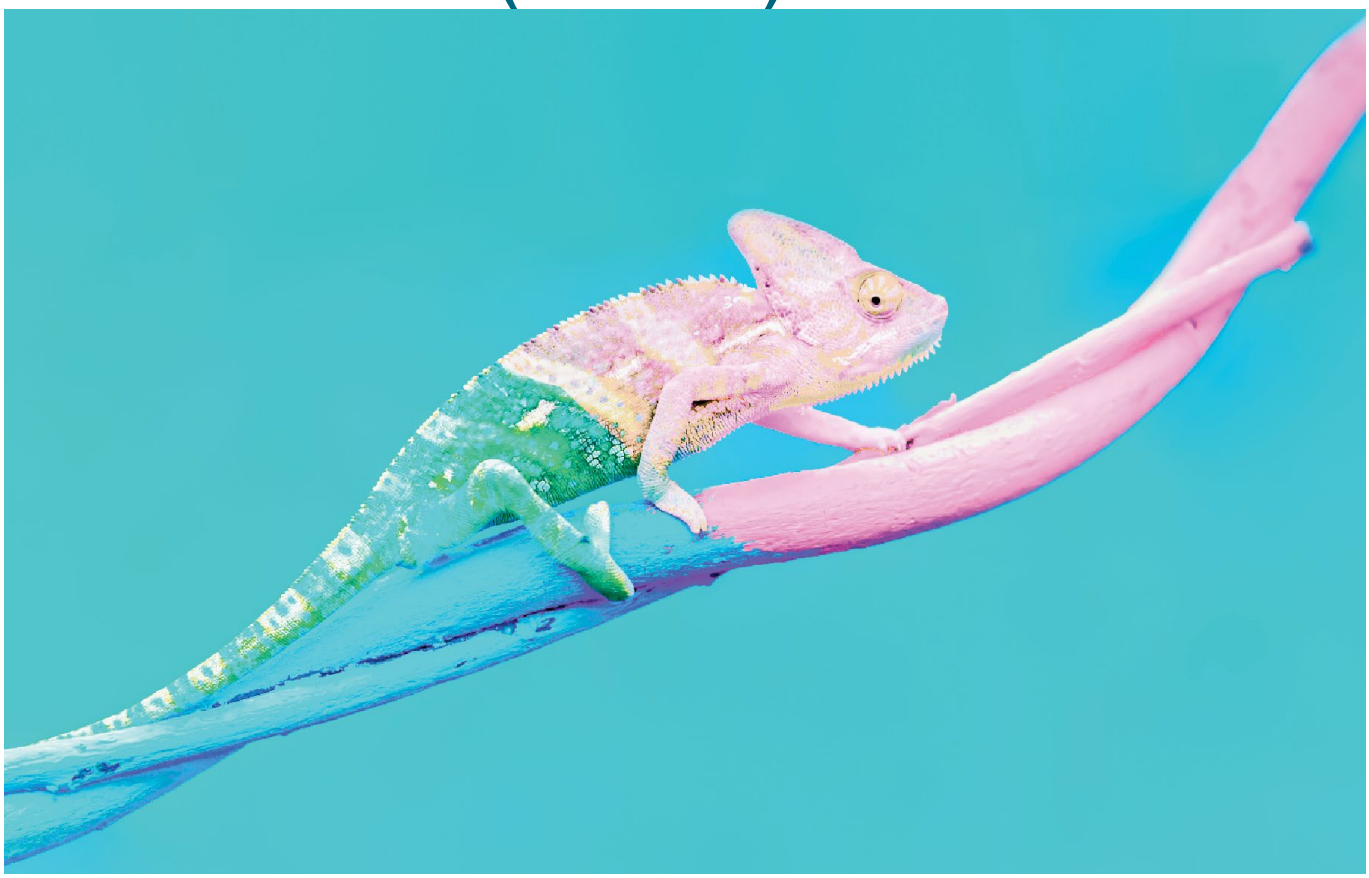
Strengthening Telecommunications Against Natural Disasters

The Department of Infrastructure, Transport, Regional Development and Communications (DITRDC)



Market research report

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1. Executive summary

This report outlines the research approach, key findings and recommendations for a Communication Strategy to improve public understanding of telecommunications resilience and the importance of having a telecommunications plan in place during emergencies and natural disasters such as bushfires, cyclones and floods. The project methodology included 4 stages of Establish, Explore, Evaluate and Execute:

Project planning:

