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27 MAY 2019

Bureau of Meteorology User occasion mapping

Quantitative research findings



Australian Government
Bureau of Meteorology

USER EXPERIENCE (UX) DESIGN PROJECT
ROBUST CHANNELS DELIVERY STREAM

Deloitte.
Digital

Background

Deloitte is working with the Bureau of Meteorology to explore new ideas around website development. This project involves a broad range of consumer exploration and testing exercises, designed to connect with the BOM audience to understand what the ideal new website could look like.

To assist in building consumer understanding to feed into this process, People Theory conducted a 15 minute online survey with a nationally representative audience to explore key thoughts, behaviours and attitudes from the target audience. In particular, our focus was on exploring the key occasions that generate a need for weather information, and the archetypal behaviour that sits behind these.

Fieldwork for this survey commenced on 23rd April 2019 and completed on Monday, 6th May. During this time, a nationally representative sample of n=1027 people was achieved.

The following outlines the findings from this study.

Research method

To meet the needs of the project, we conducted a 15-minute online survey.

The survey was administered to achieve a nationally representative sample with quotas applied based on age, gender and location (state, metro, regional)

Data quality controls were also applied to ensure quality in the responses.

What did we ask?

Section	Objective
A. Screener	To identify the correct core sample and boost samples for the study – core demographics and confirming use of online sources for weather data
B. Measuring current usage	Measuring people's current behaviour when it comes to accessing weather information – needs, gaps, sources.
C. Occasions, needs and behaviours	Measuring the use cases for accessing weather information and the detail behind each of these – key personal and work occasions and behaviour in each of these occasions
D. Information needs, preferences and gaps	Understanding user preferences to underpin information delivery – critical information, what's missing, usage behaviour
E. BOM Deep dive	Measuring the current position of BOM – satisfaction, opinion, usage, etc.

Key Findings

Information searching in the category is highly limited to understanding what is happening right now – what is the weather like today? How is it changing? How do I need to respond?

- This remains true across sub-groups within the market, and even with those who feel weather information is critical to their work.
- Users turn to a limited number of sources for quick and easy information.

Key differentiators in usage occasions are limited, but are generally linked to:

- Who is impacted by the information – is it for me, or is it to look after others?
- The level of detail and the impact of getting it wrong – what are the consequences?
- Location is critical, and most information is focused on where we are right now.

Users look to have built habits in the market, accessing a limited number of sources for weather information, and feeling they can get most of what they need.

- Offline sources are still important for many (TV, Radio) and voice-activated devices in home are starting to play a role.

BOM plays an important role in the category and is well-liked. But it is not dominant source. Satisfaction is positive and most people are generally happy with the service provided.

Recommendations

Users look to be generally happy with the level of information they have access to, and have built habits to get them what they need quickly.

- Therefore any change needs to be intuitive and simple – helping users to quickly build new habits.
- Building awareness of the BOM offer and how it performs better or can better deliver may be important

The user pathway needs to be simple – the overwhelming majority are seeking top line, transactional information on what is happening right now so they can make quick decisions.

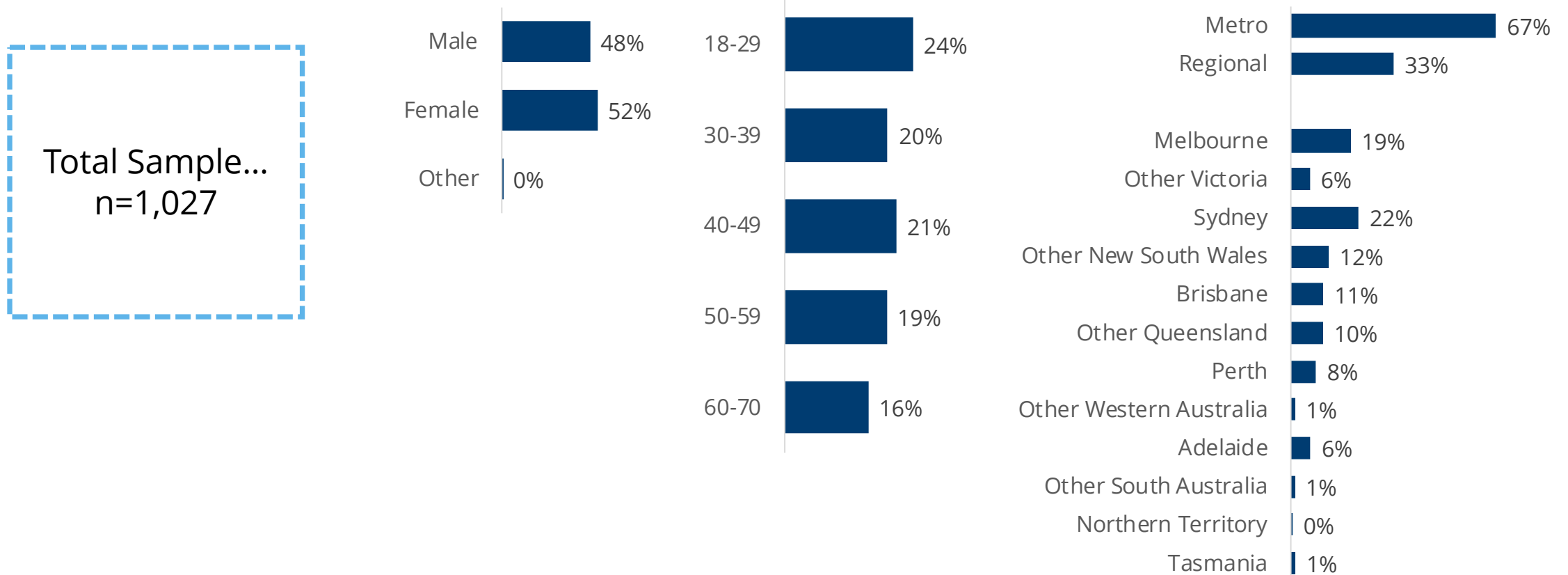
- Building in short cuts or ‘most frequent’ would be helpful, along with simple location services.
- Key priority information should be quick and immediately available – not cluttered with more complex information.
- Clustering with usage and/or day-to-day needs may be relevant. Little groupings of relevant data based on simple questions (like should I do the washing today?).

Past data, detailed or complex data, or specific weather information not seen to be a priority for most and needs to be second tier.



Who did we talk to?

The survey focused on a nationally representative sample – quotas set by age, gender and location.



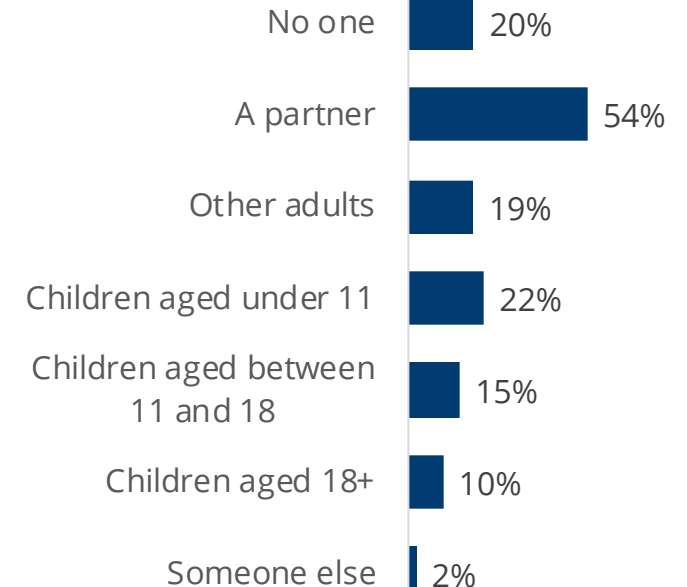
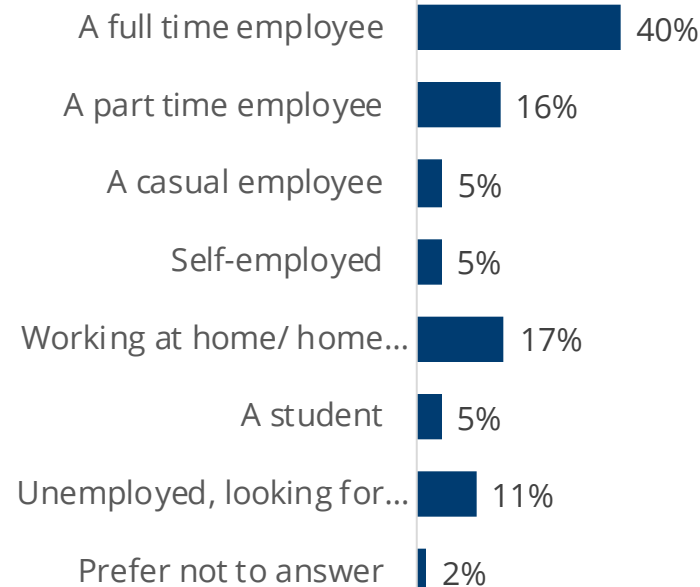
Who did we talk to? (cont'd)

The survey focused on a nationally representative sample – quotas set by age, gender and location.

Specialist Users

A sub-sample of users for whom weather data is critical to work, or those working in agriculture or mining.

n=77



THE LAY OF THE LAND

Information searching and the role of BOM...



Australian Government
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Digital

96% of Australians are accessing weather information regularly!

Websites and apps are clearly dominant as sources of information, though traditional off line methods also clearly still important.

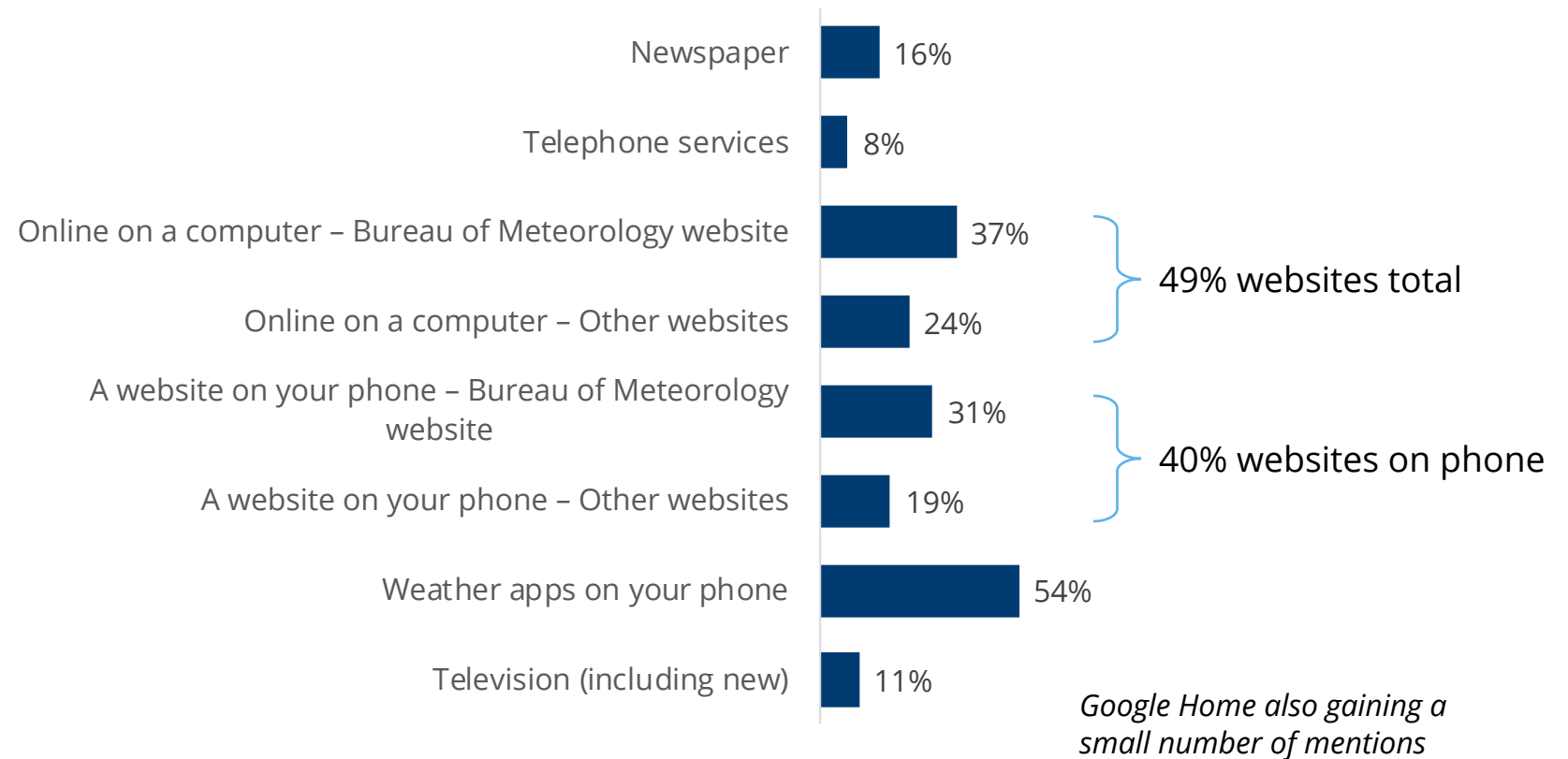
67%

...of people overall are accessing information via websites.

Who are the 4% who don't access info?

More likely to be 40-49 and on home duties.

More likely to be living alone and less likely to have children.



Sources of information by key data points

Men are showing a propensity to use a higher range of sources when compared to women, as are people with children at home. The new families audience looks to have a high level of information needs.

	Male	Female	18-29	30-39	40-49	50-59	60-70	Metro	Regional	No one	A partner	Children at Home
A website on your phone – Bureau of Meteorology website	31%	31%	31%	37%	33%	29%	23%	33%	27%	27%	32%	37%
A website on your phone – Other websites	22%	17%	27%	29%	16%	14%	9%	18%	22%	17%	18%	25%
Websites on phones	41%	39%	43%	48%	41%	38%	28%	41%	38%	35%	41%	47%
Online on a computer – Bureau of Meteorology website	45%	30%	27%	34%	40%	44%	43%	36%	41%	38%	38%	36%
Online on a computer – Other websites	29%	20%	20%	33%	23%	23%	24%	24%	26%	27%	23%	26%
Websites on computer	57%	43%	37%	49%	50%	60%	56%	47%	55%	53%	48%	47%
Weather apps on your phone	53%	56%	74%	62%	53%	42%	31%	55%	52%	50%	57%	64%
Newspaper	20%	12%	12%	22%	16%	12%	20%	16%	16%	15%	17%	18%
Telephone services	9%	7%	14%	12%	4%	3%	3%	8%	7%	4%	9%	13%
Average # of sources	3.1	2.6	2.9	3.3	2.8	2.7	2.4	2.8	2.8	2.7	2.8	3.1

Blue indicates a significantly high skew
Red indicates a significantly low skew

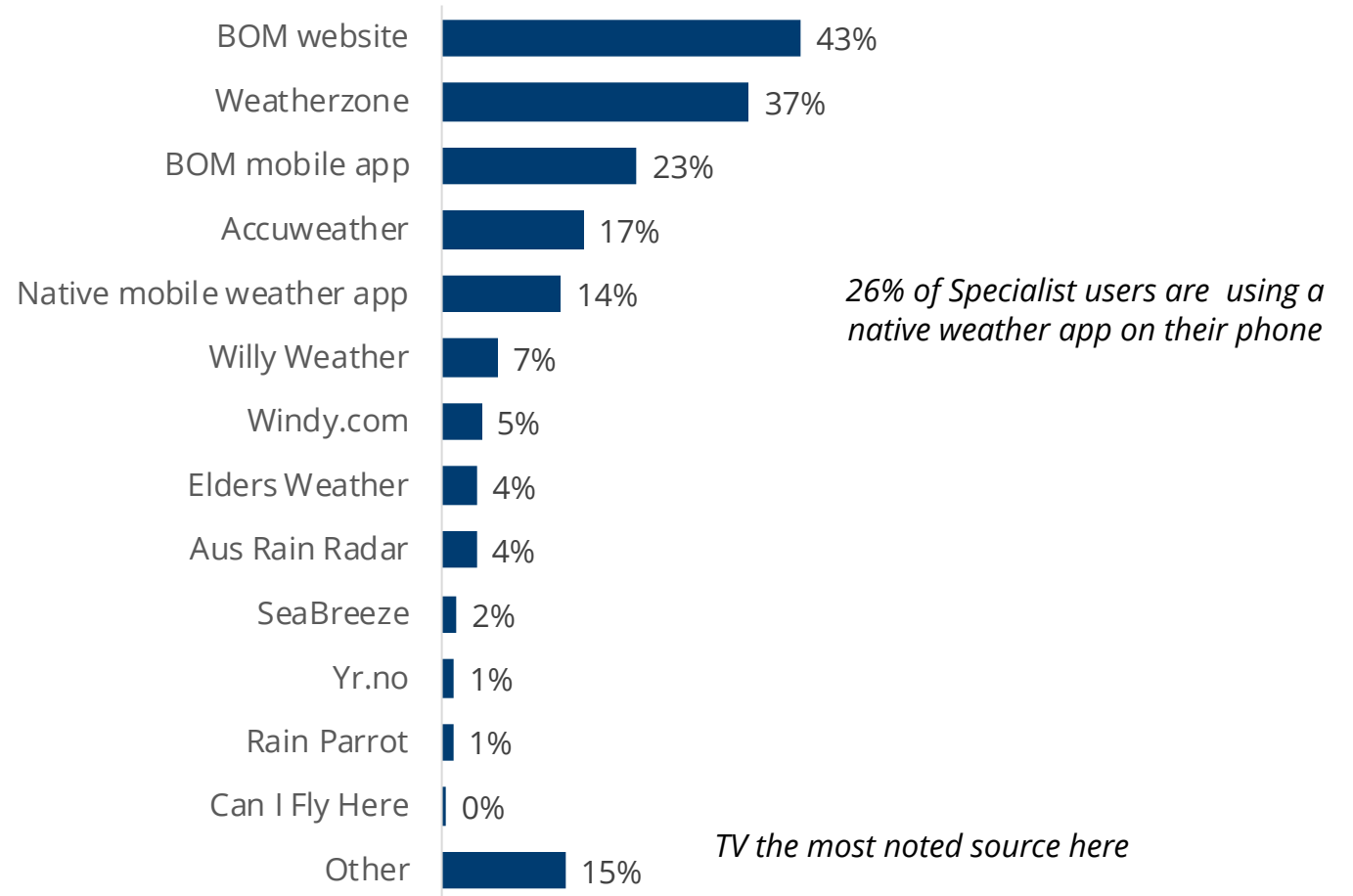
BOM the leading source of weather information, with few competitors in the space

53%

...of people in total turn to BOM regularly for weather information.

1.7

the average number of sources people turn to for weather information..



Sources of information by age

BOM a consistent source across all key demographics. Strong skew to native mobile weather apps for younger audiences.

	Male	Female	18-29	30-39	40-49	50-59	60-70	Metro	Regional	No one	A partner	Children at Home
BOM website	45%	40%	37%	42%	47%	42%	48%	41%	47%	48%	44%	40%
Weatherzone	36%	37%	41%	41%	40%	33%	24%	34%	41%	38%	36%	45%
BOM mobile app	25%	22%	21%	26%	26%	22%	20%	23%	23%	24%	24%	28%
Accuweather	19%	15%	20%	29%	15%	11%	6%	18%	15%	13%	18%	22%
Native mobile weather app	14%	14%	26%	18%	8%	6%	9%	16%	10%	10%	13%	17%
Windy.com	7%	3%	5%	10%	3%	2%	2%	5%	3%	2%	5%	7%
Other	11%	18%	8%	10%	12%	24%	24%	15%	14%	16%	14%	9%

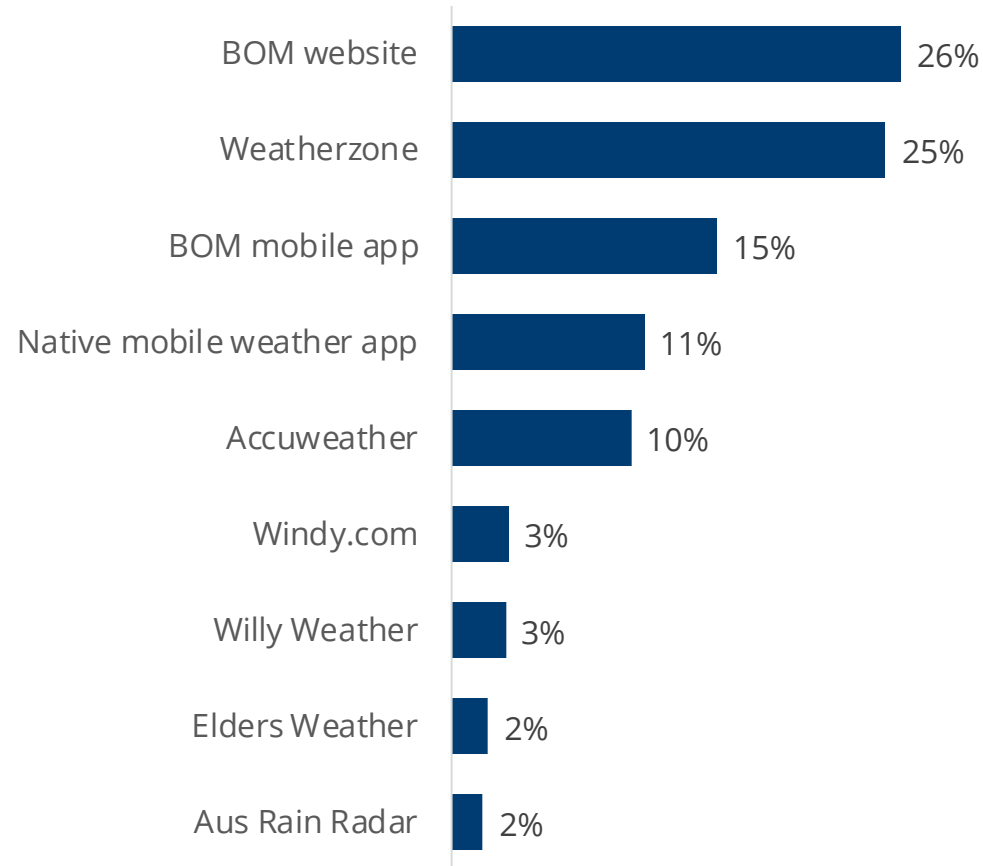
Blue indicates a significantly high skew
Red indicates a significantly low skew

Who do you turn to most?

Users are typically sticking with the sources of information they use – with people generally saying the sources they use are the ones they turn to the most.

87%

...of people who use BOM
say it is one of their most
turned to sources.

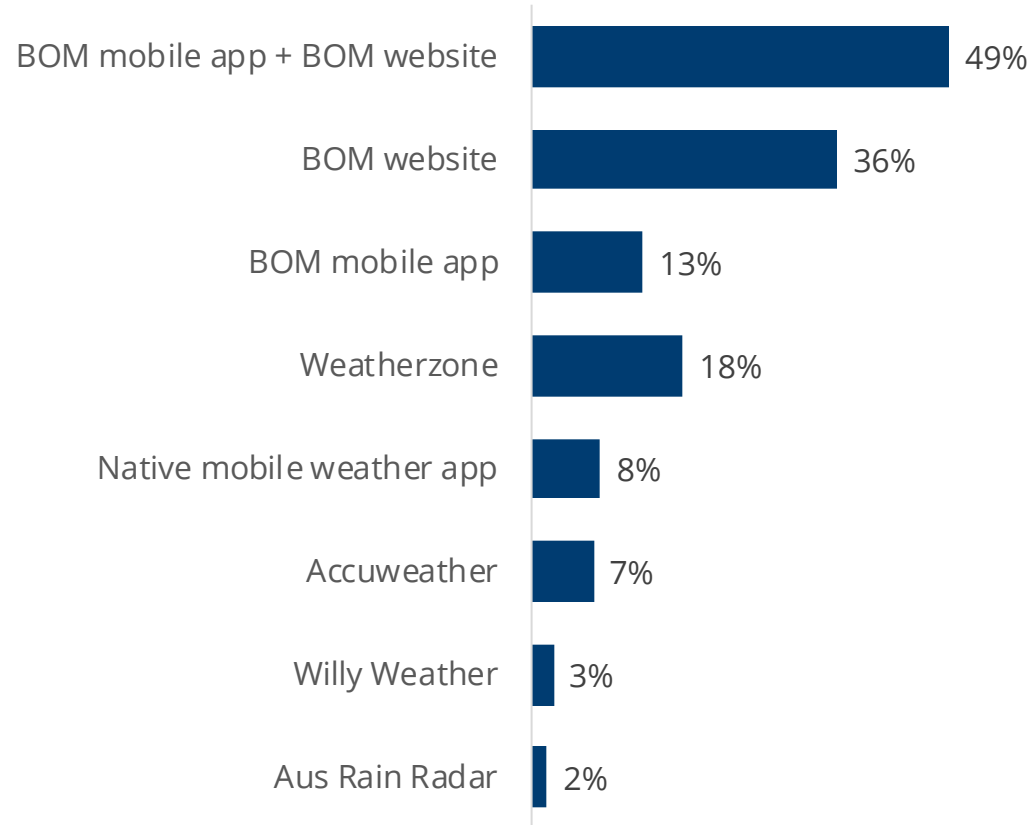


Who do you trust?

BOM is the most trusted source for almost half of all users in the market. This is potentially lower than would be expected – potentially indicating that trust is linked to frequency of usage and fit to purpose?

49%

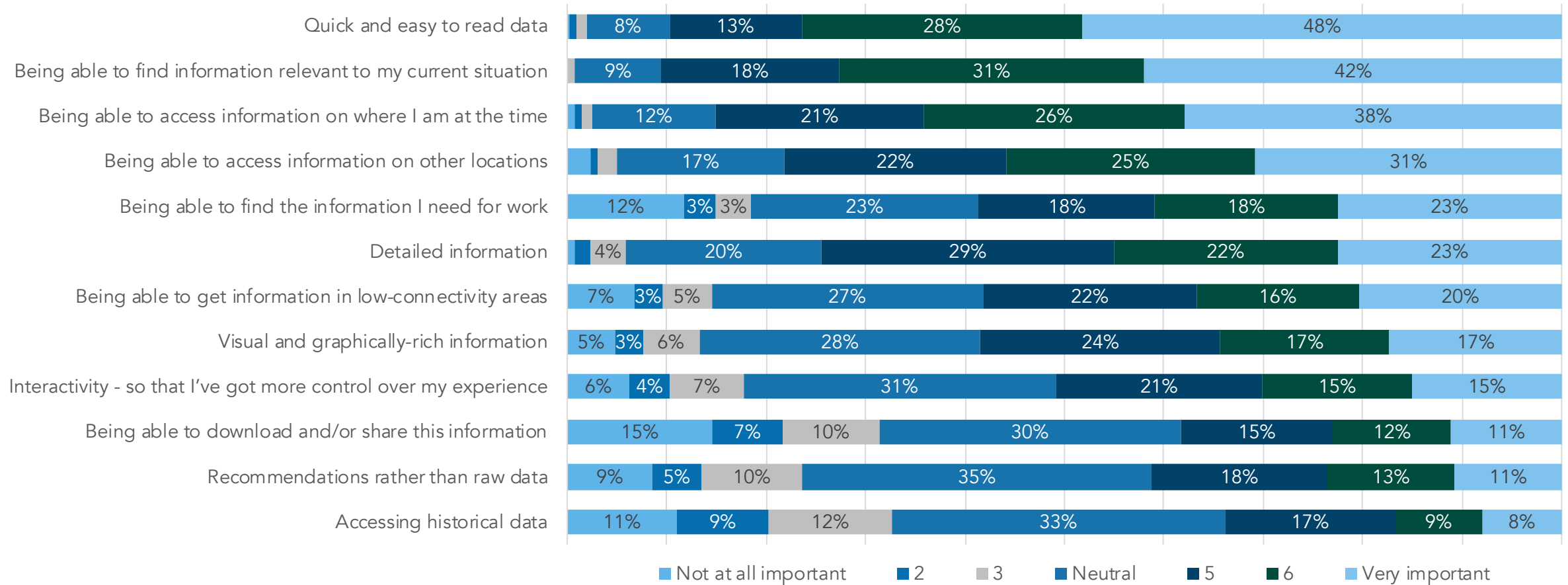
...of all people accessing
weather information trust
BOM the most.



Information needs

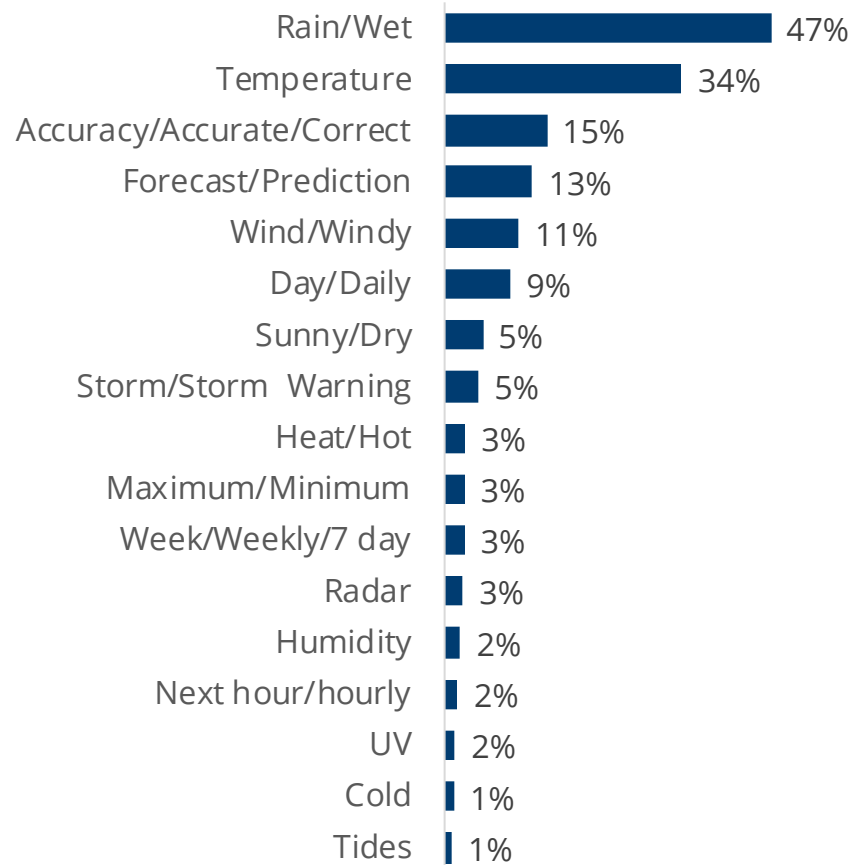
Quick and easy to read information about the current situation/location are overwhelmingly the key information needs.

No real difference in these results across sub-groups.

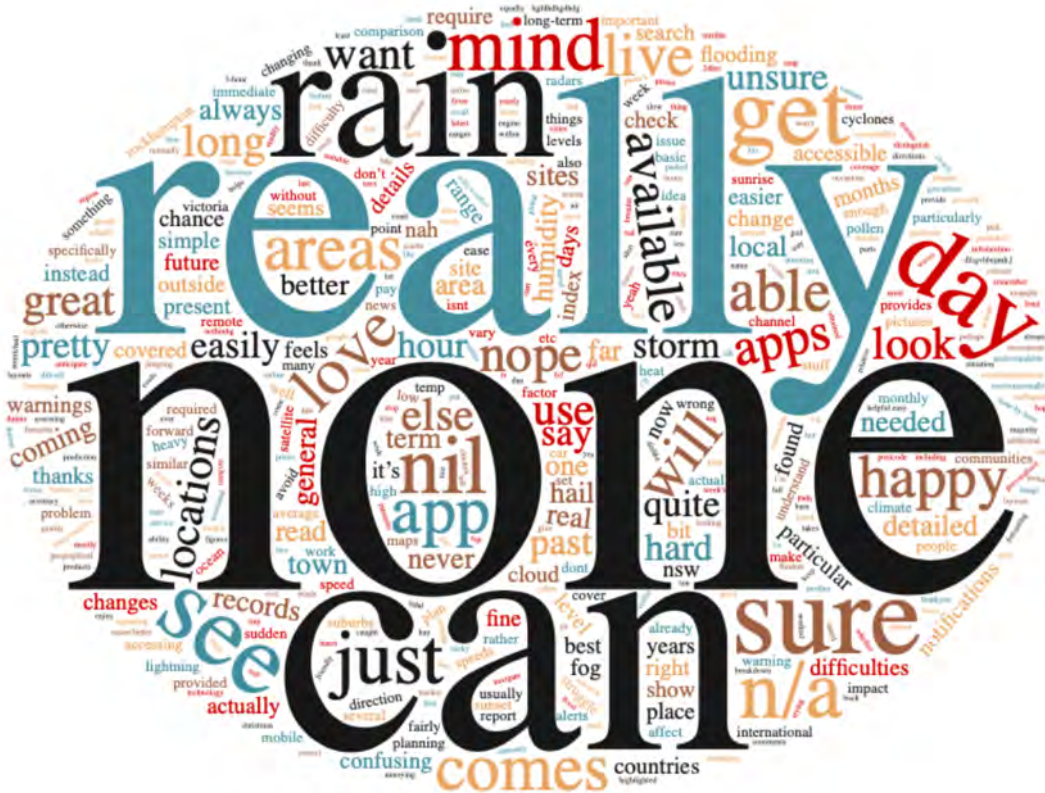


What information is important to you?

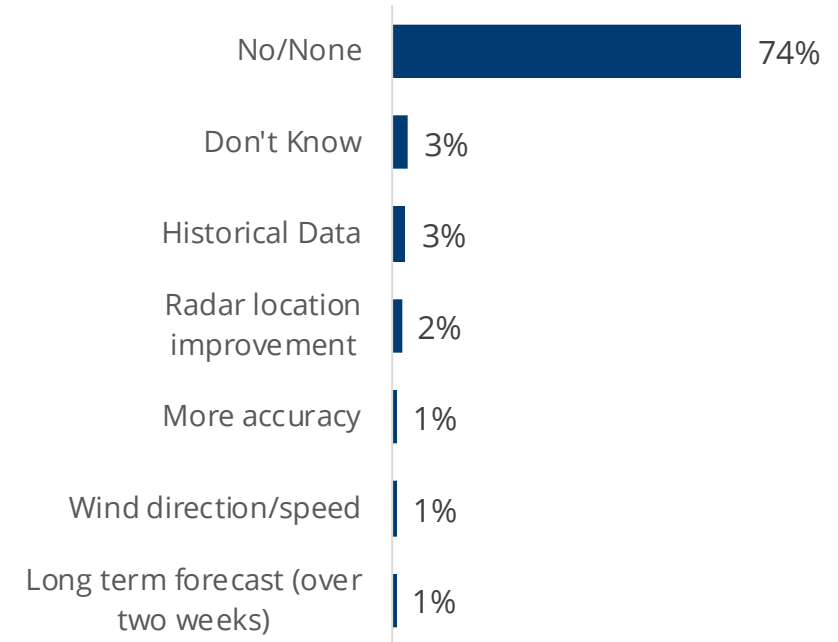
From a user perspective, information on rain/wet weather and temperature are the main information needs. Correct and accurate forecasts are also important, while a long tail-end of other needs also exists.



Most don't feel like there is any information that they would like that they can't get!



Do you feel there is any information you can't get?



Understanding BOM...

Over half of all Australians turn to BOM for weather, climate and environment information, and it is the most trusted source. Within this group, almost half are satisfied with BOM, though a strong proportion tend to feel neutral – how can we build the love?

53%

...of people in total turn to BOM regularly for weather information.

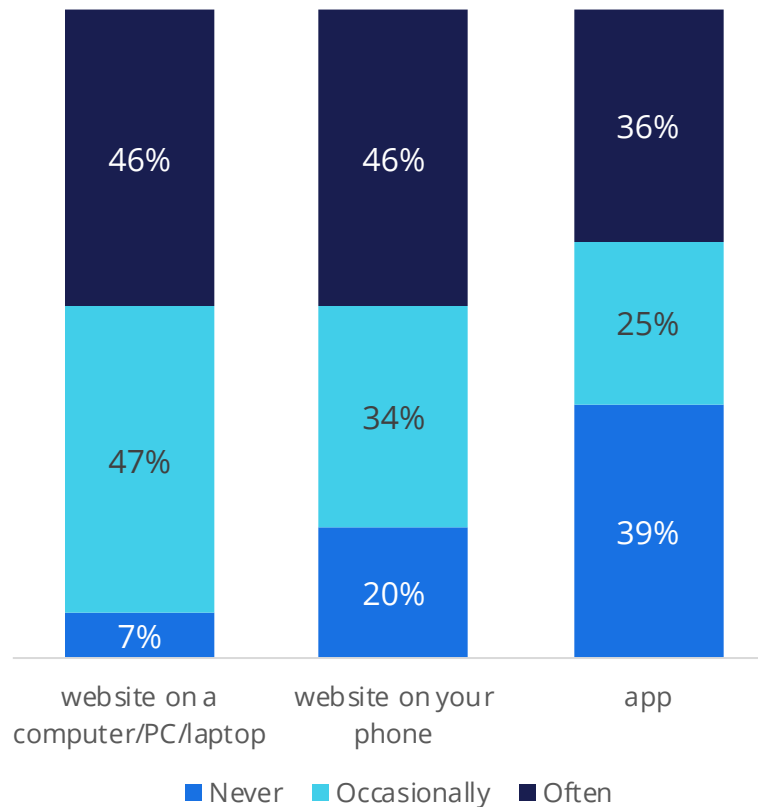
87%

...of people who use BOM say it is one of their most turned to sources.

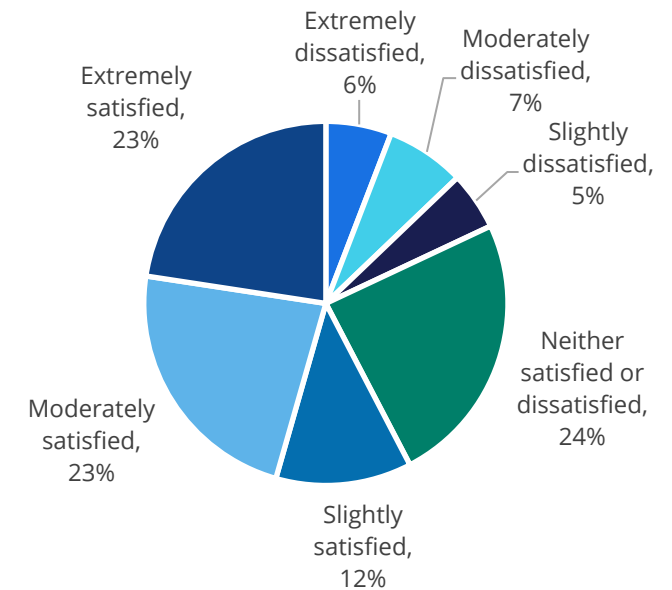
49%

...of all people accessing weather information trust BOM the most.

How are people accessing information?



Level of satisfaction

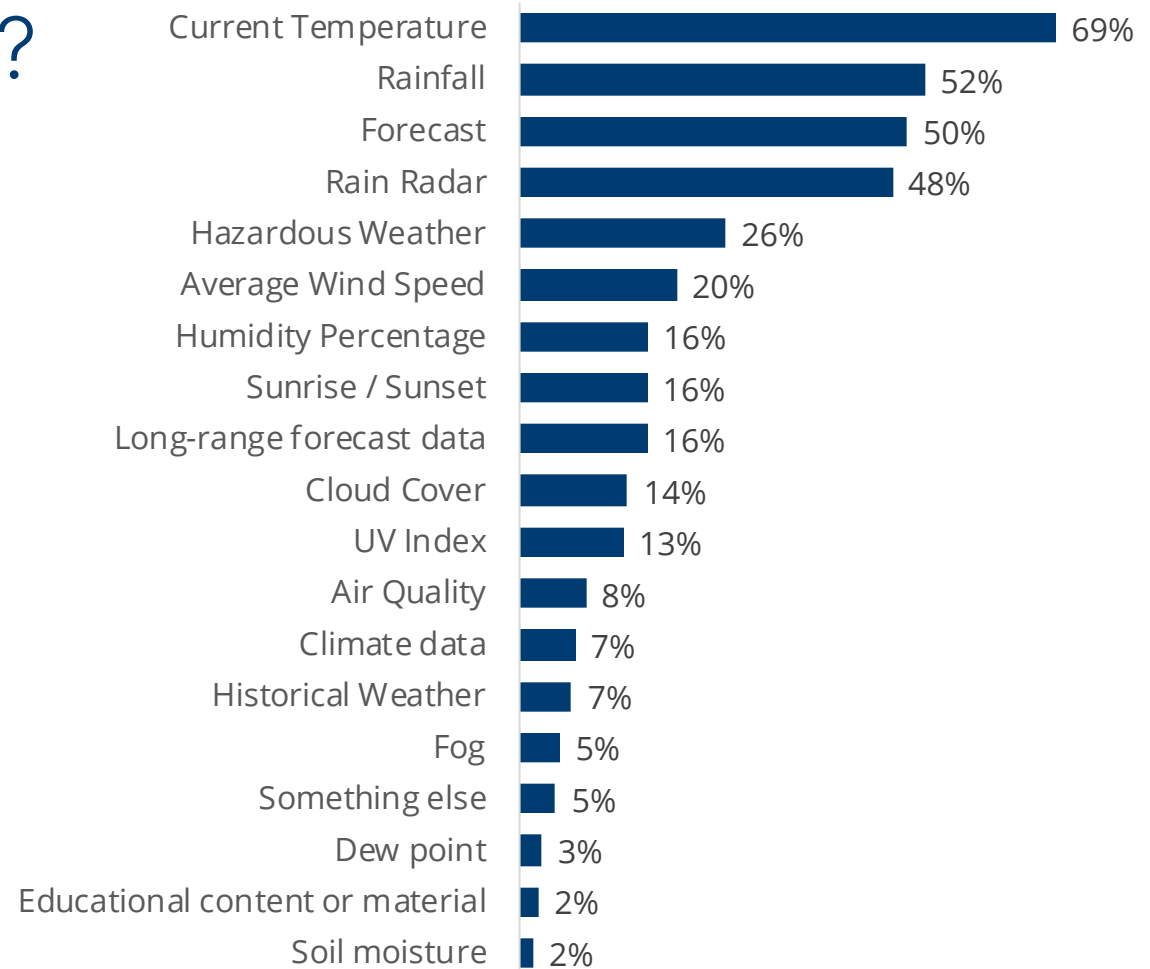


No significant difference by demographics or other sub-groups

What information are they seeking from BOM?

Primarily, users are looking for information on the current weather and forecasts, including rain.

However, a wide range of other information uses are also noted, though with a lower level of incidence.



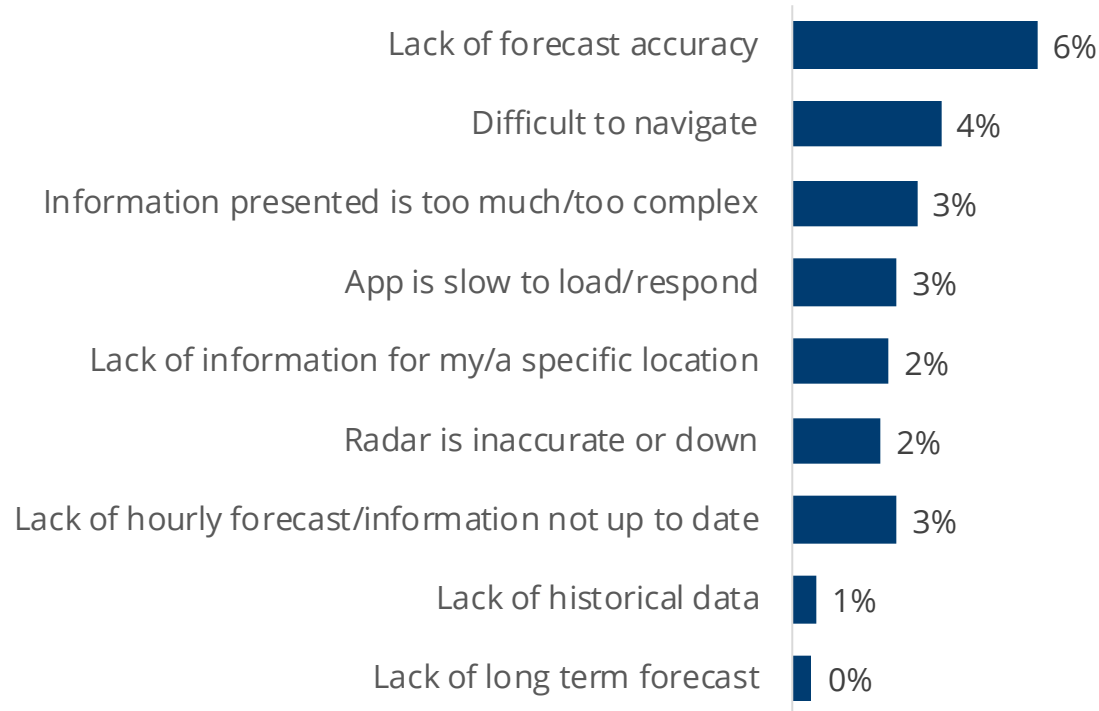
What about the Specialist users?

For those accessing weather information for work, or from one of the Specialist user groups, we can see a some differences in the types of information they are seeking online. However, we don't see any significant differences in the sources of information they are using, and their frequency or skill levels!

	Users who feel weather data is important to their work	Specialist users	All users
Air Quality	19%	16%	10%
Average Wind Speed	28%	22%	20%
Climate data	15%	10%	7%
Cloud Cover	26%	26%	13%
Current Temperature	55%	58%	69%
Hazardous Weather	34%	31%	26%
Historical Weather	13%	13%	7%
Rain Radar	57%	56%	48%
Sunrise / Sunset	23%	19%	17%
UV Index	21%	16%	14%

With a high level of satisfaction, most could not name any frustrations with the website

Key issues sit around forecast accuracy, complexity of the website and app, and that the information is dense and overwhelming.



"You sometimes go around in a circle to find what you want and some things are not specific such as ocean temp."

"My biggest frustration is that the information is not always accurate, particularly when it comes to predicting weather in the future."

