - Prepare so you know what to do if a fire starts
MODERATE - Be ready to act
HIGH - Take action
EXTREME - Leave high risk area

NOTE: the system shown is for illustrative purposes only. Font sizes, alignment and colours are to be determined.

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Appendices

Appendix 1
Steering Group and Reference Group Members

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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	Changed		
Tamsin Achilles	VIC	VICSES	Senior Advisor, Readiness & Intelligence	Changed		

Appendix 2
Focus Group Details

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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 3
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).

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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.**

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Appendix 4
Questionnaire

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