- Inception meeting
- Stimulus workshop
- Stakeholder mapping
- n=12 depths with key stakeholders

Qualitative research:

- n=5 online mini focus groups
- n=5 in-depth interviews with SMEs
- n=28 in-depth interviews with community leaders/stakeholders
- n=20 online bulletin board

Quantitative research

- Quantitative survey - n=1543: n=500 residents from regional / rural areas, n=492 residents from Urban centres excluding capital cities, n=551 overnight travellers to regional areas

Campaign Strategy

- Activation workshop
- Communication Strategy

The research identified 3 overarching findings:

1. As technology has advanced, Australians have embraced new telecommunications services and integrated the key functionality and conveniences into their everyday life
2. Many over-estimate their understanding of how telecommunications work with regional, rural and remote Australians more likely to make a conservative assessment of their preparedness for an outage in a natural disaster while urban residents are somewhat over-confident.
3. Due to a lack of understanding and preparedness, Australians lack resilience when it comes to the ability to manage without telecommunications services in a natural disaster – for those with experience, regardless of how much preparation they did, there was still an element of being unprepared

Key findings for each of these two target audience reflect their stage of change:

1. People who are familiar with natural disasters +telecommunications outages: Maintenance Stage
   - Most Australians who live outside of a metropolitan city identify as living in a disaster prone area and they are more aware of the Australian environment and being exposed to the elements recognising the dangers of natural disasters
   - They understand the need to prepare and to be self-reliant and are more resilient in these environments with recent and significant natural disasters increasing the awareness of the dangers however they are concerned about visitors who may be less familiar with the risk of natural disaster
   - There is strong awareness of the need to have a "Plan" amongst this cohort and States and Territory emergency services are considered the most trusted source of information.
   - Community is key to disaster preparation and they work individually and together to protect their community, with protecting one's property the highest priority. For travellers more familiar with being in disaster prone areas, preparation is most linked to evacuating.

- A nationally consistent message is preferred to ensure optimal understanding of the risks and preparation.
- Vulnerable community members, particularly those who are socially isolated are significantly disadvantaged in natural disaster situations.
- Regional, rural and remote Australians generally experience less reliable coverage, are less concerned about outages and are more pragmatic about the disruptions caused by disasters. They understand that genuine back up options are minimal (however most have multiple alternatives available including a battery operated radio) and are more resilient during telecommunications outages (although may not feel that they are).
- There is strong support for maintenance of messaging about the resilience of telecommunications services, particularly as part of the broader preparation for a natural disaster messaging they are exposed to and believe there is a high need to educate visitors to their region.
- Infrastructure issues are considered more problematic than telecommunications outages caused by a natural disaster

2. People who are not familiar with natural disasters or telecommunications disruptions: Pre-contemplation Stage

- People without relevant experience or understanding of the impact of a natural disaster are less aware of the need to prepare in a disaster prone area and often believe they are more prepared than they potentially are.
- They are more likely to have reliable telecommunications services and therefore do not need to fully understand how they work. They have a higher reliance on these services even outside of a natural disaster and when travelling to a regional/rural location there is often surprise and dismay at a lack of comprehensive coverage in some areas.
- Preparing for a possible telecommunications outage is not top of mind - it is considered to be a critical issue but not until they are in the midst of it. The inability to access disaster relevant Apps and social media for up to date information is the most concerning issue for those yet to experience one and the inability to reach out for help or to connect with family and friends is considered the next most concerning issue.
- A battery powered radio to tune into the local radio station is considered the most reliable and realistic back up plan.
- As per the Maintenance Stage, there is strong support for educating about the resilience of telecommunications services and communicating the options to help manage the impact of a loss telecommunications is key given their lack of familiarity with them.
- Current natural disaster preparedness messages contradict the resilience message with many sources encouraging the community to refer to online communication tools despite warning of likely telecommunications outages.

2. GLOSSARY

The following terms have been used in the quantitative reporting.