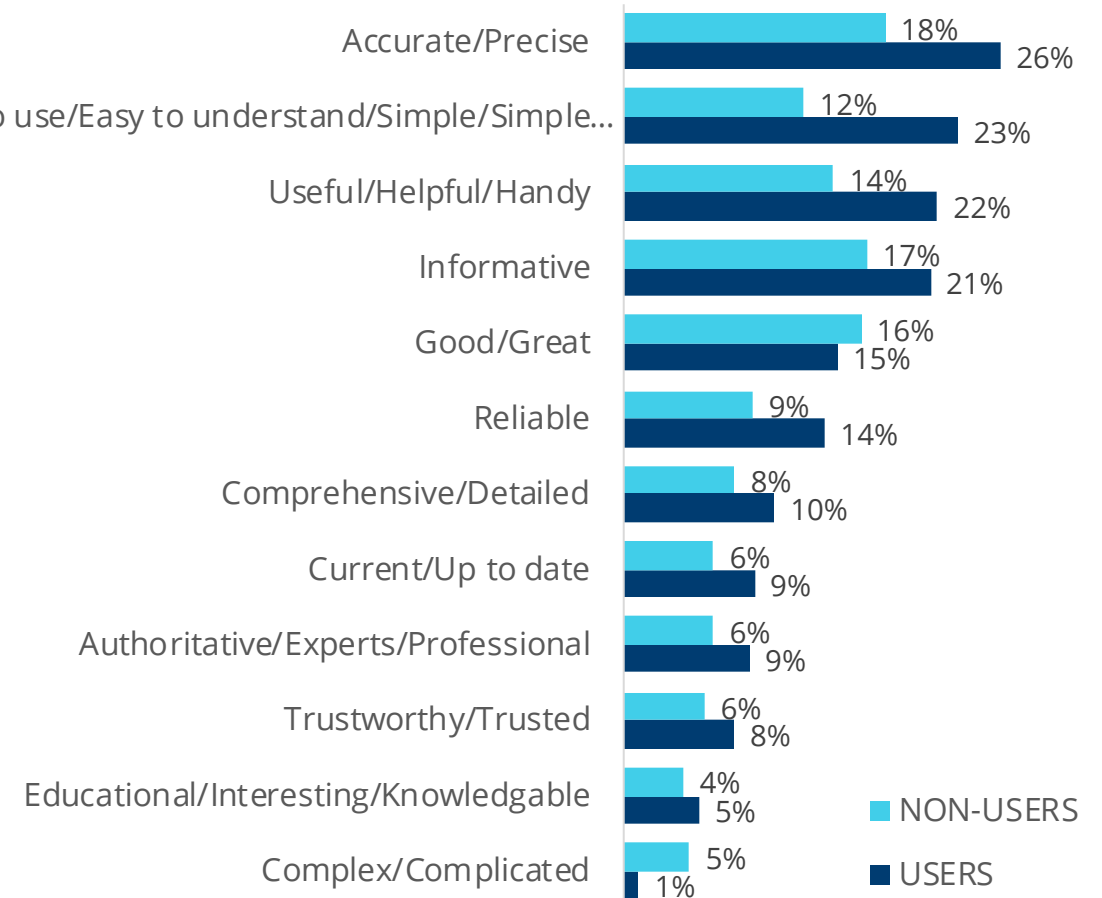
"I find it difficult to see how long storms will take to impact my location and immediate direction."

"Sometimes I get a bit lost with the gazillions of options."

How are people describing BOM?

Accurate, precise and easy to use are the key descriptors for BOM, along with information and useful. A strong position to leverage.

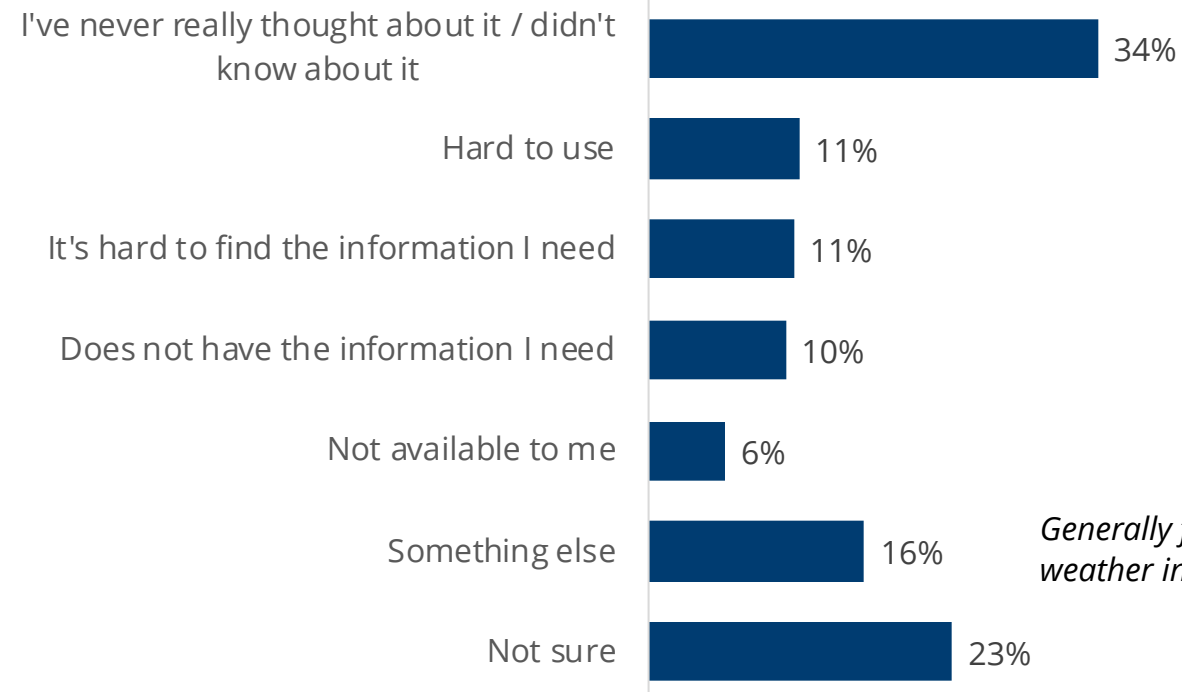
Similar views amongst users and non-users.



For those not using BOM, there are no real barriers to entry aside from consideration and ease of use.

47%

...aren't using the BOM sources for weather information.



Generally finding it easier to simply access weather information on their phone

What does this mean?

Within the category, there appears to be a narrow set of behaviours underpinned by a wide range of specific day-to-day needs.

- People are using a **limited number of sources**, indicating that they are locked into certain levels of behaviour, and with certain providers. The results indicate that users have established certain behaviours to make their regular access easy. Are these habits we are going to need to break?
 - Conversely, we need to ensure that changes to the site don't disrupt habits too greatly and turn off users
- While BOM is highly used and well liked, BOM is **only the most trusted by about half of Australians**. Why?
 - For those not using BOM, it is generally just not something they think to use.
- Most feel there are **no gaps in information** – just wanting to regularly access the information they need quickly and easily and for it to be accurate.
- Usage looks to be consistent with a **narrow set of needs for most users**. Is there an opportunity to build favourites or personal profiles in the site so users can simply re-access the same information over and over?
- There is a **clear and strong proposition for the brand around accuracy, reliability and ease**. These are key values to promote and to underpin with the redevelopment, improving the likelihood for people to turn more to BOM.

Understanding when people access weather data...



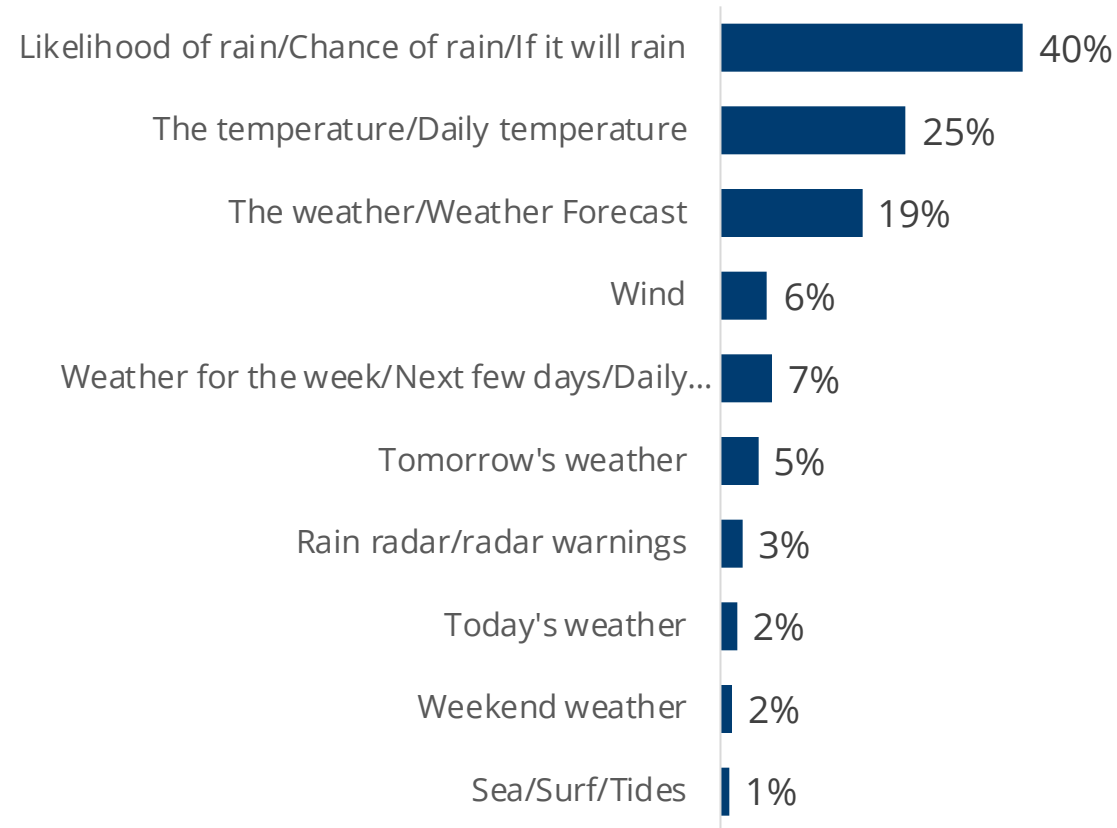
Australian Government
Bureau of Meteorology

Deloitte.
Digital

The majority of weather information occasions focus on simple information around rain, temperature and weather.

88%

...of last occasions
were for **PERSONAL**
use.



*"When you plan for the day activity
would like to find accurate information
about temperature and weather
forecast."*

*"Forecast rainfall to decide whether to
go ahead with a job or not."*

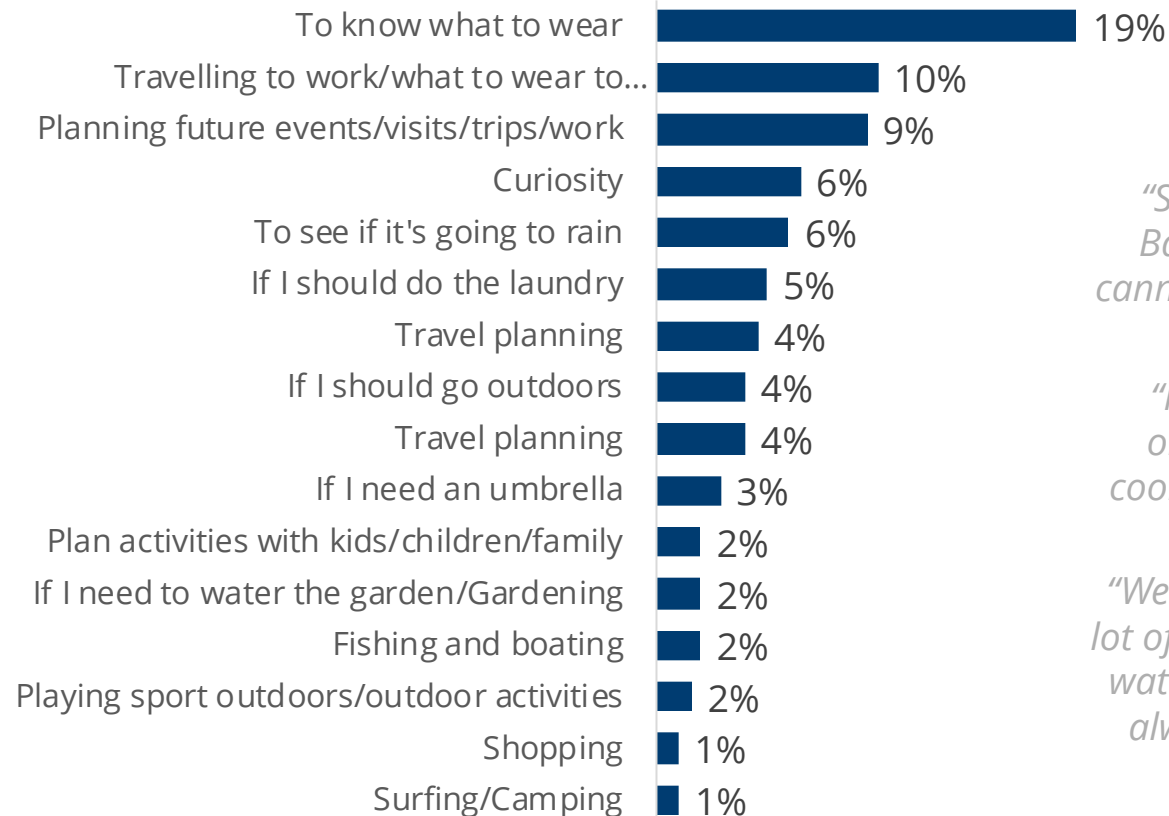
*"The temperature and when it will be
raining in the whole week."*

This information underpins work, personal and travel decisions. And, to a lesser extent, some personal curiosity.

Needs look to be generally split by information need and purpose.

An important consideration in navigation.

Why did you need this information?

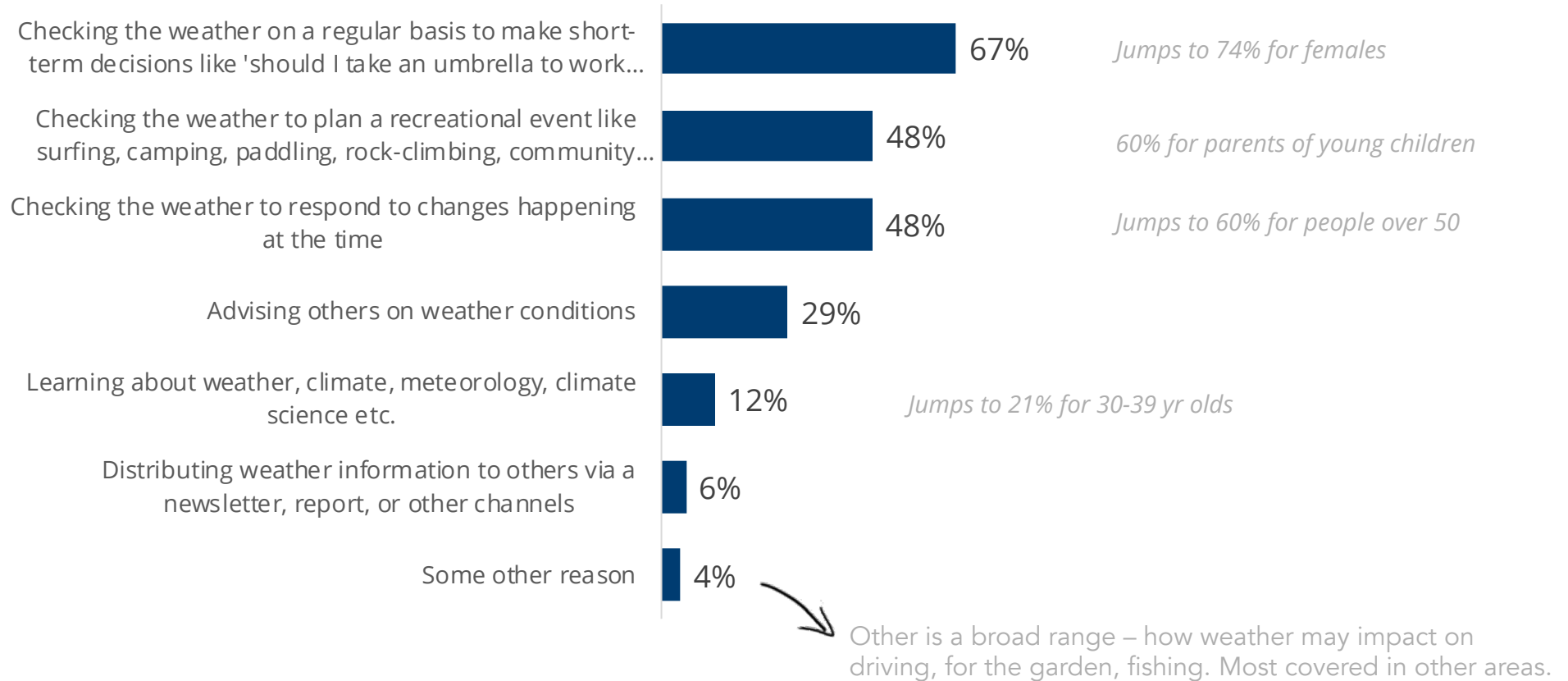


"So I was dressed appropriately; Bairnsdale is 75k from home, so cannot go back for a coat or jumper."

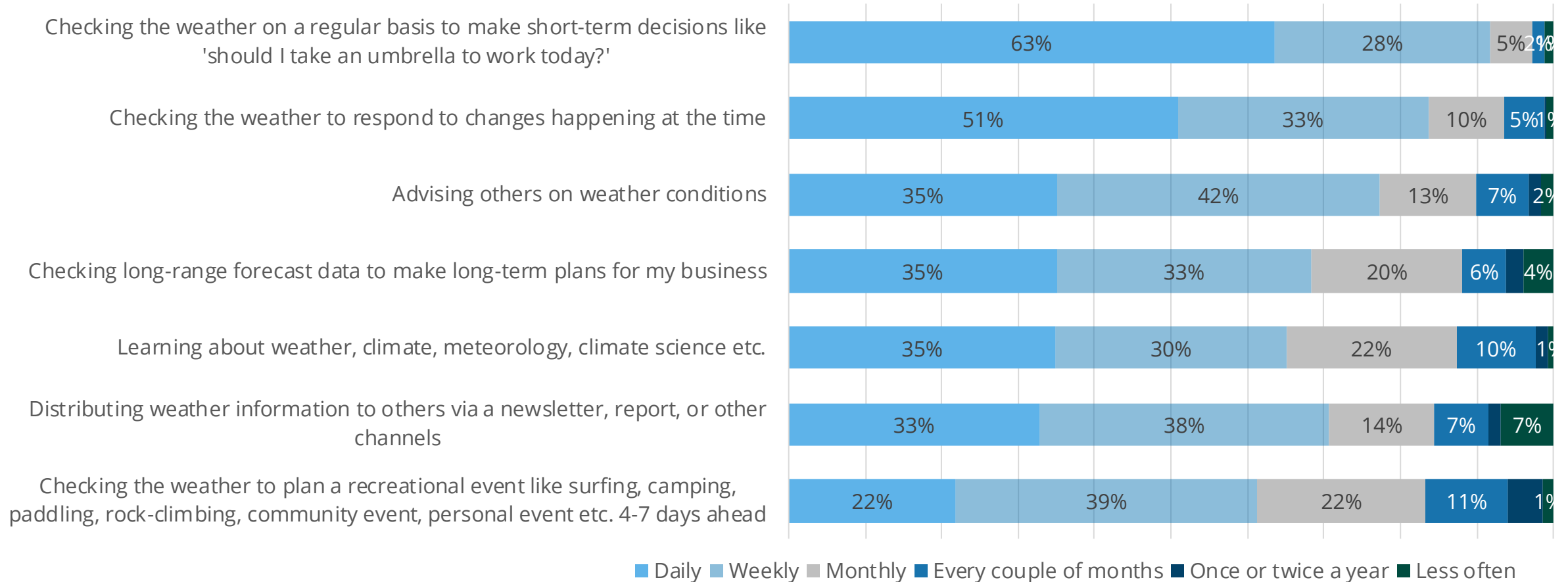
"I love weather but I constantly organise school excursions and coordinate junior hockey teams in a weekend comp."

"We have a large garden and grow a lot of our own food. We also have rain water tanks (42,000 litres) so we are always monitoring the weather in terms of rain."

What are the key information occasions for the Australian public?

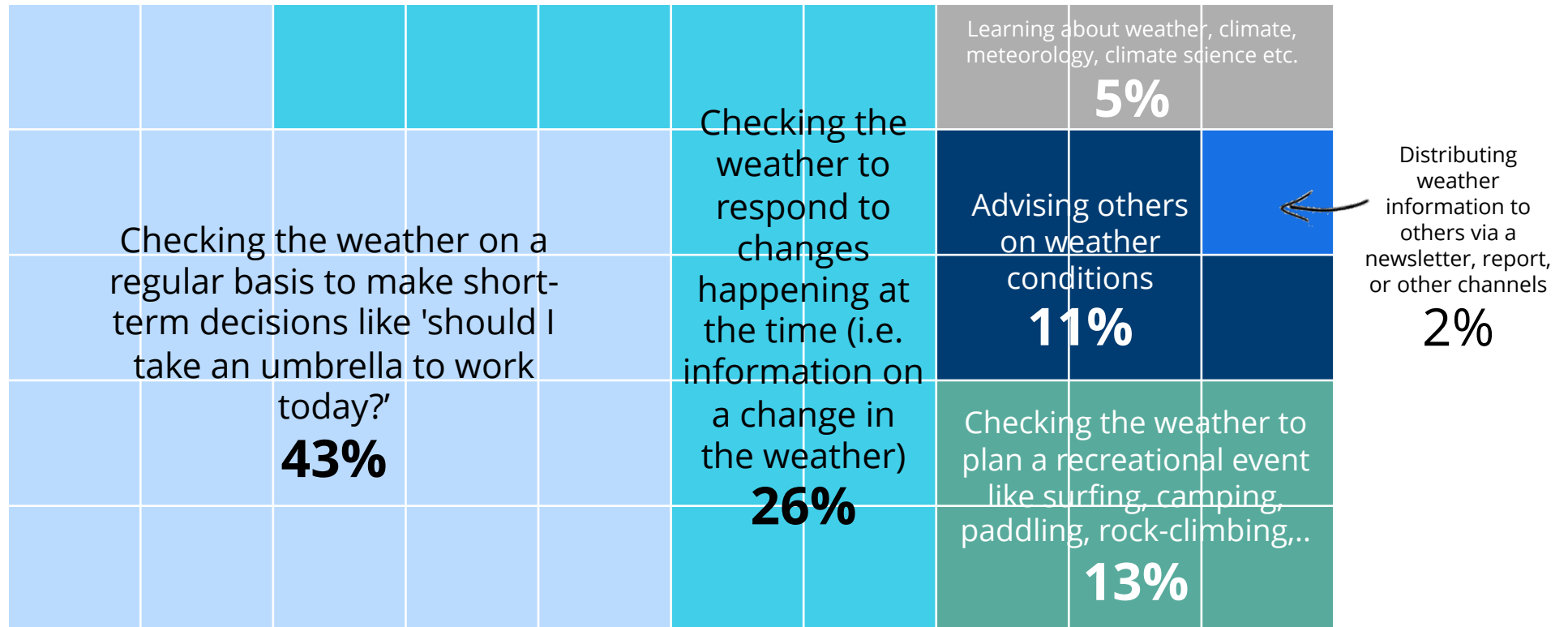


Short term occasions taking the lion's share of behaviour



Combined, a range of occasions are building the repertoire of search occasions

Short term decision making accounts for almost half of all occasions, with responding to change also a key need.

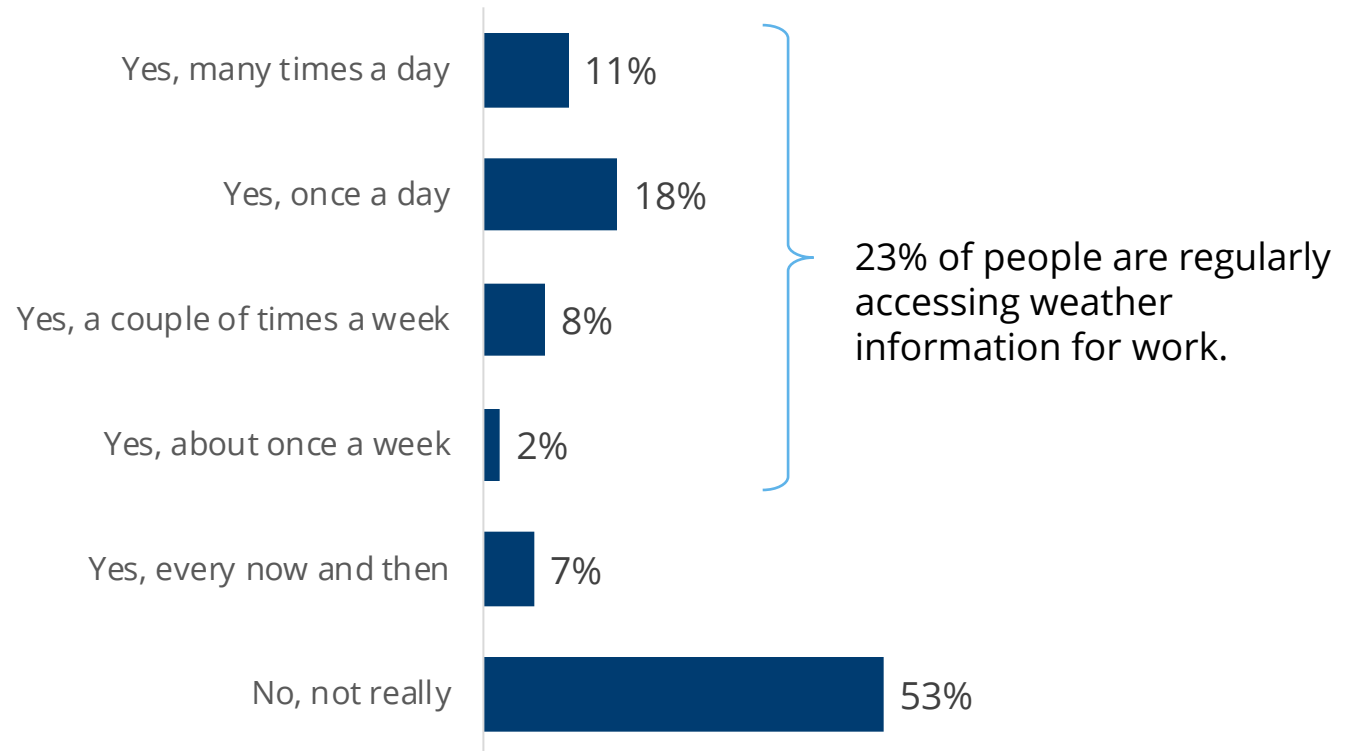
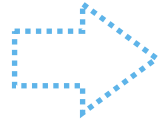


How about work occasions?

Around one-third are accessing weather information for work related reasons on a regular basis – however for many of these the information is not critical to work, but rather just playing a minor role in their behaviour.

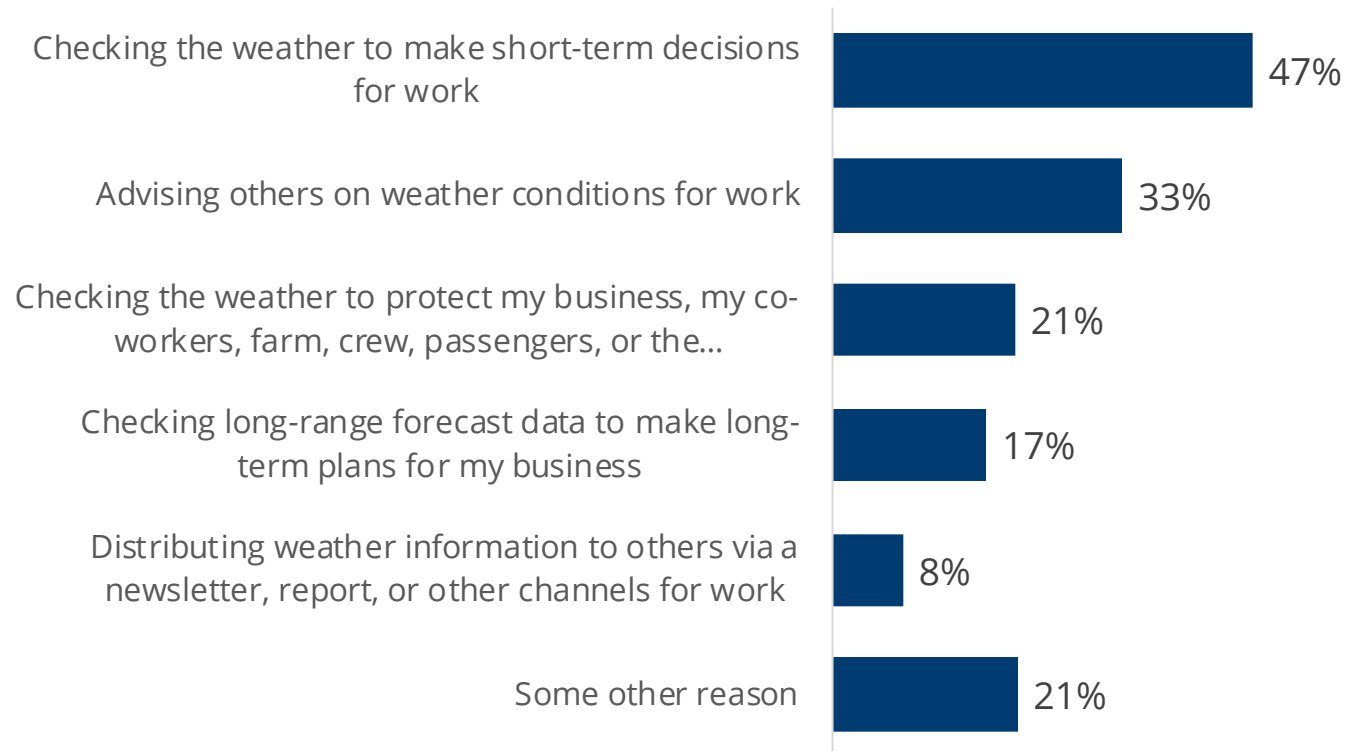
60%

...of those surveyed are working full time, part time or self-employed.



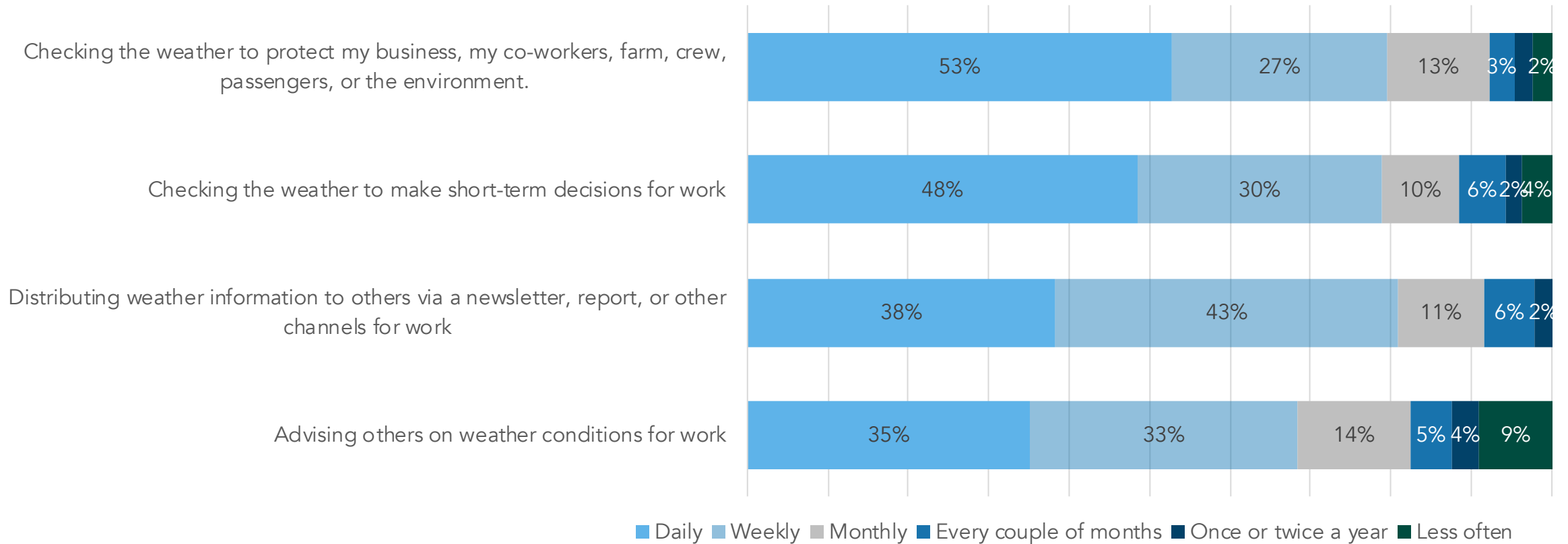
Amongst those accessing weather information for work, a range of occasions playing a role...

As with personal occasions, short term decision making is the key occasion for most at work.

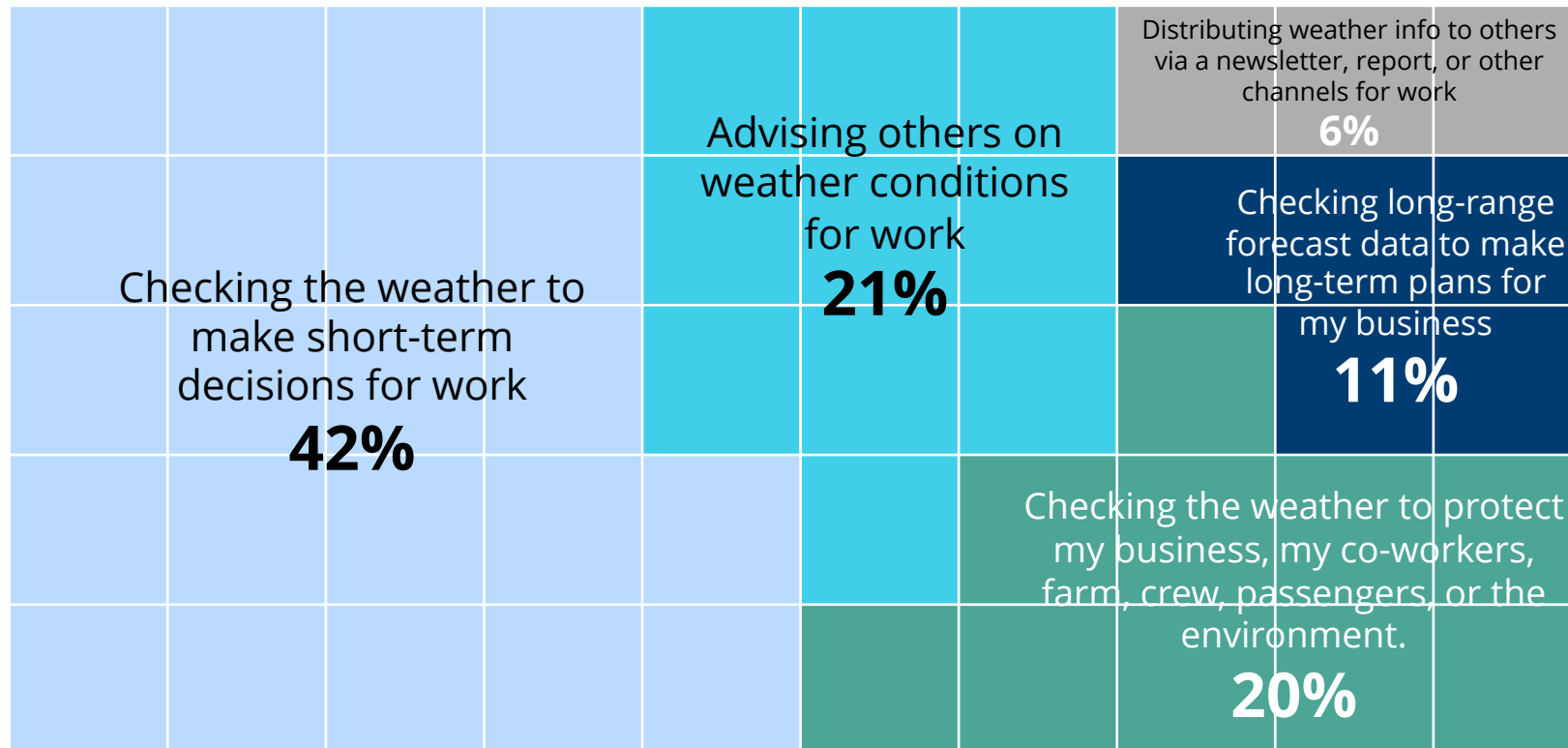


Frequency of occasions

The most frequent occasions are centred around protecting staff and people at work, and making short-term decisions based on this.



For work occasions, short term decision making accounts for a strong proportion of occasions.

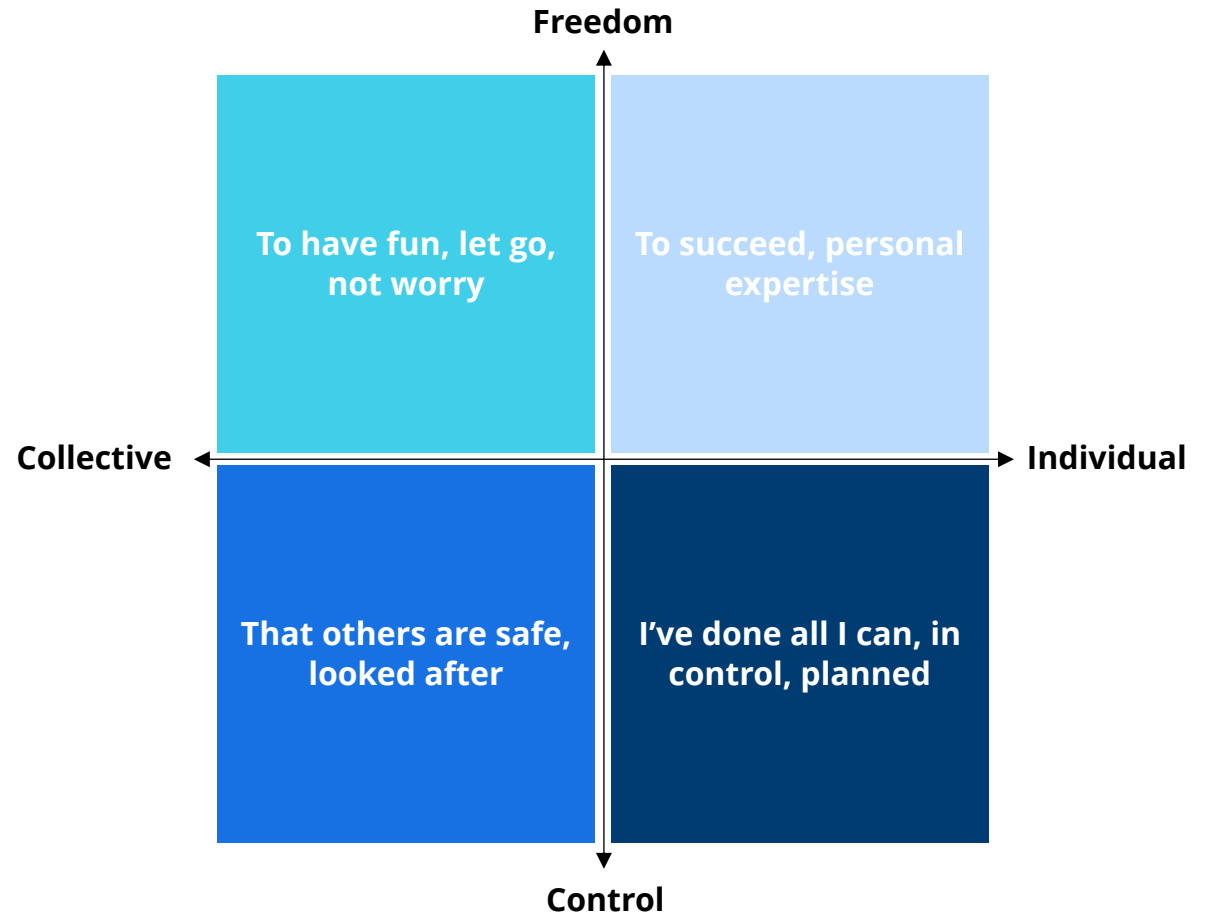


Understanding the drivers behind our information searching...

To help understand user behaviour and underlying needs in more detail, users we asked to describe their needs in each occasion. These needs essentially aligned to two core dimensions...

- Whether their desire on the occasion was about control or about freedom/release
- Whether their motivation was personal or for others.

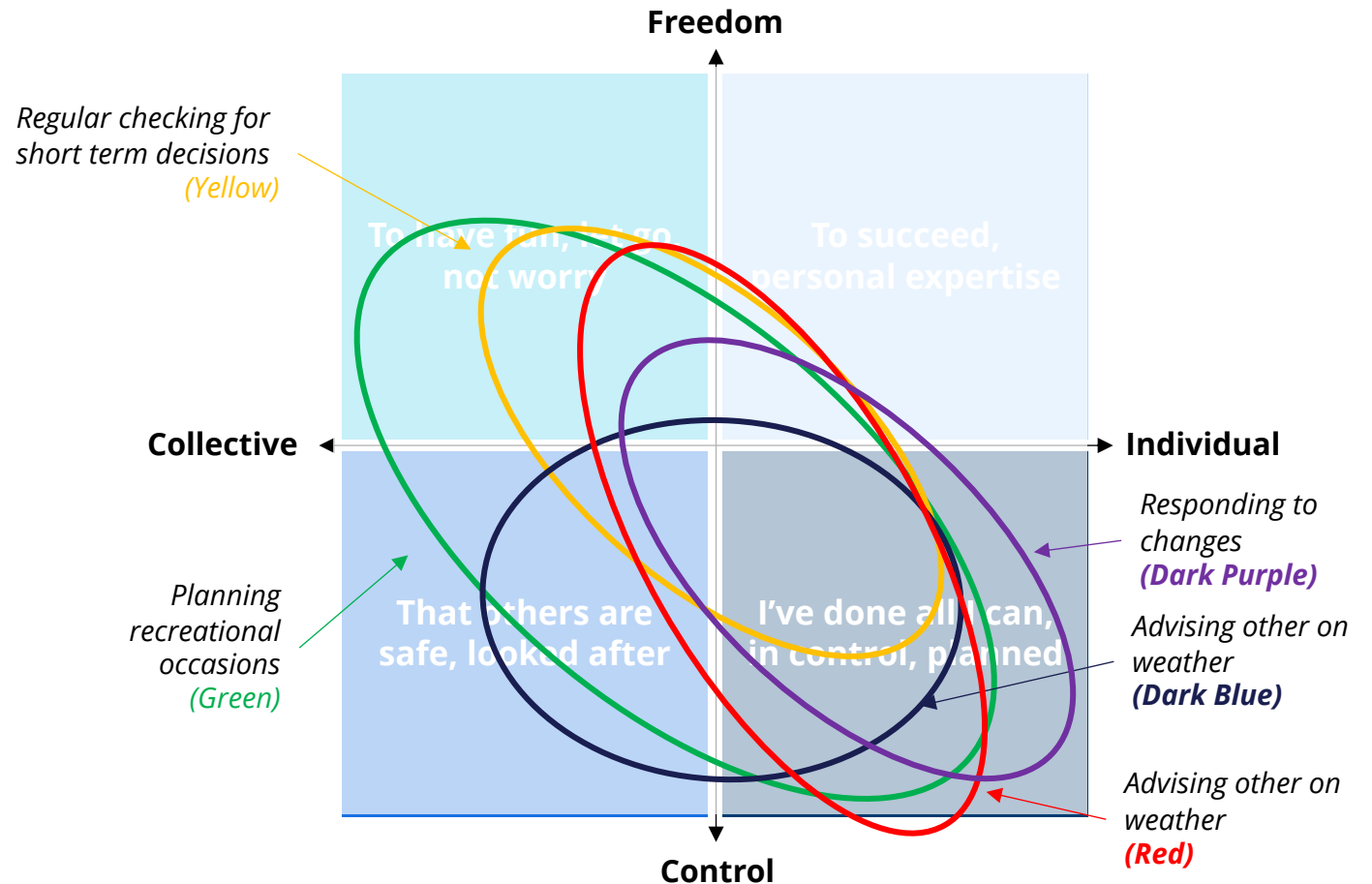
Understanding where occasions sit on these dimensions will help to articulate how to communicate and position the occasions.



Understanding personal occasions and needs

There are a range of needs linked to accessing weather information on personal occasions

- Control is the core territory, and all occasions show a high need for control, planning and being prepared.
- These needs then ladder into other needs across the different occasions – once we feel in control, we can then help others or feel free to enjoy ourselves.
- Advising is clearly about helping others, while short term decisions and planning occasions are more linked to feeling like we have the information we need to go and have fun.

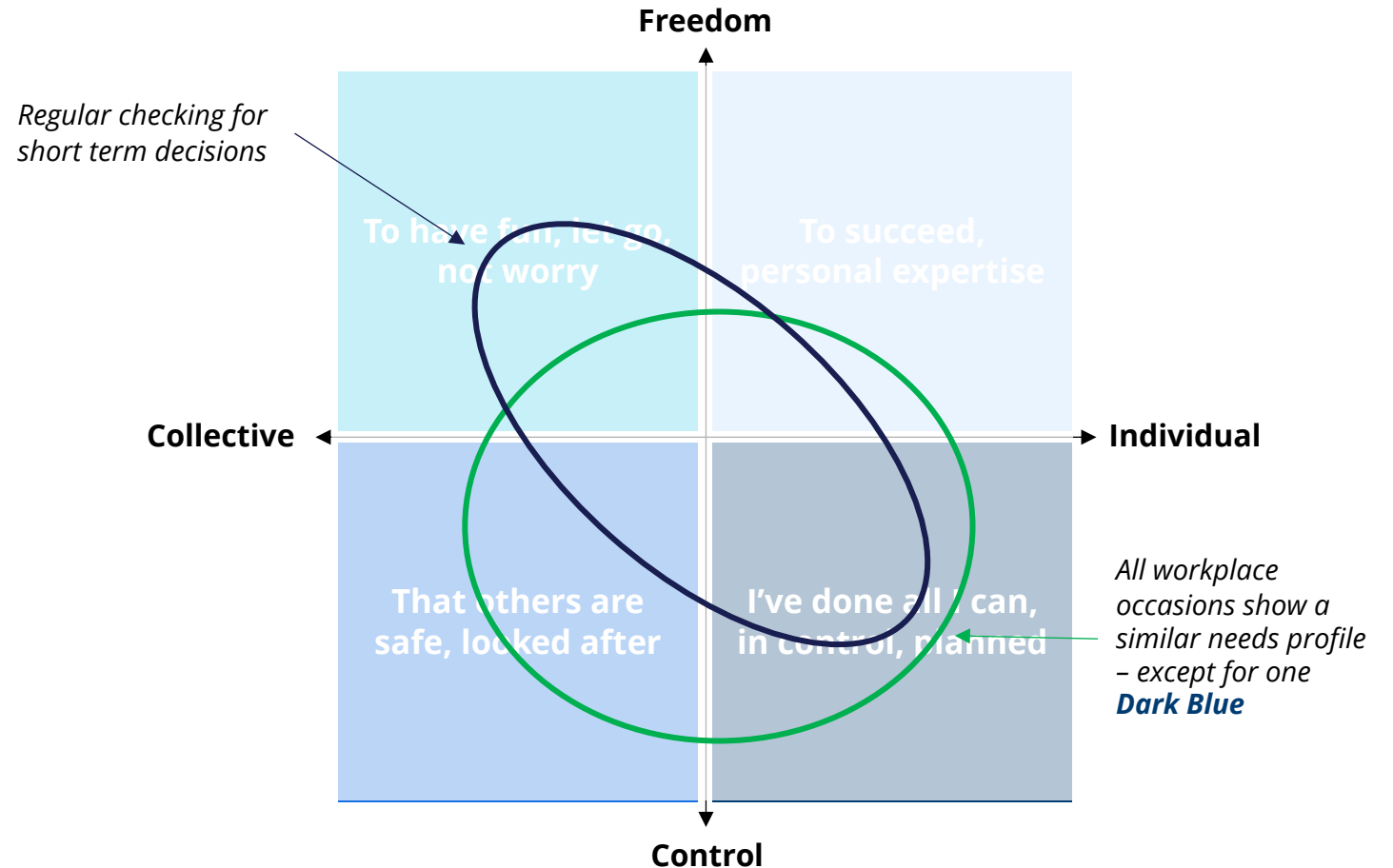


Understanding work occasions and needs

In contrast to personal occasions, work occasions are highly clustered in one needstate – control and consideration.

- This would indicate that when it comes to satisfying user needs across work occasions it is important to focus on professionalism, accuracy, reliability and control.
- These users take the access of information seriously, and want to feel they are looking after those around them.

Short-term decisions at work are a little different, and are underpinned by a need to feel free from the burden of worrying about the impact weather may have on work.



What does this mean?

A range of occasions playing a role, though the majority of all occasions in the category linked to very transactional, short-term decisions - both from a personal and a work perspective.

- The frequency of these occasions, along with their prevalence, means that the lion's share of all information searching is for quick and accurate information.

The redevelopment needs to **focus on quickly satisfying these immediate needs**. More detailed information will quickly cloud the key needs for most visitors and may drive usage elsewhere.

This is true amongst work and personal information seekers, with the purpose of their information searching relatively similar. **Short-term decisions impacting on today or the short-term future**, for myself and for others.

The core territory for behaviour in this space is linked to **CONTROL**. Users are looking for accurate, trustworthy and reliable information that helps them feel in control – then allowing them to either look after others or to be free to enjoy the day.

- This aligns strongly to the BOM market position around reliability and trust and, positioned correctly, should see BOM lift as the key and trusted source of information.

DEEP DIVE

Understanding our Specialist users



Australian Government
Bureau of Meteorology

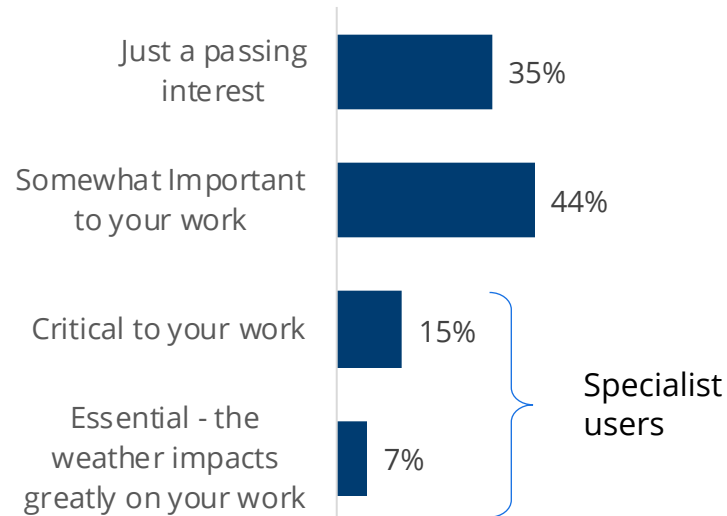
Deloitte.
Digital

Who are the Specialist users?

As part of the market exploration we also endeavoured to understand Specialist users – those working in industries strongly impacted by weather, climate and other environmental information.

In this sample, we included people who work in mining, agriculture or aviation, and those who feel that weather information plays a significant and/or critical role at work. The sample achieved in this segment was n=77.

Accessing weather information for work?



Industry



Mining
2% of workers



Agriculture
3% of workers



Aviation
n=3

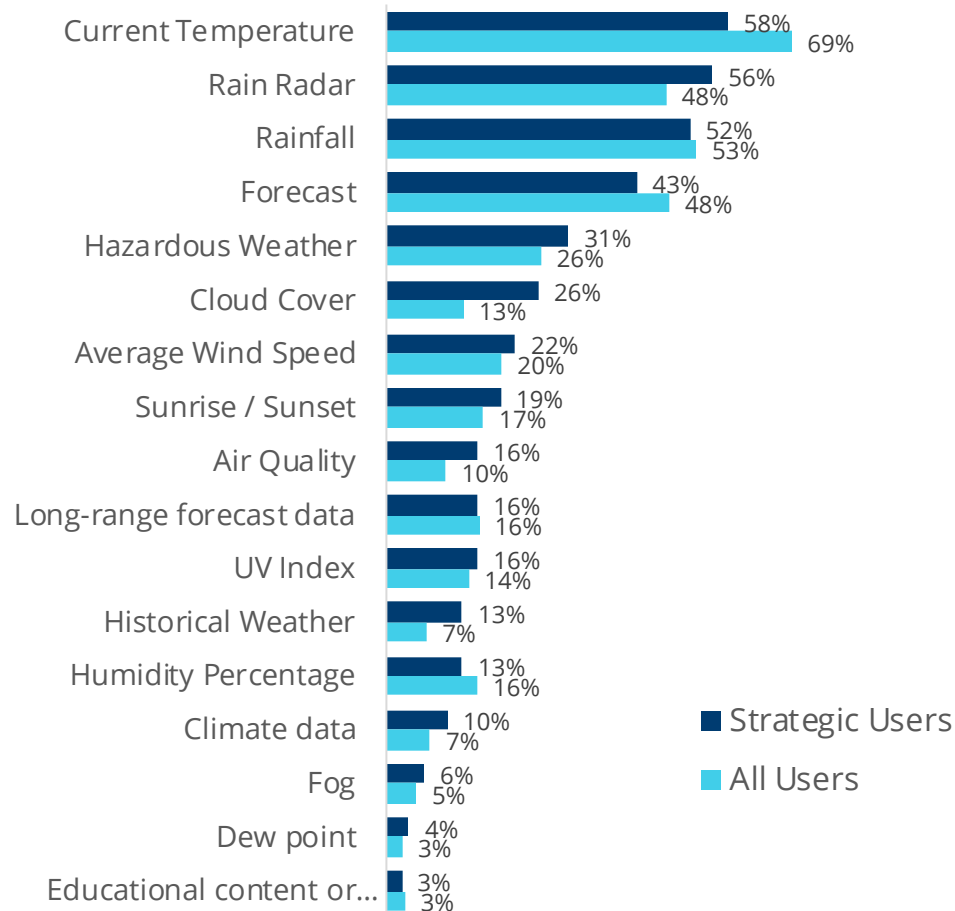
Key call outs...

- 66% are male
- 26% are using **native apps** on their phone for weather information
- They use an average of 2.6 sources for data, compared to 1.7 sources for the average user

Information needs

Specialist users are seeking a wide range of information across the board, and show some frustrations with being able to find what they need on the BOM site. As such, a higher proportion who are dissatisfied.

What information do you turn to BOM for?



Satisfaction with BOM...

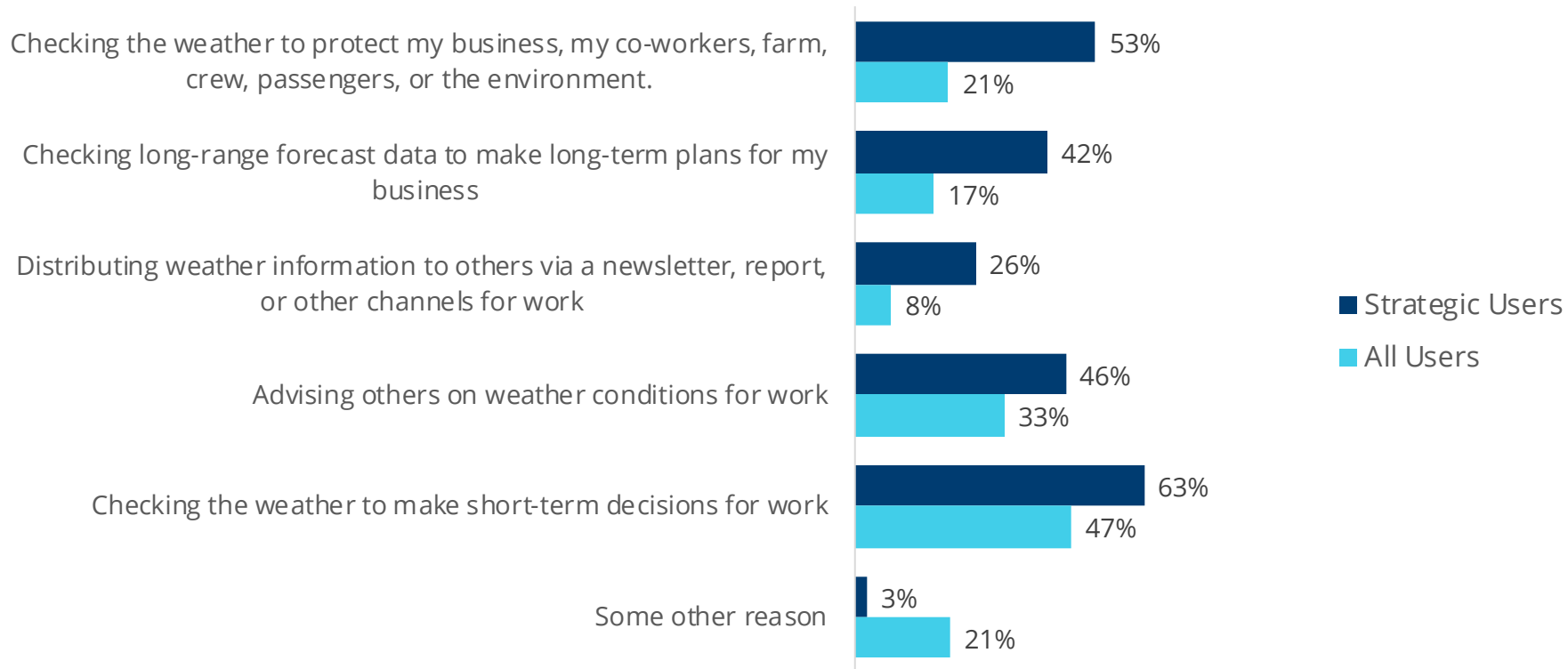


Concerns with BOM...

- "Getting too smart for there own good need to keep it simple."
- "Not really local enough - nearest BOM site is about 80kms away."
- "Lack of granular data around rainfall forecasts."
- "You sometimes go around in a circle to find what you want and some things are not specific such as ocean temp."
- "My biggest frustration is that the information is not always accurate, particularly when it comes to predicting weather in the future."
- "Only a minor frustration that I need to access a few different pages to gather all the information. As the BOM is used by many in the aviation industry it would be great to have one page that had everything needed for aviators and controllers."

Not surprisingly, Specialist users are accessing data for a wider range of people than the average work user

Specialist users are more likely to be accessing weather data as their last occasion, and have a wide range of information needs – mostly linked to day to day work performance.



Deep dive into the information searching occasions...



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OCCASION 1 - PERSONAL

Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?

67%
Incidence

63%
Do this daily

43%
Share of personal weather occasions

I'm looking for **SIMPLE** info about **RIGHT NOW** on how the weather will impact **ME** and my **PERSONAL COMFORT**. **TEMPERATURE & RAINFALL** matter the most to me, and I turn to **Weatherzone & BOM**.

This information is important to me so I can be **IN CONTROL AND HAVE FUN**, and can make decisions to make the **MOST OUT OF MY DAY**.

How long ago was this occasion?



TODAY

35%



LAST 3 DAYS

36%



LAST WEEK

17%



LONGER AGO

13%

Where was it for?



FOR HERE

85%



FOR ELSEWHERE

15%



SIMPLE

83%



DETAILED

17%

Was the info for something happening...



TODAY

86%



SHORT TERM

12%



FUTURE

1%



PAST

1%

Who was the info for...



MYSELF

91%



H'hold

17%



WORK

1%

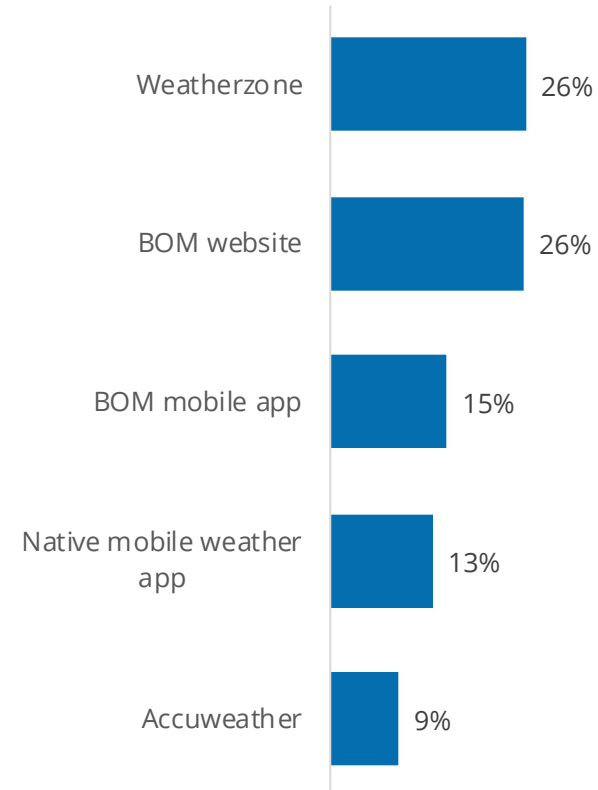
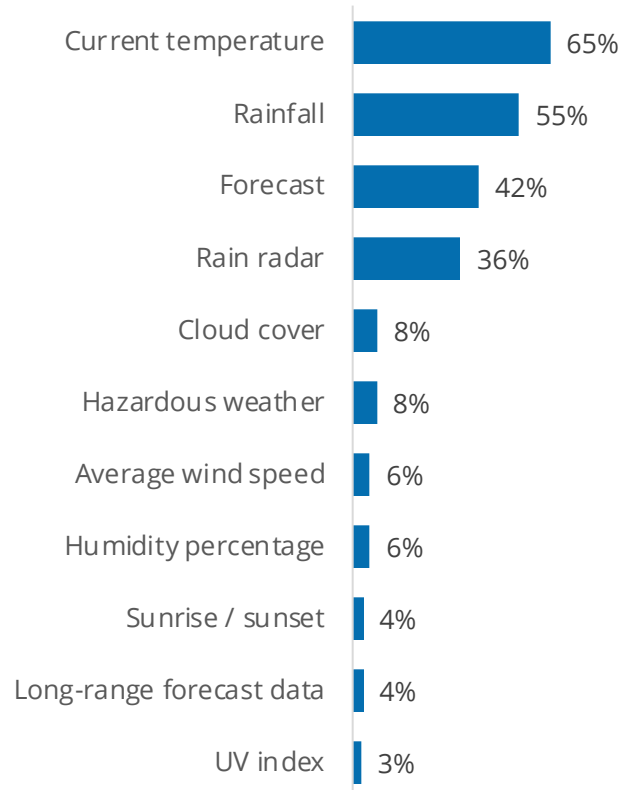


FRIENDS

6%

INFORMATION SOURCES

When making short term decisions about right now, people typically are interested in the temperature, rainfall and the forecast. It's clearly all about personal comfort on this occasion.



Google and generic phone app also mentioned



OCCASION 2 - PERSONAL

Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing,...

48%

Incidence

22%

Do this daily

39%

Do this weekly

13%

Share of personal weather occasions

I'm looking for **SOLID** info about the **SHORT TERM** on how the weather will impact **ME & MY FAMILY/FRIENDS** and our **COMFORT, SAFETY & FUN**.

RAINFALL & FORECAST matter the most to me, and I turn to **BOM FIRST!**

This information is important to me so I can be **IN CONTROL AND CAN LOOK AFTER OTHERS**, and can make decisions to make the **MOST OUT OF MY DAY**.

How long ago was this occasion?



TODAY

12%



LAST 3 DAYS

23%



LAST WEEK

21%



LONGER AGO

45%

Where was it for?



FOR HERE

52%



FOR ELSEWHERE

48%



SIMPLE

59%



DETAILED

41%

Was the info for something happening...



TODAY

22%



SHORT TERM

69%



FUTURE

8%



PAST

0%

Who was the info for...



MYSELF

72%



H'HOLD

37%



WORK

30%

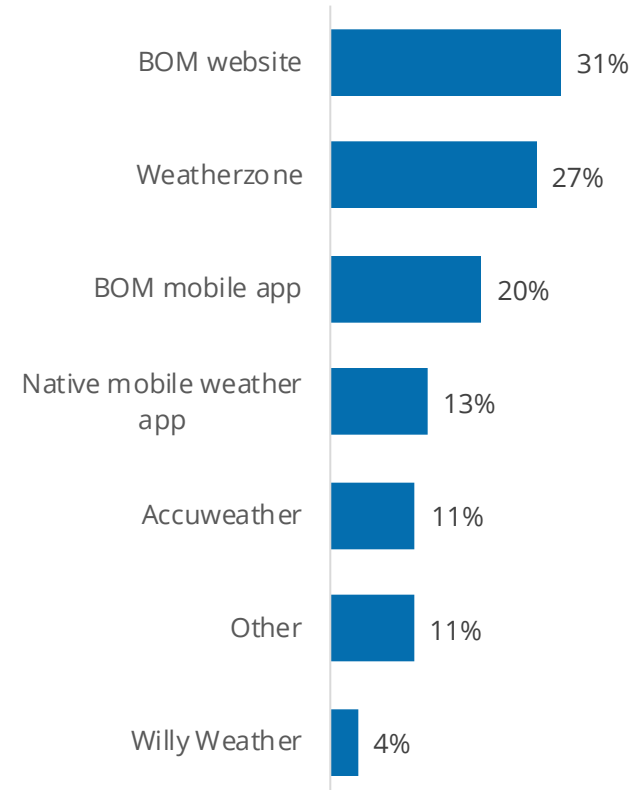
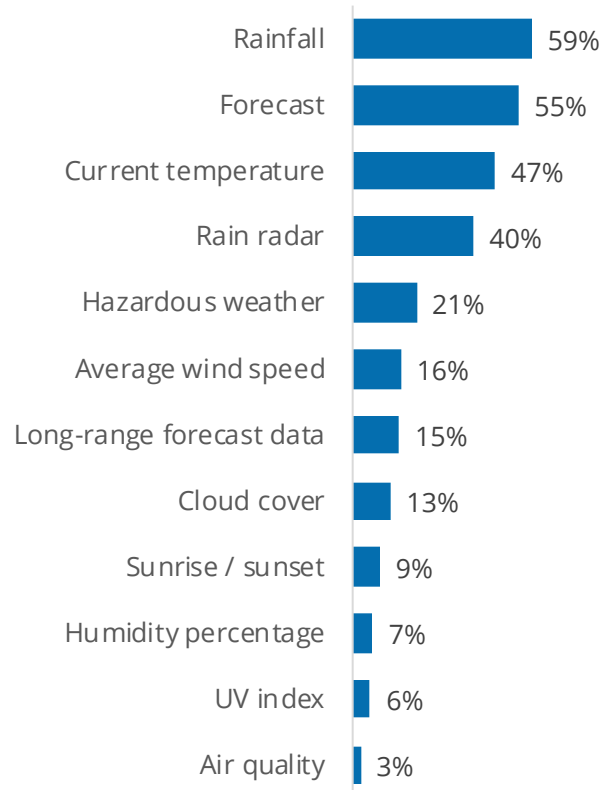


FRIENDS

30%

INFORMATION SOURCES

Checking weather for personal events is focused on the upcoming forecast and rain, primarily to drive personal comfort and for planning events.



Google and generic phone app also mentioned



OCCASION 3 - PERSONAL

Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)

48%

Incidence

51%

Do this daily

33%

Do this weekly

26%

Share of personal weather occasions

Base: n=378 responses for this occasion

I'm looking for **SIMPLE** info about the **SHORT TERM WEATHER CHANGES** on how the weather will impact **ME & MY DAY**

RAINFALL & TEMPERATURE matter the most to me, and I turn to **BOM FIRST!**

This information is important to me so I can be **IN CONTROL AND CAN STILL ENJOY MY DAY**, and can make decisions to **RESPOND APPROPRIATELY.**

How long ago was this occasion?



TODAY

29%



LAST 3 DAYS

27%



LAST WEEK

19%



LONGER AGO

25%

Where was it for?



FOR HERE

83%



FOR ELSEWHERE

17%



SIMPLE

66%



DETAILED

34%

Was the info for something happening...



TODAY

72%



SHORT TERM

20%



FUTURE

7%



PAST

0%

Who was the info for...



MYSELF

84%



H'HOLD

25%



WORK

4%

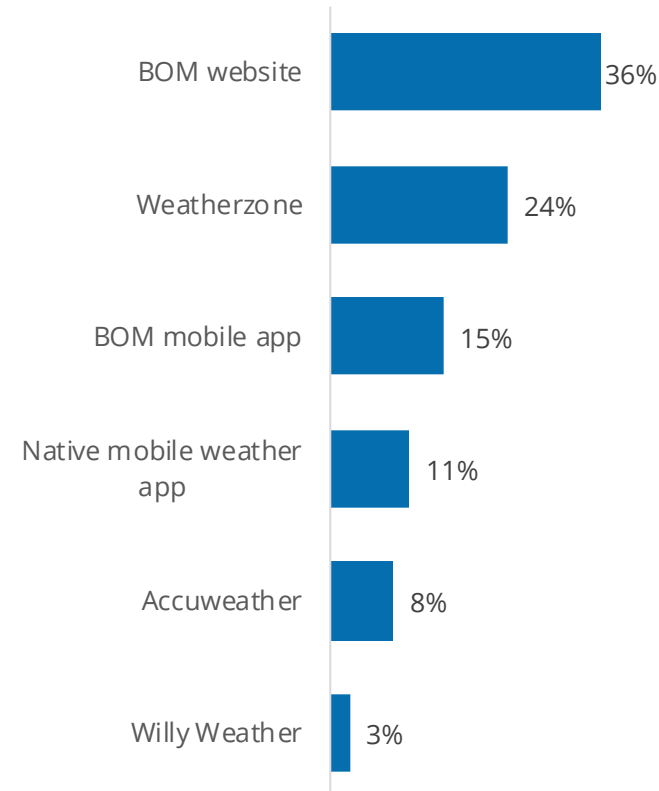
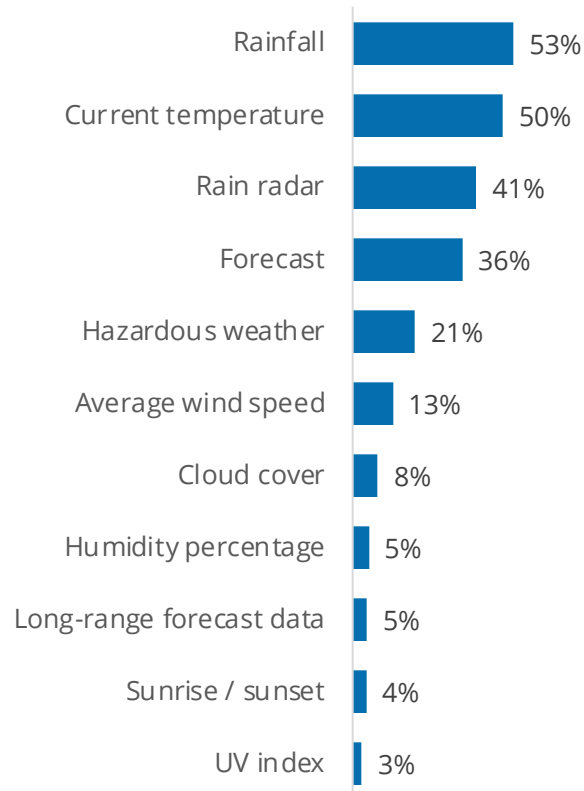


FRIENDS

12%

INFORMATION SOURCES

When responding to current changes in the weather, rainfall and temperature and most important, leading to personal comfort and safety.



Google and generic phone app also mentioned



OCCASION 4 - PERSONAL

Advising others on weather conditions

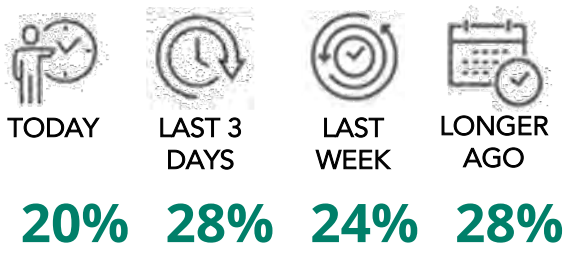
29%
Incidence

35% 42%
Do this daily Do this weekly

11%
Share of personal weather occasions

I'm looking for **SIMPLE** info about **A RANGE WEATHER CHANGES** on how the weather will impact **PEOPLE WHO ARE IMPORTANT TO ME.**
PRACTICAL RAINFALL & TEMPERATURE matter the most to me, and I turn to **WEATHERZONE FIRST!**
This information is important to me so I can be **IN CONTROL AND CAN LOOK AFTER OTHERS**, and can make decisions to **BE READY.**

How long ago was this occasion?



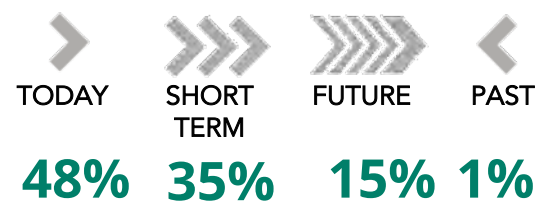
Where was it for?



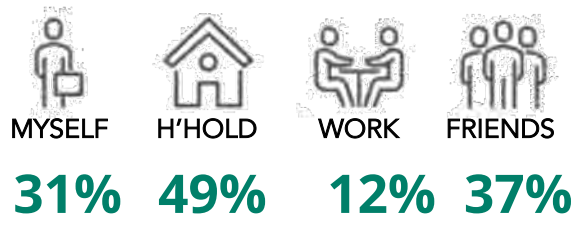
Did you want...



Was the info for something happening...



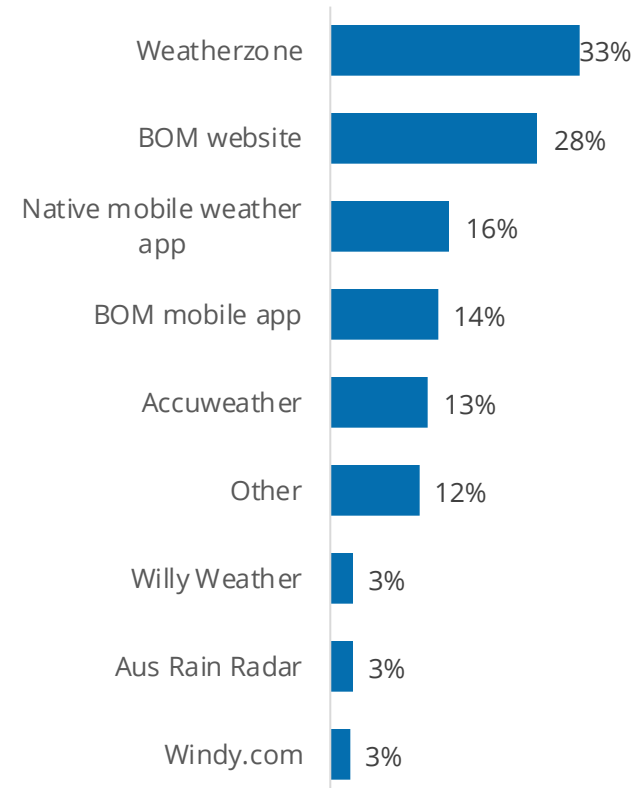
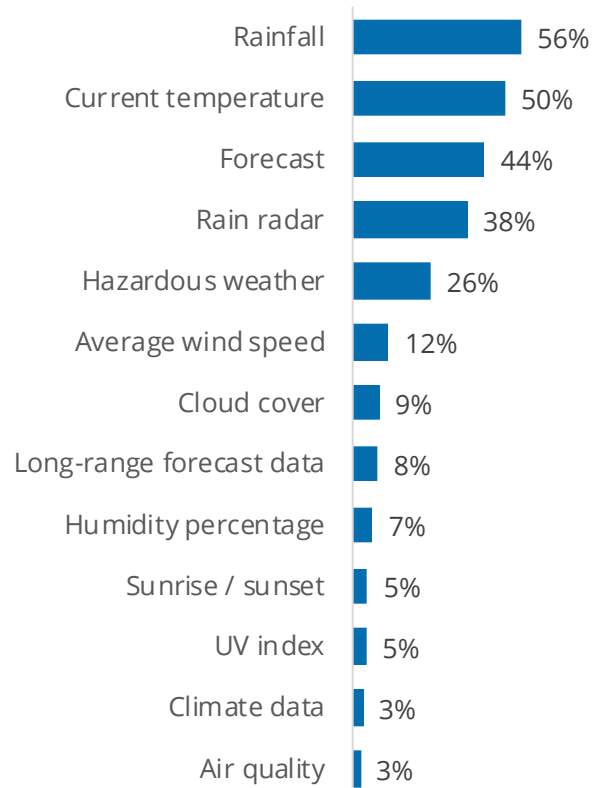
Who was the info for...



Base: n=240 responses for this occasion

INFORMATION SOURCES

Information needs when it comes to advising others on the weather look closely linked to responding to changes in the weather, with a strong focus on rain, temperature and hazards. On this occasions, personal comfort is less important.



Google and generic phone app also mentioned



OCCASION 5 - PERSONAL

Learning about
weather, climate,
meteorology,
climate science etc.

12%

Incidence

35%

Do this daily

30%

Do this weekly

5%

Share of personal
weather occasions

I'm looking for **DETAILED** info about the **A WIDE-RANGE OF CLIMATE & ENVIRONMENTAL DATA** on how the weather will impact **MYSELF & THE WORLD AROUND ME.**

TEMPERATURE & HAZARDS matter the most to me, and I turn to **BOM FIRST!**

This information is important to me so I can be **IN CONTROL AND UNDERSTAND.**

How long ago was this occasion?



TODAY

23%



LAST 3
DAYS

21%



LAST
WEEK

16%



LONGER
AGO

40%

Where was it for?



FOR
HERE

74%



FOR
ELSEWHERE

26%



SIMPLE

47%



DETAILED

53%

Was the info for something happening...



TODAY

22%



SHORT
TERM

16%



FUTURE

35%



PAST

16%

Who was the info for...



MYSELF

81%



H'HOLD

26%



WORK

6%

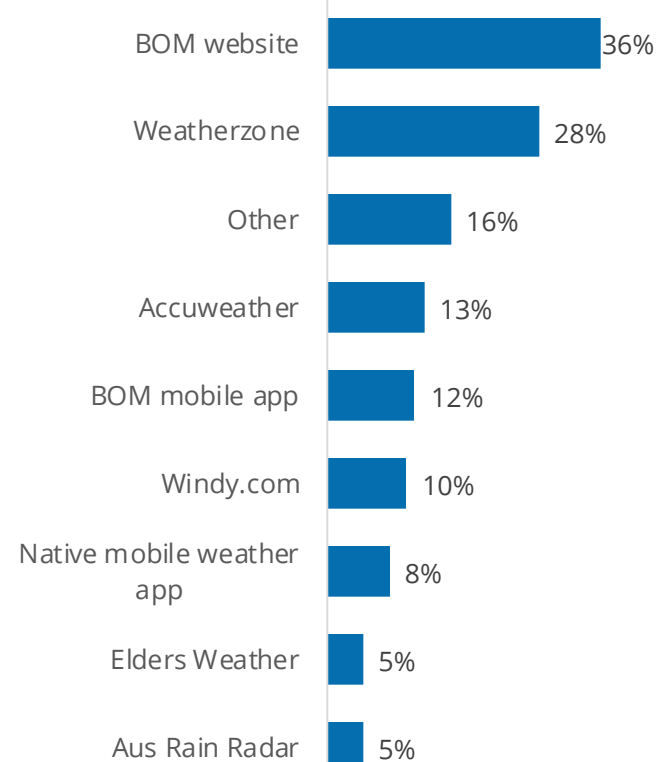
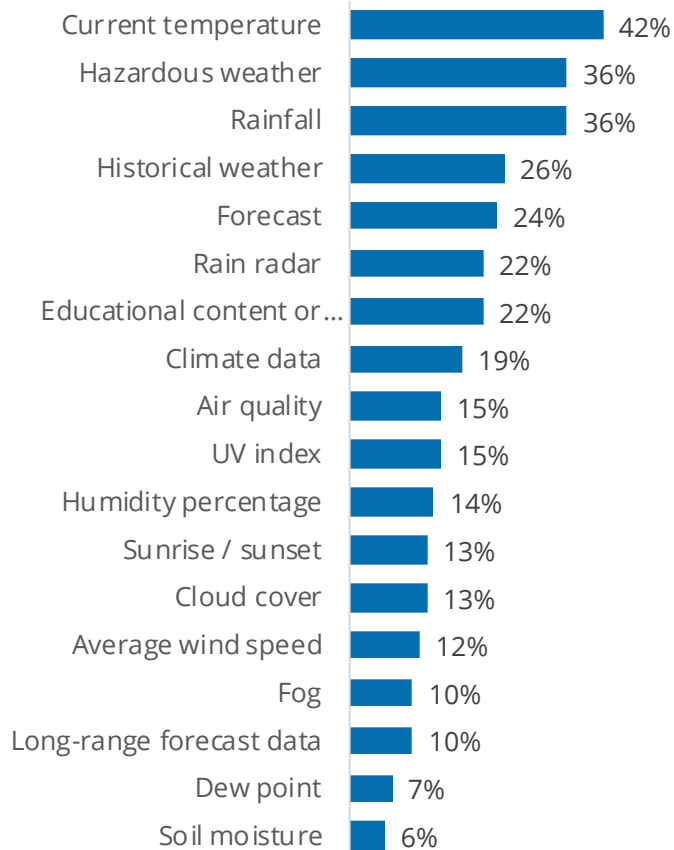


FRIENDS

12%

INFORMATION SOURCES

When it comes to accessing weather information for learning reasons, the range of information needs extends greatly, with behaviour driven by curiosity. For a low incidence occasion, the breadth of information needs makes it a challenge to cater to.



Google and generic phone app also mentioned



OCCASION 6 - WORK

Checking the weather to make short-term decisions for work

47%

Incidence

48%

Do this daily

30%

Do this weekly

42%

Share of work weather occasions

I'm looking for **DETAILED** info about the **A WIDE-RANGE OF CLIMATE & ENVIRONMENTAL DATA** on how the weather will impact **MYSELF, & THE WORLD AROUND ME.**

TEMPERATURE & HAZARDS matter the most to me, and I turn to **BOM FIRST!**

This information is important to me so I can be **IN CONTROL AND UNDERSTAND.**

How long ago was this occasion?



TODAY

40%



LAST 3 DAYS

23%



LAST WEEK

23%



LONGER AGO

14%

Where was it for?



FOR HERE

81%



FOR ELSEWHERE

19%



SIMPLE

62%



DETAILED

38%

Was the info for something happening...



TODAY

61%



SHORT TERM

35%



FUTURE

4%



PAST

0%

Who was the info for...



MYSELF

63%



H'HOLD

19%



WORK

48%

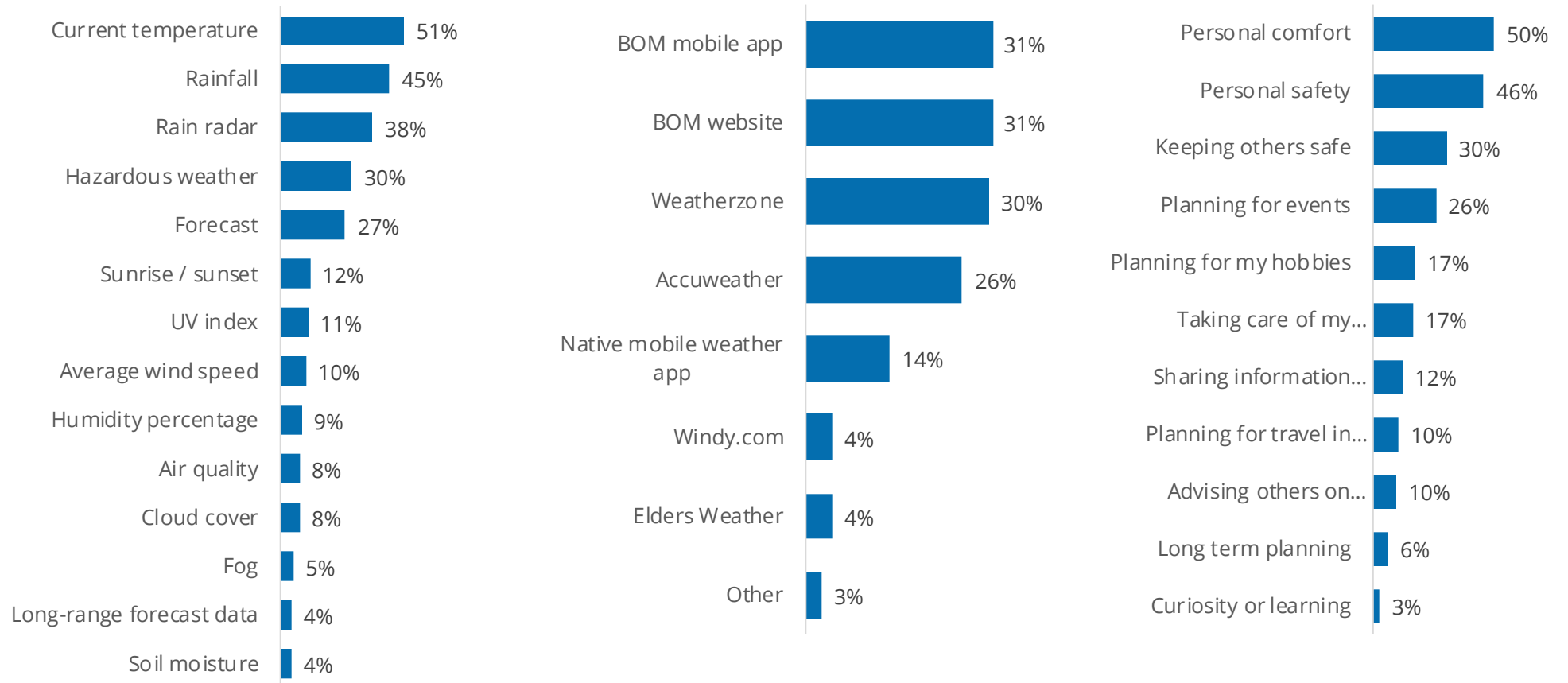


FRIENDS

8%

INFORMATION SOURCES

Responding to short-term weather needs for business users are similar to those amongst personal users – looking to understand the basics and how it will impact on their personal comfort and safety.



OCCASION 7 - WORK

Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.

21%

Incidence

53%

Do this daily

27%

Do this weekly

20%

Share of work weather occasions

I'm looking for **SIMPLE & ACCURATE** info about **RANGE OF CLIMATE & ENVIRONMENTAL DATA** on how the weather will impact **MYSELF & OTHERS AT WORK.**

TEMPERATURE & HAZARDS matter the most to me, and I turn to **A RANGE OF SOURCES TO GET THE RIGHT INFORMATION!**

This information is important to me so I can be **IN CONTROL AND UNDERSTAND.**

How long ago was this occasion?



TODAY

46%



LAST 3 DAYS

31%



LAST WEEK

11%



LONGER AGO

13%

Where was it for?



FOR HERE

77%



FOR ELSEWHERE

23%



SIMPLE

51%



DETAILED

49%

Was the info for something happening...



TODAY

65%



SHORT TERM

22%



FUTURE

10%



PAST

2%

Who was the info for...



MYSELF

62%



H'HOLD

33%



WORK

64%

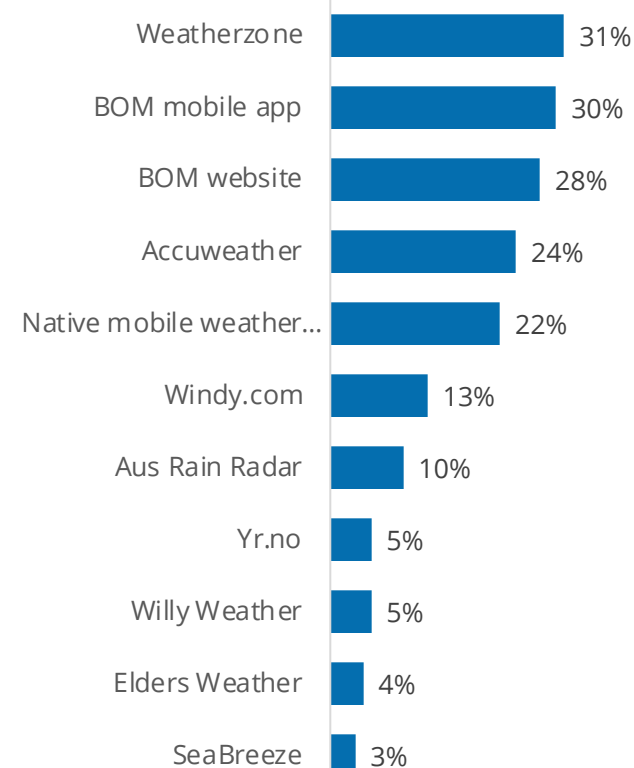
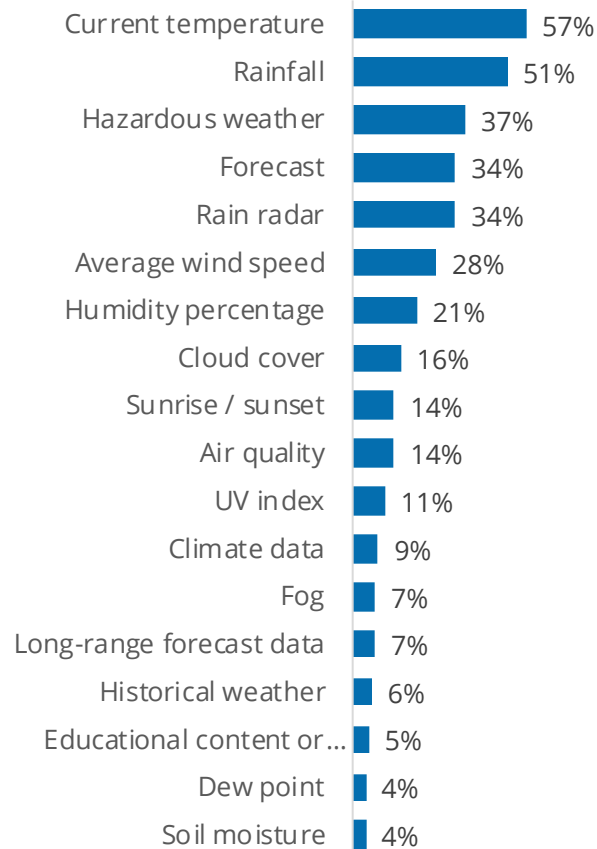


FRIENDS

23%

INFORMATION SOURCES

Similarly, when it comes to accessing data to keep others safe and to protect business, the focus is on temperature and hazards, driven by a need for safety and comfort.



Google and generic phone app also mentioned



OCCASION 8 - WORK

Advising others on weather conditions for work

33%

Incidence

35%

Do this daily

33%

Do this weekly

21%

Share of work weather occasions

Base: n=91 responses for this occasion

I'm looking for DETAILED info about the CURRENT WEATHER SITUATION on how the weather will impact OTHERS AT WORK. TEMPERATURE & RAINFALL matter the most to me, and I turn to BOM FIRST! This information is important to me so I can be FOCUS ON SAFETY – FOR MYSELF AND OTHERS.

How long ago was this occasion?



TODAY

32%



LAST 3 DAYS

35%



LAST WEEK

14%



LONGER AGO

19%

Where was it for?



FOR HERE

70%



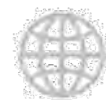
FOR ELSEWHERE

30%



SIMPLE

49%



DETAILED

50%

Was the info for something happening...



TODAY

53%



SHORT TERM

34%



FUTURE

12%



PAST

1%

Who was the info for...



MYSELF

45%



H'HOLD

25%



WORK

67%

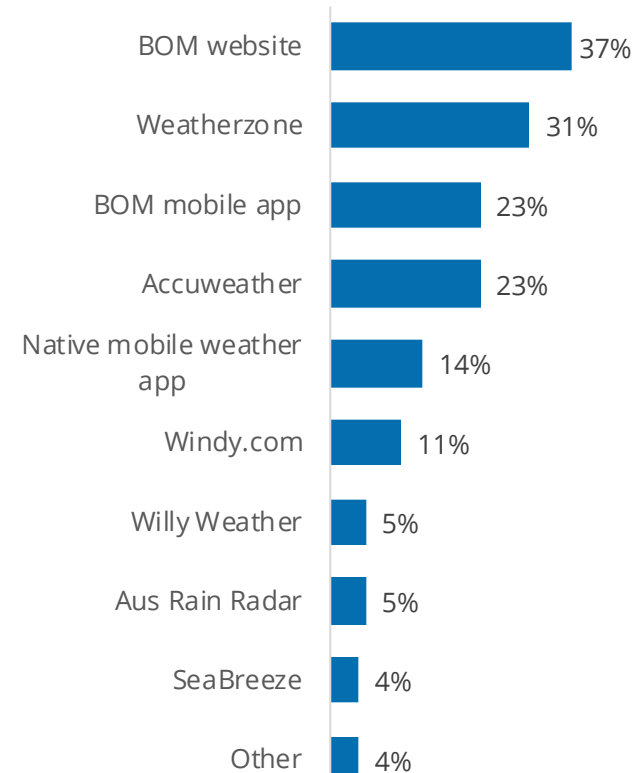
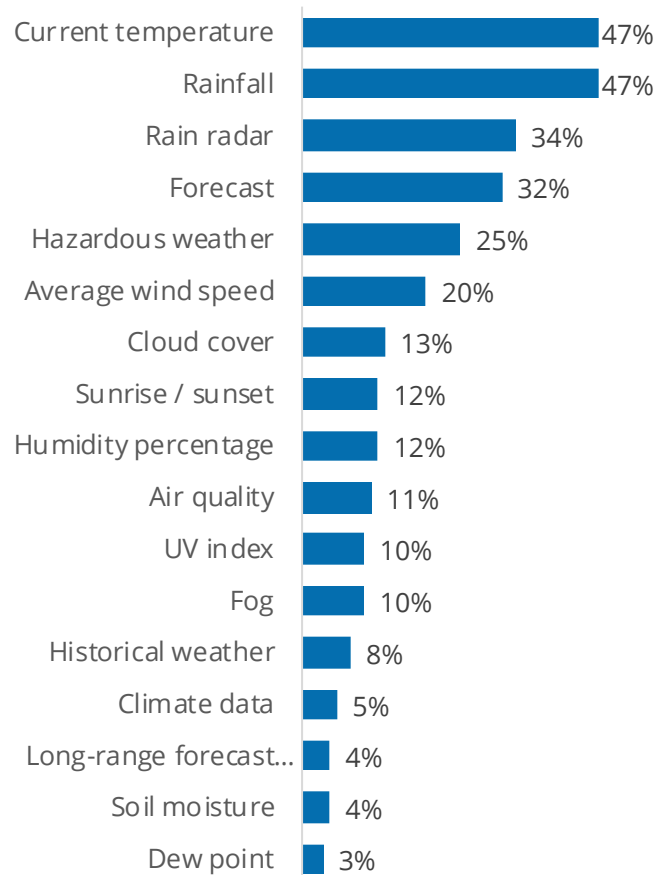


FRIENDS

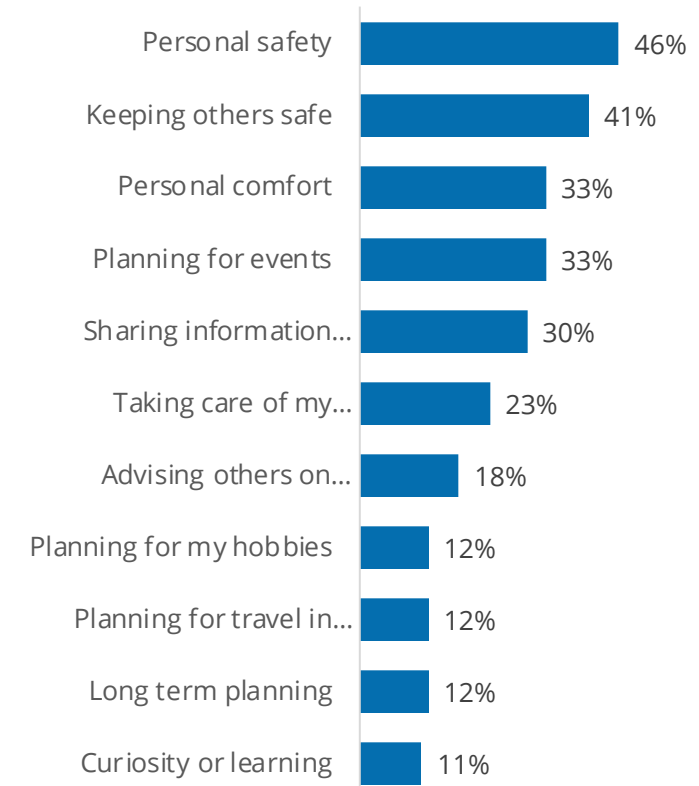
9%

INFORMATION SOURCES

As with the personal occasion, work users looking to advise others on weather conditions are focused on what is happening with the weather in the short-term, helping to ensure the safety of others. They typically turn to BOM for this information.