TERM	DEFINITON
Natural disaster	Includes natural disaster or extreme weather situation including bush or grass fires, storms with destructive rain/wind, flood, cyclone, earthquake and landslides
Capital city / Metropolitan	The capital cities in each state/territory including Sydney, Melbourne, Brisbane, Adelaide, Perth, Canberra, Hobart and Darwin
Major regional centre	Major urban centres with a large populace within regional parts of Australia over 100,000 residents excluding the capital cities as per ABS 1270.0.55.004 - Australian Statistical Geography Standard (ASGS): Volume 4 - Significant Urban Areas, Urban Centres and Localities, Section of State, July 2016. The following towns are included in this definition for the survey data: Central Coast Gold Coast - Tweed Heads (Tweed Heads Part) Gold Coast - Tweed Heads (Gold Coast Part) Newcastle Wollongong Geelong Cairns Sunshine Coast Toowoomba Townsville
Regional / Rural	Areas excluding capital cities or major regional centres as per ABS definition (see Capital city and major regional centre definitions).
Resident 	Lives in a regional/rural area or major regional centre
Traveller 	Travels to and stays overnight in regional areas to visit friends/family, for holiday or for work from urban areas including capital city or major regional centre.
↑ ↓	The arrow symbols in the survey data charts and tables denote statistically significant differences of higher or lower than other cohorts or comparison groups at a 95% confidence interval

3. Introduction

This report outlines the research approach and key findings to improve public understanding of telecommunications resilience and the importance of having a telecommunications plan in place during emergencies and natural disasters such as bushfires, cyclones and floods.

An initial desktop review established that current messaging to the community about the reliability of telecommunications during a natural disaster and the ability to access and receive information during an emergency varied in consistency across jurisdictions. It found that:

- There are many references to websites, phone numbers, apps and social media platforms that are positioned as critical sources of information that would assist someone during a natural disaster – particularly state-based information sources.
- Radio is identified as the optimal, most trustworthy and reliable communication channel with most State authorities recommending community members pack a battery-operated radio in their emergency kit.
- There are some messages that explain that during an emergency or natural disaster such as bushfire, cyclone and flood, telecommunications and power may not be available with some suggesting that community members not rely on one single communication channel. However, there is limited reference to communication devices as compared to channels eg. Apps, websites etc.
- These precautionary messages are somewhat hidden in relevant documents (towards the back of the document, in small print etc) with a lack information about the limitations of telecommunications during an emergency, the likelihood of telecommunications failing and the most reliable alternatives should they fail.
- Overall, there is very little reference to the resilience of telecommunications, which would leave most Australians to assume that the promoted communication channels and devices which rely on the telecommunications networks are the most accessible and relevant during an emergency.
- There is A LOT of information about preparing for a natural disaster – it is an information rich topic for Australians in risk prone areas.

This presents a complex and sensitive communication environment in which the future communication program will be operating and this was reflected in the findings of this research project.

4. METHODOLOGY

The project methodology included 4 stages of Establish, Explore, Evaluate and Execute:

Project planning:

- Inception meeting
- Stimulus workshop
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Qualitative research:

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Quantitative research

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Campaign Strategy

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4.1. Qualitative research

A qualitative stakeholder and community research project was undertaken followed by a robust quantitative study with community members.

4.1.1. Key stakeholders

n=12 in-depth interviews/round table discussions were held with a range of relevant stakeholder organisations:

Stakeholder	Depths
National Bushfire Recovery Agency + Emergency Management Australia	n=1
Communications Alliance + Australian Mobile Telecommunications Association	n=1
State and Territory emergency service organisations (WA, VIC, QLD, SA, TAS)	n=4
Police (VIC)	n=1
Telecommunications industry such as NBN Co, Telstra, Optus and TPG Telecom	n=4
Australian Broadcasting Corporation	n=1
TOTAL	n=12

4.1.2. Community members

A mix of online focus groups, in-depth interviews and an online bulletin board was conducted with members of the community living in or travelling to disaster prone areas. This included people who had experienced a natural disaster and some who hadn't. The fieldwork was all completed online or via telephone due to COVID-19 social restrictions in place.

Community members	Focus groups: Experience with a natural disaster	Online bulletin board: No experience with a natural disaster
Young people aged 18-25 years	n=1 Gippsland/Alpine regions (VIC) weighted towards bushfire prone	n=4 participants from Greater Western Sydney/Blue Mountains (NSW) (Bushfire prone)
Parents with children	n=1 Broome/Karratha region/Bunbury region (WA) - weighted towards bushfire/ cyclone prone n=1 Central/South Coast (NSW) weighted towards bushfire/flood	n=3 participants from Bundaberg/Mackay/Ipswich (QLD) (flood prone) n=4 participants from Central/South Coast (NSW) (Bushfire/flood prone)
People aged over 55 years	n=1 Port Douglas/Cairns/Townsville (QLD – weighted towards cyclone/flood prone	n=3 participants from Canberra region (ACT) (Bushfire prone)
Travellers	n=1 with people who travel to disaster prone areas from urban areas with a mixture of experience in a natural disaster	n=3 participants who travel to disaster prone areas from urban areas
Businesses	n=5 in-depth interviews with SME business owners Australia-wide weighted towards bushfire prone	n=3 participants who are SME business owners Australia-wide weighted towards bushfire prone
	n=5 focus groups and n=5 in-depth interviews	**n=20 participants**

4.1.3. Community leaders (formal and informal) and stakeholders

Community leaders were recruited primarily by Essence to participate in the research with most holding either informal yet respected roles within the community or community-based roles employed by a local community organisation.