Google and generic phone app also mentioned



OCCASION 9 - WORK

Checking long-range forecast data to make long-term plans for my business

17%

Incidence

35%

Do this daily

30%

Do this weekly

11%

Share of work weather occasions

Base: n=80 responses for this occasion

I'm looking for **SOMEWHAT DETAILED** info about **A WIDE-RANGE OF WEATHER ELEMENTS** on how the weather will impact **MYSELF & OTHERS AT WORK**. **TEMPERATURE, RAIN & FORECASTS** matter the most to me, and I turn to **BOM FIRST!**

This information is important to me so I can be **IN CONTROL** and can **PLAN FOR BUSINESS PERFORMANCE AND SAFETY**.

How long ago was this occasion?



TODAY

35%



LAST 3 DAYS

30%



LAST WEEK

20%



LONGER AGO

15%

Where was it for?



FOR HERE

71%



FOR ELSEWHERE

29%



SIMPLE

50%



DETAILED

50%

Was the info for something happening...



TODAY

35%



SHORT TERM

43%



FUTURE

21%



PAST

1%

Who was the info for...



MYSELF

71%



H'HOLD

28%



WORK

55%

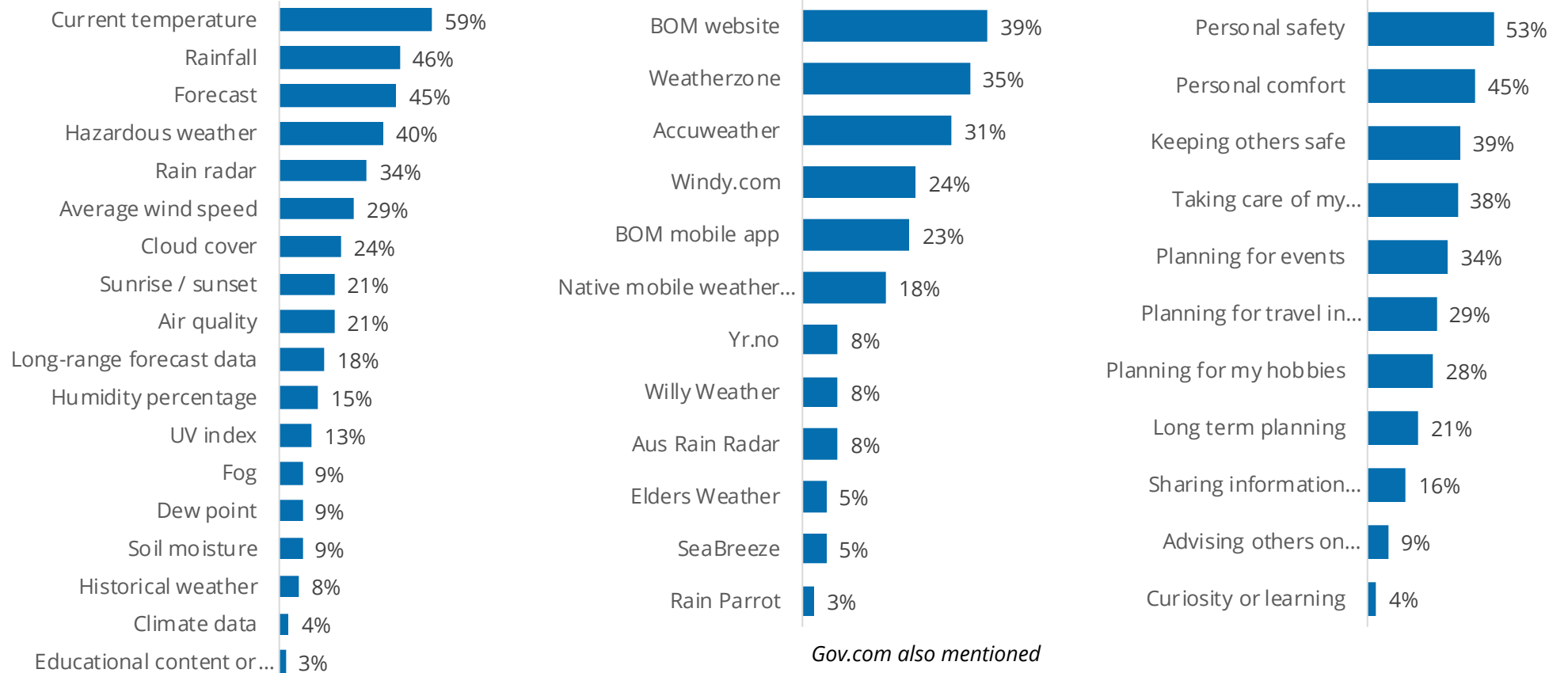


FRIENDS

18%

INFORMATION SOURCES

A wider range of information sources are accessed when users are looking to understand long-term trends and information to help make business decisions. BOM is the key source of information, helping users to make decisions safely.



What does this mean?

Looking across the various occasions covered as part of the research, we can see a great deal of commonality in behaviour, with some minor differences.

- By and large, people are looking for **simple, easy information** to help address things that are **happening right now?**
- A series of sub-occasions appear across many of the usage occasions linked to the day-to-day activities (i.e. travel to and from work, washing, driving, travelling, outdoor activities). Is there a way to cluster these day-to-day activities into mini snapshots on the site?
- There are some more detailed or complex usage occasions that need to be accommodated in the new design, but these people should be **fed quickly off to another area** on the site, rather than complicating the experience for the majority or users?
- **Sharing information** looks to be a key priority for many – either for personal reasons or for work. Are there ways to build sharing into the redevelopment to build engagement and fulfillment of user needs?
- **Past or historical data**, or detailed complex data, is not a requirement for many users. Further, the needs of these users is very particular – almost best served on a **case-by-case basis?**

Archetype occasions



Australian Government
Bureau of Meteorology

Deloitte.
Digital

MONITOR

Monitoring weather to make short term decisions, helping me to advise others and to protect myself and those around me

57%

Of total occasions in the survey.

82%

Of total work occasions.

55%

Of total personal occasions.

I'm looking for pretty **SIMPLE** information on what is happening **TODAY**. No matter my industry, **QUICK, ACCURATE, SHORT-TERM INFORMATION** is something I need.

PERSONAL COMFORT is the priority here, and I am most likely to **TURN TO BOM** to give me the **TEMPERATURE, FORECAST AND RAINFALL** information I need.

Industry incidence



Mining

56%



Farming

55%



Construction

55%



General Public

54%

Where was it for?



FOR
HERE

79%



FOR
ELSEWHERE

21%



SIMPLE

71%



DETAILED

29%

Was the info for something happening...



TODAY

69%



SHORT
TERM

25%



FUTURE

6%



PAST

0%

Who was the info for...



MYSELF

63%



H'HOLD

24%



WORK

29%

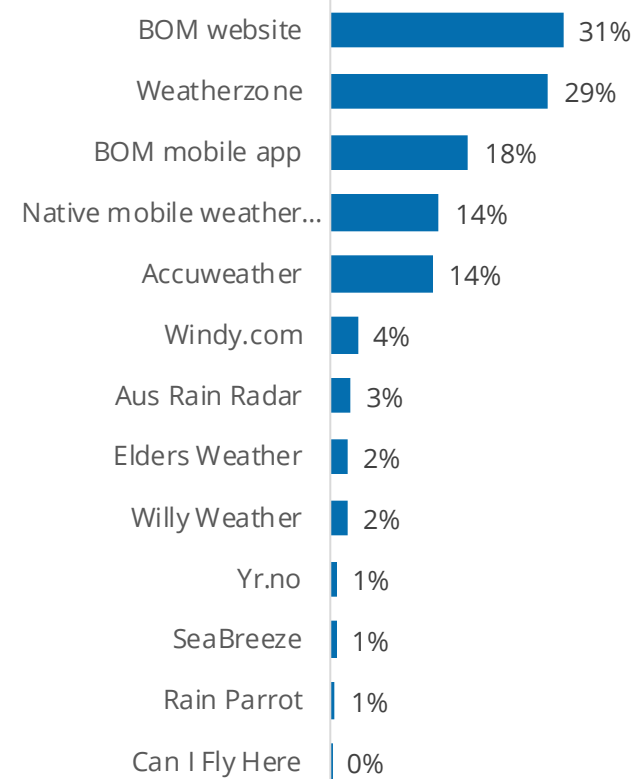
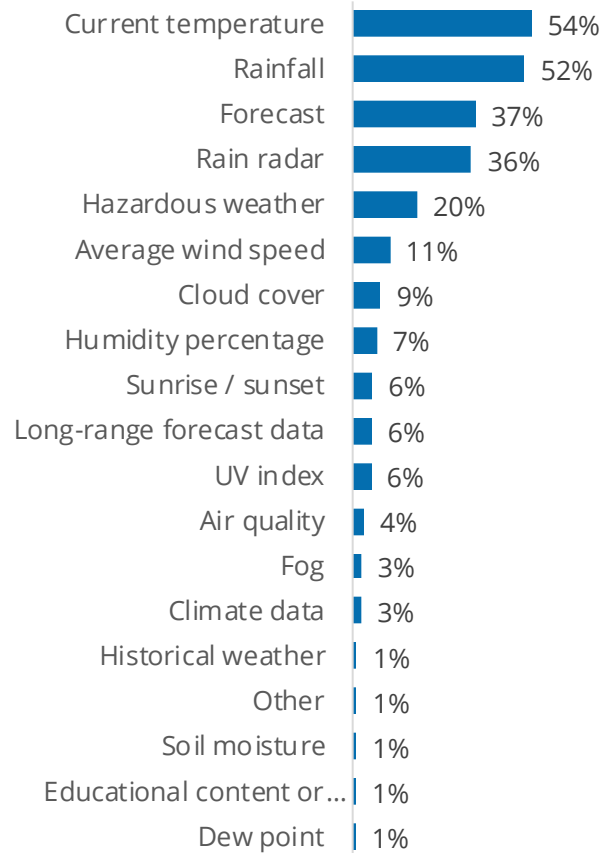


FRIENDS

14%

INFORMATION SOURCES

When looking to make short term decisions, both for their own needs as well as to support others, users are typically focused on practical information such as rainfall, temperature and the forecast, turning to BOM to support their personal comfort.



ANTICIPATOR

Checking the weather to make decisions about work or upcoming recreational activities.

16%

Of total occasions in the survey.

42%

Of total work occasions.

13%

Of total personal occasions.

I'm looking for moderately **DETAILED** information on what is happening **IN THE SHORT TERM**. A lower incidence occasion, important for the **GENERAL PUBLIC & CONSTRUCTION**.

PERSONAL COMFORT & PLANNING is the priority here, and I am most likely to **TURN TO BOM** to give me the **FORECAST AND RAINFALL** information I need.

Industry incidence



Mining

19%



Farming

25%



Construction

29%



General Public

27%

Where was it for?



FOR
HERE

63%



FOR
ELSEWHERE

37%



SIMPLE

63%



DETAILED

37%

Did you want...

Was the info for something happening...



TODAY

34%



SHORT
TERM

54%



FUTURE

12%



PAST

1%

Who was the info for...



MYSELF

71%



H'HOLD

27%



WORK

16%

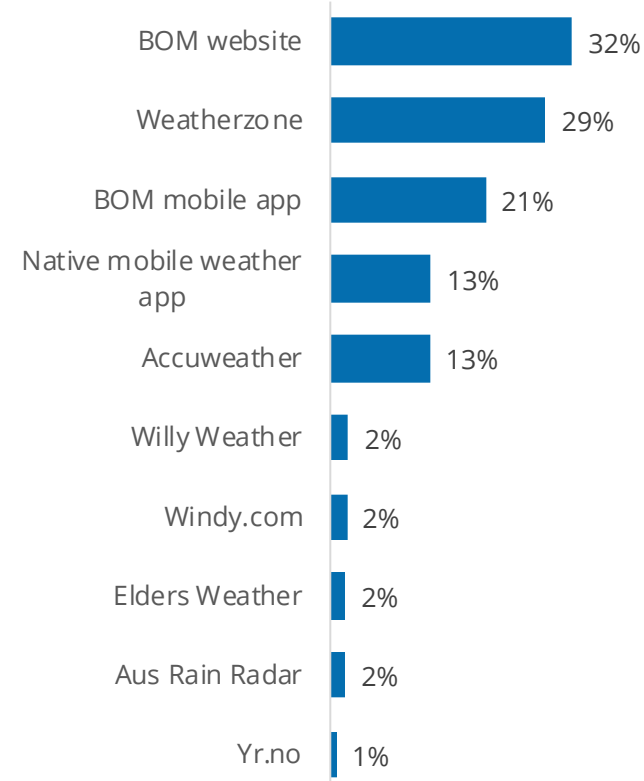
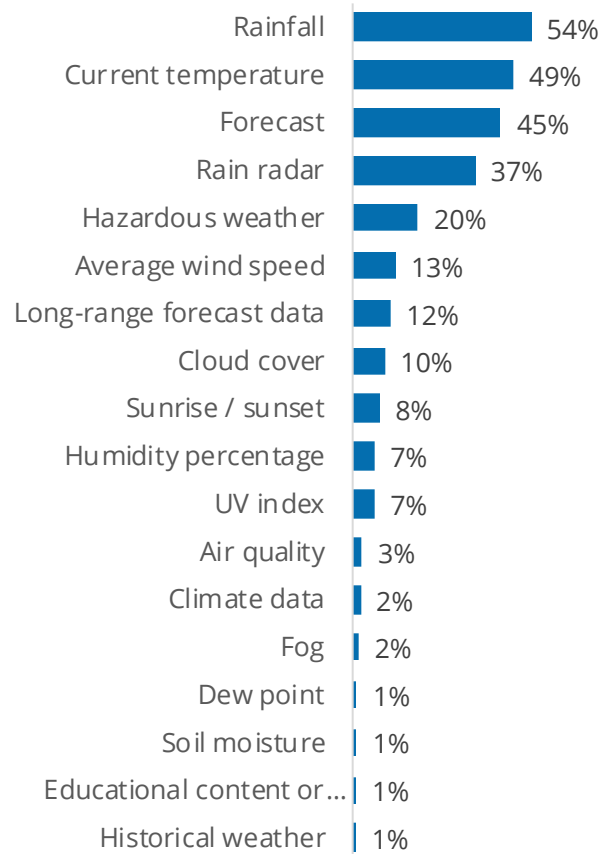


FRIENDS

20%

INFORMATION SOURCES

When looking to the short term future, users are looking for forecasts and rain data to plan for events, helping to maximise their personal comfort and safety. BOM is a key source of information here, supported by Weatherzone.



PROSPECTOR

Looking to make short term and long term plans for work to help drive successful outcomes.

5%

Of total occasions in the survey.

53%

Of total work occasions.

0%

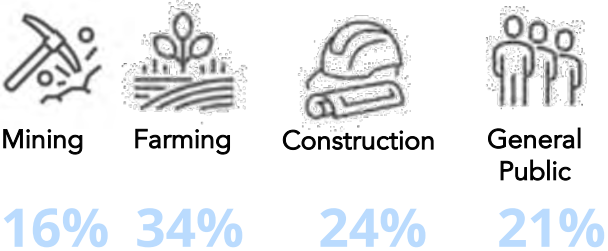
Of total personal occasions.

Base: n=369 responses for this occasion
Note: some cross over in occasions

I'm looking for pretty **DETAILED** information on what is happening **IN THE SHORT & LONG TERM**. A lower incidence occasion, but notably important for the **AGRICULTURE SECTOR**.

PERSONAL COMFORT & PLANNING is the priority here, and I am most likely to **TURN TO BOM** to give me the **FORECAST AND RAINFALL** information I need.

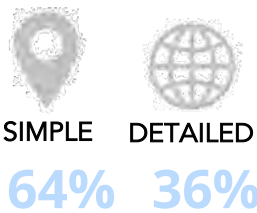
Industry incidence



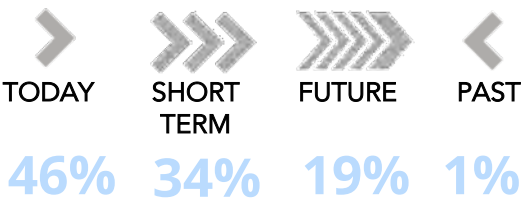
Where was it for?



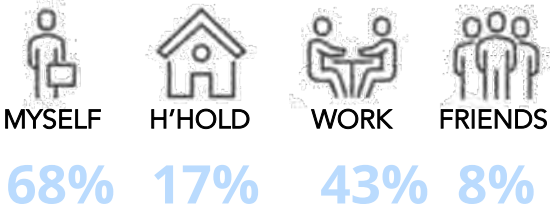
Did you want...



Was the info for something happening...

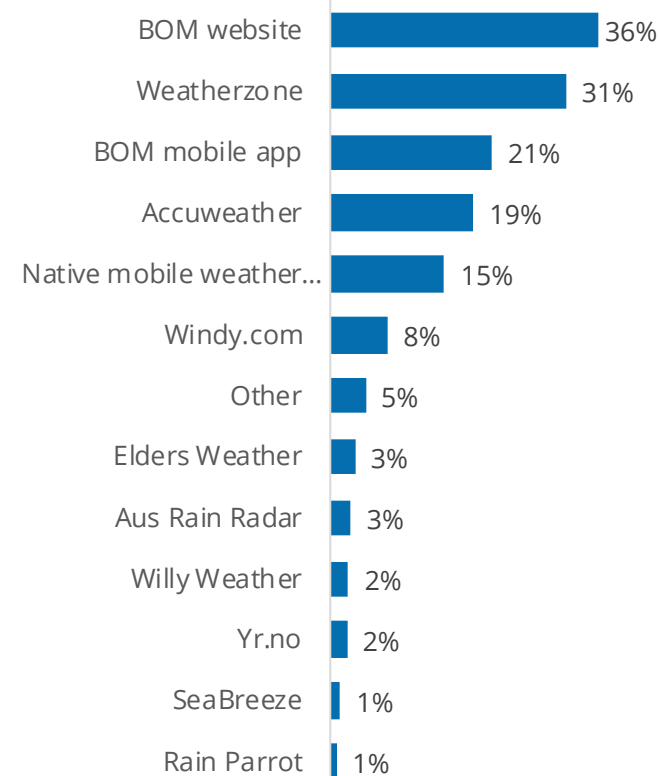
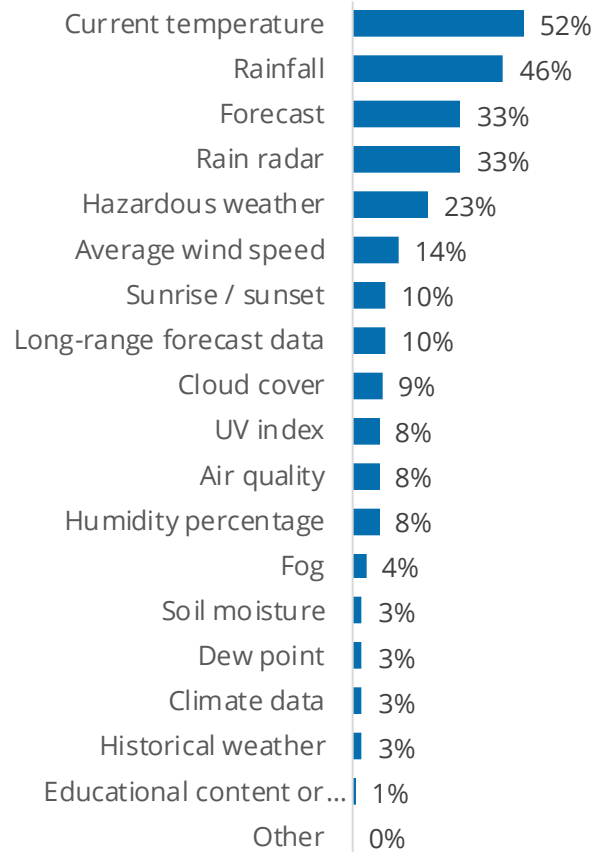


Who was the info for...



INFORMATION SOURCES

When users are looking to make short and long term decisions for work, temperature, rainfall and forecasts are critical, as is hazardous weather information. BOM is the leading source here, helping users to ensure their personal safety and the safety of others.



REACTOR

Responding to changes in the weather right now, focused on protecting those around me.

25%

Of total occasions in the survey.

20%

Of total work occasions.

26%

Of total personal occasions.

I'm looking for pretty **DETAILED** information on what is happening **RIGHT NOW**. A mid-incidence occasion, but notably important for **OUTDOOR INDUSTRIES**. **PERSONAL COMFORT & SAFETY** is the priority here, and I am most likely to **TURN TO BOM** to give me the **TEMPERATURE, RADAR AND RAINFALL** information I need.

Industry incidence



Mining

28%



Farming

26%



Construction

18%



General Public

19%

Where was it for?



FOR HERE

81%



FOR ELSEWHERE

19%



SIMPLE

63%



DETAILED

37%

Was the info for something happening...



TODAY

69%



SHORT TERM

21%



FUTURE

5%



PAST

1%

Who was the info for...



MYSELF

77%



H'HOLD

26%



WORK

19%

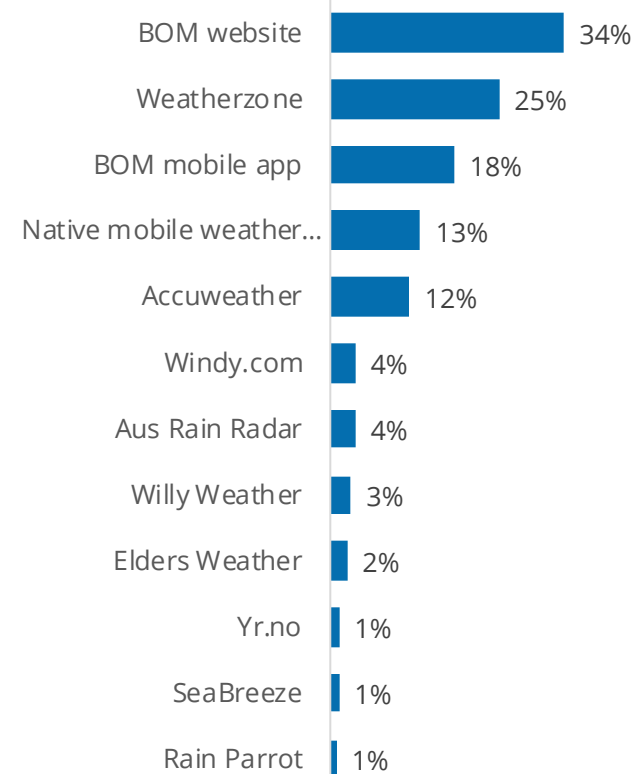
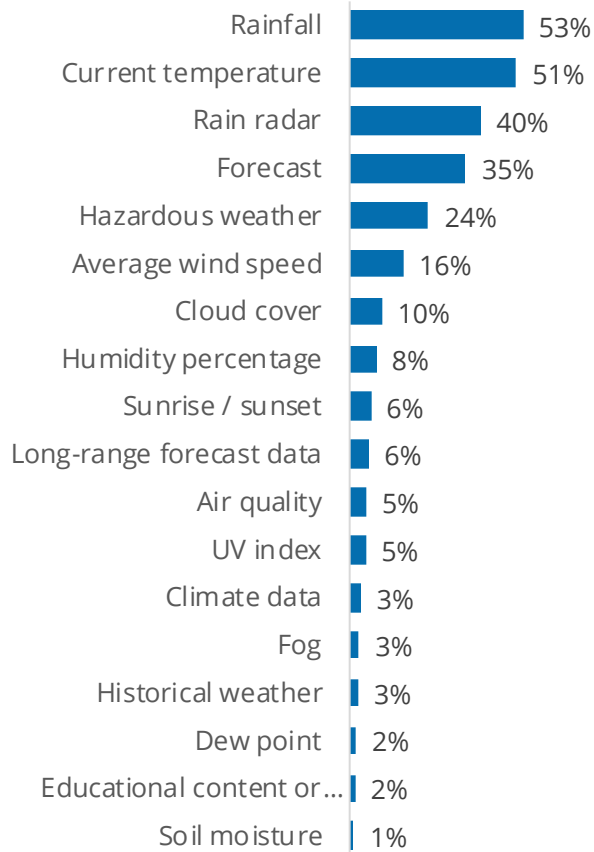


FRIENDS

14%

INFORMATION SOURCES

Safety is a key driver here, as is comfort and planning. Rainfall, temperature and radar information is important to help make quick decisions, and BOM is the leading source of information.



EXPLORER

Learning about
weather, climate,
meteorology,
climate science etc.

12%

Incidence

35%

Do this daily

30%

Do this weekly

5%

Share of personal
weather occasions

I'm looking for **DETAILED** info about the **A WIDE-RANGE OF CLIMATE & ENVIRONMENTAL DATA** on how the weather will impact **MYSELF & THE WORLD AROUND ME.**

TEMPERATURE & HAZARDS matter the most to me, and I turn to **BOM FIRST!**

This information is important to me so I can be **IN CONTROL AND UNDERSTAND.**

How long ago was this occasion?



TODAY

23%



LAST 3
DAYS

21%



LAST
WEEK

16%



LONGER
AGO

40%

Where was it for?



FOR
HERE

74%



FOR
ELSEWHERE

26%



SIMPLE

47%



DETAILED

53%

Was the info for something happening...



TODAY

22%



SHORT
TERM

16%



FUTURE

35%



PAST

16%

Who was the info for...



MYSELF

81%



H'HOLD

26%



WORK

6%

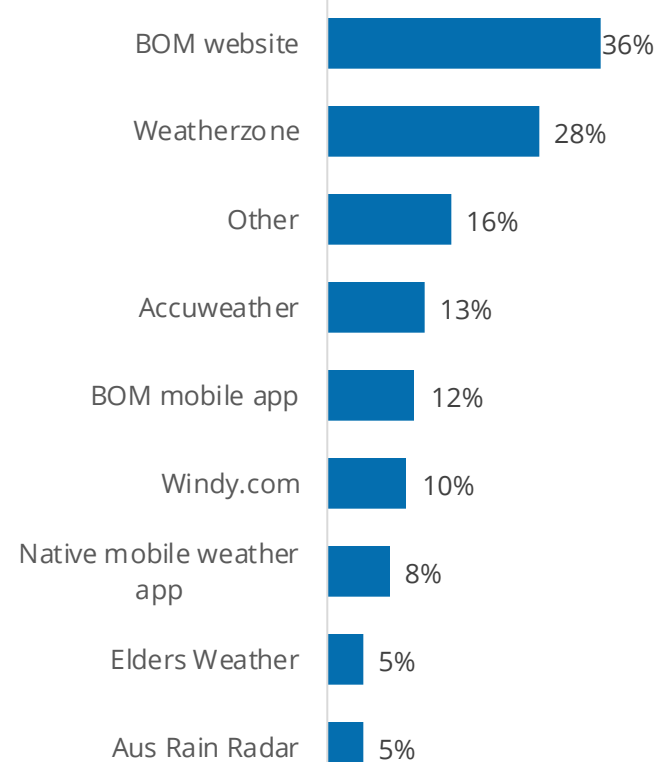
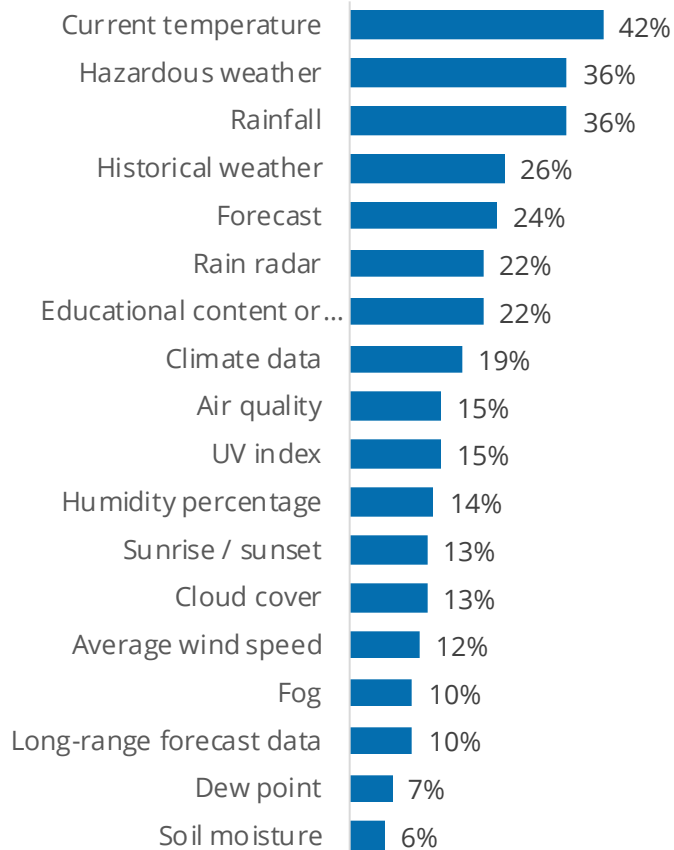


FRIENDS

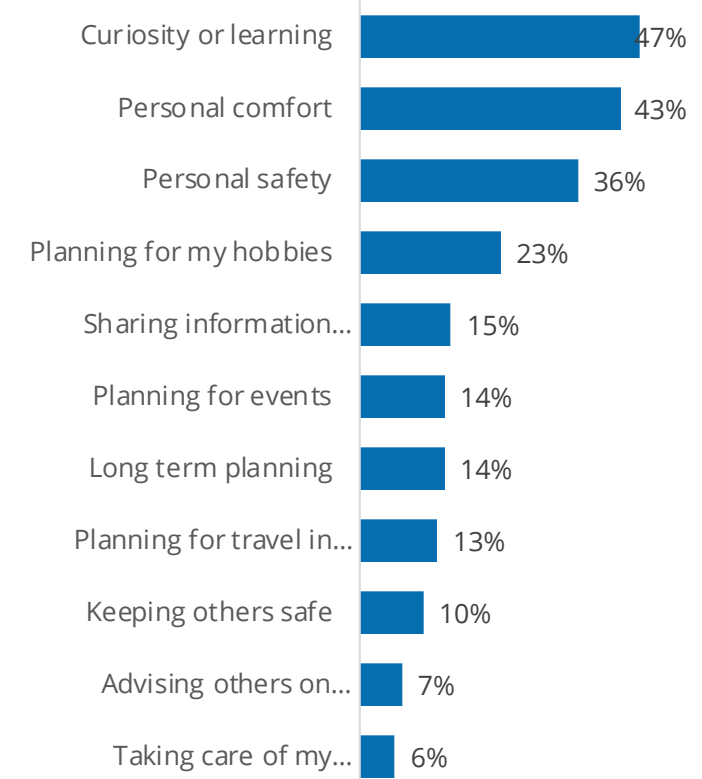
12%

INFORMATION SOURCES

When it comes to accessing weather information for learning reasons, the range of information needs extends greatly, with behaviour driven by curiosity. For a low incidence occasion, the breadth of information needs makes it a challenge to cater to.



Google and generic phone app also mentioned



Appendix – Detailed Occasion Information



Australian Government
Bureau of Meteorology

Deloitte.
Digital

When was the last time you accessed information for this occasion?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Today	35%	12%	36%	20%	23%	29%
Within the last 3 days	36%	23%	19%	28%	21%	27%
Within the last week	17%	21%	17%	24%	16%	19%
Within the last fortnight	5%	16%	11%	10%	8%	7%
Within the last month	4%	13%	6%	5%	16%	7%
Within the last 3 months	3%	9%	6%	10%	6%	6%
Within the last 6 months	1%	4%	0%	3%	5%	3%
Within the last year	0%	2%	0%	1%	1%	1%
More than a year ago	0%	1%	6%	0%	3%	0%

Where were you on this occasion?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Planning for something happening that day	60%	22%	22%	43%	22%	49%
Planning for something happening within the next week	12%	69%	42%	35%	16%	20%
Planning for something happening within the next few months	0%	4%	6%	2%	10%	2%
Planning for an event a long time away	0%	2%	8%	0%	5%	1%
Looking to find out about the weather right now	26%	3%	17%	13%	20%	23%
Looking for past/historical data	0%	0%	3%	1%	16%	0%

Were you...

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Planning for something happening that day	60%	22%	22%	43%	22%	49%
Planning for something happening within the next week	12%	69%	42%	35%	16%	20%
Planning for something happening within the next few months	0%	4%	6%	2%	10%	2%
Planning for an event a long time away	0%	2%	8%	0%	5%	1%
Looking to find out about the weather right now	26%	3%	17%	13%	20%	23%
Looking for past/historical data	0%	0%	3%	1%	16%	0%

What was it for?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing,..	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Where I was at the time	85%	52%	86%	74%	74%	83%
For another location	15%	48%	14%	26%	26%	17%

Who was it for?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing,...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
It was just for me	91%	72%	50%	31%	81%	84%
For others in my household	17%	37%	39%	49%	26%	25%
For others at work	1%	1%	14%	12%	6%	4%
For friends or other family	6%	30%	25%	37%	12%	12%
Someone else	0%	1%	0%	2%	0%	0%

What information were you looking for?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Current temperature	65%	47%	47%	50%	42%	50%
Hazardous weather	8%	21%	28%	26%	36%	21%
Sunrise / sunset	4%	9%	25%	5%	13%	4%
Air quality	0%	3%	3%	3%	15%	2%
Forecast	42%	55%	28%	44%	24%	36%
Average wind speed	6%	16%	6%	12%	12%	13%
Humidity percentage	6%	7%	3%	7%	14%	5%
UV index	3%	6%	6%	5%	15%	3%
Rain radar	36%	40%	11%	38%	22%	41%
Cloud cover	8%	13%	14%	9%	13%	8%
Rainfall	55%	59%	36%	56%	36%	53%
Historical weather	0%	1%	8%	0%	26%	2%
Fog	1%	1%	3%	2%	10%	2%
Long-range forecast data	4%	15%	0%	8%	10%	5%
Dew point	0%	1%	3%	0%	7%	2%
Soil moisture	0%	1%	3%	1%	6%	1%
Educational content or material	0%	1%	3%	0%	22%	1%
Climate data	1%	2%	0%	3%	19%	2%

What sources did you use?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Windy.com	1% ↓	2% ↓	6%	3%	10% ↑	1% ↓
BOM mobile app	15%	20%	25%	14%	12%	15%
Weatherzone	26%	27%	28%	33%	28%	24%
BOM website	26% ↓	31%	25%	28%	36%	36%
Accuweather	9%	11%	6%	13%	13%	8% ↓
Elders Weather	1%	2%	0%	2%	5%	2%
Native mobile weather app	13%	13%	11%	16%	8%	11%
Yr.no	0%	1%	3%	0%	1%	0%
SeaBreeze	0%	0%	0%	0%	2%	1%
Willy Weather	2%	4%	6%	3%	2%	3%
Rain Parrot	0%	0%	0%	0%	2%	1%
Aus Rain Radar	1%	2%	3%	3%	5%	2%
Can I Fly Here	0%	0%	0%	0%	0%	0%

What were you trying to achieve on this occasion?

APPENDIX: PERSONAL OCCASIONS

	Checking the weather on a regular basis to make short-term decisions like 'should I take an umbrella to work today?'	Checking the weather to plan a recreational event like surfing, camping, paddling, rock-climbing...	Distributing weather information to others via a newsletter, report, or other channels	Advising others on weather conditions	Learning about weather, climate, meteorology, climate science etc.	Checking the weather to respond to changes happening at the time (i.e. information on a change in the weather)
Personal comfort	83%	65%	44%	45%	43%	68%
Personal safety	23%	35%	39%	28%	36%	33%
Planning for my hobbies	10%	27%	22%	10%	23%	12%
Planning for travel in Australia	3%	19%	22%	8%	13%	3%
Planning for events	11%	37%	22%	21%	14%	18%
Keeping others safe	6%	15%	22%	33%	10%	14%
Taking care of my business	2%	1%	3%	3%	6%	3%
Curiosity or learning	6%	5%	8%	11%	47%	9%
Long term planning	2%	5%	6%	4%	14%	3%
Sharing information with others	4%	14%	11%	42%	15%	11%
Advising others on weather conditions and how to respond	4%	6%	0%	24%	7%	9%

When was the last time you accessed information for this occasion?

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
Today	37%	29%	31%	20%	26%
Within the last 3 days	27%	24%	41%	24%	19%
Within the last week	13%	20%	14%	15%	24%
Within the last fortnight	6%	10%	4%	9%	8%
Within the last month	8%	6%	4%	11%	10%
Within the last 3 months	3%	2%	0%	6%	6%
Within the last 6 months	4%	4%	0%	6%	2%
Within the last year	1%	2%	2%	4%	2%

Were you...

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
Planning for something happening that day	53%	32%	37%	44%	51%
Planning for something happening within the next week	26%	41%	47%	32%	32%
Planning for something happening within the next few months	6%	17%	12%	9%	3%
Planning for an event a long time away	4%	4%	4%	1%	2%
Looking to find out about the weather right now	10%	4%	0%	12%	11%
Looking for past/historical data	2%	3%	0%	1%	0%

What was it for?

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
Where I was at the time	74%	71%	82%	73%	79%
For another location	26%	29%	18%	27%	21%

Who was it for?

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
It was just for me	54%	67%	51%	37%	70%
For others in my household	29%	27%	39%	20%	13%
For others at work	65%	52%	43%	72%	39%
For friends or other family	20%	16%	27%	9%	5%
Someone else	2%	3%	4%	2%	1%

What information were you looking for?

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
Current temperature	54%	55%	63%	40%	51%
Hazardous weather	34%	36%	31%	29%	18%
Sunrise / sunset	12%	18%	14%	8%	7%
Air quality	13%	20%	20%	6%	3%
Forecast	33%	40%	27%	31%	31%
Average wind speed	26%	26%	14%	17%	8%
Humidity percentage	16%	12%	18%	7%	6%
UV index	10%	10%	18%	7%	8%
Rain radar	36%	34%	45%	40%	33%
Cloud cover	14%	19%	27%	10%	5%
Rainfall	51%	46%	43%	50%	47%
Historical weather	5%	8%	4%	4%	0%
Fog	6%	7%	6%	5%	3%
Long-range forecast data	9%	20%	10%	6%	6%
Dew point	3%	7%	8%	2%	2%
Soil moisture	3%	7%	6%	2%	2%
Educational content or material	4%	2%	4%	1%	1%
Climate data	6%	5%	4%	3%	2%

What sources did you use?

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
Windy.com	10%	19%	14%	6%	3%
BOM mobile app	27%	21%	37%	20%	21%
Weatherzone	28%	33%	27%	29%	31%
BOM website	30%	38%	24%	42%	34%
Accuweather	21%	26%	31%	16%	16%
Elders Weather	5%	5%	6%	2%	3%
Native mobile weather app	21%	18%	16%	11%	14%
Yr.no	4%	6%	10%	1%	1%
SeaBreeze	2%	4%	8%	2%	0%
Willy Weather	4%	7%	10%	4%	1%
Rain Parrot	2%	2%	2%	1%	0%
Aus Rain Radar	8%	6%	8%	3%	2%
Can I Fly Here	0%	0%	0%	0%	0%

What were you trying to achieve on this occasion?

APPENDIX: WORK OCCASIONS

	Checking the weather to protect my business, my co-workers, farm, crew, passengers, or the environment.	Checking long-range forecast data to make long-term plans for my business	Distributing weather information to others via a newsletter, report, or other channels for work	Advising others on weather conditions for work	Checking the weather to make short-term decisions for work
Personal comfort	47%	45%	49%	34%	61%
Personal safety	54%	49%	57%	41%	34%
Planning for my hobbies	18%	21%	31%	6%	10%
Planning for travel in Australia	15%	24%	33%	8%	7%
Planning for events	34%	37%	27%	27%	24%
Keeping others safe	44%	35%	37%	38%	19%
Taking care of my business	29%	33%	22%	19%	12%
Curiosity or learning	9%	4%	16%	7%	3%
Long term planning	14%	23%	14%	9%	3%
Sharing information with others	31%	17%	22%	32%	9%
Advising others on weather conditions and how to respond	17%	7%	12%	14%	7%

Thank you.



Australian Government
Bureau of Meteorology

USER EXPERIENCE (UX) DESIGN PROJECT
ROBUST CHANNELS DELIVERY STREAM



Deloitte.
Digital



Accessibility review of Drupal Content Management System

Report created for **The Bureau of Meteorology** by
Intopia

10 June 2022

creating an inclusive digital world
intopia.digital



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Executive Summary

Introduction

The Bureau of Meteorology engaged Intopia to conduct an independent accessibility review of select features on the Drupal CMS. Accessibility is the extent to which a site or app is accessible to as many people as possible.

Expert accessibility testers reviewed select pages and features of the Drupal CMS against the Authoring Tool Accessibility Guidelines (ATAG) 2.0 Level A and AA from 16 MAY - 26 MAY 2022.

How you went

The Drupal CMS tested moderately well for accessibility and is a credit to The Bureau of Meteorology's time and effort towards making the site accessible.

Only a small number of accessibility issues were identified. Most of the ATAG success criteria were satisfied, with a moderate number of success criteria identified as 'not applicable' as the functionality and features did not exist in the CMS.

What you're doing well

- **The CMS emphasises creating accessible content by ensuring accessibility features are prominent.** When authors use the CMS tool, some accessibility features are enforced, which minimises the possibility of authors creating inaccessible content. For example, images cannot be added to the media library without alternative text being assigned to the image. Similarly, videos cannot be added to the media library without being accompanied with a transcript.
- **The CMS UI is mostly customisable.** The CMS tool does not allow for personalisation of settings. However, the CMS tool does respect a user's personalisation on the UI without impacting the design of the published content. For example, authors can:
 - Use the CMS tool with Windows High Contrast Mode (WHCM) is activated
 - Increase text spacing of the CMS tool
 - Zoom the CMS tool without functionality breaking

Your most critical issues

- **The CMS does not meet WCAG 2.0 success criteria.** On all pages tested, the CMS tool did not satisfy the web-based accessible success criteria. Common accessibility issues identified were:
 - Colour contrast requirements of text were not met
 - Focus indicators were not always clearly visible
 - Tables were used for layout purposes
 - Tables were nested within each other

- o Not all interactive elements were keyboard accessible

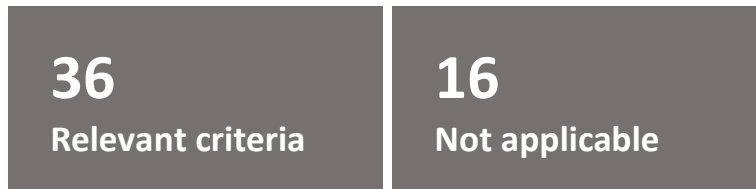
If possible, it is strongly recommended to conduct a WCAG audit to identify where WCAG related accessibility issues are. If this is not possible, then consider using an automated testing tool to begin identifying some of the WCAG issues of the CMS.

- **The CMS does not support full keyboard access.** Not all aspects of the CMS tool are compatible with a keyboard only or similar input device. Users that rely on the keyboard alone will not be able to navigate and operate the CMS tool easily. For example, in the Rich Text Editor, the formatting shortcuts are not accessible with a keyboard. Users can rely on keyboard shortcuts for formatting, but this relies on authors knowing the relevant keyboard shortcuts.

Summary of results

To assess your conformance against ATAG 2.0, we tested your authoring tool against 52 Success Criteria. To meet ATAG 2.0 Level AA, all Level A and Level AA Success Criteria must pass.

Of these 52 criteria, 16 were not applicable to the Bureau's CMS. This is because the ATAG standard has to cover a wide range of features, many of which are not relevant to a content management system or are not part of the Bureau's chosen feature set.



For the 36 relevant criteria, 41 issues were raised. Multiple items were raised for criteria A.1.1.1 to allow for specific details for each of the templates that were tested.

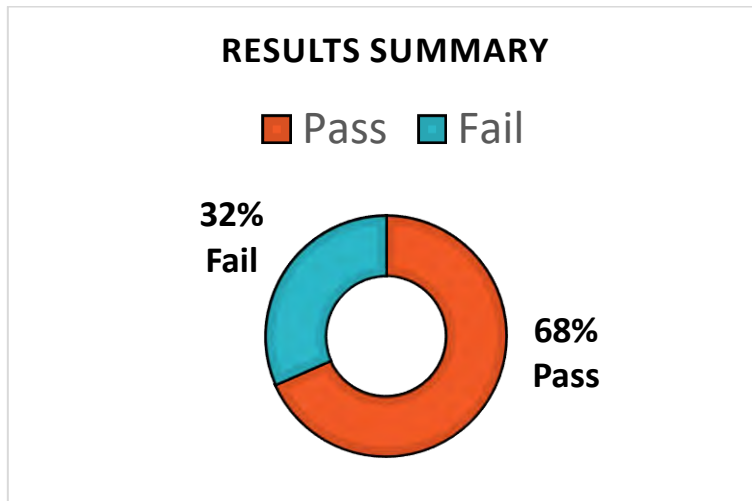
Results by Part

The ATAG standard is divided into two parts. Part A is to determine how accessible the authoring tool is to an author with a disability. Part B is to determine if the authoring tool will allow and support authors to make accessible content with the tool.

Result	Part A	Part B	Total
Satisfied	12	11	23 issues
Partially Satisfied	2	2	4 issues
Not Satisfied	10	4	14 issues
Not Applicable	5	11	16 issues
	29 issues	28 issues	57 issues

Pass and Fail Summary

Any Success Criteria that aren't applicable are considered a pass. Any Success Criteria which are Partially satisfied are considered a failure of that criteria.



Next steps

Accessibility is a journey. Here are a few things to consider as you take your next steps:

- **Fix issues based on recommendations.** We recommend issues with a higher severity are prioritised although all issues should be addressed.
- **Find issues and apply fixes on pages that weren't tested.** Since only a sample of pages were tested, make sure that any issues that were identified are also fixed on pages that weren't tested.
- **Ensure new functionality or content updates maintain accessibility standards.** Accessibility can decay over time if new features or content are not created with accessibility in mind and reviewed over time.
- **Testing with people with disabilities.** According to the Australian Human Rights Commission, "there is no complete substitute for user testing, and designers should, wherever possible, involve users of assistive technology in the testing and evaluation of the accessibility of their websites and web content." Usability testing helps you better understand the real experience of your users by testing it with people with different access requirements who would normally use the site.

Our approach

Methodology

Our testing methodology for ATAG is based on the [Website Accessibility Conformance Evaluation Methodology \(WCAG-EM\) 1.0](#) (W3C Working Group Note 10 July 2014) published by the W3C Web Accessibility Initiative. This document provides guidance on evaluating how well websites conform to WCAG 2, however we have adapted the methodology to suit ATAG.

The process has five sequential steps:

1. Define the evaluation scope
2. Explore the target website
3. Select a representative sample
4. Audit the selected sample
5. Report the findings

Scope

The accessibility review of the Drupal CMS was performed against ATAG 2.0 Level A and AA between 16 MAY - 26 MAY 2022.

The review was performed on a representative sample of the Drupal CMS on the staging site ([drupal.preprod.digital.internal](#)).

The findings and recommendations in this document are correct at the time of publication and:

- do not include any other templates or pages outside the scope of testing
- do not cover any updates or maintenance that have been or will be performed on the site since testing
- are according to our interpretation of ATAG 2.0

Pages or views tested

The following pages or views were tested against ATAG 2.0 Level A and AA. These pages form a representative sample of different pages and states, content types such as text, images, tables and multimedia and types of web technologies. It also includes pages or views that are necessary to complete a task, such as registering for an account, buying a product, or completing a form.

- Advanced template
- Section template
- Glossary taxonomy list
- Glossary taxonomy list (edit mode)
- Glossary taxonomy list (preview mode)

- Content management area
- Feature news block configuration

Technologies relied upon for conformance

ATAG 2.0 requires that utilised technologies are supported by users' assistive technologies (e.g. screen readers, screen magnifiers, speech recognition software) as well as the accessibility features in browsers.

The following technologies are relied upon and must be turned on and/or supported for this product to conform with ATAG 2.0:

- HTML
- CSS
- WAI-ARIA
- JavaScript
- DOM

Software tested on

The following assistive technologies, web browsers and user agents were used during testing:

- NVDA 2021.3.1/Chrome 101.0.4951.54 on PC running Windows 10

The assistive technologies are installed and used with default settings unless noted.

Tools used during testing

The following web accessibility evaluation tools were used to support manual (human) evaluation of accessibility requirements:

- Colour contrast analyser
- [ARC toolkit](#)
- [Accessibility insights for web](#)
- Web developer toolbar

What accessibility conformance means

While the sampled pages may have passed the ATAG 2.0 Success Criteria for the relevant conformance level, please note that this is not a guarantee that the site is accessible to everyone.

The Australian Human Rights Commission states that "compliance with WCAG 2 is strongly recommended, but will not, of itself, always guarantee equal access to the web and the fulfilment of obligations under the DDA [Disability Discrimination Act] and the Convention [Convention on the Rights of Persons with Disabilities]."

This is due to the nature of disabilities where access requirements exist on a very broad spectrum and where, sometimes, there are conflicting access needs between different groups of people.

Accessibility is good usability for everyone. And just like usability cannot be completely understood through a review against a list of requirements or heuristics, accessibility also cannot be completely understood by a review against WCAG 2.0 or 2.1 or ATAG 2.0.

The Australian Human Rights Commission also states "there is no complete substitute for user testing, and designers should, wherever possible, involve users of assistive technology in the testing and evaluation of the accessibility of their websites and web content."

Summary of findings

Site-wide ATAG conformance by Success Criteria

Any Success Criteria that aren't applicable are considered Satisfied. Any Success Criteria which are Partially satisfied are considered a failure of that criteria. If a Success Criterion fails on any page, even once, it has been recorded as a Not satisfied in the tables below.

Success Criteria	Level	Results
A.1.1.1 Web-Based Accessible	WCAG	Not satisfied
A.1.2.1 Accessibility Guidelines	A	Not applicable
A.1.2.2 Platform Accessibility Services	A	Not applicable
A.2.1.1 Text Alternatives for Rendered Non-Text Content	A	Satisfied
A.2.1.2 Alternatives for Rendered Time-Based Media	A	Satisfied
A.2.2.1 Editing-View Status Indicators	A	Partially satisfied
A.2.2.2 Access to Rendered Text Properties	AA	Satisfied
A.3.1.1 Keyboard Access (Minimum)	A	Not satisfied
A.3.1.2 No Keyboard Traps	A	Satisfied
A.3.1.3 Efficient Keyboard Access	AA	Satisfied
A.3.2.1 Auto-Save (Minimum)	A	Not satisfied
A.3.2.2 Timing Adjustable	A	Satisfied
A.3.2.3 Static Input Components	A	Satisfied
A.3.3.1 Static View Option	A	Satisfied
A.3.4.1 Navigate By Structure	AA	Satisfied
A.3.5.1 Text Search	AA	Not applicable

A.3.6.1 Independence of Display	A	Satisfied
A.3.6.2 Save Settings	AA	Not applicable
A.3.6.3 Apply Platform Settings	AA	Satisfied
A.3.7.1 Preview (Minimum)	A	Satisfied
A.4.1.1 Content Changes Reversible (Minimum)	A	Partially satisfied
A.4.1.2 Settings Change Confirmation	A	Not Applicable
A.4.2.1 Describe Accessibility Features	A	Not satisfied
A.4.2.2 Document All Features	AA	Not satisfied
B.1.1.1 Content Auto-Generation After Authoring Sessions	WCAG	Not applicable
B.1.1.2 Content Auto-Generation During Authoring Sessions	WCAG	Not applicable
B.1.2.1 Restructuring and Recoding Transformations	WCAG	Not applicable
B.1.2.2 Copy-Paste Inside Authoring Tool	WCAG	Not satisfied
B.1.2.3 Optimizations Preserve Accessibility	A	Not applicable
B.1.2.4 Text Alternatives for Non-Text Content are Preserved	A	Not applicable
B.2.1.1 Accessible Content Possible	WCAG	Satisfied
B.2.2.1 Accessible Option Prominence	WCAG	Satisfied
B.2.2.2 Setting Accessibility Properties	WCAG	Satisfied
B.2.3.1 Alternative Content is Editable	WCAG	Satisfied
B.2.3.2 Automating Repair of Text Alternatives	A	Not applicable
B.2.4.1 Accessible Template Options	WCAG	Not applicable
B.2.4.2 Identify Template Accessibility	AA	Not applicable

B.2.4.3 Author-Created Templates	AA	Not applicable
B.2.5.1 Accessible Pre-Authored Content Options	AA	Satisfied
B.2.5.2 Identify Pre-Authored Content Accessibility	AA	Not satisfied
B.3.1.1 Checking Assistance	WCAG	Satisfied
B.3.1.2 Help Authors Decide	A	Not satisfied
B.3.1.3 Help Authors Locate	A	Not satisfied
B.3.1.4 Status Report	AA	Not applicable
B.3.1.5 Programmatic Association of Results	AA	Not applicable
B.3.2.1 Repair Assistance	WCAG	Satisfied
B.4.1.1 Features Active by Default	A	Satisfied
B.4.1.2 Option to Reactivate Features	A	Satisfied
B.4.1.3 Feature Deactivation Warning	AA	Satisfied
B.4.1.4 Feature Prominence	AA	Satisfied
B.4.2.1 Model Practice	WCAG	Partially satisfied
B.4.2.2 Feature Instructions	A	Partially satisfied

Findings and recommendations

Understanding your findings and recommendations

Result definitions

Each issue raised is given a result. We include an issue for each Satisfied criterion so that clients can better understand the features which are providing accessibility support in the product. We also include an issue for the Not Applicable criterion so that clients can discover potential ways to improve their product in the future if new features are added.

Result	Description
Satisfied	The product has a reliable method of meeting the criterion, without any known defects.
Partially satisfied	The product has a method for meeting this criterion, but that method does not meet accessibility best practice or will present problems for some users.
Not Satisfied	The product does not have a way of meeting this criterion.
Not applicable	The criterion is not directly relevant to this product.

Issue severity rating key

Each issue is given a severity rating which estimates the impact the issue will have on affected users. The severity rating can help you to prioritise issues based on user impact.

Severity	Description
Critical	A critical issue that will stop a user from accessing content or completing a task. In addition, and in line with WCAG 2.0 or 2.1 Conformance Requirement 5: Non-Interference, any content that fails the following Success Criteria is considered critical because failure to meet them may interfere with any use of the page. • 1.4.2 – Audio Control • 2.1.2 – No Keyboard Trap • 2.3.1 – Three Flashes or Below Threshold • 2.2.2 – Pause, Stop, Hide
High	A high priority issue that is likely to cause serious problems or major inconvenience to users.
Medium	Medium priority issue that is likely to cause problems or frustrations for users.
Low	Low priority issue that is likely to be an inconvenience or irritation to users.

Our expert testers find issues that are best practice but have a medium – high severity rating. Just because an issue is not a direct failure of ATAG 2.0 doesn't mean it is not going to impact users.

We recommend that all issues are carefully reviewed and the impact to the user considered irrespective of whether it is an ATAG failure or best practice.

Part A: Make the authoring tool user interface accessible

A.1.1.1 Web-based accessible (Advanced template)

Not satisfied

Severity	High
Level	WCAG A and AA
Guideline	A.1.1 Ensure that web-based functionality is accessible
Principle	A.1 Authoring tool user interfaces follow applicable accessibility guidelines
Location	Advanced template

The CMS does not conform to WCAG 2.1. Observations include:

- The keyboard focus indicator is not consistent throughout Drupal, and it does not always meet minimum contrast requirements (3:1)
 - Sometimes, colour alone is used to indicate when an element has keyboard focus
- Some text does not meet minimum contrast requirements
 - Item count of the component;
 - **Foreground:** #787878
 - **Background:** #FFFFFF
 - **Expected ratio:** 4.5:1
 - **Actual ratio:** 4.4:1
 - Content summary of component;
 - **Foreground:** #777777
 - **Background:** #FFFFFF
 - **Expected ratio:** 4.5:1
 - **Actual ratio:** 4.47:1
- The content areas of Drupal (Main content area, Location content area, Curated content area Content bottom area and Cards content area) are marked up as tables; when they should be composed of headings, static text, links and buttons with states and properties.
- The Rich Text Editor (RTE) is not keyboard accessible; users can only tab into the edit boxes themselves, they are unable to activate the editing elements. Some editing elements can only be accessed by keyboard shortcuts. (e.g., 'Bold' as Ctrl+B)

- 'Topics' tag component, Content category component and Content format component do not have an accessible name

Please note: For colour contrast issues with an actual ratio of 4.47:1, it is acknowledged that it is only minimally below the minimum contrast ratio of 4.5:1. The issue has been captured for thoroughness, as the issue will be identified by automated accessibility testing tools.

If the user interface is not accessible then people with disabilities may find it difficult or impossible to create, edit and manage content.

- Focus indicators that do not meet minimum contrast requirements may cause users with low vision or colour blindness to lose track of where they are when they navigate the site with a keyboard.
- When colour is used to indicate a change in state, users with low vision or colour perception issues may not see the change in colour as the element receives focus. It will be unclear where the focus is currently located.
- When the contrast between text and background is low, it can impact users with low vision to perceive information.
- A screen reader relies on tables being marked up correctly to be able to provide useful information to the user about their location within the table. When tables are used for layout styling, it is confusing for users of screen reader technology to understand and perceive the information.
 - Furthermore, nested data tables are difficult for users of screen reader technology to understand. Screen reader software announces the row and column information for each cell, so complex table structures can be repetitive and ambiguous.
- All functionality must be operable using only a keyboard. Some users can only interact with their devices using a keyboard or similar input mechanism.

Our recommendation

Ensure the UI of the CMS meets WCAG 2.1 compliance.

- Consider running an automated accessibility tool over Drupal to identify some of the WCAG 2.1 accessibility issues
- If possible, complete a full WCAG 2.1 audit of Drupal to identify WCAG 2.1 accessibility issues not identified by automated testing
- Review the colour palette of the CMS and check if a more accessible theme can be installed. Text must have a contrast of at least 4.5:1 against the background, and non-text content (e.g., focus indicators, input borders) must have a contrast of at least 3:1

- Remove the table structure from content that is not a data table; change the table layout to a modern CSS layout and provide structure through heading and list mark up
- Ensure all interactive elements are keyboard accessible and have a visible focus indicator

Figure 1: Focus indicator does not meet minimum requirements



Figure 2: Tables are nested within each other

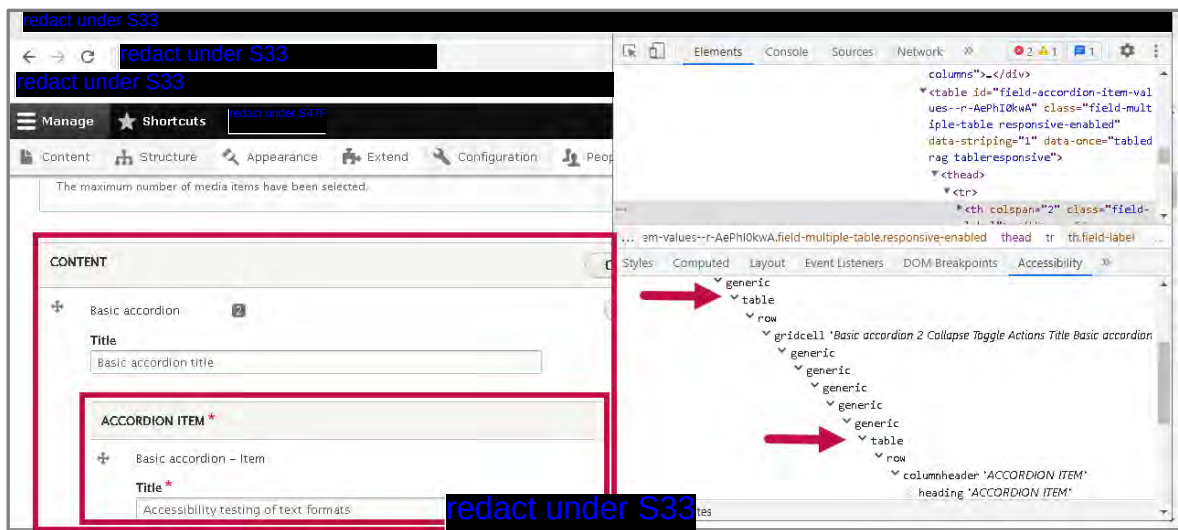


Figure 3: Rich Text Editor (RTE) is not keyboard accessible

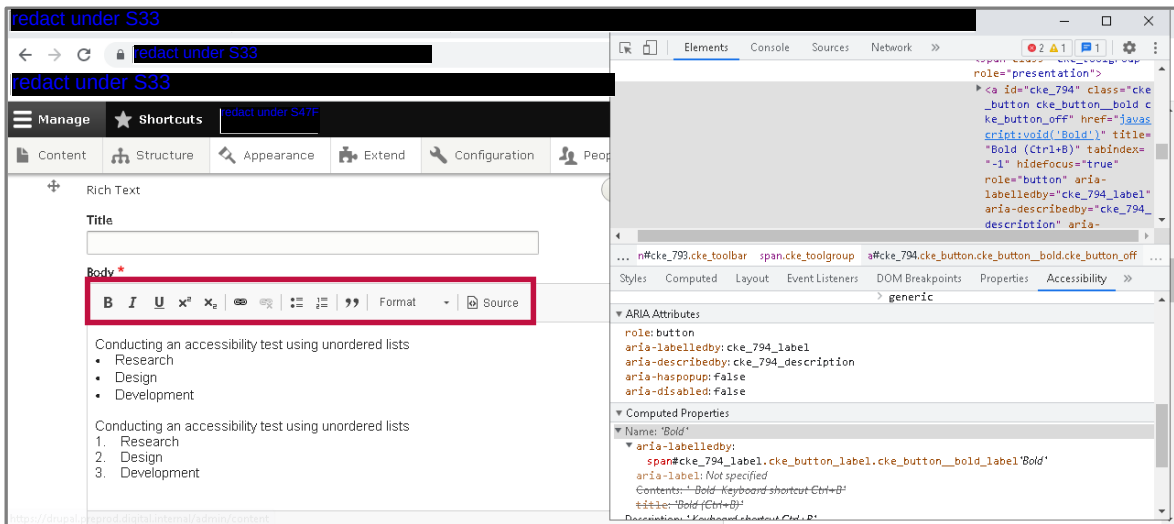
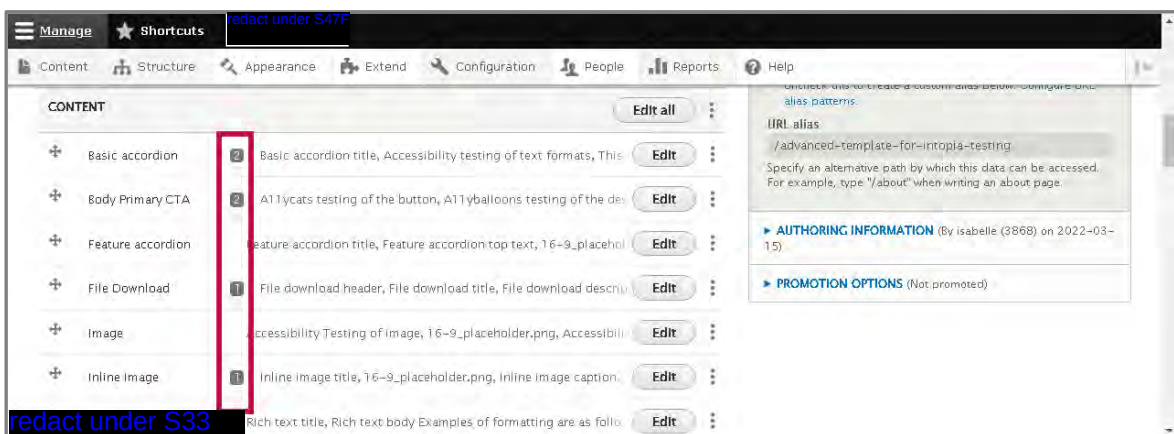


Figure 4: Item count of components do not meet minimum contrast requirements



A.1.1.1 Web-based accessible (Glossary taxonomy list – edit mode)

Not satisfied

Severity High

Level WCAG A and AA

Guideline A.1.1 Ensure that web-based functionality is accessible

Principle A.1 Authoring tool user interfaces follow applicable accessibility guidelines

Location Glossary taxonomy list (edit mode)

The 'Edit term' page of the CMS does not conform to WCAG 2.1.

- The keyboard focus indicator is not consistent throughout the CMS, and it does not always meet minimum contrast requirements (3:1)
 - Sometimes, colour alone is used to indicate when an element has keyboard focus (delete button)

- Glossary is marked up as a table
- The Rich Text Editor (RTE) is not keyboard accessible; users can only tab into the edit boxes themselves, they are unable to activate the editing elements. Some editing elements can only be accessed by keyboard shortcuts. (e.g., 'Bold' as CTRL)
- The current value of the 'Parent 'terms' is not programmatically determinable. (Located within the 'Relations' accordion)

If the user interface is not accessible then people with disabilities may find it difficult and/or impossible to create, edit and manage content.

- Focus indicators that do not meet minimum contrast requirements may cause users with low vision or colour blindness to lose track of where they are when they navigate the site with a keyboard.
- When colour is used to indicate that an item has keyboard focus, users with low vision or colour perception issues may not see the change in colour. It will be unclear where the focus is currently located.
- A screen reader relies on tables being marked up correctly to be able to provide useful information to the user about their location within the table. When tables are used for layout styling, it is confusing for users of screen reader technology to understand and perceive the information.
 - o Furthermore, nested data tables are difficult for users of screen reader technology to understand. Screen reader software announces the row and column information for each cell, so complex table structures can be repetitive and ambiguous.
- When an interactive element's state or current value is not communicated to users of screen readers, the user will not know if they have set the control correctly.

Our recommendation

Ensure the UI of the CMS meets WCAG 2.1 to Level AA.

- Consider running an automated accessibility tool over the CMS to identify some of the WCAG 2.1 accessibility issues
- If possible, complete a full WCAG 2.1 audit of Drupal to identify WCAG 2.1 accessibility issues not identified by automated testing
- Review the colour palette of the CMS and check if a more accessible theme can be installed. Text must have a contrast of at least 4.5:1 against the background, and non-text content (e.g., focus indicators, input borders) must have a contrast of at least 3:1

- Remove the table structure from content that is not a data table; change the table layout to a modern CSS layout and provide structure through heading and list mark up
- Ensure all interactive elements are keyboard accessible, have a visible focus indicator, and when they have a state (selected or unselected), that the state is announced by screen reader technology.
- Ensure keyboard focus is managed to a logical place (the RTE) when the quick edit function is activated

Figure 1: Colour alone used to indicate when 'Delete' button receives keyboard focus.

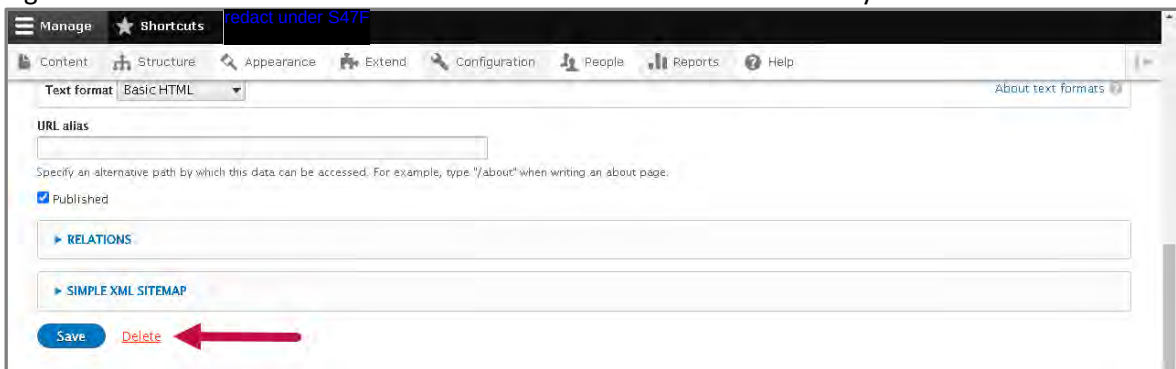


Figure 2: Default state of 'Delete' button

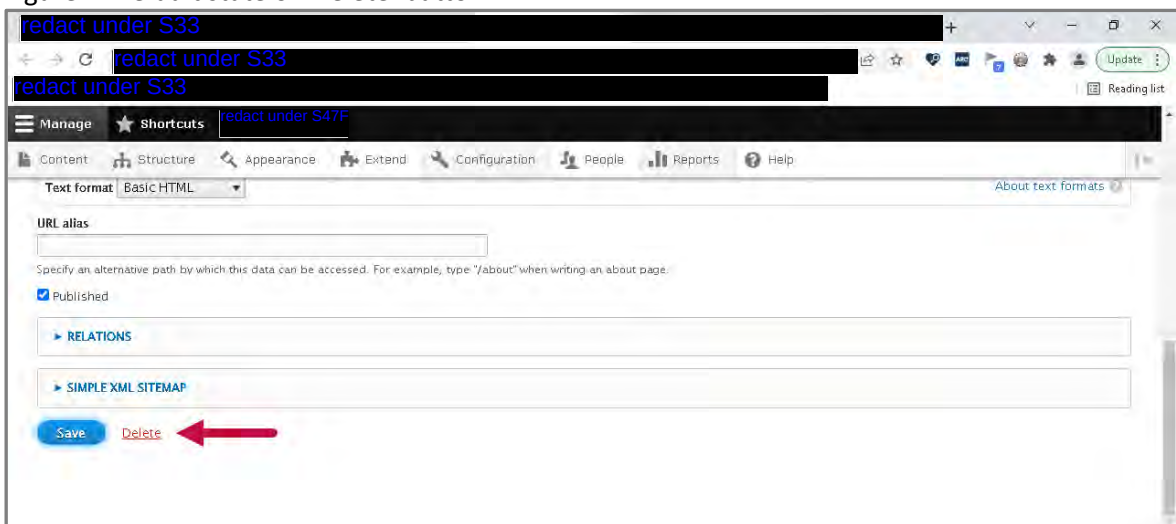
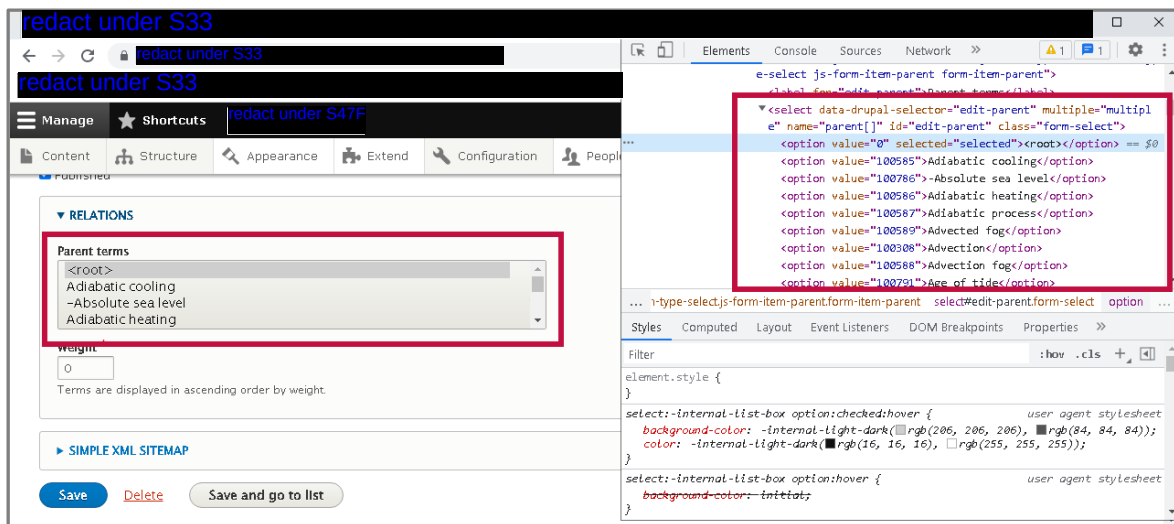


Figure 3: Value of 'Parent terms' is not programmatically determinable



A.1.1.1 Web-based accessible (Glossary taxonomy list – preview mode)

Not satisfied

Severity	High
Level	WCAG A and AA
Guideline	A.1.1 Ensure that web-based functionality is accessible
Principle	A.1 Authoring tool user interfaces follow applicable accessibility guidelines
Location	Glossary taxonomy list (preview mode)

The 'Glossary taxonomy list - preview mode' page of the CMS does not conform to WCAG 2.1.

- The 'quick edit' mode has several keyboard-related problems:
 - o Keyboard users can activate the 'quick edit' mode, but there is no announcement by screen readers that there has been a change.
 - o When the Rich Text Editor (RTE) is opened, focus is not managed to the RTE; keyboard users have to navigate through the whole page in order to reach it
 - o Users cannot close the RTE using the ESC key
 - o Keyboard users cannot operate the styling tools of the RTE
 - o The 'close' button is located at the end of the DOM; keyboard users have to tab through the whole page (past the footer) before they can reach the 'close' button of the 'quick edit' function
 - o Once the 'quick edit' function is closed, keyboard focus is not managed and remains at the bottom of the page, forcing the user to re-navigate the page to find their starting point.

- Functionality breaks when the page is zoomed to 400% - users are unable to activate the 'Close' button of the quick edit function
- Glossary type is marked up as a link, but when activated, triggers a select box component (select component does not have a visible label)
- 'Loading' status message is not announced to assistive technologies

If the user interface is not accessible then people with disabilities may find it difficult and/or impossible to create, edit and manage content.

- Keyboard and screen reader users are likely to become confused, disoriented and frustrated when focus moves to another part of the page unexpectedly, or does not move to a logical place where they expect it to. They will then need to navigate back to the content they were working with, which will be painful or time-consuming for some users.
- When users are unable to zoom the page, it can impact users with low vision, or people with dyslexia who will not be able to use Drupal because functionality breaks when zoom is increased up to 400%
- Users of screen reader technologies will miss out on information when status messages (e.g., "loading") are not announced. When no feedback is received, users may accidentally repeat an action believing that the control has not worked.

Our recommendation

Ensure the UI of this page meets WCAG 2.1 to Level AA.

- Consider running an automated accessibility tool over this page to identify some of the WCAG 2.1 accessibility issues
- If possible, complete a full WCAG 2.1 audit of this page to identify WCAG 2.1 accessibility issues not identified by automated testing
- When a page dynamically updates, ensure keyboard focus is managed to a logical place on the page.
 - When the 'Quick edit' function is triggered, ensure keyboard focus is set to the RTE
 - Ensure interactive elements like the 'Close' button of the 'Quick edit' are placed after the editing section instead of after the entire page content
 - Ensure keyboard focus is sent to a logical place in the page once the 'Quick edit' function is closed (e.g., returns to the glossary item)
- Ensure content can be resized up to 400% when the viewport is set to 1280 x 1024px without any loss of content or functionality

- o Review the CSS for the positioning and size of the content on the page. Content container dimensions should also be declared in relative units (such as ems or rems) so they can stretch and scale along with changes to the layout.
- Ensure status messages like "loading" are announced by assistive technologies by using an ARIA live region.
- Review the RTE options for Drupal to check if a more accessible plugin is available

A.1.1.1 Web-based accessible (Glossary taxonomy list)

Not satisfied

Severity	High
Level	WCAG A and AA
Guideline	A.1.1 Ensure that web-based functionality is accessible
Principle	A.1 Authoring tool user interfaces follow applicable accessibility guidelines
Location	Glossary taxonomy list

The Glossary taxonomy list page in the CMS does not conform to WCAG 2.1. Observations include:

- The keyboard focus indicator is not consistent, and it does not always meet minimum contrast requirements (3:1)
 - o Sometimes, colour alone is used to indicate when an element has keyboard focus. (For example, the drag-and-drop re-ordering feature, the 'list additional actions' button, the active pagination page, the 'Next' and 'Last' pagination elements)
- Some text does not meet minimum
 - o Last item of the global taxonomy list (grey background)
 - **Foreground:** #0074BD
 - **Background:** #EEEEEE
 - **Minimum contrast ratio:** 4.5:1
 - **Actual ratio:** 4.27:1
 - o Current page in pagination, 'Next' and 'Last' items of pagination when receiving keyboard focus
 - **Foreground:** #3395D2
 - **Background:** #FFFFFF

- **Minimum contrast ratio:** 4.5:1
- **Actual ratio:** 3.3:1
- The glossary taxonomy list is marked up as a table

If the user interface is not accessible then people with disabilities may find it difficult or impossible to create, edit and manage content.

- Focus indicators that do not meet minimum contrast requirements may cause users with low vision or colour blindness to lose track of where they are when they navigate the site with a keyboard.
- When colour is used to indicate a change in state, users with low vision or colour perception issues may not see the change in colour as the element receives focus. It will be unclear where the focus is currently located.
- When the contrast between text and background is low, users with low vision will find it difficult to read.
- Screen reader software announces the row and column information of each cell. This is useful for describing the relationship between data points but adds unnecessary information when the table is only being used to create a visual style of layout.
 - Furthermore, nested data tables are difficult for users of screen reader technology to understand. The row and column information for each cell within a parent table cell becomes repetitive and ambiguous.
- All functionality must be operable using only a keyboard. Some users can only interact with their devices using a keyboard or similar input mechanism.

Our recommendation

Ensure the UI of this page meets WCAG 2.1 to Level AA.

- Consider running an automated accessibility tool over this page to identify some of the WCAG 2.1 accessibility issues
- If possible, complete a full WCAG 2.1 audit of this page to identify WCAG 2.1 accessibility issues not identified by automated testing
- Review the colour palette of Drupal and check if a more accessible theme can be installed. Text must have a contrast of at least 4.5:1 against the background, and non-text content (e.g., focus indicators, input borders) have a contrast of at least 3:1
- Remove the table structure from content that is not a data table; change the table layout to a modern CSS layout and provide structure through heading and list mark up

Figure 1: Text does not meet minimum contrast requirements.



Figure 2: Glossary taxonomy list is marked up as a table.

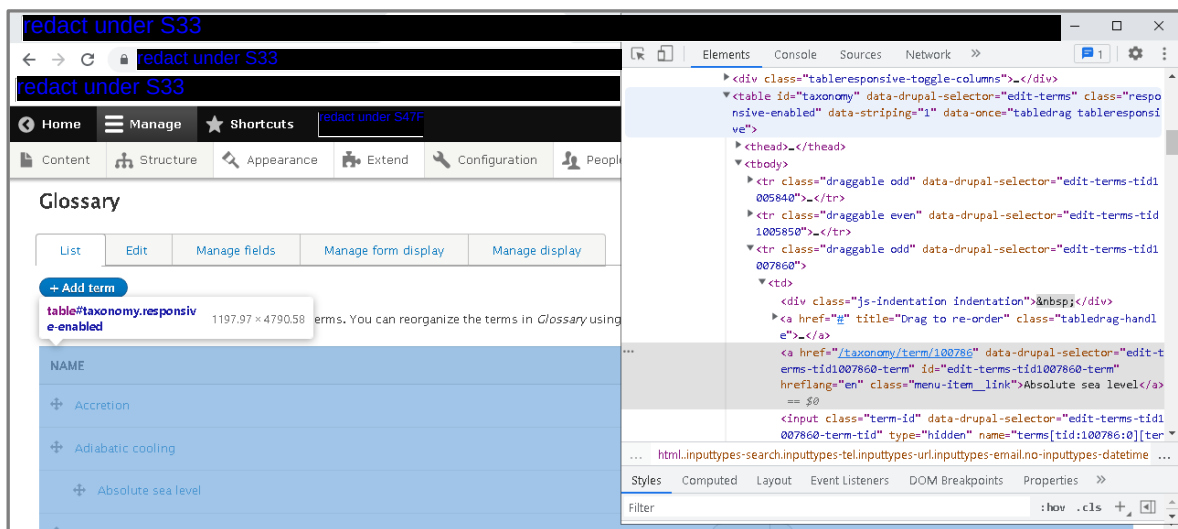
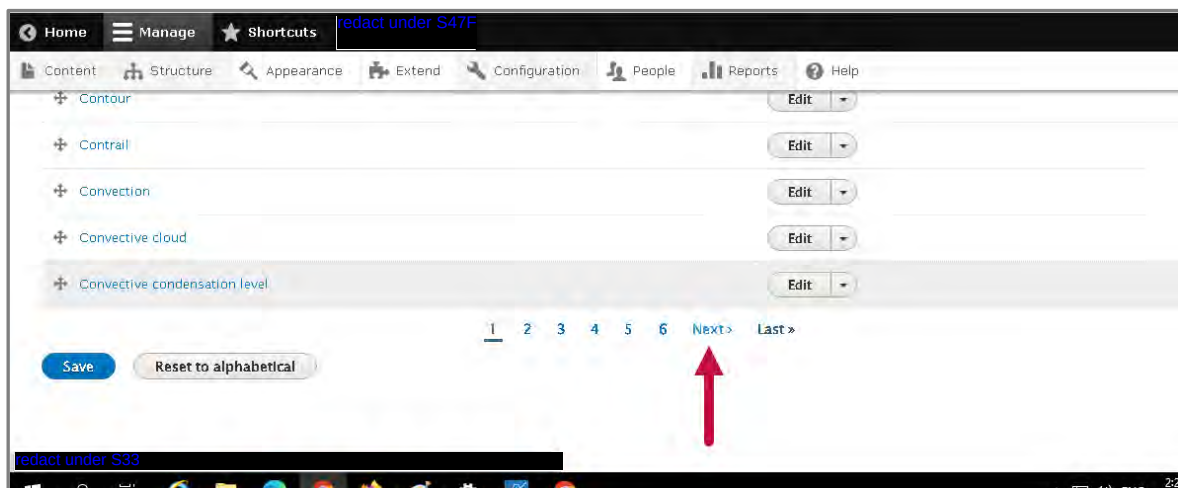


Figure 3: Focus indicator of the pagination element relies on colour alone



A.1.1.1 Web-based accessible (Feature news block configuration)

Not satisfied

Severity	High
Level	WCAG A and AA
Guideline	A.1.1 Ensure that web-based functionality is accessible
Principle	A.1 Authoring tool user interfaces follow applicable accessibility guidelines
Location	Feature news block configuration

The 'Features news block configuration' page of the CMS does not conform to WCAG 2.1.

- Tables are used for layout purposes and tables are nested within each other. For example, 'News item' is a table nested within 'National news'
- Text of the content summary does not meet minimum contrast requirements
 - o **Foreground:** #777777
 - o **Background:** #FFFFFF
 - o **Expected ratio:** 4.5:1
 - o **Actual ratio:** 4.47:1
- Content tags do not meet minimum contrast requirements
 - o **Foreground:** #787878
 - o **Background:** #FFFFFF
 - o **Expected ratio:** 4.5:1
 - o **Actual ratio:** 4.4:1

Please note: For colour contrast issues with an actual ratio of 4.47:1, it is acknowledged that it is only minimally below the minimum contrast ratio of 4.5:1. The issue has been captured for thoroughness, as the issue will be identified by automated accessibility testing tools.

Additional observations were made that do not relate directly to WCAG success criteria but can still create usability barriers. Intopia usually raises these during WCAG audits.

- The Add a News Link selector does not show options until after the user begins to type
- If the News Link input has text, authors must clear the input field before they can interact with the list of options; this behaviour is not clear

If the user interface is not accessible then people with disabilities may find it difficult and/or impossible to create, edit and manage content.

- Screen reader software announces the row and column information of each cell. This is useful for describing the relationship between data points but adds unnecessary information when the table is only being used to create a visual style of layout.
 - Furthermore, nested data tables are difficult for users of screen reader technology to understand. The row and column information for each cell within a parent table cell becomes repetitive and ambiguous.
- When text does not meet minimum contrast requirements, users with low vision will find it difficult to read
- When the expected behaviour of custom elements is not clear, it can create confusion for users on how to interact with the component, leaving it to trial and error of the user
 - When users resort to trial and error to determine the behaviour of a component, it uses time and energy, which can be particularly challenging for users with disabilities

Our recommendation

Ensure the UI of this page meets WCAG 2.1 to Level AA.

- Consider running an automated accessibility tool over this page to identify some of the WCAG 2.1 accessibility issues
- If possible, complete a full WCAG 2.1 audit of this page to identify WCAG 2.1 accessibility issues not identified by automated testing
- Review the colour palette of Drupal and check if a more accessible theme can be installed. Text must have a contrast of at least 4.5:1 against the background, and non-text content (e.g., focus indicators, input borders) must have a contrast of at least 3:1
- Remove the table structure from content that is not a data table; change the table layout to a modern CSS layout and provide structure through heading and list mark up

Figure 1: Select box can't be triggered when option has been selected.

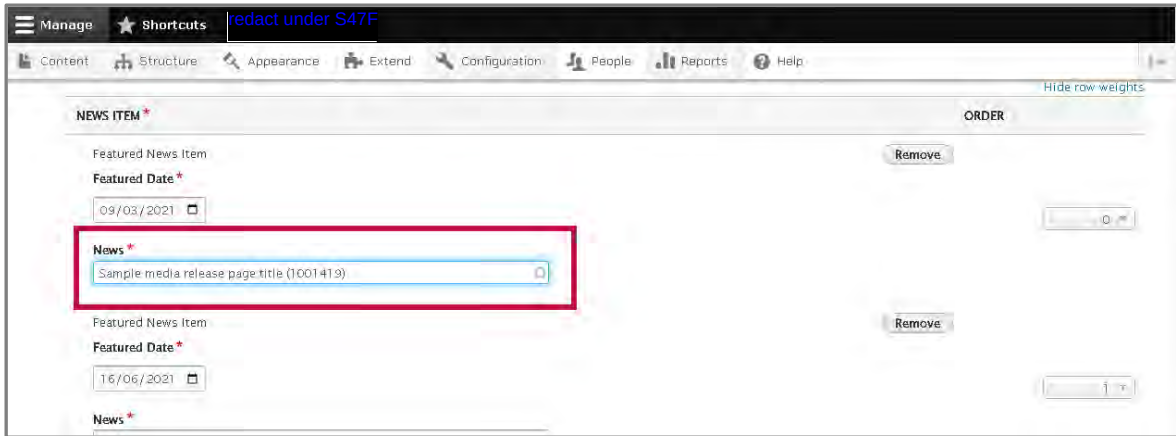


Figure 2: Select box can't be expanded when empty.

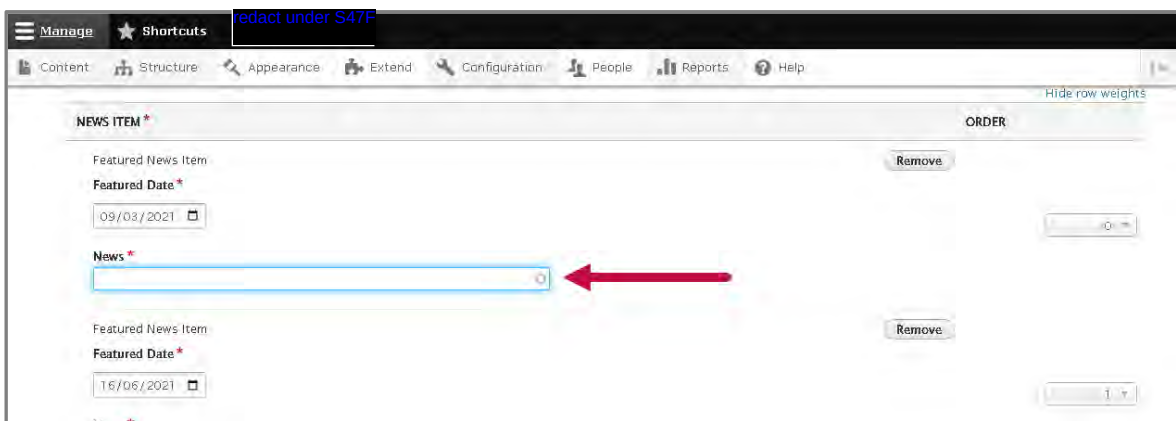


Figure 3: Options of select box can only be triggered when a user starts typing.

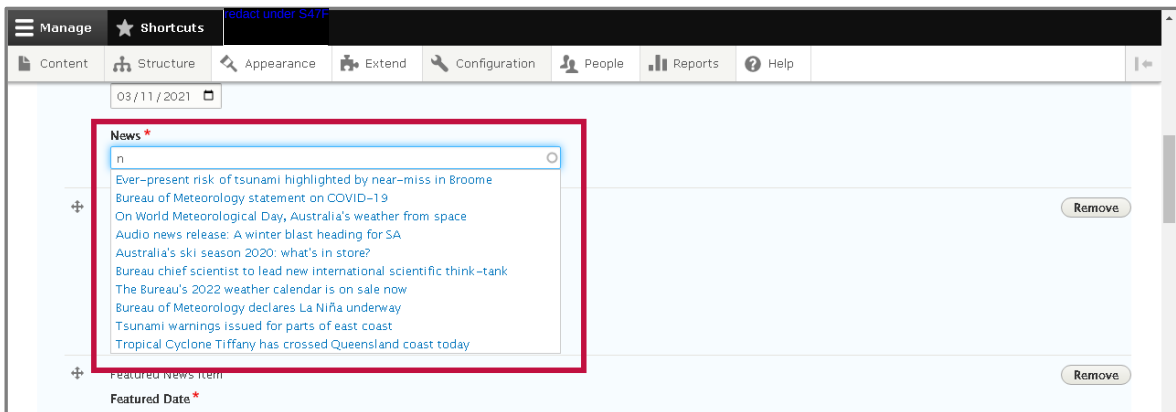


Figure 4: Summary of 'Featured news' text does not meet minimum contrast requirements.

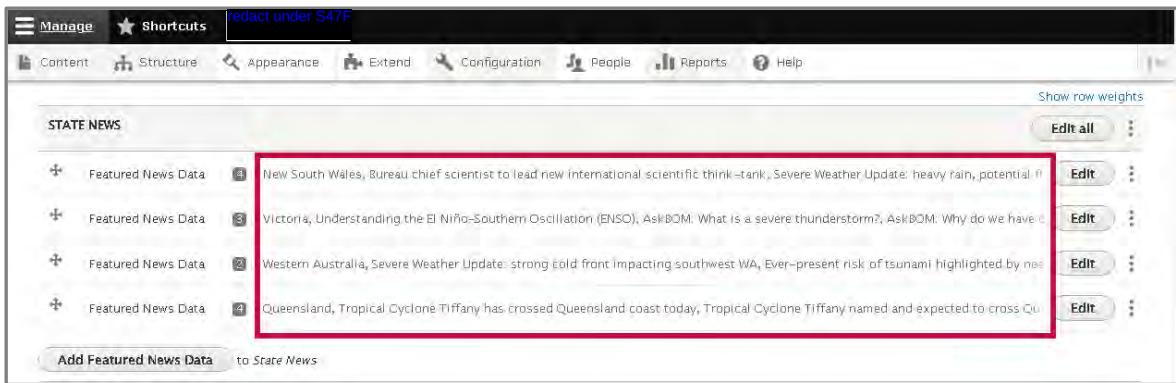


Figure 5: Item count components do not meet minimum contrast requirements.

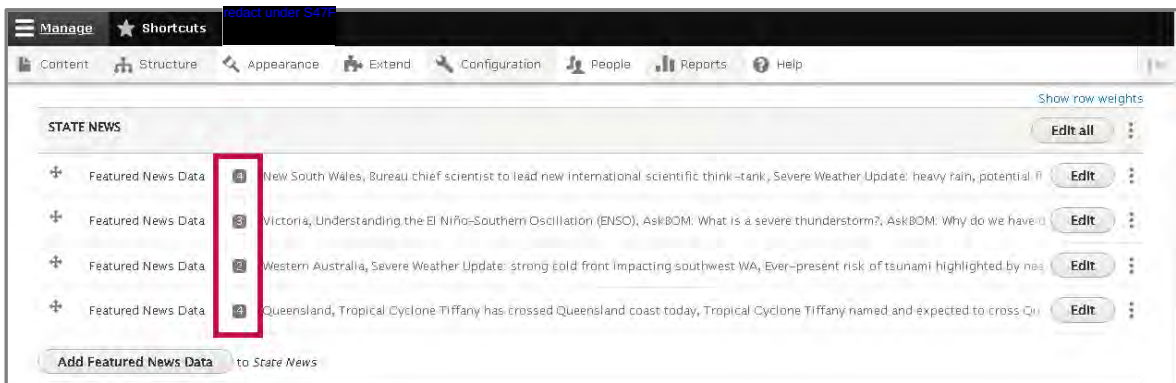
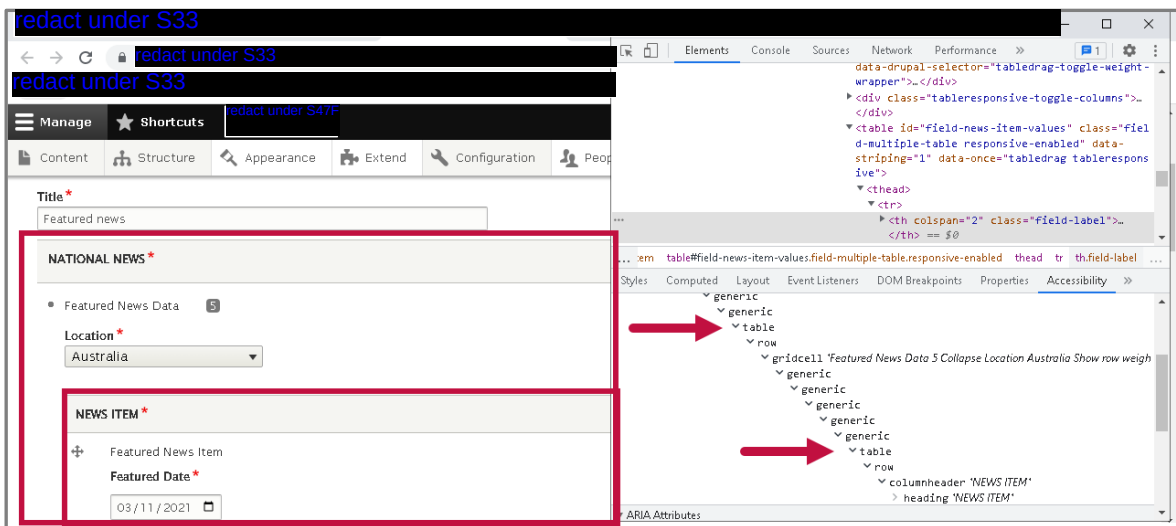


Figure 6: Featured news marked up as nested tables.