Target	Community stakeholder
n=4	Local community leaders – no formal role
n=5	Rural fire service organisations Emergency service organisations and responders
n=2	Community organisations/service providers
n=6	Community organisations supporting vulnerable people, CALD, Indigenous and People with Disability
n=4	Visitor services/Tourism operators
n=5	Local councils
n=2	Community Advocates
n=28	

4.2. Quantitative survey

A comprehensive quantitative study was undertaken with an online survey being the primary survey method and CATI providing rural and remote samples not achievable through online alone. A total of n=1543 respondents were surveyed with n=913 via the online survey and n=116 via telephone.

FIGURE 1: SURVEY SAMPLE ACHIEVEMENTS

Survey sample sizes by cohort	% of sample	n=
Total Sample	100	1543
Resident total	**82**	**1265**
Regional/Rural resident	33	500
Major regional centre resident	49	765
Traveller total	**36**	**551**
Major regional centretraveller*	18	273
Capital city traveller	18	278

*Note the major regional centre traveller sample is a sub-sample of the total major regional centre resident sample.

The incidence of travelling to regional areas was high with 76% of residents from major regional centres and 59% of capital city residents travelled and stayed overnight in regional areas to visit friends/family, holiday or for work.

4.2.1. Survey sampleprofile

The survey achieved a good spread of residents from all states and territories and a broad spread of age groups.

FIGURE 2: SURVEY SAMPLE PROFILE

	% of sample	n=
Male	50	624
Female	50	918
Other	1	1
18-34yrs	30	475
35-49yrs	23	360
50-56yrs	22	339
65+yrs	25	369
NSW	28	437
VIC	14	220
QLD	34	519
SA	7	114
WA	7	109
ACT	2	30
NT	3	45
TAS	4	69

FIGURE 3: SURVEY SAMPLE PROFILE BY COHORT

Column %	Total Sample n = 1543	Resident total n = 1265	Regional/ Rural resident n = 500	Major regional centre resident n = 765	Traveller total n = 551	Major regional centre traveller n = 273	Capital city traveller n = 278
Male	50	48	54	44	52	48	56
Female	50	51	46	55	47	49	44
Other	1	1	0	1	1	3	0
18-34yrs	30	29	16	38	36	41	31
35-49yrs	23	22	19	24	26	25	28
50-56yrs	22	23	29	19	19	20	19
65+yrs	25	26	36	19	18	14	22
NSW	28	30	19	37	28	35	21
VIC	14	14	19	11	13	11	14
QLD	34	38	18	52	33	55	12
SA	7	6	15	0	6	0	13
WA	7	6	15	0	6	0	12
ACT	2	0	0	0	5	0	11
TAS	4	3	6	0	7	0	13
NT	3	3	7	0	2	0	4
Indigenous	4	4	4	3	4	2	6
Culturally / Linguistically diverse	16	13	8	16	22	15	29
Have a disability	17	18	22	15	12	11	13

4.2.2. Weighting of data

For the main report (sections 5 to 6.1 comparing regions and cohorts), data was weighted for sex (male, female and other) to account for an over representation of females in the sample. Data was unable to be weighted by population as it would compromise the reliability of the data.

For the sections 6.1 onwards for any segment reporting of those 'familiar' with natural disasters onwards, the Resident sample has been weighted to reflect the population of regional/rural and major regional centres using a weighting of 67:33 to reflect the population contribution of the key regional locations as the focus on the report was to profile the at risk vs. less at risk audiences and provide a profile of the key audiences.