A.1.1.1 Web-based accessible (Content management area)

Not satisfied

Severity	High
Level	WCAG A and AA
Guideline	A.1.1 Ensure that web-based functionality is accessible
Principle	A.1 Authoring tool user interfaces follow applicable accessibility guidelines
Location	Content management area

The content management area does not conform to WCAG 2.1. Observations include:

- The keyboard focus indicator is not consistent, and it does not always meet minimum contrast requirements (3:1)
 - Sometimes, colour alone is used to indicate when an element has keyboard focus
 - List additional actions button
 - Current link, Next and Last links of the pagination
- Some text does not meet minimum contrast requirements (unselected tabs)
 - **Foreground text:** #0074BD
 - **Background text:** #F2F2F0
 - **Actual contrast:** 4.42:1
 - **Minimum contrast:** 4.5:1
- The 'Select all rows in this table' checkbox <th> has scope="col" - causing all checkboxes to be announced "Select all rows in this table" and then "update this item checkbox not checked"
- The 'Content type' component does not have an accessible name

If the user interface is not accessible then people with disabilities may find it difficult and/or impossible to create, edit and manage content.

- Focus indicators that do not meet minimum contrast requirements may cause users with low vision or colour blindness to lose track of where they are when they navigate the site with a keyboard
- When colour is used to indicate a change in state, users with low vision or colour perception issues may not see the change in colour as the element receives focus. It will be unclear where the focus is currently located
- When text does not meet minimum contrast requirements, it will be difficult for users with low vision to perceive the text

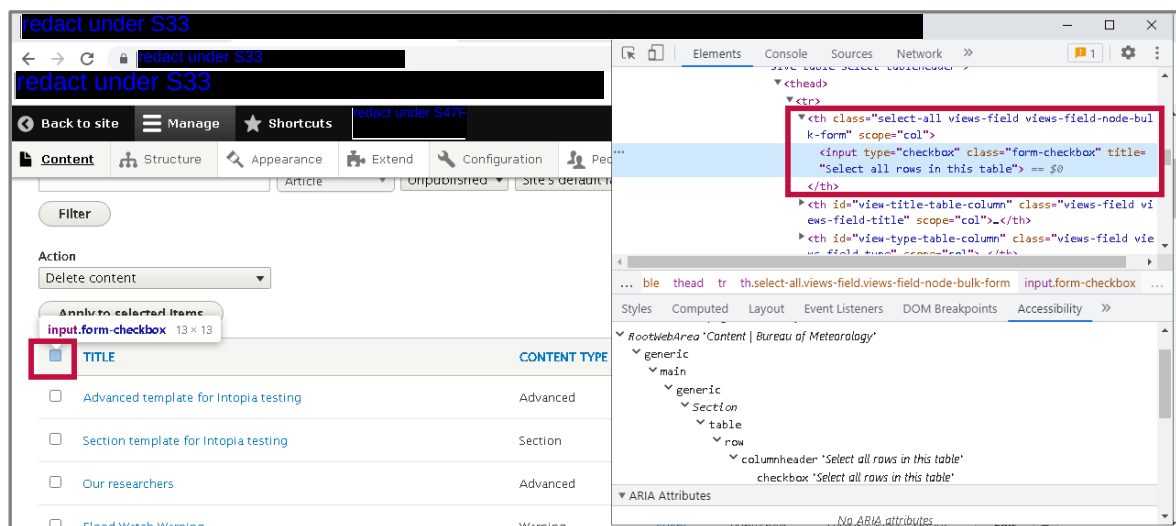
- If a table header has an incorrect name, inaccurate table header information will cascade to all elements within the table header column. Users of screen reader technology will find it challenging to perceive and understand the text

Our recommendation

Ensure the UI of the CMS meets WCAG 2.1 compliance.

- Consider running an automated accessibility tool over Drupal to identify some of the WCAG 2.1 accessibility issues
- If possible, complete a full WCAG 2.1 audit of Drupal to identify WCAG 2.1 accessibility issues not identified by automated testing
- Review the colour palette of the CMS and check if a more accessible theme can be installed. Text must have a contrast of at least 4.5:1 against the background, and non-text content (e.g., focus indicators, input borders) must have a contrast of at least 3:1
- Remove the scope="col" attribute from the 'Select all' checkbox table header

Figure 1: Checkbox has incorrect attribute of scope="col"



A.1.2.1 Accessibility guidelines

Not applicable

Level A

Guideline A.1.2 Ensure that non-web-based functionality is accessible

Principle A.1 Authoring tool user interfaces follow applicable accessibility guidelines

The CMS is a web app, with no software or native app features which depend on a specific developer platform. Therefore it does not need to conform to any platform accessibility guidelines.

Platforms and operating systems have their own accessibility guidelines. Software which runs directly on the platform (rather than through the web) must meet these standards to give users with disabilities a predictable way of using platform accessibility features.

A.1.2.2 Platform accessibility services

Not applicable

Level A

Guideline A.1.2 Ensure that non-web-based functionality is accessible

Principle A.1 Authoring tool user interfaces follow applicable accessibility guidelines

The CMS is a web app, with no software or native app features which depend on a specific developer platform. Therefore it does not need to communicate with any platform accessibility APIs.

Platforms and operating systems have their own accessibility APIs and standards. Software which runs directly on the platform must communicate with the relevant API to be able to support user settings on the device.

A.2.1.1 Text alternatives for rendered non-text content

Satisfied

Level A

Guideline A.2.1 Make alternative content available to authors

Principle A.2 Editing-views are perceivable

The editing view of the CMS uses an `<img>` element to mark up images which have been added to the content. These images have appropriate alt attributes with the text alternatives from the media library.

Code sample

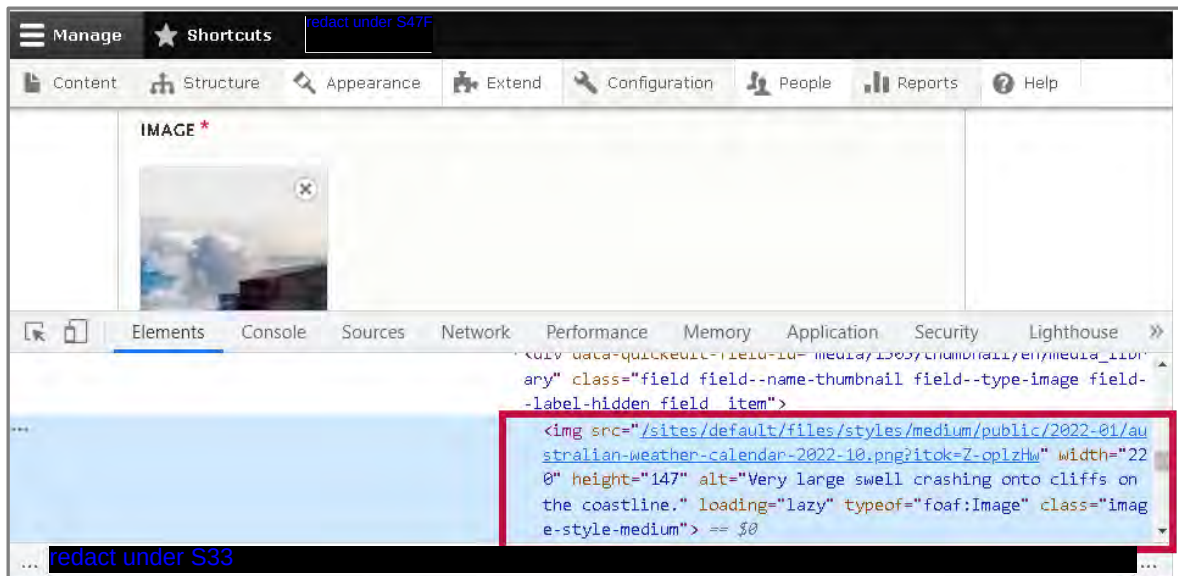
```

```

When the editing view has a text alternative programmatically linked to an image, the accessibility API of the browser can pass on this information to assistive technology.

This means that people with vision impairments who rely on screen reader software will be able to tell which image is in the content.

Figure 1: Thumbnail of image in editing mode with alternative text.



A.2.1.2 Alternatives for rendered time-based media

Satisfied

Level A

Guideline A.2.1 Make alternative content available to authors

Principle A.2 Editing-views are perceivable

Location Advanced template

The editing view of the CMS can contain video and audio content. When video and/or audio content is added to the media library, it is compulsory for authors to add alternatives. Authors can:

1. upload and create alternatives (e.g., transcripts); and
2. preview and edit the alternatives

The CMS makes it compulsory for all authors to meet WCAG 1.2.1 and 1.2.3, which are Level A requirements for content on the web.

Additionally, authors with disabilities who rely on transcripts will be able to confirm that they have chosen the right media from the library.

Figure 1: Transcript is required when uploading video to media library.

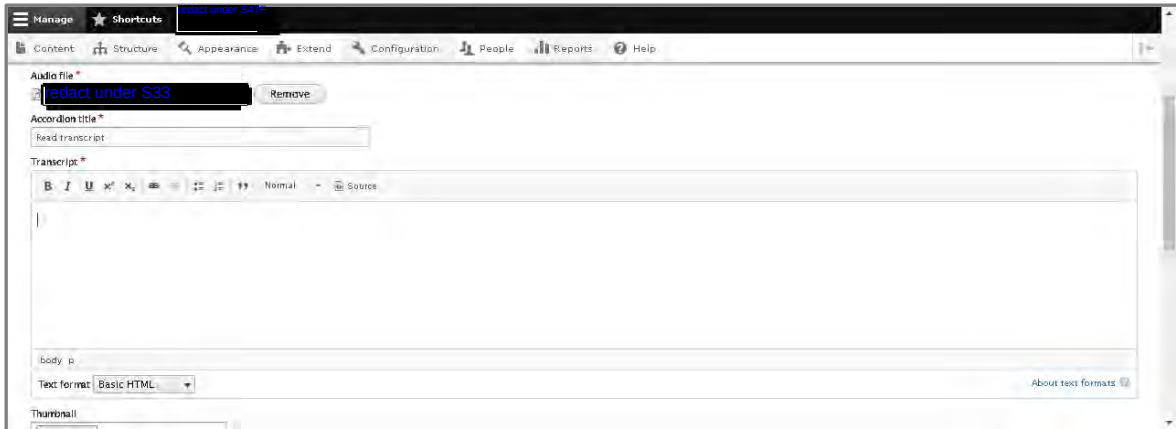


Figure 2: Transcript of video can be edited from the media library

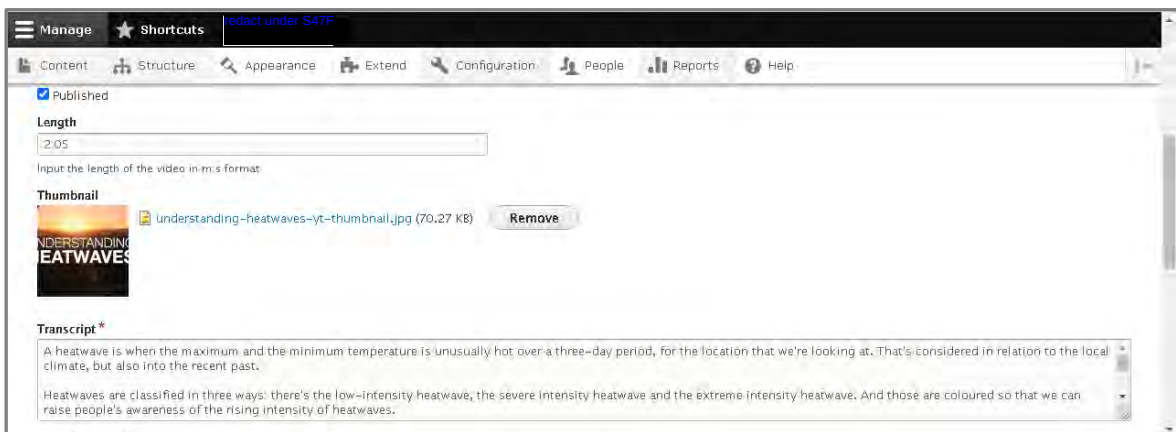
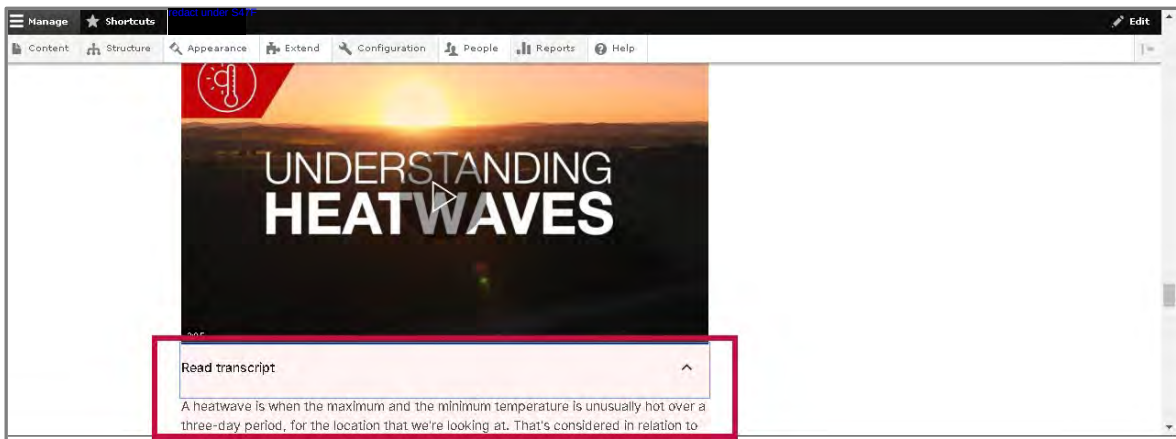


Figure 3: Preview of transcript is available in the preview mode



A.2.2.1 Editing-view status indicators

Partially satisfied

Level	A
Guideline	A.2.2 Ensure that editing-view presentation can be programmatically determined
Principle	A.2 Editing-views are perceivable
Location	Advanced template, Section template

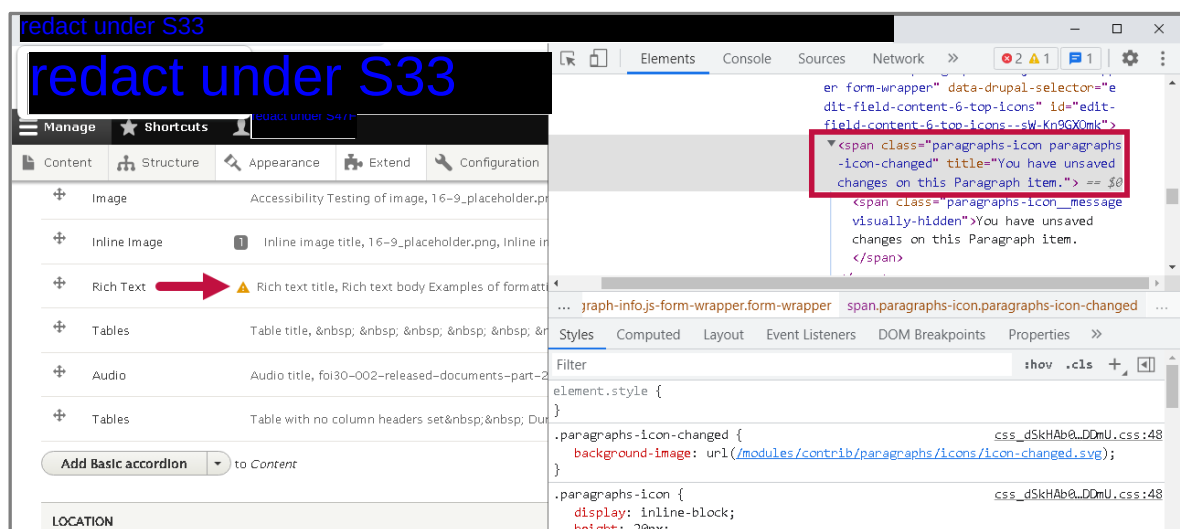
When an author has unsaved changes in the CMS, authors are notified via an icon when the component is collapsed. Live tracking of edits is not available to authors.

All information on a page must be available in a form that can be perceived by all users. All content not saved by the author is lost when an author closes or refreshes the page. It is therefore imperative that unsaved changes (identified by imagery) must be available to all users, including users of assistive technologies like screen readers.

Our recommendation

When all content blocks of the CMS are expanded and edits are being made, there is no indication to authors that there are unsaved changes. Consider adding notifications of unsaved edits to the content blocks when they are expanded, so it is clear to users what content has not yet been saved. This may also act as a reminder for authors to save their work, as there is no auto-save function in Drupal.

Figure 1: Collapse content blocks with icon indicating unsaved changes.



A.2.2.2 Access to rendered text properties

Satisfied

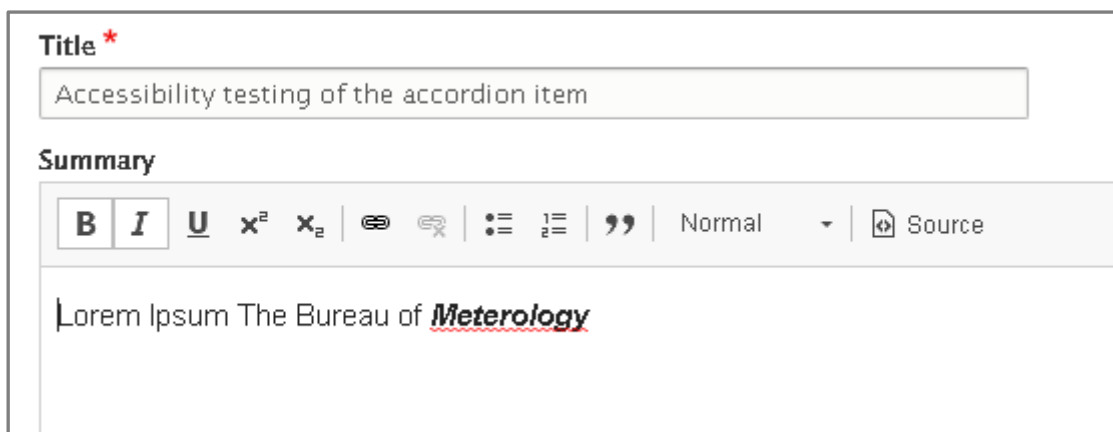
Level	AA
-------	----

Guideline	A.2.2 Ensure that editing-view presentation can be programmatically determined
Principle	A.2 Editing-views are perceivable
Location	Advanced template, Section template

Formatting changes for published pages in the CMS are available in the authoring edit mode. When users increase verbosity of screen reader technology (e.g., NVDA) and choose to be notified of formatting and styling of text, these formatting changes are programmatically available to users of assistive technology.

All information on a page must be available in a form that can be perceived by all users, including authors with disabilities. It is important for authors to have access to the renderings of text, as it acts as a preview of how the content will be presented to users when published.

Figure 1: Rich Text Editor (RTE) with a range of formatted text programmatically available to screen reader users.



A.3.1.1 Keyboard access (Minimum)

Not satisfied

Severity	Critical
Level	A
Guideline	A.3.1 Provide keyboard access to authoring features
Principle	A.3 Editing-views are operable
Location	Rich text editor, Topics component, Content category component,

The following elements are not keyboard accessible:

- Controls of the Rich Text Editor (RTE)
- 'Delete' button of the 'Topics' component
- Options within the 'Content category' component

All functionality must be operable using only a keyboard. Some users can only interact with their devices using a keyboard or similar input mechanism.

Our recommendation

- A

Figure 1: Rich Text Editor (RTE) shortcuts are not keyboard accessible

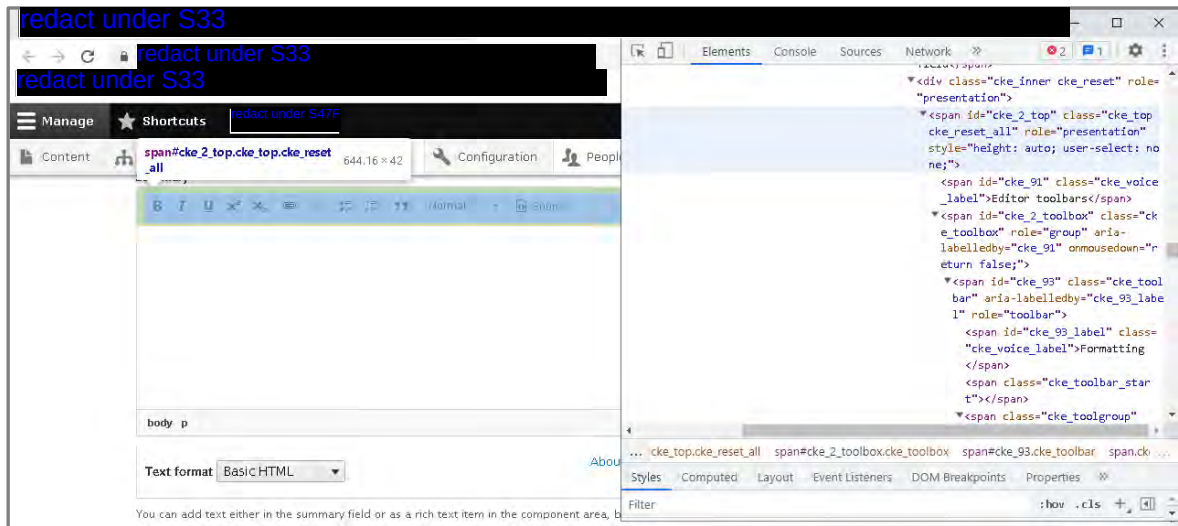


Figure 2: Delete button of each topic is not keyboard accessible

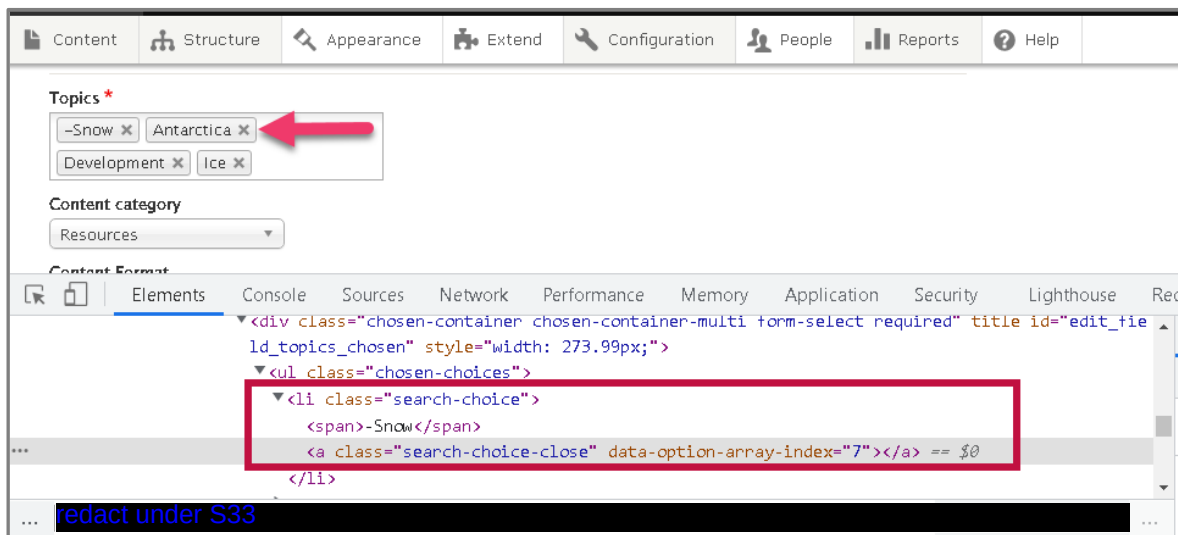
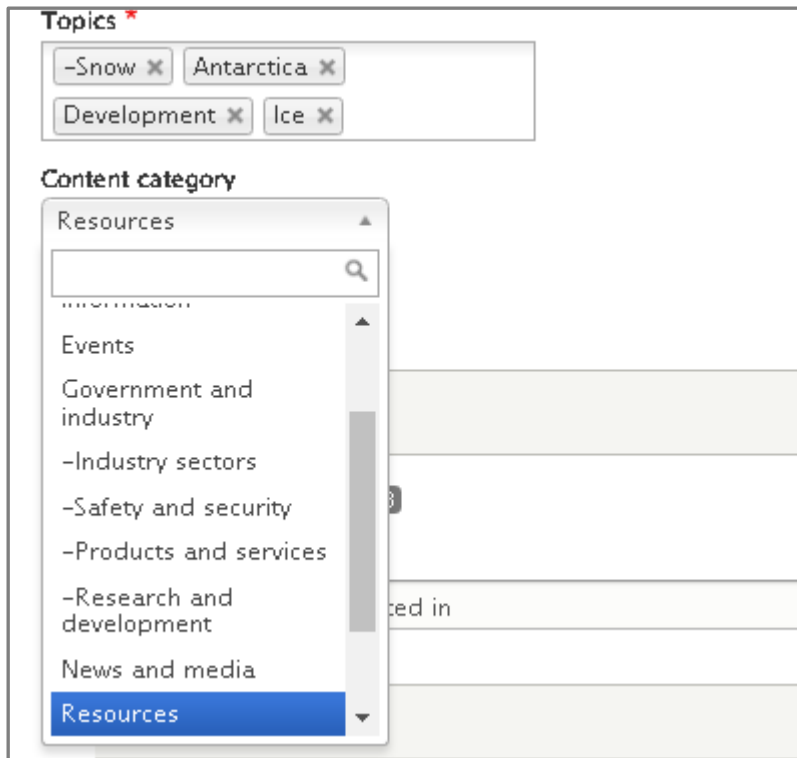


Figure 3: Options within Content category component are not keyboard accessible



A.3.1.2 No keyboard traps

Satisfied

Level A

Guideline A.3.1 Provide keyboard access to authoring features

Principle A.3 Editing-views are operable

The CMS allows users to reach the text input container of the Rich Text Editor (RTE) using a keyboard only. Users can also freely leave the control and the editing-view of the RTE.

Keyboard users will not have to find a way to escape any keyboard traps. This is good because any work not saved in the CMS is lost when a user navigates from the page. A keyboard trap would therefore create a significant barrier to a user of assistive technology from creating content in the CMS. This is because when a keyboard trap occurs, users have no option but to close their current tab, or in some cases restart their browser.

A.3.1.3 Efficient keyboard access

Satisfied

Level AA

Guideline A.3.1 Provide keyboard access to authoring features

Principle A.3 Editing-views are operable

Keyboard and screen reader users have an alternative to standard linear navigation through the CMS via shortcuts, bypass links and UI features.

- Users can quickly navigate to the main content via the 'Skip to main content' link
- Users can navigate more efficiently through the page by collapsing content blocks

It is important to give users who navigate sequentially through a page more direct access to content. In the CMS, users can skip the repeated navigation and jump straight to the main content via the 'skip to main content' link. This is particularly important because at the moment keyboard and screen reader users must navigate through every menu item; as child menu items are triggered as soon as the parent menu items receive keyboard focus.

In addition, allowing users to collapse all content blocks lets users navigate more efficiently through the template, accessing only the content blocks that are relevant to them.

Figure 1: 'Skip to main content' link at the top of Advanced template edit mode.

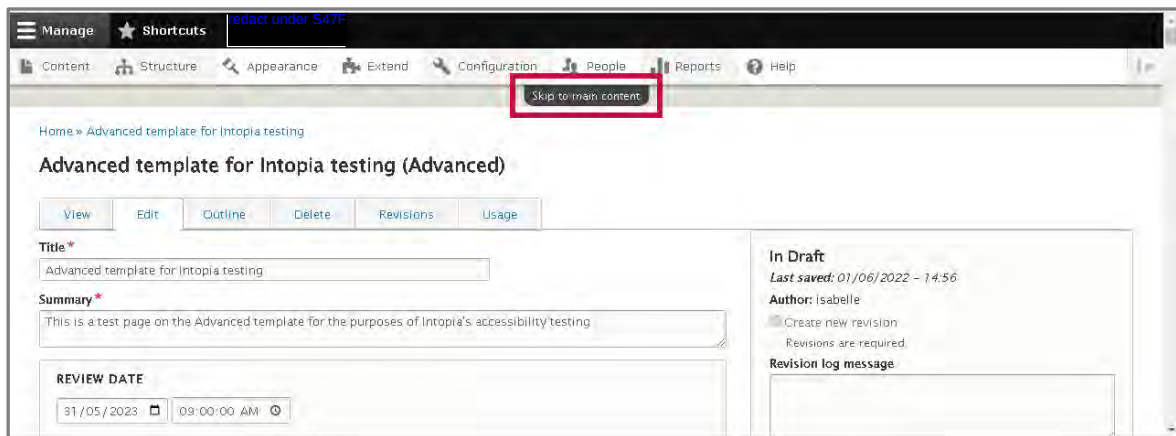


Figure 2: 'Skip to main content' link at the top of Advanced template preview mode.

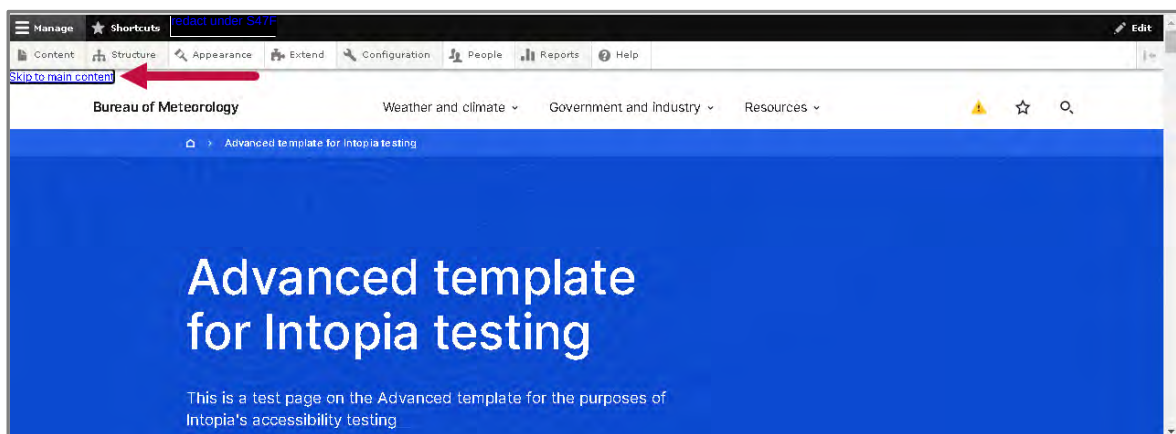
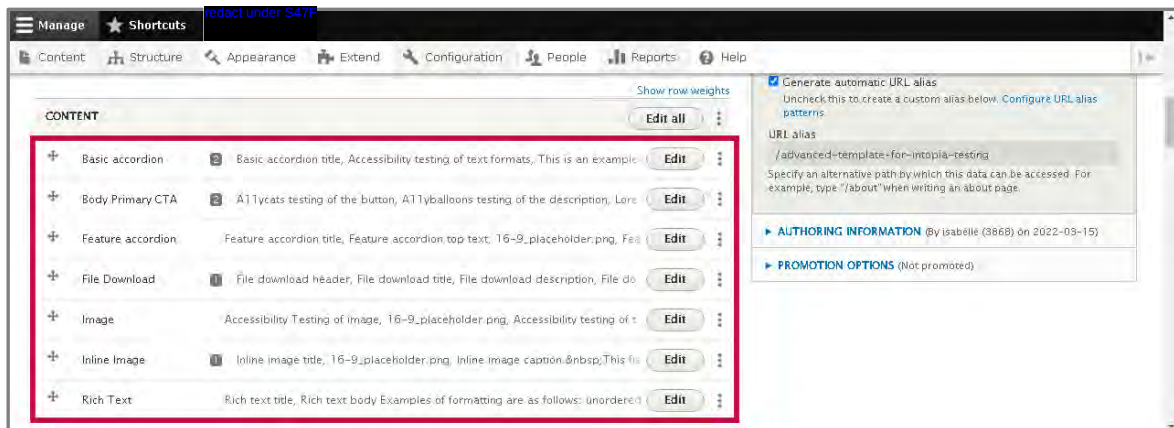


Figure 3: Advanced template collapsed content blocks.



A.3.2.1 Auto-save (Minimum)

Not satisfied

Severity High

Level A

Guideline A.3.2 Provide authors with enough time

Principle A.3 Editing-views are operable

There is no auto-save function in the CMS. Any work not saved is lost when the user moves away from the page, closes the browser, or the session times out (if session limits are set).

Without an auto-save function, any timeouts can lead to authors losing work that has not been saved. Some users with disabilities or who are using assistive technology require more time to perceive information or perform tasks.

Our recommendation

If possible, add an auto-save function to the CMS.

Consider removing the session limits or documenting how authors can ask the CMS administrator to change them, as suggested for criteria A.4.2.1 Describe accessibility features.

A.3.2.2 Timing adjustable

Satisfied

Level A

Guideline A.3.2 Provide authors with enough time

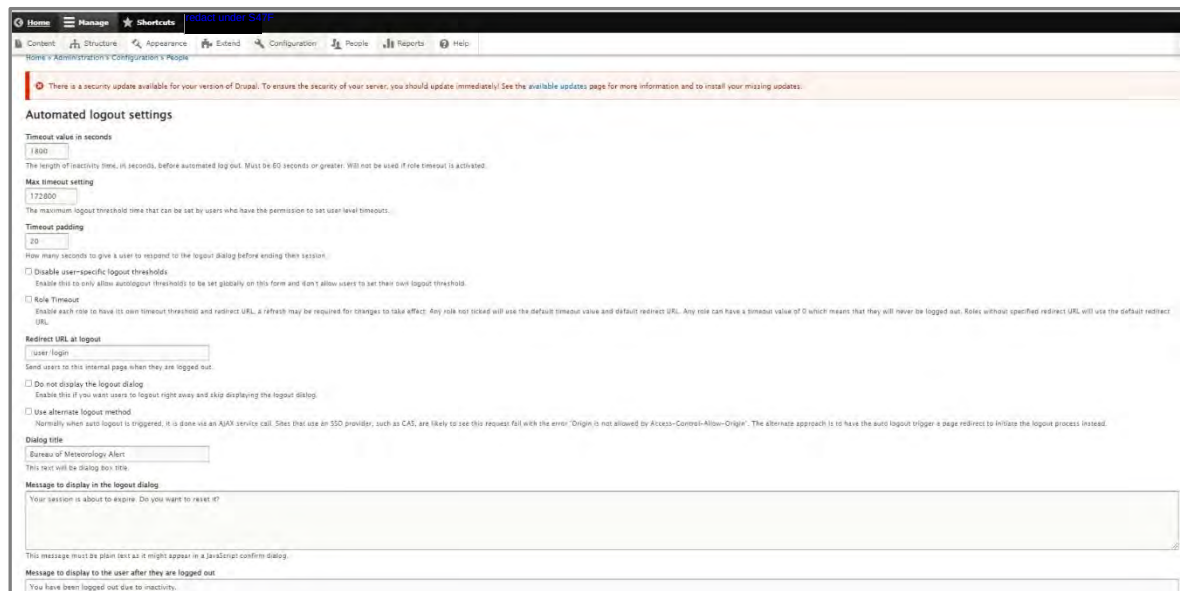
Principle A.3 Editing-views are operable

In the CMS, the time limits can be set and turned off by administrators. The CMS therefore satisfies the following parts of A.3.2.2:

- Turn off: Authors are allowed to turn off the time limit before encountering it
- Adjust: Authors are allowed to adjust the time limit before encountering it

Authors can be given the opportunity to extend or adjust time limits, within reason. Some users with disabilities, or who use assistive technology, require more time to perceive information or perform tasks.

Figure 1: Session time out limits are adjustable



A.3.2.3 Static input components

Satisfied

Level	A
Guideline	A.3.2 Provide authors with enough time
Principle	A.3 Editing-views are operable
Location	Content block, Advanced template

The CMS does not include any moving user interface components, and any moving content can be paused by authors.

For example, when a user adds a video to the page template, the YouTube video thumbnail does not automatically play. A user can play and pause the YouTube thumbnail.

Moving, blinking, or scrolling content can be stopped, paused, or hidden to avoid distracting users during their interaction with the page.

- People with attention conditions will not be distracted by the moving, blinking, or scrolling content before they are able to use the pause or hide controls
- People with severe photosensitivity conditions (such as epilepsy or migraines) will be able to check for blinking or flashing content without having their condition triggered.

A.3.3.1 Static view option

Satisfied

Level A

Guideline A.3.3 Help authors avoid flashing that could cause seizures

Principle A.3 Editing-views are operable

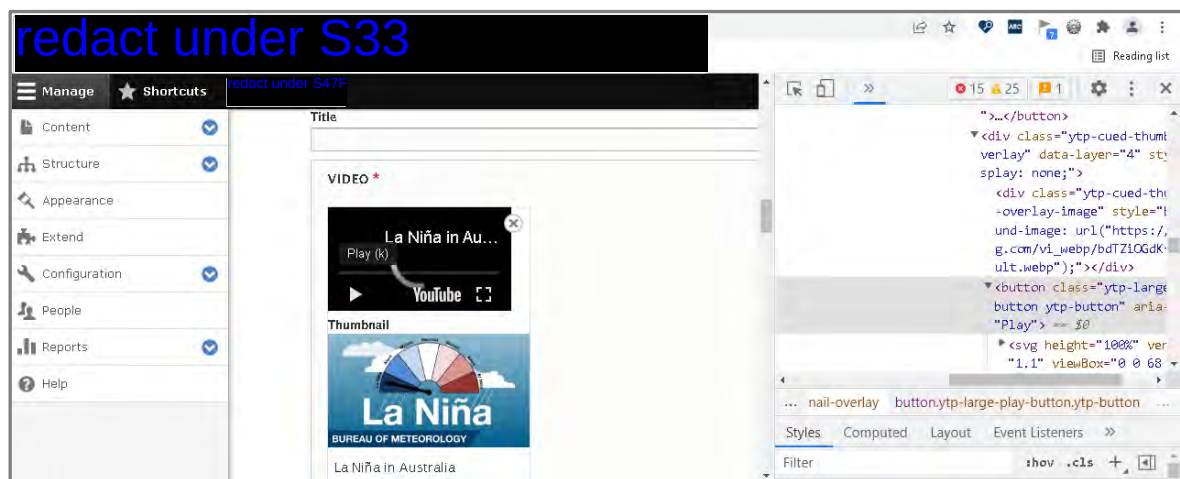
Location Content block, Advanced template

When an author adds visual time-based content (e.g., video) to the content block, the video thumbnail does not auto-play, and also has play and pause controls.

Moving, blinking, or scrolling content can be stopped, paused, or hidden to avoid distracting users during their interaction with the page.

- People with attention conditions will not be distracted by the moving, blinking, or scrolling content before they are able to use the pause or hide controls
- People with severe photosensitivity conditions (such as epilepsy or migraines) will be able to check for blinking or flashing content without having their condition triggered.

Figure 1: Static YouTube thumbnail



A.3.4.1 Navigate by structure

Satisfied

Level AA

Guideline A.3.4 Enhance navigation and editing via content structure

Principle A.3 Editing-views are operable

The CMS provides shortcuts through the template structure because each section of the template can be collapsed into an accordion-style panel. Closing the panels allows users to bypass parts of the template and reach the relevant sections more easily.

People who rely on the keyboard to navigate, including screen reader users, will be able to navigate long templates efficiently.

Figure 1: Users can collapse content blocks for more efficient navigation.

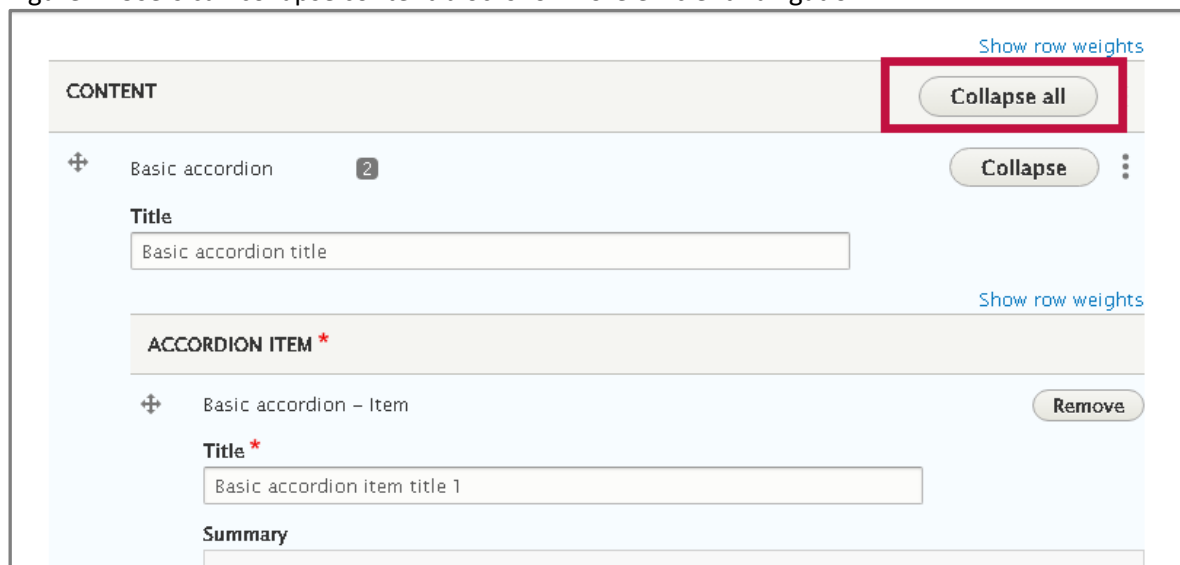
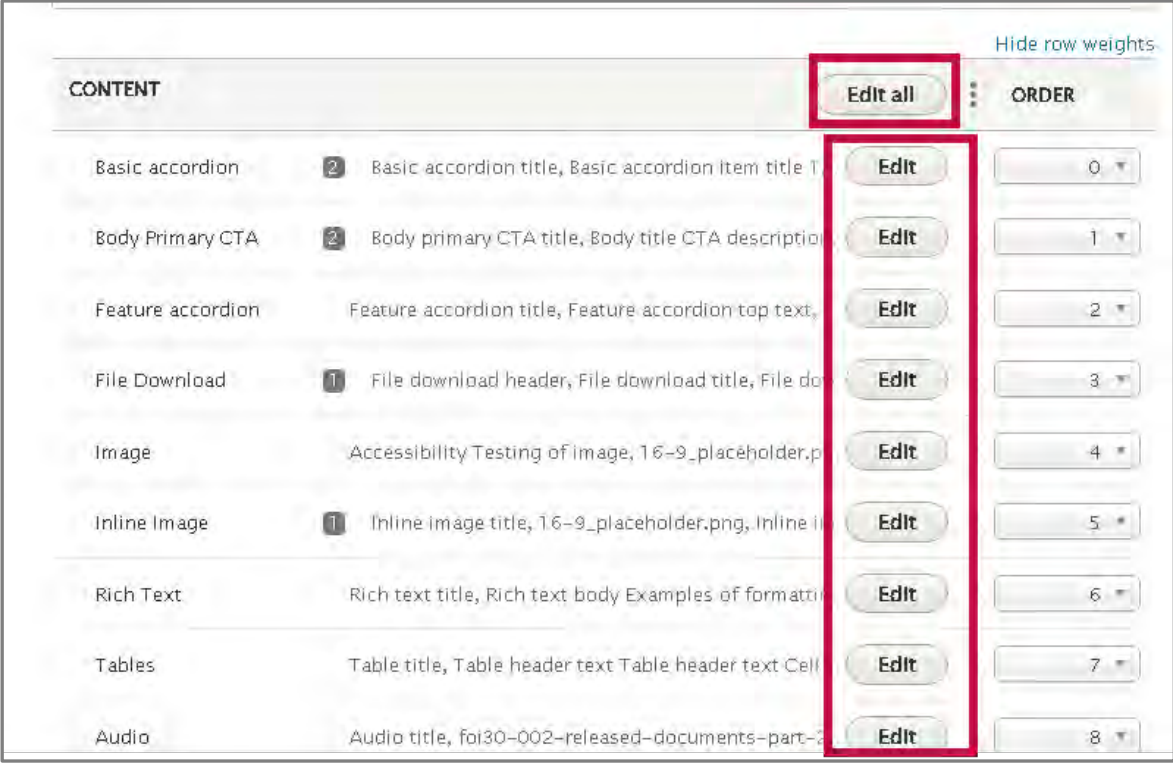


Figure 2: Users can navigate more efficiently by collapsing content blocks.



CONTENT			Hide row weights
		Edit all	ORDER
Basic accordion	2 Basic accordion title, Basic accordion item title 1	Edit	0 ▼
Body Primary CTA	2 Body primary CTA title, Body title CTA description	Edit	1 ▼
Feature accordion	Feature accordion title, Feature accordion top text,	Edit	2 ▼
File Download	1 File download header, File download title, File do	Edit	3 ▼
Image	Accessibility Testing of Image, 16-9_placeholder.p	Edit	4 ▼
Inline Image	1 Inline image title, 16-9_placeholder.png, Inline i	Edit	5 ▼
Rich Text	Rich text title, Rich text body Examples of formati	Edit	6 ▼
Tables	Table title, Table header text Table header text Cell	Edit	7 ▼
Audio	Audio title, foi30-002-released-documents-part-2	Edit	8 ▼

A.3.5.1 Text search

Not applicable

Level AA

Guideline A.3.5 Provide text search of the content

Principle A.3. Editing-views are operable

Although no search function is provided in the CMS, the editing view does not block the browser's search tool. This allows users to:

- search any text content in the editing-view, forwards or backwards, and
- use the search tool to focus on any results which are in the editing view.

Authors with disabilities will be able to find content they want to edit, without having to navigate through all of it in linear order.

A.3.6.1 Independence of display

Satisfied

Level A

Guideline A.3.6 Manage preference settings

Principle A.3. Editing-views are operable

When an author changes their editing view display preferences, it does not affect the look of the web content they are creating during editing or publication.

The CMS does not allow for much flexibility in user preferences. However, users can change device and browser settings according to their needs. Increasing their browser zoom or text size does not affect the content they are creating during editing or publication.

The display independence of the CMS allows authors with disabilities to use their preferred settings (e.g. increased base font size, Windows High Contrast Mode (WHCM)) while creating content for other people (e.g. final content has standard font size and does not present in a WHCM theme).

Figure 1: Advanced template, editing view in Windows High Contrast Mode (WHCM).

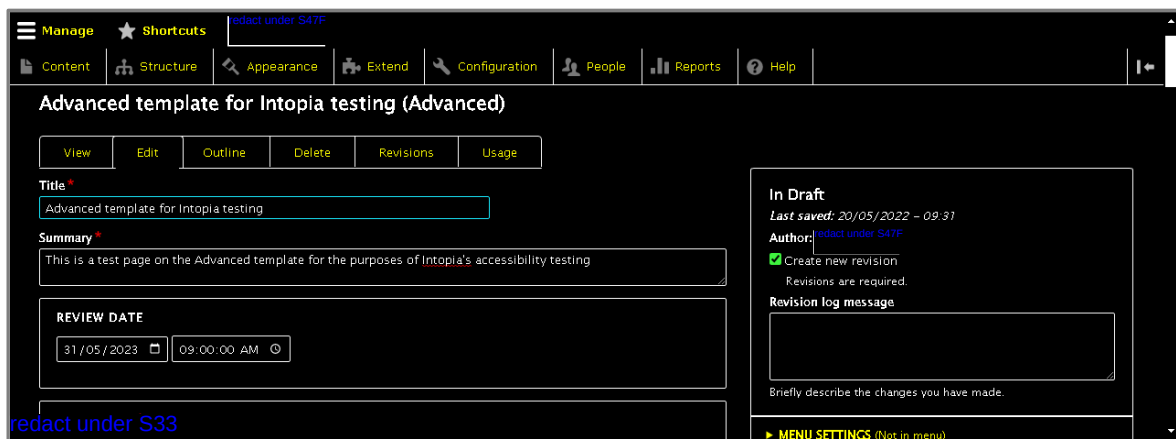


Figure 2: Advanced template, increased text size.