5. The current situation

5.1. Risk and experience with natural disasters

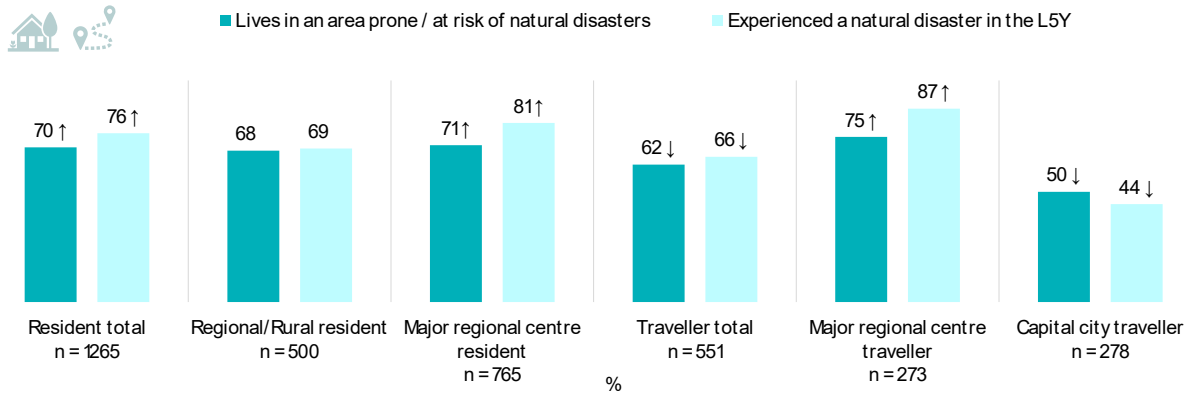
The majority of Australians who live in regional/rural or major regional centres have experienced a natural disaster or extreme weather situation in the last 5 years

The survey found that the majority of Australians who live in a regional/rural or major regional centre (70%) identify the area in which they live as prone to disasters such as bushfires or grassfires, extreme weather and destructive storms, heavy rain, cyclones or floods. Even more (76%) had experienced a natural disaster in the last 5 years.

Residents of more urban areas of regional Australia, that is those who live in major regional centres, were most likely to consider where they live to be at risk of natural disasters (71% vs. 68% of regional/rural residents) and they were also more likely to report having experienced a natural disaster in the last 5 years (81% vs 69% regional/rural residents).

The survey results found that half (50%) of capital city dwellers (who travel regionally) considered their area to be prone to natural disasters and 44% had experienced one in the last 5 years.

FIGURE 4: RISK AND EXPERIENCE WITH NATURAL DISASTERS



Total sample: n=1543. S6 Would you consider the area you live in to be at risk or prone to…?, Experienced L5Y combines experience where they live and when travelled. Q1 In the last 5 years, have you experienced any of the following in the immediate area you live? T1 In the last 5 years, have you experienced any of the following when staying in a regional area for holiday / to visit friends or family / work?

The high number of residents in major regional centres who have experience with a natural disaster can be explained when looking at the specific regions. The natural disaster most experienced was destructive storms (65%) and this was higher for major regional centres than regional/rural areas, particularly in WA and NSW. The next most experienced natural disaster was bushfires or grassfires (40%), which was similar between regional/rural residents and major regional centre residents and was higher in NSW. Floods and cyclones were more commonly experienced in major regional centre areas driven by experiences in NSW and QLD.

Heatwaves (also measured but not included in the definition of natural disasters) were more common in major regional centre areas especially in NSW and NT.

FIGURE 5: TYPES OF NATURAL DISASTERS EXPERIENCED BY REGION

Column %	TOTAL RESIDENTS			NSW		VIC		QLD		SA	WA	TAS	NT
	Total n = 1265	Regional / Rural n = 500	Major regional centre n = 765	Regional / Rural n = 95	Major regional centre n = 282	Regional / Rural n = 95	Major regional centre n = 87	Regional / Rural n = 88	Major regional centre n = 396	Regional / Rural n = 78	Regional / Rural n = 76	Regional / Rural n = 32	Regional / Rural n = 35
All exc. heatwave	76	69↓	80↑	75	86↑	58↓	67	66↓	78	71	81	51↓	79
Storm with destructive winds/rain	65	58↓	69↑	56	76↑	51↓	62	48↓	66	62	80↑	39↓	63
Bushfire or Grassfire	40	40	40	59↑	54↑	30↓	28↓	25↓	33↓	42	40	27	62↑
Flood	31	21↓	37↑	34	36↑	17↓	15↓	27	43↑	13↓	13↓	21	25
Cyclone	13	8↓	15↑	1↓	5↓	1↓	4↓	21↑	25↑	2↓	15	0↓	25↑
Earthquake	8	10↑	6↓	8	4↓	6	6	6	7	11	21↑	4	18↑
Landslide	3	3	3	6	4	3	0	5	2	0	3	3	0
Heatwave / Extreme heat	61	57↓	64↑	57	72↑	58	67	52	58	68	52	19↓	79↑

Resident sample: n=1265. Q1 In the last 5 years, have you experienced any of the following in the immediate area you live? EXPERIENCED L5Y, Excludes states/territories with base sizes lower than n=30.