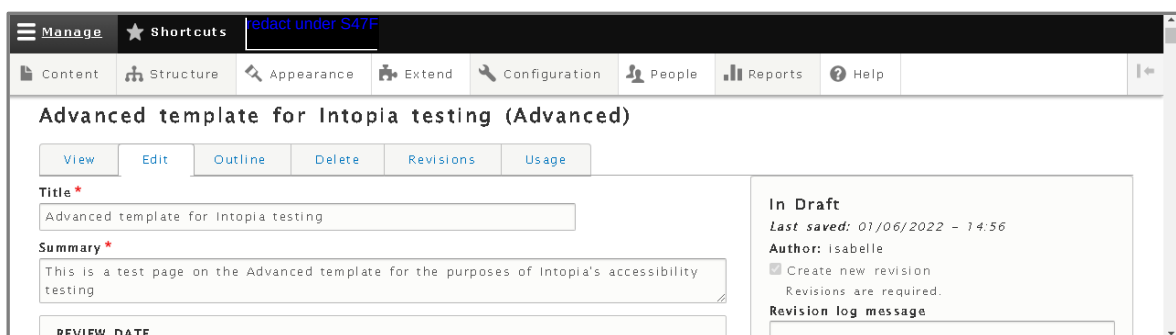
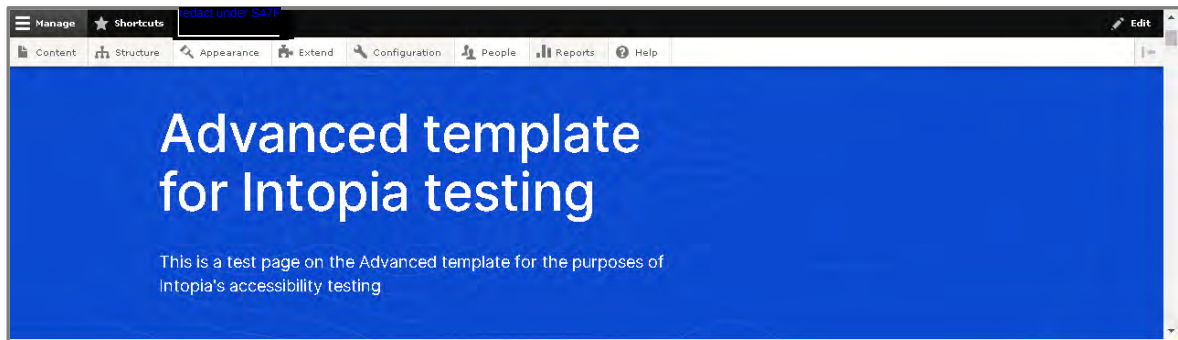


Figure 3: Advanced template preview, standard view, despite increased text size when creating content.



A.3.6.2 Save settings

Not applicable

Level	AA
Guideline	A.3.6 Manage preference settings
Principle	A.3 Editing-views are operable

The CMS does not allow users to make changes to their display, nor control settings in the tool. As a consequence, the authoring tool's display is consistent between sessions or logins.

All users benefit from having their settings kept consistent between sessions. However people who cannot see the page, and people who have memory issues, will particularly benefit from being confident that the display hasn't changed.

A.3.6.3 Apply platform settings

Satisfied

Level	AA
Guideline	A.3.6 Manage preference settings
Principle	A.3 Editing-views are operable

When the author has changed their platform settings, e.g., by increasing their font size or turning on a high contrast theme, the CMS respects these settings by applying them to the UI, editing and preview modes.

Any areas where the setting is applied but isn't giving a useful result (e.g., icons not visible in high contrast, text labels not resizing) are WCAG issues. They are covered by the issues raised for criteria A.1.1.1 in this report.

All users will be able to use the CMS comfortably with their preferred computer settings. This is particularly important for people with low vision or other disabilities which lead them to customise the display and operation of their computer.

Figure 1: Advanced template, editing view in Windows High Contrast Mode (WHCM).

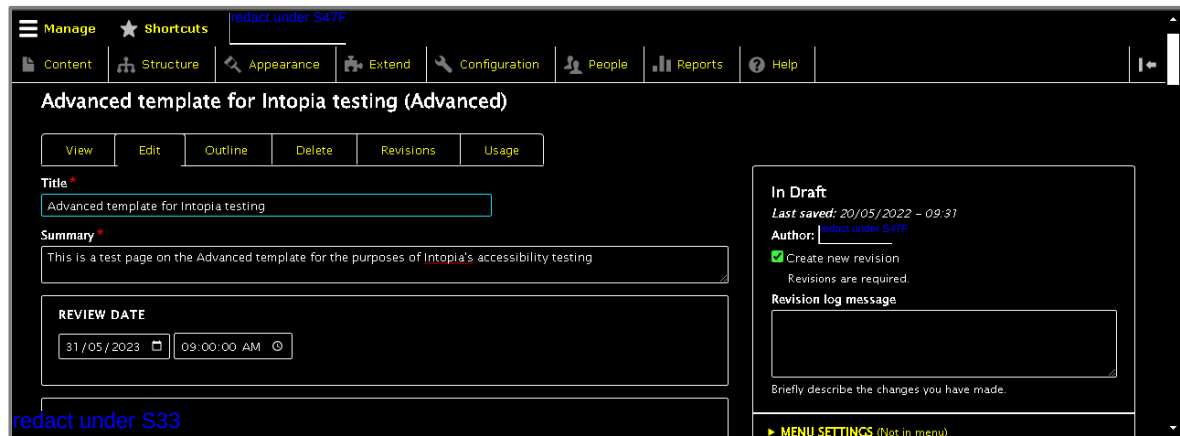
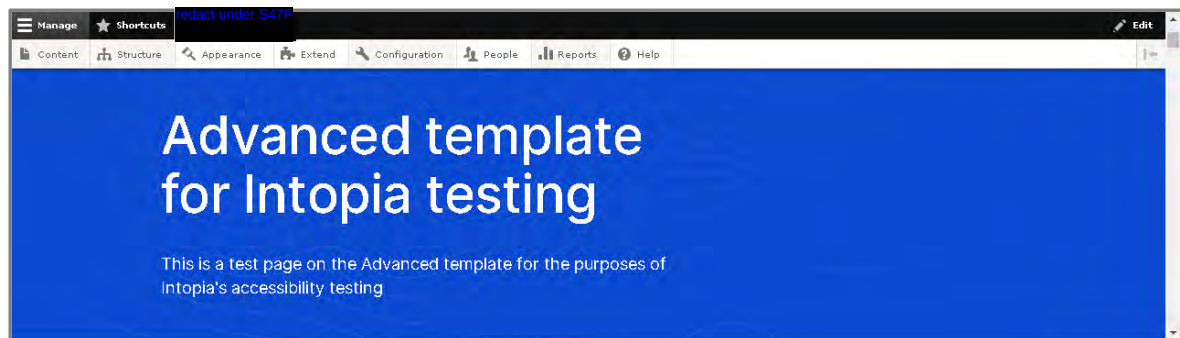


Figure 2: Advanced template preview, standard view, despite increased text size when creating content.



A.3.7.1 Preview (Minimum)

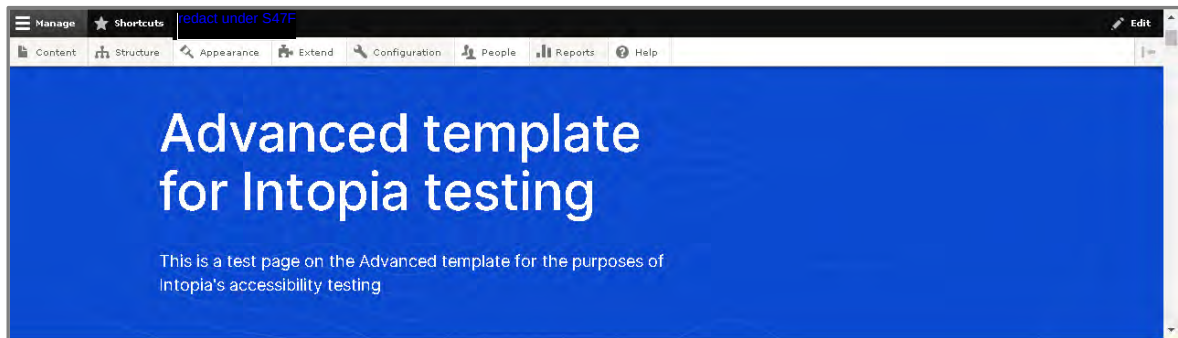
Satisfied

Level	A
Guideline	A.3.7 Ensure that previews are at least as accessible as in-market user agents
Principle	A.3 Editing-views are operable
Location	Advanced template, Section template, Glossary taxonomy list (edit mode)

The CMS satisfies this success criteria by allowing users to preview the page in the browser, which means that it conforms with the User Agent Accessibility Guidelines (UAAG). The preview sits in a separate container on the page, framed by the navigation to other parts of the editing view.

A preview in a browser tab allows users with disabilities to view the content in a way which will work with their existing assistive technologies (e.g., screen readers), and doesn't require any additional support.

Figure 1: Advanced template preview.



A.4.1.1 Content changes reversible (Minimum)

Partially satisfied

Level	A
Guideline	A.4.1 Help authors avoid and correct mistakes
Principle	A.4 Editing-views are understandable
Location	Advanced template, Section template

The CMS allows users to reverse all authoring actions using the version feature. When an author chooses an older version of the content, the CMS asks for confirmation before committing the changes.

However, it is not clear that changing to the older version will delete all newer versions of the content. Users may mistakenly think that they can view the older version then return to a newer version.

Please note: Reinstating earlier versions of content is only possible in page templates (e.g., Advanced template). If authors need to remediate mistakes in the Glossary or Featured News Block, authors must re-edit the whole component.

Allowing authors to reverse all authoring actions, and confirming with the user before committing the changes, avoids serious consequences as a result of a known mistake. However, the lack of instructions for using the version feature may end up creating additional mistakes.

Our recommendation

Provide a description of the consequences of reverting to an older version of the content.

There are several potential ways to add this description. Consider the following:

- rename the controls which start the revert, e.g., "revert to version n.x"
- include a micro copy explanation above the version list, e.g. "Use this version list to go back to an earlier version of your work by discarding the more recent versions"
- include a warning in the confirmation message, e.g. "You will not be able to retrieve more recent versions of your content".

Figure 1: List of saved and available revisions of Advanced template.

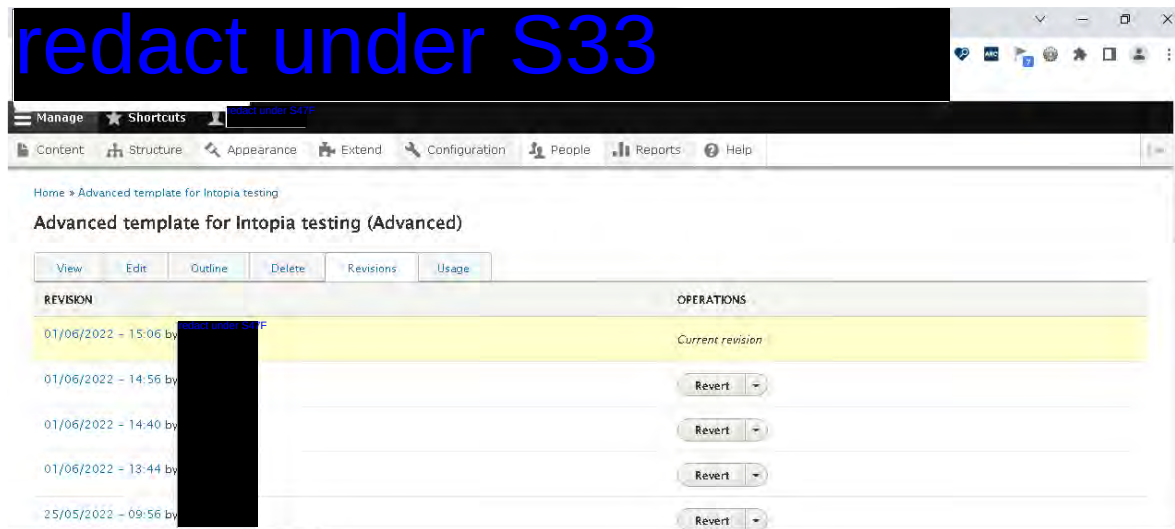


Figure 2: Confirmation message of version revert.

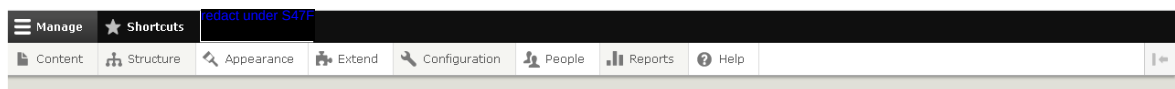
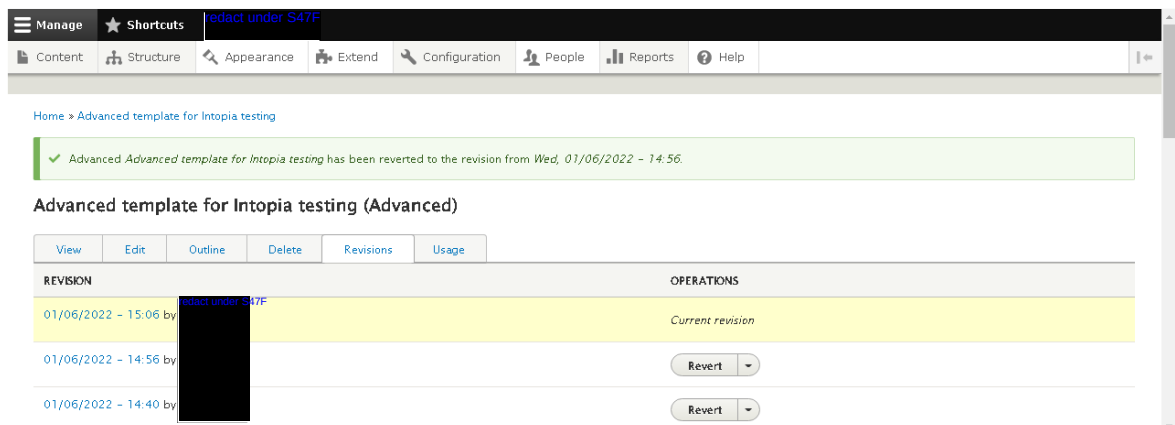


Figure 3: Success message of version reversion.



A.4.1.2 Settings change confirmation

Not applicable

Level A

Guideline A.4.1 Help authors avoid and correct mistakes

Principle A.4 Editing-views are understandable

The CMS does not allow authors to personalise the tool's settings. Therefore this criteria is not applicable in this audit.

Please note: The CMS does respond to changes in the user's operating system settings.

People with disabilities can have more difficulty using an interface correctly. It's important that the CMS reduces the number of irreversible actions that are possible. Providing Undo controls and asking for confirmation before making permanent changes to the settings are features which support disabled users to use any tool more easily.

A.4.2.1 Describe accessibility features

Not satisfied

Severity High

Level A

Guideline A.4.2 Document the user interface, including all accessibility features

Principle A.4 Editing-views are understandable

Accessibility features are described in separate documentation created and housed by The Bureau of Meteorology.

However, there is no (or little) documentation for the following features:

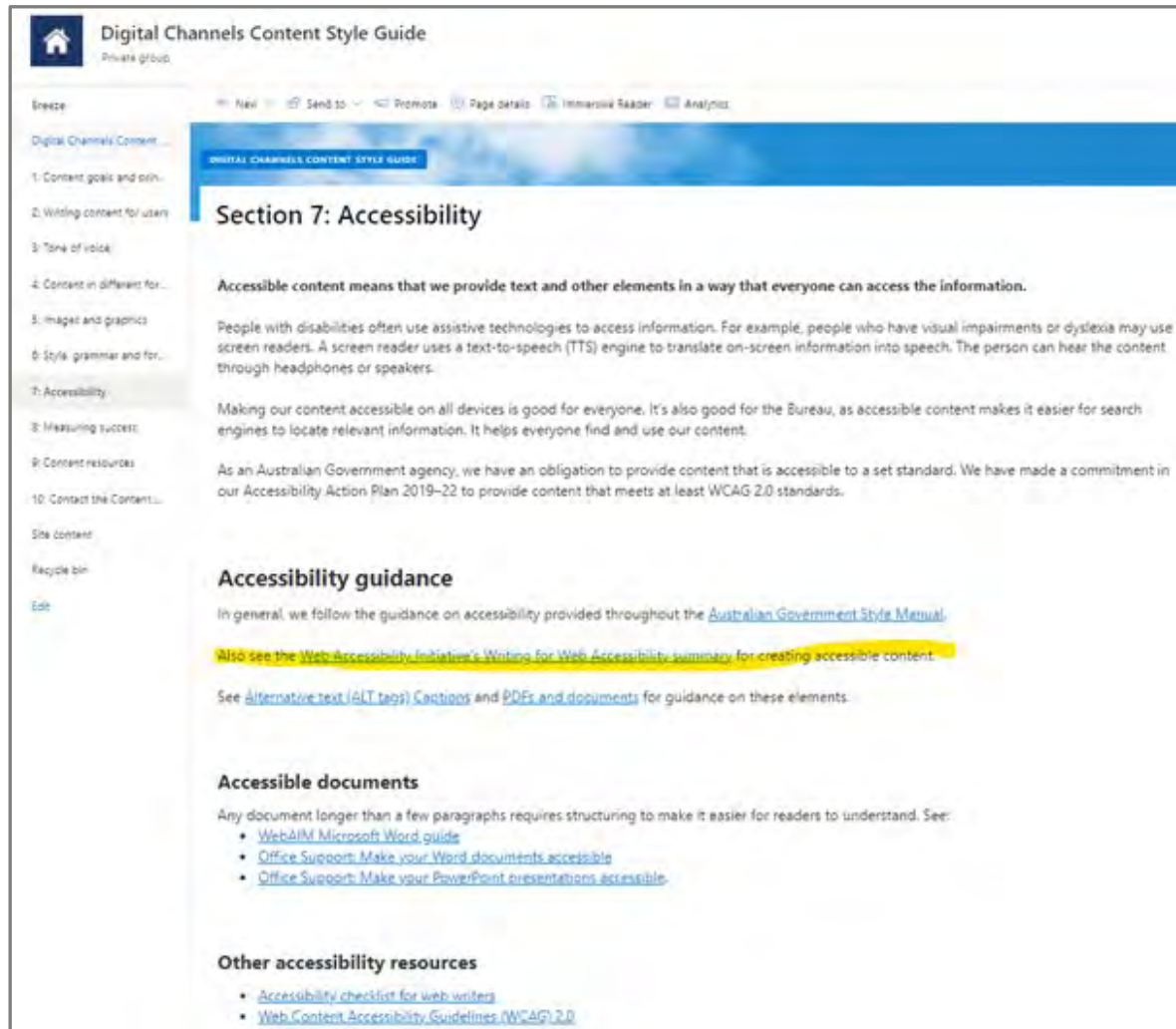
- skip link
- reverting to older versions
- collapsible panels with indicators for unsaved content
- how to preview content before publishing it
- how to ask for a session timeout change from the admin

Authors with disabilities will find it easier to find and use these accessibility support features when they are clearly documented along with the other features of the CMS.

Our recommendation

Ensure that all features which are used to Pass the Part A criteria of ATAG are documented in the Bureau's CMS documentation. They do not specifically have to be mentioned as accessibility support features, although it will be useful to explain that the skip link will be available by keyboard only.

Figure 1: Accessibility documentation at the Bureau, located on internal SharePoint site.



The screenshot shows a SharePoint page titled "Digital Channels Content Style Guide" with a "Private group" label. The left sidebar contains a navigation menu with items like "Digital Channels Content", "1: Content goals and obj...", "2: Writing content for users", "3: Tone of voice", "4: Content in different for...", "5: Images and graphics", "6: Style, grammar and for...", "7: Accessibility", "8: Measuring success", "9: Content resources", "10: Contact the Content...", "Site content", "Recycle bin", and "Edit". The main content area is titled "Section 7: Accessibility" and includes the following text:

Accessible content means that we provide text and other elements in a way that everyone can access the information.

People with disabilities often use assistive technologies to access information. For example, people who have visual impairments or dyslexia may use screen readers. A screen reader uses a text-to-speech (TTS) engine to translate on-screen information into speech. The person can hear the content through headphones or speakers.

Making our content accessible on all devices is good for everyone. It's also good for the Bureau, as accessible content makes it easier for search engines to locate relevant information. It helps everyone find and use our content.

As an Australian Government agency, we have an obligation to provide content that is accessible to a set standard. We have made a commitment in our Accessibility Action Plan 2019-22 to provide content that meets at least WCAG 2.0 standards.

Accessibility guidance

In general, we follow the guidance on accessibility provided throughout the [Australian Government Style Manual](#).

Also see the [Web Accessibility Initiative's Writing for Web Accessibility summary](#) for creating accessible content.

See [Alternative text \(ALT tags\)](#), [Captions](#) and [PDFs and documents](#) for guidance on these elements.

Accessible documents

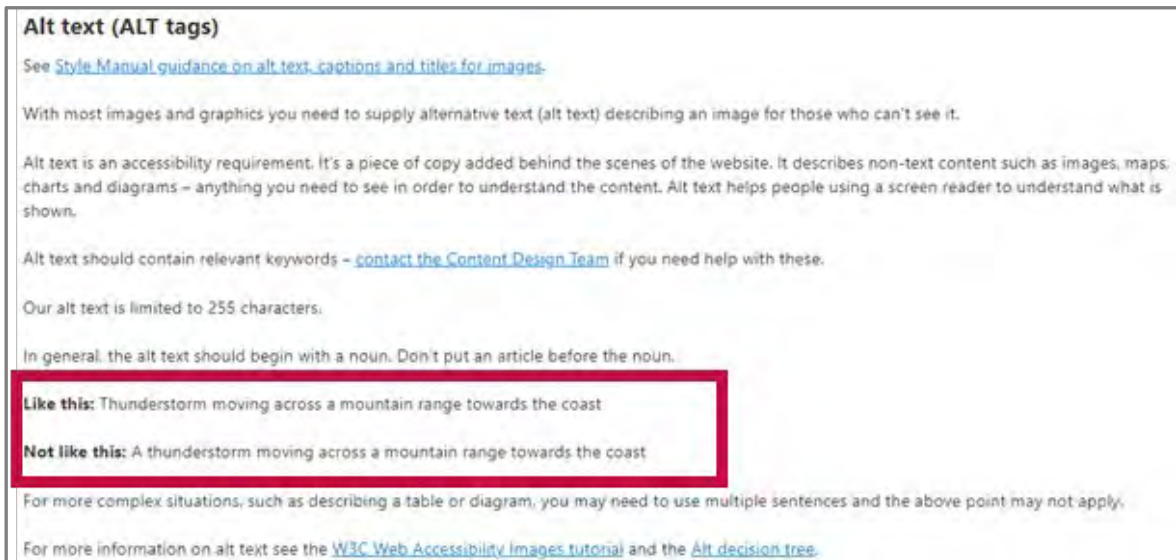
Any document longer than a few paragraphs requires structuring to make it easier for readers to understand. See:

- [WebAIM Microsoft Word guide](#)
- [Office Support: Make your Word documents accessible](#)
- [Office Support: Make your PowerPoint presentations accessible](#)

Other accessibility resources

- [Accessibility checklist for web writers](#)
- [Web Content Accessibility Guidelines \(WCAG\) 2.0](#)

Figure 2: Accessibility documentation at the Bureau, description of alternative text of images.



A.4.2.2 Document all features

Not satisfied

Severity Medium

Level AA

Guideline A.4.2 Document the user interface, including all accessibility features

Principle A.4 Editing-views are understandable

In the CMS, the documentation does not capture all of the authoring tool's features.

All users benefit from documenting the features of a CMS, but authors with disabilities will find it easier and more efficient to find out the correct way of using the tool without relying on trial and error.

Our recommendation

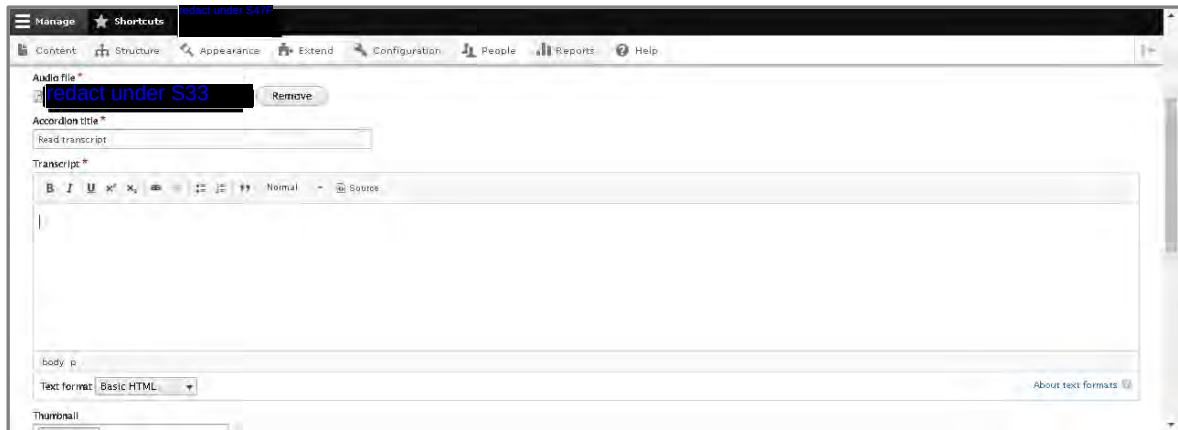
Document all the features mentioned in this audit, and those which are commonly used by all authors. It is strongly recommended to house the documentation within the CMS itself, where authors can easily find the documentation without having to navigate to external sites.

If documenting the accessibility features within the CMS is not feasible, ensure all documentation is located in the one space.

Documentation should include:

- A list of Drupal's features which have been set up by the Bureau
- Details on how to use those features efficiently

Figure 1: Accessibility documentation at The Bureau, no documentation on what a transcript is, or how to write a transcript.



Part B: Support the production of accessible content

B.1.1.1 Content auto-generation after authoring sessions

Not applicable

Level	WCAG A and AA
Guideline	B.1.1 Ensure that automatically-specified content is accessible
Principle	B.1 Fully automatic processes produce accessible content

The CMS does not auto-generate extra content after an author publishes the content. All content is created before publication.

Authors have control over what is published, with no inaccessible additions made to their work.

B.1.1.2 Content auto-generation during authoring sessions

Not applicable

Level	WCAG A and AA
Guideline	B.1.1 Ensure that automatically-specified content is accessible
Principle	B.1 Fully automatic processes produce accessible content

The CMS does not auto-generate extra content while the author is editing. The author has control over all content created before publication.

Authors can create accessible content without inaccessible additions from the CMS.

B.1.2.1 Restructuring and recoding transformations

Not applicable

Level WCAG A and AA

Guideline B.1.2 Ensure that accessibility information is preserved

Principle B.1 Fully automatic processes produce accessible content

The CMS does not have a feature which can re-structure or re-format the content. Authors can only create content with the CMS by using the templates set up by The Bureau.

Please note: If a re-formatting feature is added later (e.g., Save To PDF, export to a different CMS), it will need to preserve any accessibility properties added by the author.

Authors will not have their accessible content accidentally transformed to a less accessible format.

B.1.2.2 Copy-paste inside authoring tool

Not satisfied

Severity Medium

Level WCAG A and AA

Guideline B.1.2 Ensure that accessibility information is preserved

Principle B.1 Fully automatic processes produce accessible content

Location Rich text editor, Advanced template, Section template, Glossary taxonomy list (edit mode)

When a user copies and pastes content inside the CMS tool, not all accessibility properties are preserved.

- Text that is copied as 'bold' or 'italic' is pasted as <p> elements only.
- List semantics, like bulleted and numbered lists are preserved.

Please note: The testing of this issue occurred in conjunction with WordPad. Limited formatted content from WordPad was pasted into the Rich Text Editor (RTE) of Drupal. The preservation of heading and link semantics could not be tested due to the limited functionality of WordPad.

Authors who have already made accessible content in a different format and want to re-use it in the CMS will have to re-do the accessibility properties.

Our recommendation

Ensure accessibility information (like content structure) is preserved when copied across from other software.

Drupal's Rich Text Editor may offer an option or setting to preserve formatting of copied content. If this option can be added to the RTE controls, that would give authors the choice of preserving or stripping out any content formatting.

Figure 1: Formatted content of unordered and ordered list, italicised, and bolded text inside WordPad authoring tool

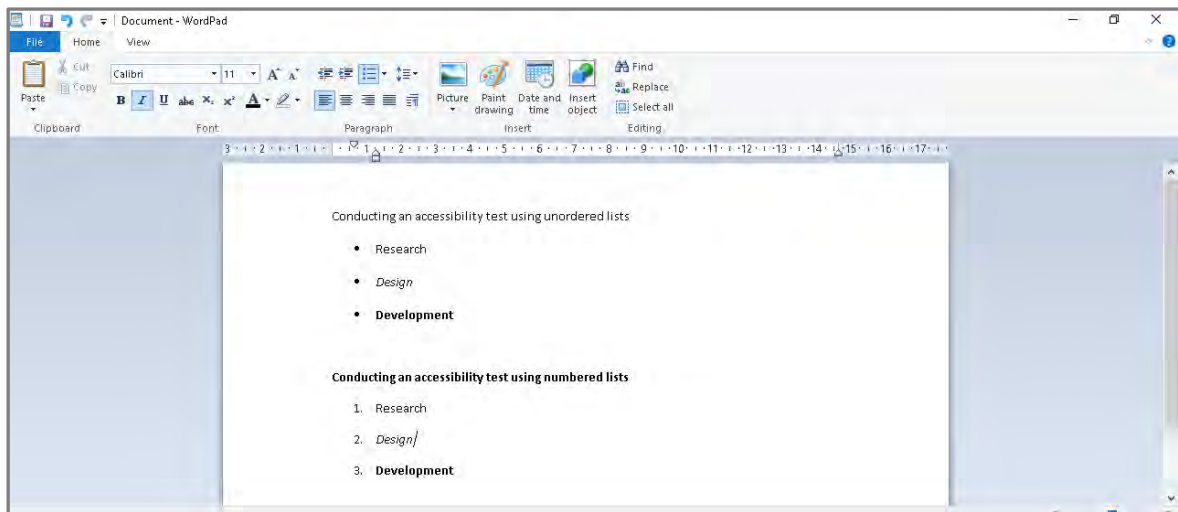
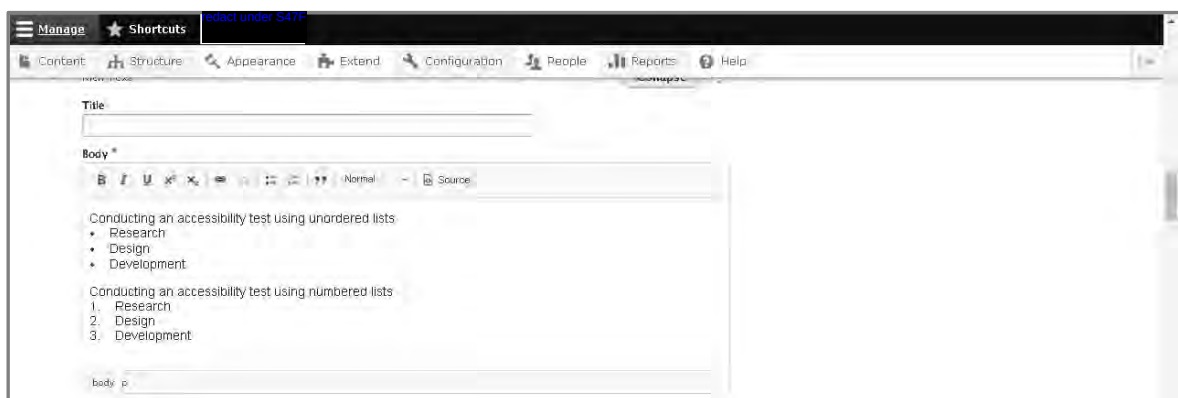


Figure 2: Formatted content pasted into the CMS from WordPad with only the unordered and ordered list markup preserved.



B.1.2.3 Optimisations preserve accessibility

Not applicable

Level A

Guideline B.1.2 Ensure that accessibility information is preserved

Principle B.1 Fully automatic processes produce accessible content

The CMS does not have any optimisation features (for example, image compression or indentation reformatting of text) which could potentially remove any accessibility information added by the author.

Please note: If a feature like this is added in future, check that all accessibility information in the original version is preserved in the optimised version of the content.

Authors will not be able to accidentally remove accessibility information by using any optimisation features.

B.1.2.4 Text alternatives for non-text content are preserved

Not applicable

Level A

Guideline B.1.2 Ensure that accessibility information is preserved

Principle B.1 Fully automatic processes produce accessible content

The CMS does not have a feature which can re-structure or re-format content. As a consequence, there is no way that text alternatives can be lost during a re-structure.

Authors will not accidentally lose any accessibility work done to provide text alternatives.

B.2.1.1 Accessible content possible

Satisfied

Level WCAG A and AA

Guideline B.2.1 Ensure that accessible content production is possible

Principle B.2 Authors are supported in producing accessible content

The CMS allows knowledgeable users to add accessibility information.

- When adding an image to the media library, users must add alternative text to the image
- When adding video to the media library, users must add a transcript to the video
- Users can select appropriate heading levels from the Rich Text Editor (RTE)

Authors who have the knowledge to create more accessible web content can do so, because the templates have the features to support the creation of accessible content.

Figure 1: Alternative text must be added to image before it is uploaded to the media library



Figure 2: Transcript must be added to video before it can be uploaded to the media library

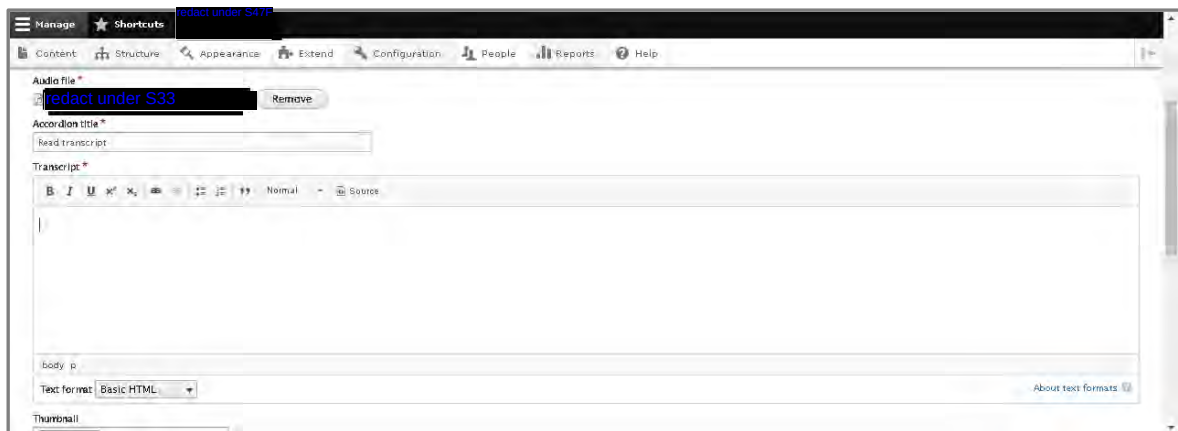
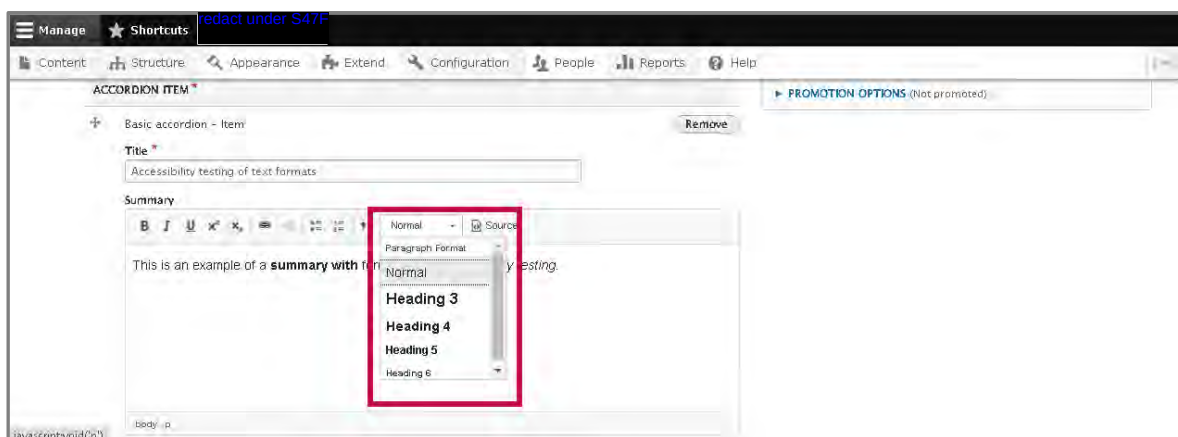


Figure 3: Appropriate heading level can be selected in the Rich Text Editor (RTE)



B.2.2.1 Accessible option prominence

Satisfied

Level WCAG A and AA

Guideline B.2.2 Guide authors to produce accessible content

Principle B.2 Authors are supported in producing accessible content

Drupal is a CMS which allows administrators to control how content is created by setting up templates for authors to use. The Bureau has organised the CMS templates so that there is usually only one way to create content, with no hidden features. In addition, the features which make accessible content are visible, compulsory, and automatically turned on by default.

Ensuring features that lead to the creation of accessible content are prominent will help authors create more accessible content. Making accessible authoring practices part of the default process will encourage authors to create accessible content.

Figure 1: Alternative text must be added to image before it is uploaded to the media library



redact under S33

Manage Shortcuts redact under S47P

Content Structure Appearance Extend Configuration People Reports Help

Add Image

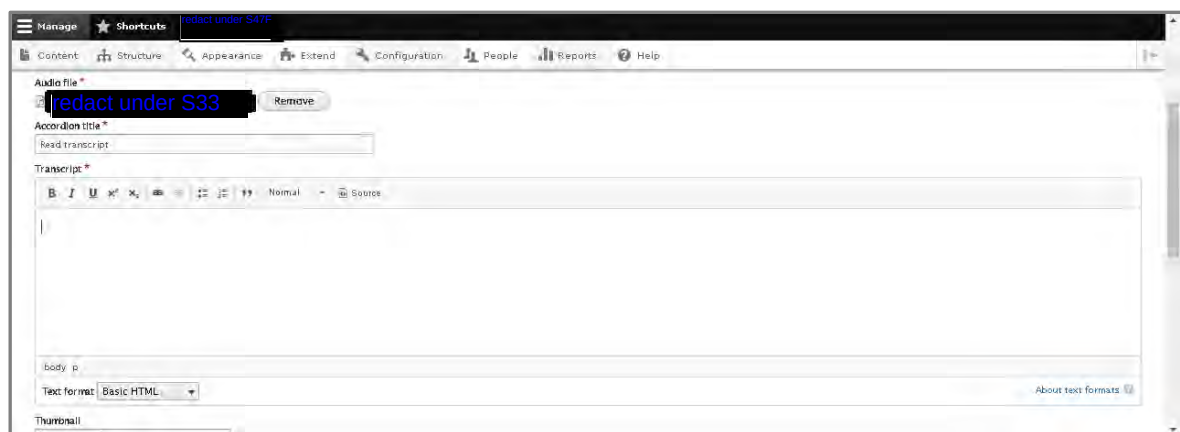
Name *

Image *

Alternative text *

This text will be used by screen readers, search engines, or when the image cannot be loaded.

Figure 2: Transcript must be added to video before it can be uploaded to the media library



redact under S33

Manage Shortcuts redact under S47P

Content Structure Appearance Extend Configuration People Reports Help

Audio file *

Accordion title *

Read transcript

Transcript *

Text format: Basic HTML

Thumbnail

B.2.2.2 Setting accessibility properties

Satisfied

Level WCAG A and AA

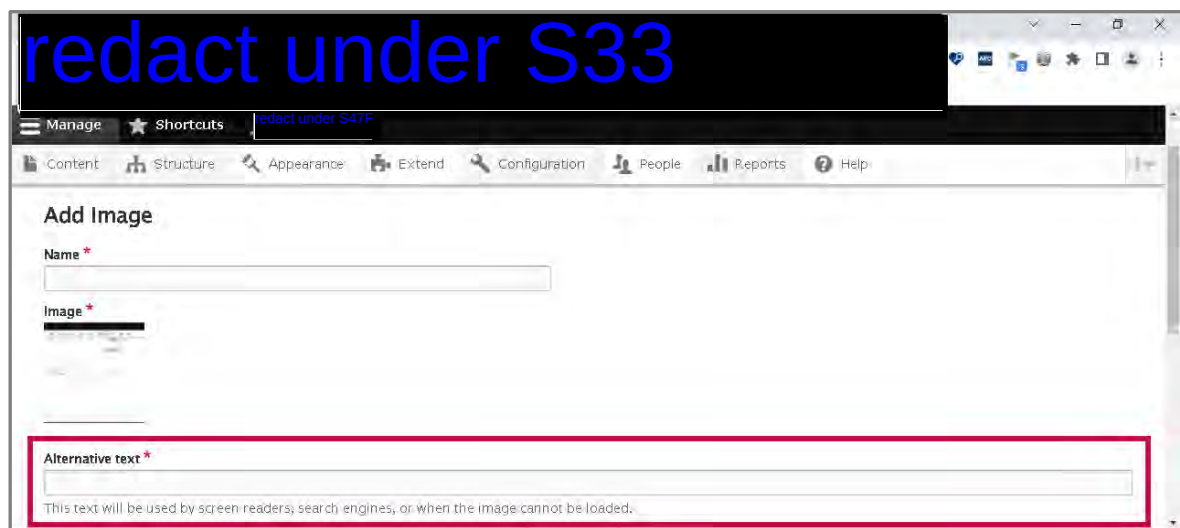
Guideline B.2.2 Guide authors to produce accessible content

Principle B.2 Authors are supported in producing accessible content

In every part of the templates where authors can edit content (e.g., add an image) without touching source code, authors can also edit the relevant accessibility properties (e.g. alternative text).

When an author is aware of accessibility attributes, they can make the necessary changes to create more accessible content.

Figure 1: Alternative text must be added to image before it is uploaded to the media library



B.2.3.1 Alternative content is editable

Satisfied

Level WCAG

Guideline B.2.3 Assist authors with managing alternative content for non-text content

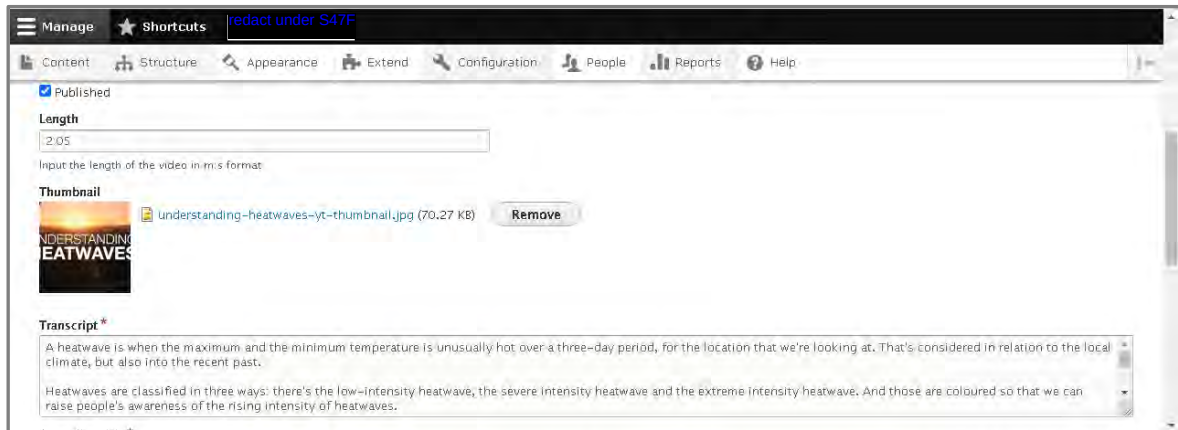
Principle B.2 Authors are supported in producing accessible content

The Bureau's templates make it compulsory for authors to add alternative text to an image before it can be added to the media library. It is also compulsory for authors to add a transcript to multimedia content prior to it being added to the media library.

Additionally, when an image is chosen from the media library the author can edit the existing alternative text if they need to.

Authors must be able to add and modify alternative content for non-text content to ensure that accessible content can be created and modified.

Figure 1: Edit transcript of video in media library



B.2.3.2 Automating repair of text alternatives

Not applicable

Level A

Guideline B.2.3 Assist authors with managing alternative content for non-text content

Principle B.2 Authors are supported in producing accessible content

The CMS does not have an auto-suggest feature for alternative text. Users must manually add alternative text when adding content to the media library.

If an authoring tool has a feature to auto-suggest alternative text, it must not insert any generic alternative text strings. It must also allow authors to repair the automatically generated alternative text; authors can accept, change, or reject any of the suggestions made. This ensures that authors do not accidentally produce content with misleading or inaccurate text alternatives by accepting automated suggestions.

B.2.4.1 Accessible template options

Not applicable

Level WCAG A and AA

Guideline B.2.4 Assist authors with accessible templates

Principle B.2 Authors are supported in producing accessible content

The Bureau has built the CMS templates according to specific needs. The same accessible components are used across Drupal. The components available for use depend on the type of template selected by the author.

The aim of this success criteria is to ensure that when there are a variety of templates available to authors, that some or all of the options are accessible.

B.2.4.2 Identify template accessibility

Not applicable

Level AA

Guideline B.2.4 Assist authors with accessible templates

Principle B.2 Authors are supported in producing accessible content

All templates are built from consistent authoring components, so none are more accessible than others.

If multiple templates are available to authors, and not all templates are accessible, they should have a label or other marker of how accessible they are. This would allow knowledgeable authors to choose the most accessible template from the options available

B.2.4.3 Author-created templates

Not applicable

Level AA

Guideline B.2.4 Assist authors with accessible templates

Principle B.2 Authors are supported in producing accessible content

Authors cannot create their own templates in the CMS, they are all pre-defined by the Bureau. As a consequence, authors also cannot provide the template's accessibility status.

If authors are allowed to create their own templates and share them with others, they must also provide information about the accessibility of that template. This allows all users to choose the most accessible template that fits their content.

B.2.5.1 Accessible pre-authored content options

Satisfied

Level AA

Guideline B.2.5 Assist authors with accessible pre-authored content
Principle B.2. Authors are supported in producing accessible content

When a user adds content to a media library, it is compulsory to add alternative text to images, and transcripts to videos. As a consequence, the CMS includes a range of accessible, pre-authored content.

When there is a range of accessible pre-authored content authors may choose from, it reduces the likelihood of the author creating inaccessible content.