Those more aware of the Australian environment with greater exposure to the elements, recognise the dangers of natural disasters

The qualitative research found that Australians who live, visit or work in areas of the country that are more prone to natural disasters are more aware of the likelihood and risks of natural disasters and the impacts.

These Australians are more likely to have lived "on the land" or in high risk areas for many years. Travellers from urban areas who are familiar with this context may have lived in these disaster prone areas at some stage in their life or work or travel to these areas regularly. They are more familiar with the unpredictability of the Australian environment and the need to prepare for any scenario is well understood. For those who have recently moved into these disaster prone areas, they quickly become aware through engagement with the local community of the need to prepare accordingly.

> "*My husband lived on a farm growing up so he knew a bit about what to do. And I just spoke to the neighbours—it was pretty clear how important it is to prepare for the chance it might happen. They were great. They were all over it.*"
>
> *New rural resident NSW.*

As outlined above, there is a high likelihood that, either as a resident or visitor, they are likely to have experienced an extreme weather situation of some sort with many describing situations where they were exposed to a major and at the time, unprecedented event such as bushfires, floods and cyclones.

5.1.1. Expectations of a natural disaster affecting them in the future

Recent natural disasters have increased awareness of the dangers

In communities that have seen natural disasters recently, and in many cases where events have caused significant damage and emotional trauma to a community, there is a greater commitment to preparing for a potential future event. For many, both community members and leaders, there is a sense that the recent events reflect a worsening situation caused by a combination of climate change, reduced planned burn offs and hazard reduction strategies, property development in urban fringes and "freak" natural events.

There is also a portion of the broader Australian community who weren't involved in the recent natural disasters who may or may not live in disaster prone areas themselves but who observed the impact of the 2019/20 events in particular and have a greater sense of the risk and need to prepare. For those in bushfire prone areas, the coverage of the bushfires in particular suggested that they can not be fully prepared for or controlled and this has increased awareness and interest in doing as much as they can in their own local community.

This increase in awareness has significantly contributed to a greater openness to messages and information that will enable them to prevent or mitigate against the impact seen in recent events.

"*You know we watched from over here (WA) and could see that it could easily have been us. We really felt for them."*

Community leader, WA

"I think people are open now – they just want to be told to do. After seeing what they saw, they're primed for more information about what to do."

Community leader, South Coast NSW

"People might be more serious now. We used to brag that we've never lost a house and now we've lost a lot. Now with what's happened people are more aware. This was a game changer."

Farm owner, Kangaroo Valley

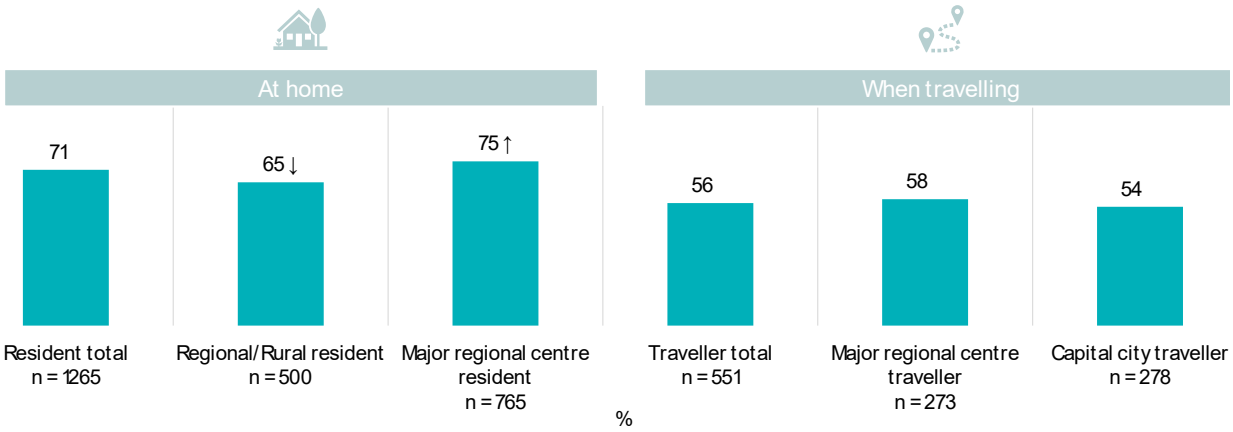
"We had to evacuate last year for a week and camping out on the oval. A lot of people thought they were prepared and realised they weren't. It's quite common to see that – realising you aren't prepared."