B.2.5.2 Identify pre-authored content accessibility

Not satisfied

Severity Medium

Level AA

Guideline B.2.5 Assist authors with accessible pre-authored content

Principle B.2. Authors are supported in producing accessible content

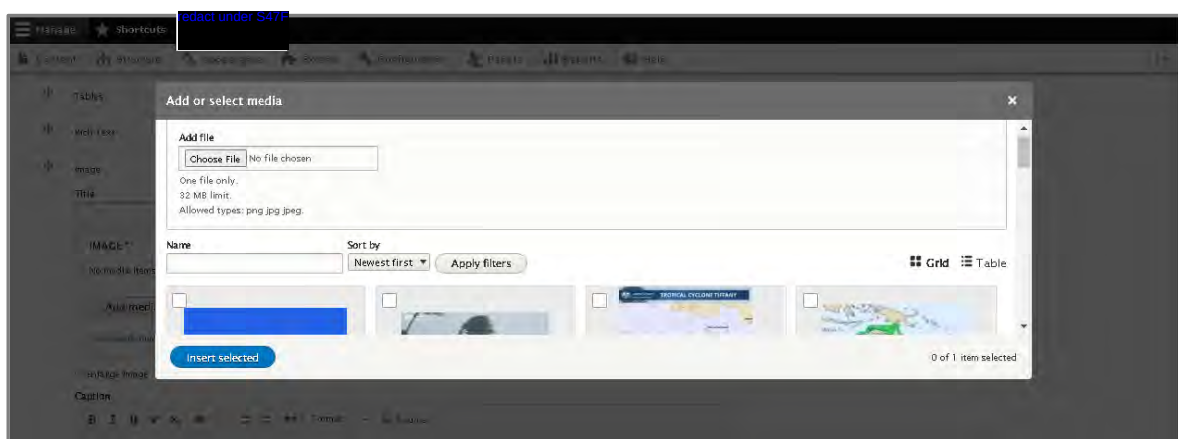
In the CMS, authors can add pre-authored content (e.g., videos) once it has been uploaded to the media library. However, there is no indication for authors to determine which video is accessible (e.g., has captions, and transcripts).

When authors are provided with pre-authored content, then the accessibility of the pre-authored content must be distinguishable. Accessibility indicators of the pre-authored content can include the WCAG conformance level of the content.

Our recommendation

Add a tagging or labelling feature to the media library which allows authors or admins to indicate which multimedia has captions and/or transcripts.

Figure 1: Accessibility of images uploaded to the media library is not identifiable



B.3.1.1 Checking assistance

Satisfied

Level WCAG A and AA

Guideline B.3.1 Assist authors in checking for accessibility problems

Principle B.3 Authors are supported in improving the accessibility of existing content

The CMS does not have an automated accessibility checker, but authors are supported by external documentation created by The Bureau on how to check their work for accessibility.

When authors create content, they are supported in identifying accessibility barriers in the content that they are creating or editing.

Figure 1: Documentation on Accessibility at The Bureau on internal SharePoint site

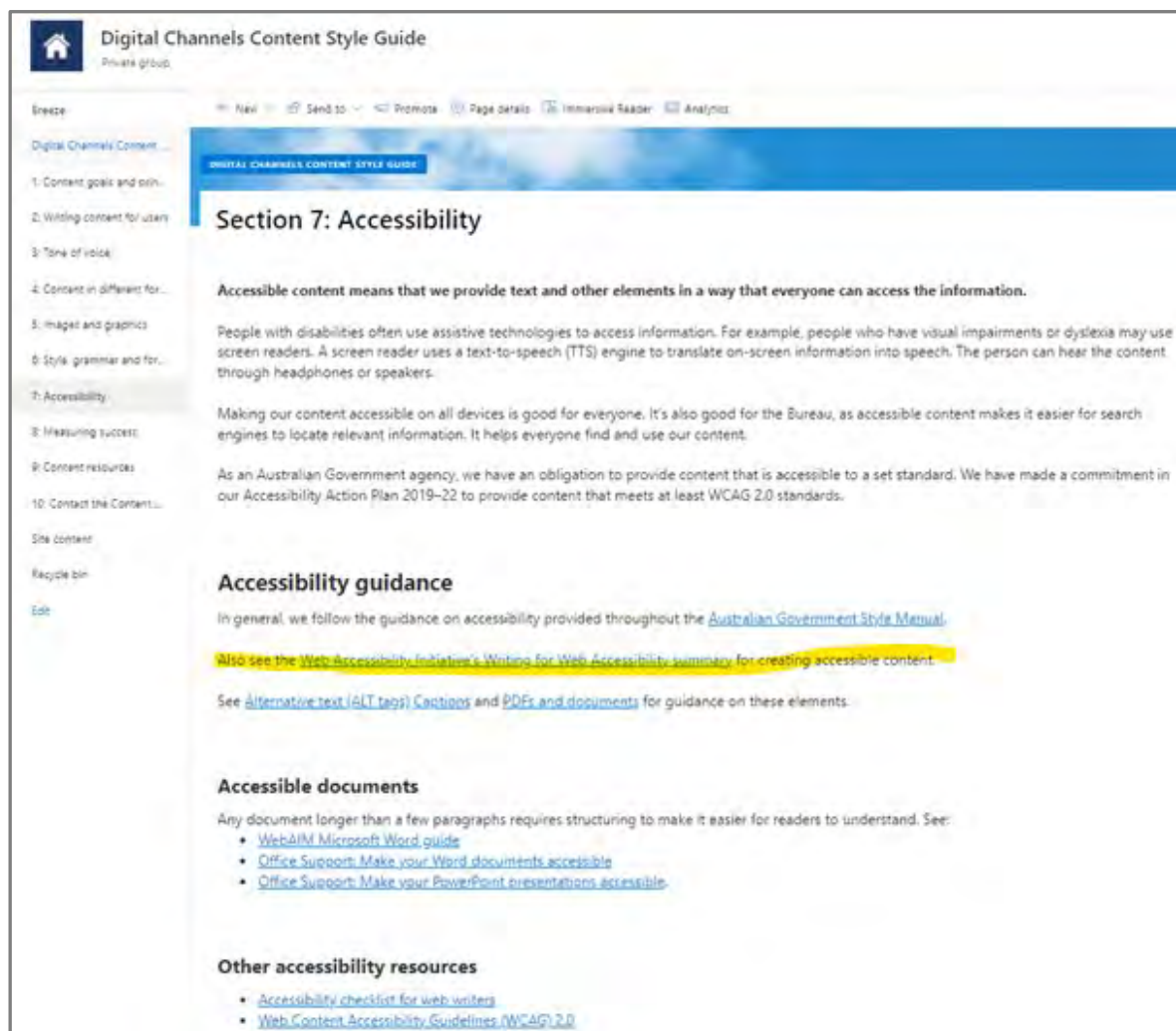


Figure 2: Documentation of alternative text, including good and bad examples of alternative text.

Alt text (ALT tags)

See [Style Manual guidance on alt text, captions and titles for images](#).

With most images and graphics you need to supply alternative text (alt text) describing an image for those who can't see it.

Alt text is an accessibility requirement. It's a piece of copy added behind the scenes of the website. It describes non-text content such as images, maps, charts and diagrams – anything you need to see in order to understand the content. Alt text helps people using a screen reader to understand what is shown.

Alt text should contain relevant keywords – [contact the Content Design Team](#) if you need help with these.

Our alt text is limited to 255 characters.

In general, the alt text should begin with a noun. Don't put an article before the noun.

Like this: Thunderstorm moving across a mountain range towards the coast

Not like this: A thunderstorm moving across a mountain range towards the coast

For more complex situations, such as describing a table or diagram, you may need to use multiple sentences and the above point may not apply.

For more information on alt text see the [W3C Web Accessibility Images tutorial](#) and the [Alt decision tree](#).

Figure 3: Documentation on captions.

Captions

See [Style Manual guidance on alt text, captions and titles for images](#).

Most images require captions. These are brief descriptions (up to 255 characters) related to the image that give it context. They also credit the copyright owner, where required.

Captions don't need to be complete sentences. Even if they are full sentences, in general, don't conclude them with a full stop. However, if your caption also attributes a copyright owner or has multiple sentences, use a full stop. For example:

Large hail damaged 55 houses in Port Macquarie in February 2020. Credit: Peter Pan

In general, don't include text in a graphic or image, as this isn't accessible. Use a caption instead.

Consider how your alt text and caption work together. They shouldn't be identical or someone using a screen reader will hear the same information twice.

Figure 4: Documentation on videos.

Video

Video is an effective way to convey certain information. It's typically created as part of an overarching communication plan for a Bureau service. The Video Team [redact under S33](#) can provide information and advice about whether video is the best format for your information and how it can be produced. Video presented on the website needs to be of high quality, have captions and include a transcript to meet accessibility requirements. Our videos are embedded on our website but hosted on YouTube.

See also [Style Manual guidance on video](#).

B.3.1.2 Help authors decide

Not satisfied

Severity Low
Level A

Guideline B.3.1 Assist authors in checking for accessibility problems

Principle B.3 Authors are supported in improving the accessibility of existing content

The Bureau provides some documentation of accessibility requirements, but it does not include information on how authors can tell if there is an accessibility problem present.

All authors would benefit from being able to identify accessibility problems in their content. They would also benefit from knowing when they have successfully made accessible content.

Support authors in deciding if their content has an accessibility problem or not.

Drupal may offer an automated accessibility test as a plugin. If so, it would help users identify potential problems. Alternatively, the existing documentation could add instructions for the authors to perform basic accessibility checks themselves in the preview mode.

B.3.1.3 Help authors locate

Not satisfied

Severity Medium

Level A

Guideline B.3.1 Assist authors in checking for accessibility problems

Principle B.3 Authors are supported in improving the accessibility of existing content

The CMS does not have an automated or semi-automated accessibility checker, but it does provide documentation about manually checking for accessibility problems. However, that documentation doesn't include details of how to locate accessibility problems.

When authors know that there is an accessibility problem, they will need help finding it in their content so that they can fix it.

Our recommendation

Support authors in finding any accessibility problems in their content.

Drupal may offer an automated accessibility test as a plugin. If so, it would help users locate any problems it finds. Alternatively, the existing documentation could add instructions for the authors to perform basic accessibility checks themselves in the preview mode.

B.3.1.4 Status report

Not applicable

Level AA

Guideline B.3.1 Assist authors in checking for accessibility problems

Principle B.3 Authors are supported in improving the accessibility of existing content

The CMS does not have an automated accessibility checking tool installed. Therefore this criteria about accessibility status reports from automated checking tools is not applicable to this audit.

When an authoring tool has an accessibility checker, authors must be able to access an overview of the accessibility status of their web content. An overview status report allows authors to view where accessibility barriers are in their content and remediate the issues to create more accessible content.

B.3.1.5 Programmatic association of results

Not applicable

Level AA

Guideline B.3.1 Assist authors in checking for accessibility problems

Principle B.3 Authors are supported in improving the accessibility of existing content

The CMS only has support for manual accessibility checks. Therefore this criteria about whether the results of the automated checker are programmatically associated to the relevant content are not applicable to this audit.

Automated accessibility checking tools can help authors by identifying accessibility barriers in their content. Automated tools should help authors save time by linking any error results to the part of the content with the problem.

B.3.2.1 Repair assistance

Satisfied

Level WCAG A and AA

Guideline B.3.2 Assist authors in repairing accessibility problems

Principle B.3 Authors are supported in improving the accessibility of existing content

The CMS has documentation which helps authors identify accessibility problems and it suggests better ways of providing accessible content.

When authors create content, they should be supported in repairing all accessibility problems which are found.

B.4.1.1 Features active by default

Satisfied

Level	A
Guideline	B.4.1 Ensure the availability of features that support the production of accessible content
Principle	B.4 Authoring tools promote and integrate their accessibility features

The features which help users create accessible content are compulsory and always active by default. Examples include:

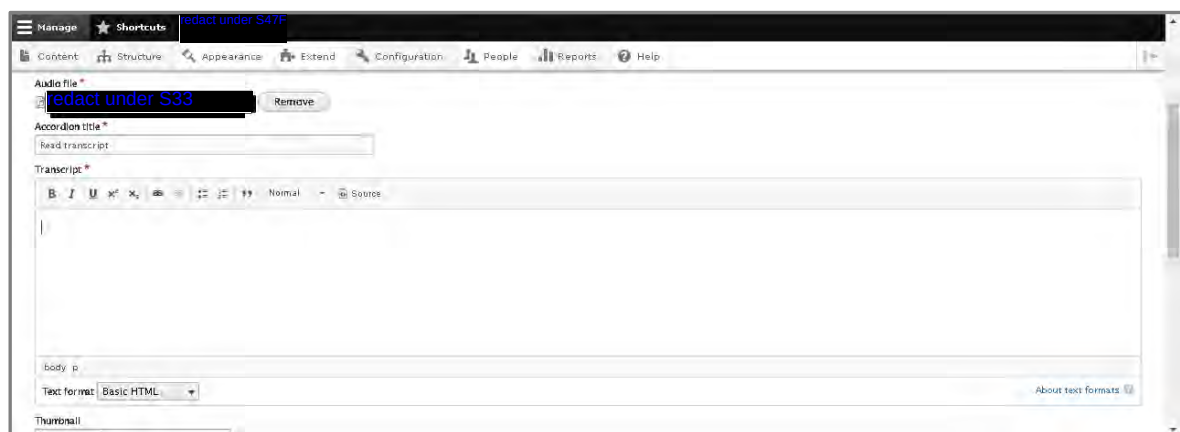
- Requirement for alternative text on images when adding an image to the media library
- Requirement for transcript when adding multimedia to the media library

Accessibility authoring features of the content tool should be on by default as a natural and expected part of the authoring workflow.

Figure 1: Alternative text must be added to images before being uploaded to the media library.



Figure 2: Transcripts must be added to videos before being uploaded to the media library.



B.4.1.2 Option to reactivate features

Satisfied

Level A

Guideline B.4.1 Ensure the availability of features that support the production of accessible content

Principle B.4 Authoring tools promote and integrate their accessibility features

The accessibility features of the CMS are always switched on and cannot be turned off.

Authors are more likely to make accessible content when the accessibility features are always available. If authoring tools have the option to turn off accessibility features, they should be able to be turned back on as well.

B.4.1.3 Feature deactivation warning

Satisfied

Level AA

Guideline B.4.1 Ensure the availability of features that support the production of accessible content

Principle B.4 Authoring tools promote and integrate their accessibility features

The CMS does not allow for accessibility support features to be turned off, so no deactivation warning is needed.

Authors are more likely to make accessible content when the accessibility features are always available. If the accessibility features could be switched off, it would be necessary to warn users about the effect this will have on the production of accessible content.

B.4.1.4 Feature prominence

Satisfied

Level AA

Guideline B.4.1 Ensure the availability of features that support the production of accessible content

Principle B.4 Authoring tools promote and integrate their accessibility features

Accessibility support features are prominent and visible in the CMS and are not concealed.

Ensuring accessibility features are prominent will help authors keep accessibility front of mind.

B.4.2.1 Model practice

Partially satisfied

Level	WCAG A and AA
Guideline	B.4.2 Ensure that documentation promotes the production of accessible content
Principle	B.4 Authoring tools promote and integrate their accessibility features
Location	Documentation

The Bureau of Meteorology has created a small range of examples in documentation that demonstrate accessible authoring practices. For example, there is documentation showing what to do and what to avoid when creating alternative text for images.

The Bureau also links out to external resources such as WebAim, Web Accessibility Initiative (WAI) and The Australian Government's Style Guide to provide examples of accessible authoring practices.

Providing examples of accessible authoring practices increases the likelihood of authors in creating accessible content. It also decreases the likelihood of authors copying and pasting inaccessible authoring practices into their content.

Our recommendation

Give authors examples of good and bad practice for creating accessible content, ideally using content which is relevant to meteorology. Linking to other sources of accessibility advice is good, but their examples may be too basic or generic for the Bureau's needs.

Some directions should be given for completed articles, well-named data tables with useful heading cells, images with complex text alternatives, and transcript formatting for readability. Another source of useful documentation may be to point to existing accessible content on the Bureau's sites to show the standard which is expected.

Figure 1: Documentation of alternative text, including good and bad examples of alternative text.

Alt text (ALT tags)

See [Style Manual guidance on alt text, captions and titles for images](#).

With most images and graphics you need to supply alternative text (alt text) describing an image for those who can't see it.

Alt text is an accessibility requirement. It's a piece of copy added behind the scenes of the website. It describes non-text content such as images, maps, charts and diagrams – anything you need to see in order to understand the content. Alt text helps people using a screen reader to understand what is shown.

Alt text should contain relevant keywords – [contact the Content Design Team](#) if you need help with these.

Our alt text is limited to 255 characters.

In general, the alt text should begin with a noun. Don't put an article before the noun.

Like this: Thunderstorm moving across a mountain range towards the coast

Not like this: A thunderstorm moving across a mountain range towards the coast

For more complex situations, such as describing a table or diagram, you may need to use multiple sentences and the above point may not apply.

For more information on alt text see the [W3C Web Accessibility Images tutorial](#) and the [Alt decision tree](#).

B.4.2.2 Feature Instructions

Partially satisfied

Level A

Guideline B.4.2 Ensure that documentation promotes the production of accessible content

Principle B.4 Authoring tools promote and integrate their accessibility features

Location Documentation

The Bureau of Meteorology has created a small subset of documentation to instruct authors on creating accessible content. This documentation sits external to the CMS, and on The Bureau's own internal systems. Feature instructions include:

- what is alternative text and how to construct meaningful and accurate alternative text
- creating transcripts for multimedia
- selecting appropriate heading levels

However, there is no documentation for the following:

- what makes an accessible video
- how headings should be used to create a structure for long pages or articles

The Bureau also includes a list of external resources for authors. This includes:

- The Australian Government style manual
- Writing for Web Accessibility by the Web Accessibility Initiative

- An accessibility checklist for web writers
- Creating accessible documents by Microsoft Word

When CMS tools include accessibility features, instructions and documentation should be available to support authors in using the accessible content support features effectively.

Our recommendation

Consider increasing the internal documentation for content authors at The Bureau of Meteorology.

The documentation should include detail on video captions, what a transcript is, what detail to include in a transcript, and when a detailed transcript might be required. Documentation for how to use headings in a way that is consistent with other content in the site would also be useful.

Also consider placing all the documentation in one area; documentation at the moment can be fragmented, with information residing across numerous websites and links.

Figure 1: Documentation on Accessibility at The Bureau on internal SharePoint site

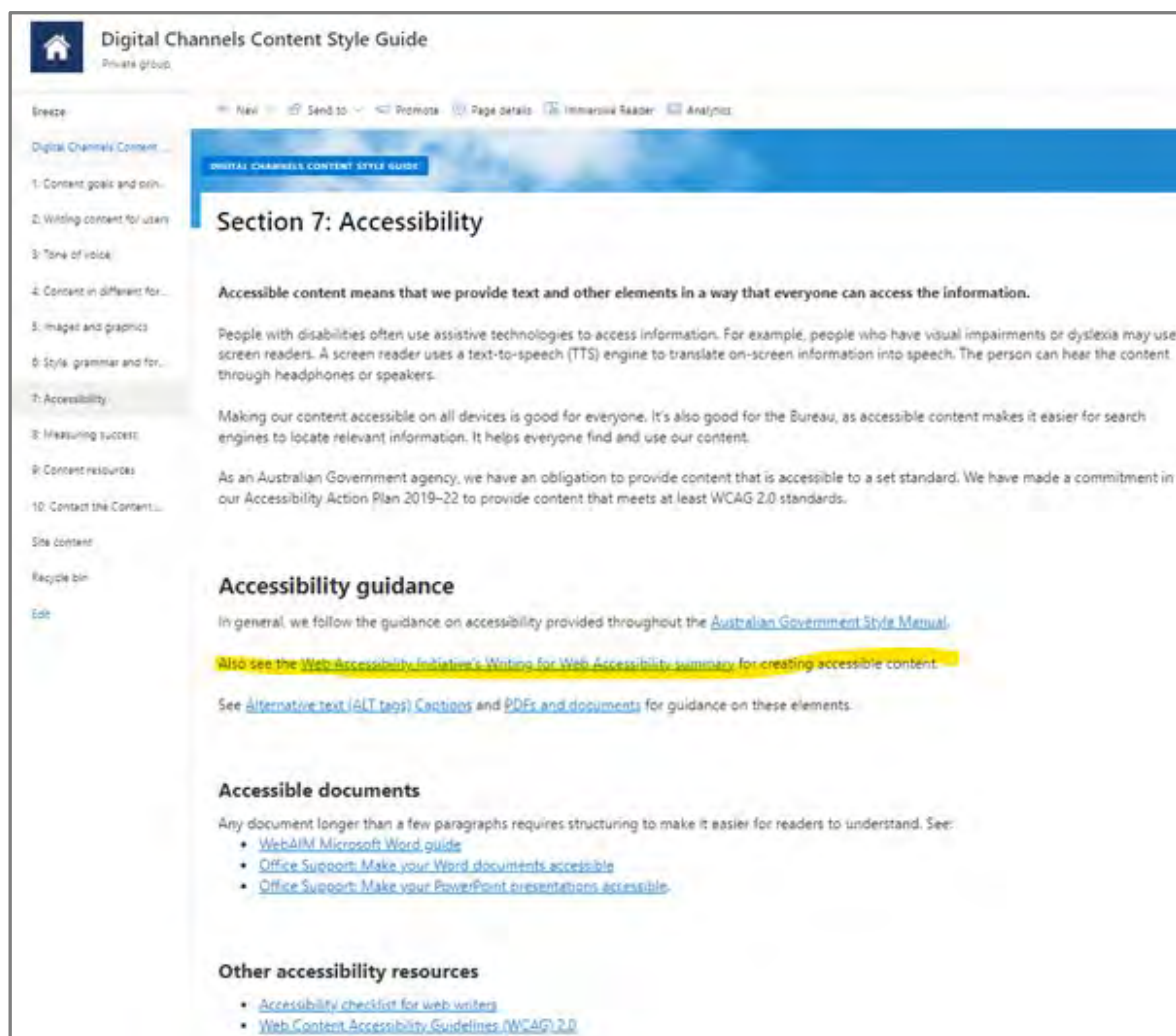


Figure 2: Documentation of alternative text, including good and bad examples of alternative text.

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Alt text is an accessibility requirement. It's a piece of copy added behind the scenes of the website. It describes non-text content such as images, maps, charts and diagrams – anything you need to see in order to understand the content. Alt text helps people using a screen reader to understand what is shown.

Alt text should contain relevant keywords – [contact the Content Design Team](#) if you need help with these.

Our alt text is limited to 255 characters.

In general, the alt text should begin with a noun. Don't put an article before the noun.

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Not like this: A thunderstorm moving across a mountain range towards the coast

For more complex situations, such as describing a table or diagram, you may need to use multiple sentences and the above point may not apply.

For more information on alt text see the [W3C Web Accessibility Images tutorial](#) and the [Alt decision tree](#).

Figure 3: Documentation on captions.

Captions

See [Style Manual guidance on alt text, captions and titles for images](#).

Most images require captions. These are brief descriptions (up to 255 characters) related to the image that give it context. They also credit the copyright owner, where required.

Captions don't need to be complete sentences. Even if they are full sentences, in general, don't conclude them with a full stop. However, if your caption also attributes a copyright owner or has multiple sentences, use a full stop. For example:

Large hail damaged 55 houses in Port Macquarie in February 2020. Credit: Peter Pan

In general, don't include text in a graphic or image, as this isn't accessible. Use a caption instead.

Consider how your alt text and caption work together. They shouldn't be identical or someone using a screen reader will hear the same information twice.

Appendices

What is ATAG?

From the [ATAG 2.0 Abstract](#):

The Authoring Tool Accessibility Guidelines (ATAG) 2.0 provides guidelines for designing web content authoring tools that are both more accessible to authors with disabilities (Part A) and designed to enable, support, and promote the production of more accessible web content by all authors (Part B).

The [World Wide Web Consortium \(W3C\)](#) publishes the Authoring Tool Accessibility Guidelines (ATAG).

ATAG is an internationally recognised digital accessibility standard for web authoring tool designers, developers, and testers.

ATAG consists of two parts:

- A. Make the authoring tool user interface accessible
- B. Support the production of accessible content

Each part contains several broad principles, such as "Editing views are operable" and "Authors are supported in producing accessible content".

In turn, the principles contain a framework of guidelines, such as "(For the authoring tool interface) Provide authors with enough time" and "Assist authors in repairing accessibility problems".

Within each ATAG guideline are a series of testable statements, called success criteria. These success criteria make up the backbone of our accessibility audit process.

[ATAG 2.0](#) (2015) contains 63 success criteria.

The success criteria are split into three conformance levels:

- Level A – the lowest conformance level
- Level AA
- Level AAA – the highest conformance level.

Some ATAG success criteria reference WCAG. The level of conformance attained for these success criteria is determined by the WCAG conformance level of the authoring tool.

In general terms, to achieve conformance, websites must satisfy every level up to and including the desired conformance level in full.



Accessibility review of Bureau of Meteorology beta website

By Intopia for Bureau of Meteorology
Created on 02/03/22

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- [Menu links are not marked up in a list](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Focus indicator does not meet minimum contrast requirements](#)

- [Informative styles are not visible in Windows high contrast mode](#)
- [Related items are not marked up in a list](#)
- [The visible label is different to the label in code](#)
- [Text should be a heading](#)
- [Accessible name is referencing a non existent element ID](#)
- [Auto-suggestions are not announced by the screen reader](#)
- [Focus is not managed correctly on input](#)
- [Link has redundant aria-describedby attribute](#)
- [Filters are not marked up as a landmark](#)
- [Accessible name does not adequately describe the purpose of the button](#)
- [Status message is not announced by screen reader](#)
- [The heading hierarchy in code skips levels](#)
- [The heading hierarchy in code skips levels](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Filters are not wrapped in a landmark](#)
- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Active filters cannot be programmatically determined](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [The loading screen is not announced by the screen reader](#)
- [Context changes on input](#)
- [Modal contents are hidden from screen readers](#)
- [Text should not be a heading](#)
- [Clear filters button does not clear the selected filters](#)
- [Image alternative text is not descriptive](#)
- [Link is marked up using ARIA accordion pattern](#)
- [Focus is not managed on page loads on mobile](#)

- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Focus is not managed on input](#)
- [The heading hierarchy in code skips levels](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Non-text objects do not meet minimum contrast requirements](#)
- [Non-text objects do not meet minimum contrast requirements](#)
- [Colour alone is used to convey meaning](#)
- [Colour alone is used to indicate a change in state](#)
- [Content collapses when Skip to main content link is activated](#)
- [Site displayed before the page name](#)
- [Text should be a heading](#)
- [Content updates automatically](#)
- [Meaningful content is not visible in Windows High Contrast mode](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Tabs component uses radio buttons](#)
- [Tabs component uses radio buttons](#)
- [Article description cannot be accessed with a screen reader](#)
- [Content is missing when zoomed to 200% and 400%](#)
- [Content is cut off when the page is zoomed 400%](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Focus is not managed on input](#)
- [Focus moves to the first interactive element in the modal](#)
- [Auto suggestion field is marked up as text input](#)
- [Colour is used to indicate when an element has focus](#)

- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Focus is not managed on input](#)
- [Headings do not reflect the content structure](#)
- [Switch control is not clear without colour](#)
- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Drag and drop within lists is not screen reader accessible](#)
- [The Auto suggest element is not accessible using keyboard](#)
- [Button does not have an accessible name](#)
- [Button is not functional](#)
- [Focus is not managed on input](#)
- [Combobox is not implemented correctly](#)
- [Tabs component uses radio buttons](#)
- [Feedback form is not accessible to mobile screen reader users](#)
- [Responsive navigation menu links are not functional](#)
- [Content truncates when the page is zoomed 400%](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Status message is not announced by screen reader](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Filters are not marked up as a landmark](#)
- [Related form fields are not grouped in code](#)
- [Button incorrectly announces as a toggle button](#)
- [Focus is not managed correctly on input](#)

- [Accessible name does not adequately describe the purpose of the button](#)
- [Button is not operable using keyboard](#)
- [Group label does not correctly describe grouped inputs](#)
- [Focus does not move to the modal heading](#)
- [Form fields are announced without their labels](#)
- [Article description cannot be accessed with a screen reader](#)
- [Links open in new tabs without warning](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [The heading hierarchy in code skips levels](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Tooltips are not accessible via keyboard](#)
- [Decorative image is not hidden from assistive technologies](#)
- [Content truncates when the page is zoomed 400%](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Focus is not managed on input](#)
- [Text is hidden from screen readers](#)
- [Icons are hidden from screen readers](#)
- [My weather links marked up in two separate lists](#)
- [Text is hidden from screen readers](#)
- [The heading hierarchy in code has two H1 headings](#)
- [Text should be a heading](#)
- [Inappropriate use of landmark](#)
- [Form field is not linked to a label in code](#)

- [Link is marked up using ARIA accordion pattern](#)
- [Glossary filters cannot be reset](#)
- [The heading hierarchy skips levels](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Tabs are using accordion ARIA pattern](#)
- [Tabs component uses radio buttons](#)
- [Status message is not announced by screen reader](#)
- [Tooltips are not accessible via keyboard](#)
- [Decorative image is not hidden from assistive technologies](#)
- [Skip link does not move keyboard focus to target destination](#)
- [Status message is not announced by screen reader](#)
- [Accessible name does not adequately describe the purpose of the button](#)
- [Non-text objects do not meet minimum contrast requirements](#)
- [Tabs are using accordion ARIA pattern](#)
- [Button is marked up using ARIA accordion pattern](#)
- [Tabs are using accordion ARIA pattern](#)
- [Focus does not move to the modal heading](#)
- [Decorative image is not hidden from assistive technologies](#)
- [Focus is not managed while modal is open](#)
- [Visible label does not adequately describe purpose of the button](#)
- [Form fields do not have a visible label](#)
- [Content collapses when Skip to main content link is activated](#)
- [Tabs are using accordion ARIA pattern](#)
- [Focus does not move to the modal heading](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Text does not meet minimum contrast requirements](#)

- [Button is marked up using ARIA accordion pattern](#)
- [Colour alone is used to convey meaning](#)
- [Location markers are not keyboard accessible](#)
- [Keyboard shortcut instructions are not available for users](#)
- [Link opens in new tab without warning](#)
- [Static element receives focus](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Informative content has low contrast in Windows high contrast mode](#)
- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Switch control is not clear without colour](#)
- [Meaningful content is not visible in Windows High Contrast mode](#)
- [Skip links are not keyboard accessible](#)
- [Skip link does not move keyboard focus to target destination](#)
- [Tooltips are not accessible via keyboard](#)
- [Focus is not managed on input](#)
- [Colour alone is used to convey meaning](#)
- [Decorative image is not hidden from assistive technologies](#)
- [Radio buttons are not grouped programmatically](#)
- [Form fields do not have a visible label](#)
- [Text does not meet minimum contrast requirements](#)
- [Location markers are not keyboard accessible](#)
- [Keyboard shortcut instructions are not available for users](#)
- [Link opens in new tab without warning](#)
- [Button name is hidden from screen readers](#)
- [Button is hidden when content is zoomed to 200%](#)

- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Content plays automatically](#)
- [Visually hidden element receives focus](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Meaningful content is not visible in Windows High Contrast mode](#)
- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Informative content has low contrast in Windows high contrast mode](#)
- [Content is cut off when the page is zoomed 400%](#)
- [Tabs component uses radio buttons](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Content is not visible when the page is zoomed 400%](#)
- [Functionality breaks when zoom is increased to 400%](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Skip link is not keyboard accessible](#)
- [Links open in new tabs without warning](#)
- [Text is hidden from screen readers](#)
- [Map does not have a title](#)
- [Non-text objects do not meet minimum contrast requirements](#)
- [Accordion does not communicate state](#)
- [Path-based gesture functionality has no simple pointer alternative](#)
- [Decorative image is not hidden from assistive technologies](#)

- [Content truncates when the page is zoomed 400%](#)
- [Text is cut off when text spacing is increased](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Map does not have a title](#)
- [Radio buttons are not grouped programmatically](#)
- [Content plays automatically](#)
- [Text should be a heading](#)
- [Fire danger ratings table is not marked up correctly](#)
- [Weather observations tables are not marked up correctly](#)
- [States links marked up in two separate lists](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Radio buttons are not grouped programmatically](#)
- [Tabs component uses radio buttons](#)
- [Content is not visible when the page is zoomed to 200%](#)
- [Content is not visible when the page is zoomed 400%](#)
- [Content is not visible when the page is zoomed to 200%](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Data has no visible labels](#)
- [Data has no visible labels](#)
- [Button name is hidden from screen readers](#)
- [Visually hidden element receives focus](#)
- [Forecast screen reader alternative is difficult to navigate](#)
- [Past 72 hours screen reader alternative is difficult to navigate](#)
- [Map does not have a complete text alternative](#)
- [Button does not have a meaningful label](#)
- [Button does not have a meaningful label](#)
- [Informative content has low contrast in Windows high contrast mode](#)

- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Role and label does not adequately convey purpose of button](#)
- [Accordion does not communicate state](#)
- [Path-based gesture functionality has no simple pointer alternative](#)
- [Map does not have a complete text alternative](#)
- [Distance values are repeated](#)
- [The heading hierarchy skips levels](#)
- [Form fields do not have a visible label](#)
- [Decorative image is not hidden from assistive technologies](#)
- [Focus does not move to the modal heading](#)
- [Tabs are using accordion ARIA pattern](#)
- [Path-based gesture functionality has no simple pointer alternative](#)
- [Accordion does not communicate state](#)
- [Content plays automatically](#)
- [Radio buttons are not grouped programmatically](#)
- [Map does not have an accessible name](#)
- [Meaningful content is not visible in Windows High Contrast mode](#)
- [Switch control is not clear without colour](#)
- [Focus indicators are not visible in Windows High Contrast mode](#)
- [Informative content has low contrast in Windows high contrast mode](#)
- [Link opens in new tab without warning](#)
- [Keyboard shortcut instructions are not available for users](#)
- [Colour alone is used to convey meaning](#)
- [Button is marked up using ARIA accordion pattern](#)
- [Text does not meet minimum contrast requirements](#)

- [Map does not have a complete text alternative](#)
- [Verbose table announcements with iOS](#)
- [Text should be a heading](#)
- [Text should not be a heading](#)
- [Functionality breaks when zoom is increased to 400%](#)
- [Content is cut off when the page is zoomed 400%](#)
- [Focus indicator does not meet minimum contrast requirements](#)
- [Meaningful content has low contrast in Windows High Contrast mode](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Text is hidden from screen readers](#)
- [Content is cut off when the page is zoomed 400%](#)
- [Text should not be a heading](#)
- [Icon button has no on-screen text label](#)
- [Icon button has no on-screen text label](#)
- [Icon button has no on-screen text label](#)
- [Meaningful non-text content is unlabelled](#)
- [Meaningful non-text content is unlabelled](#)
- [Meaningful non-text content is unlabelled](#)
- [Meaningful non-text content is unlabelled](#)
- [Meaningful non-text content is unlabelled](#)
- [Meaningful non-text content is unlabelled](#)
- [Slider buttons are all set to 2 hours](#)
- [District links marked up in two separate lists](#)
- [Weather observations table is not marked up correctly](#)
- [Non-text objects do not meet minimum contrast requirements](#)
- [Informative styles are not visible in Windows high contrast mode](#)
- [Tabs component uses radio buttons](#)
- [Button is hidden when content is zoomed to 200%](#)

- [Visually hidden element receives focus](#)
- [Horizontal scroll bar displayed when content is resized to 400%](#)
- [Focus is not managed on input](#)
- [The heading hierarchy in code is not well formed](#)
- [There is no control provided to pause auto-updating content](#)
- [Verbose table announcements with iOS](#)
- [Button does not have a meaningful label](#)
- [Button does not have a meaningful label](#)
- [Accessible name does not adequately describe the purpose of the button](#)
- [Content collapses when Skip to main content link is activated](#)
- [Focus is not managed while modal is open](#)
- [Functionality breaks when zoom is increased to 400%](#)
- [Visible label does not adequately describe purpose of the button](#)
- [Parsing errors which may affect assistive technology](#)

Executive summary

Introduction

Bureau of Meteorology engaged Intopia to conduct an independent accessibility review of select features on the Bureau of Meteorology beta website. Accessibility is the extent to which a site or app is accessible to as many people as possible. Expert accessibility testers reviewed select pages and features of Bureau of Meteorology beta website against the Web Content Accessibility Guidelines WCAG 2.1 A & AA from 02/02/22 - 25/02/22.

How you went

The results of this review have revealed that the Bureau of Meteorology beta website presents moderate accessibility barriers for users with disability. Most of the issues identified were medium and high priority issues, with a smaller number of critical and low priority issues identified.

What you're doing well

- **Text Contrast.** With the exception of the spatial maps, text across the tested pages meets contrast requirements, making it easier for users with low vision to read the content.
- **Clear link purpose.** Links are given descriptive link text enabling users to know where the link will go before they activate it. This also assists screen reader users to quickly find the information that they are looking for.
- **Consistent Navigation.** The order of navigation and content is consistent and makes it easy for content to be understood. Structural and navigational elements such as headings, links and lists are generally used well. This consistency and repeatability

assists a range of users, such as users with cognitive conditions and users with low or no vision to navigate the site with ease.

- **Presentation of weather information.** Information is presented in various ways, such as text, tables and spatial maps giving flexibility to users in finding and narrowing down data based on their location.

Your most critical issues

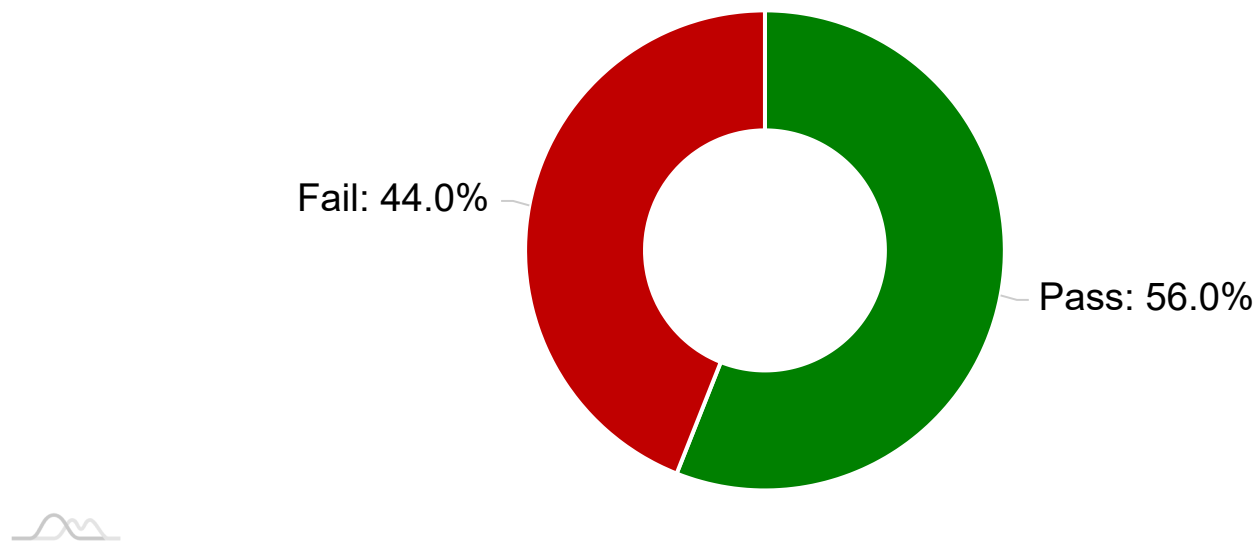
- **Inaccessible CAPTCHA.** Use of older version of CAPTCHA in the contact forms may prevent users with disabilities from submitting the contact form.
- **Inaccessible tooltips.** Tooltips on several pages are not operable using a keyboard, blocking keyboard and screen reader users from accessing the information that is contained in the tooltip.
- **Windows high contrast mode.** Certain content that is meaningful or rely on informative styles either are not visible or have low contrast when viewed in Windows high contrast mode, preventing users with low vision who rely on high contrast themes from accessing the content.
- **Spatial maps.** The spatial maps contain detailed weather information for sighted users. However reliance on use of colour only to convey this information, along with inadequate text alternatives, prevent users who are colourblind and those with low or no vision from accessing the same level of detail that is available to sighted users.

Summary of results

Site-wide WCAG conformance

To assess your conformance against WCAG 2.1 Level A & AA, we tested your site against 50 Success Criteria. To meet WCAG 2.1 Level A & AA, all Level A & AA Success Criteria must pass.

44% of WCAG 2.1 Success Criteria failed on the pages tested for Levels A & AA. Note that a Success Criteria only has to fail once to be counted as an overall fail across the site.



The number of WCAG 2.1 A & AA Success Criteria passed or failed on the pages tested.

Conformance	Pass	Fail	Total
Level A	16	14	30
Level AA	12	8	20
Level AAA	0	0	0

Number of issues identified

In addition to WCAG 2.1 failures, our expert testers also identify best practice issues that affect the experience for users with disabilities. These best practice requirements cover techniques that enhance accessibility but are not a failure of WCAG 2.1.

Your site has 299 issues.

WCAG 2.1**199****Expert
observation****96****Functional****4**

Issues by severity

Each issue we found has a severity rating which predicts the impact the issue will have on a user's experience. There were 8 critical issues, 121 high priority issues, 146 medium priority issues and 24 low priority issues.

Next steps

Accessibility is a journey. Here are a few things to consider as you take your next steps:

- **Fix issues based on recommendations.** We recommend issues with a higher severity are prioritised although all issues should be addressed.
- **Find issues and apply fixes on pages that weren't tested.** Since only a sample of pages were tested, make sure that any issues that were identified are also fixed on pages that weren't tested.
- **Ensure new functionality or content updates maintain accessibility standards.** Accessibility can decay over time if new features or content are not created with accessibility in mind and reviewed over time.
- **Testing with people with disabilities.** According to the Australian Human Rights Commission, "...there is no complete substitute for user testing, and designers should, wherever possible, involve users of assistive technology in the testing and evaluation of the accessibility of their websites and web content." Usability testing helps you better understand the real experience of your users by testing it with people with different access requirements who would normally use the site.

Our approach

Methodology

Our testing methodology is based on the [Website Accessibility Conformance Evaluation Methodology \(WCAG-EM\) 1.0](#) (W3C Working Group Note 10 July 2014) published by the W3C Web Accessibility Initiative. This document provides guidance on evaluating how well websites conform to WCAG 2.

The process has five sequential steps:

1. Define the evaluation scope
2. Explore the target website
3. Select a representative sample
4. Audit the selected sample
5. Report the findings

Scope

The accessibility review of the Bureau of Meteorology beta website was performed against WCAG 2.1 A & AA between 02/02/22 - 25/02/22.

The review was performed on the Beta environment for Bureau of Meteorology website **redact under S33**.

The findings and recommendations in this document are correct at the time of publication and:

- do not include any other templates or pages outside the scope of testing
- do not cover any updates or maintenance that have been or will be performed on the site since testing
- are according to our interpretation of WCAG 2.1

Pages or views tested

The following pages or views were tested against WCAG 2.1 Level A & AA. These pages form a representative sample of different pages and states, content types such as text, images, tables and multimedia and types of web or app technologies. It also includes pages or views that are necessary to complete a task, such as registering for an account, buying a product or completing a form.

- Homepage (new and returning)
- Search function including results
- Town and place - Today, 7 days, Past
- State - Forecast, Past, Places
- District - Forecast, Past, Places
- Warnings and alerts
- Warnings details page - severe weather
- News and media
- Landing page - Safety and security
- Contact page
- Section page - Weather and climate
- Collection template - The strategy document
- Glossary

Technologies relied upon for conformance

WCAG 2.1 requires that utilised technologies are supported by users' assistive technologies (e.g. screen readers, screen magnifiers, speech recognition software) as well as the accessibility features in browsers. The following technologies are relied upon and must be turned on and/or supported for this product to conform with WCAG 2.1 Level A & AA:

- HTML
- CSS

- WAI-ARIA
- JavaScript
- DOM

Software tested on

The following assistive technologies, web browsers and user agents were used during testing:

- NVDA (latest) with Chrome (latest) on Windows 10
- Voiceover with Safari on iOS iPhone (latest - 15.2.1)
- Talkback with Chrome (latest) on Android 12

Tools used during testing

The following web accessibility evaluation tools were used to support manual (human) evaluation of accessibility requirements:

- Colour contrast analyser
- Tanaguru Contrast Finder
- Accessibility Insights for Web plugin for Chrome
- ARC Toolkit plugin for Chrome
- axe plugin for Chrome
- Text Spacing Bookmarklet

What WCAG conformance means

Although content may satisfy all Success Criteria, the content may not always be usable by people with a wide variety of disabilities. Therefore, usability testing is recommended, in addition to the WCAG conformance testing.

Usability testing aims to determine how well people can use the content for its intended purpose. It is recommended that users with disabilities be included in test groups when performing usability testing.

Summary of findings

Site-wide WCAG conformance by Success Criteria

Any Success Criteria that aren't applicable are considered a pass. If a Success Criterion fails on any page, even once, it has been recorded as a fail in the table below.

Success Criteria	Level	Result
1.1.1 Non-text Content	A	Fail
1.2.1 Audio-only and Video-only (Prerecorded)	A	Pass
1.2.2 Captions (Prerecorded)	A	Pass
1.2.3 Audio Description or Media Alternative (Prerecorded)	A	Pass
1.3.1 Info and Relationships	A	Fail
1.3.2 Meaningful Sequence	A	Fail
1.3.3 Sensory Characteristics	A	Pass
1.4.1 Use of Color	A	Fail
1.4.2 Audio Control	A	Pass
2.1.1 Keyboard	A	Fail
2.1.2 No Keyboard Trap	A	Pass
2.2.1 Timing Adjustable	A	Pass
2.2.2 Pause, Stop, Hide	A	Fail
2.3.1 Three Flashes or Below	A	Pass
2.4.1 Bypass Blocks	A	Fail
2.4.2 Page Titled	A	Pass
2.4.3 Focus Order	A	Fail
2.4.4 Link Purpose (In Context)	A	Pass
3.1.1 Language of Page	A	Pass
3.2.1 On Focus	A	Pass

Success Criteria	Level	Result
3.2.2 On Input	A	Fail
3.3.1 Error Identification	A	Pass
3.3.2 Labels or Instructions	A	Fail
4.1.1 Parsing	A	Fail
4.1.2 Name, Role, Value	A	Fail
2.1.4 Character Key Shortcuts	A	Pass
2.5.1 Pointer Gestures	A	Fail
2.5.2 Pointer Cancellation	A	Pass
2.5.3 Label in Name	A	Fail
2.5.4 Motion Actuation	A	Pass
1.3.4 Orientation	AA	Pass
1.3.5 Identify Input Purpose	AA	Pass
1.4.10 Reflow	AA	Fail
1.4.11 Non-text Contrast	AA	Fail
1.2.4 Captions (Live)	AA	Pass
1.2.5 Audio Description (Prerecorded)	AA	Pass
1.4.12 Text Spacing	AA	Fail
1.4.13 Content on Hover or Focus	AA	Fail
1.4.3 Contrast (Minimum)	AA	Fail
1.4.4 Resize text	AA	Fail
1.4.5 Images of Text	AA	Pass
2.4.5 Multiple Ways	AA	Pass
2.4.6 Headings and Labels	AA	Fail
2.4.7 Focus Visible	AA	Pass
3.1.2 Language of Parts	AA	Pass
3.2.3 Consistent Navigation	AA	Pass
3.2.4 Consistent Identification	AA	Pass
3.3.3 Error Suggestion	AA	Pass

Success Criteria	Level	Result
3.3.4 Error Prevention (Legal, Financial, Data)	AA	Pass
4.1.3 Status Messages	AA	Fail