Fire Services volunteer, TAS

Residents and to a lesser extent travellers are cognisant of the likelihood that a natural disaster will occur in the future.

Most regionally based residents believed the likelihood of a natural disaster happening in the future was very or somewhat likely (65% for regional/rural and 75% for major regional centre residents). Over half (56%) of urban residents that travelled to regional areas believed a natural disaster could happen while they were visiting a regional area in the future.

FIGURE 6: FUTURE LIKELIHOOD TO EXPERIENCE A NATURAL DISASTER

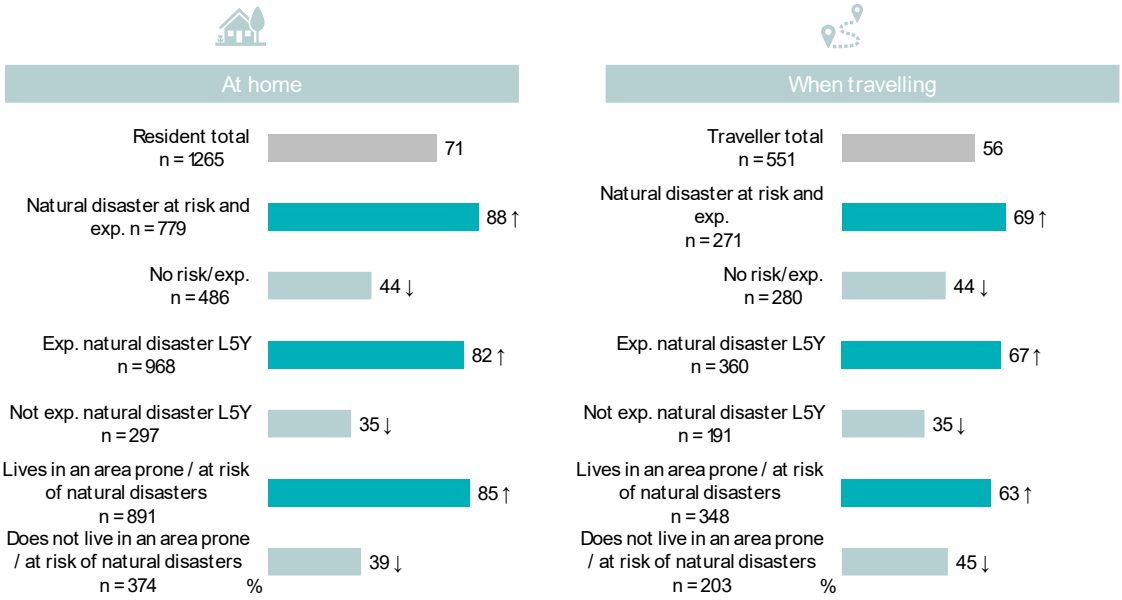


Total sample: n=1543. Q2 In the future, what is the likelihood of a natural disaster or extreme weather situation occurring in your immediate area that could have an impact on your safety, property, local community or connectivity…? T2 Thinking about when you stay overnight in a regional area for holiday / to visit friends or family / work, how likely do you think it is that the following could happen? Showing Very likely / Somewhat likely

Experience highly influences both residents and traveller's perception of whether they will experience a natural disaster in the future.

Those who had experienced a natural disaster in the last 5 years or those who lived in areas prone to natural disasters, were significantly more likely (88% versus 44% with no experience) to believe a natural disaster could occur in the future at their residence or in regional destinations they travel to.

FIGURE 7: FUTURE LIKELIHOOD TO EXPERIENCE A NATURAL DISASTER BY EXPERIENCE



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5.2. Preparing for a natural disaster

5.2.1. Preparing your home / household- Residents

Regional/rural and majorregional centre residents are receptive to information about how to prepare for natural disasters and believe that one can never be too prepared

Generally speaking, residents of regional/rural andmajor regional centresare receptive to information about how to prepare for natural disasters and acknowledge that reminders are necessary even if you have experience. Around 9 in 10(between 88%- 93%)of residents agree that:

- It's important to be reminded about what you need to do to be prepared
- Even those who have experienced natural disasters need to be reminded about what to do to be prepared
- I am always open to hearing more about how to prepare for a natural disaster or extreme weather situation and the impacts of it on the people and community
- I am open to learning more about how to be better prepared for a future natural disaster / emergency

The majority also acknowledge that it is easy to become complacent or overconfident about how prepared you might be (86%) and that one is never really prepared for the impact (76%). Few (31%) consider themselves to be very experienced and know exactly what to do.

FIGURE 8: ATTITUDES TO INFORMATION ABOUT PREPARING FOR NATURAL DISASTERS - RESIDENTS

Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Natural disaster at risk and exp. n = 779	No risk/exp. n = 486
Receptiveness and Importance of Information					
It's important to be reminded about what you need to do to be prepared	93	90 ↓	95 ↑	95 ↑	90 ↓
Even those who have experienced natural disasters need to be reminded about what to do to be prepared	91	88 ↓	93 ↑	93 ↑	88 ↓
I am always open to hearing more about how to prepare for a natural disaster or extreme weather situation and the impacts of it on the people and community	88	85 ↓	90 ↑	92 ↑	82 ↓
I am open to learning more about how to be better prepared for a future natural disaster / emergency	88	84 ↓	91 ↑	92 ↑	83 ↓
Preparation					
It is easy to become complacent or too confident about how prepared you might be for a natural disaster	86	84	88	88 ↑	83 ↓
One is never really prepared for the impacts of a natural disaster	76	74	78	77	75
The best preparation is learning from experience	60	61	59	63 ↑	56 ↓
I have a lot of experience with natural disasters or extreme weather situations and know exactly what to do, in preparation for and during an event	31	34 ↑	28 ↓	36 ↑	22 ↓

Resident sample: n=1265. Q3 Please indicate your agreement with the following statements about natural disasters or extreme weather situations. - Strongly Agree / Agree

Regardless of how much preparation they did, everyone was unprepared for what they experienced

The qualitative research found that for those who have experienced a natural disaster, despite how prepared and experienced they were in living on the land and regardless of whether they managed to protect their home, they still felt unprepared for what happened. The unpredictability and in many ways, the magnitude of major natural disasters is incredibly confronting for the lay person and indeed, manages to challenge emergency services professionals who have had years of training, experience and knowledge gathering.

Those who have experienced a natural disaster agree that having been through one does not make them an expert, that the next time may be completely different, that they can take what they have learned and apply it to future preparations but inevitably, they may be dealing with a range of different factors that they haven't seen before. This does not make their experience irrelevant however they acknowledge that complacency contributes to a greater risk.

These experienced residents are invaluable spokespeople to communicate the risk - their genuine surprise or sense of unpreparedness when reflecting on the experience is a stark reminder of the unpredictability of the Australian landscape.

> *"Have always had fires and always will - that's not the problem, the problem is the ferocity of the fires and this time, that's because of the undergrowth."*
>
> Farm owner, Buchan, VIC

> *"I was in Melbourne when the Black Friday February 2009 bushfires were on. I remember the heat and destruction from them. I was with a friend and helping her to evacuate her home and she was from Kinglake area. It was chaos and confusion and trying to prioritise what to take and what to leave was a nightmare – her home was ok but the neighbours weren't so lucky. I remember being on the plane coming home and still smelling smoke and thinking how relieved I was to be getting out of there, but at the same time feeling so guilty for getting out."*
>
> Resident, SA

> *"We could never have expected what happened. It was incredible. We couldn't believe what the fire was doing – had never seen that before."*
>
> Volunteer, SA

Those more familiar with 'remote' living, understand the need to prepare, to be self-reliant and are typically more resilient in these environments

For Australians who live in more regional, rural and remote areas, preparing for disasters is a sub-set of readiness for 'life in the country' where there are less services and support generally. They are familiar with service outages both for power and telecommunications services and not just due to natural disasters. These Australians are more resilient, have a better understanding of how things work in these areas of the country and are more likely to consider all possible scenarios and plan appropriately to mitigate against them.

> *"Well you just know that you just can't get someone out here to help fix something so you really just work it out yourself most of the time."*
>
> *Resident, remote NSW*

> *"The reality is that the RFS just can't get out here. We're 25 kilometres out of town and they can't get to everyone so you have to do what you can. And just have to prepare for the fact that they just can't be here to save your property."*
>
> *Farm owner, rural NSW*

> *"I regularly travel into the Victorian high country, 4wding and camping. I'm well aware just how quickly weather extremes can occur".*
>
> *Traveller, ACT*

They generally integrate risk mitigation strategies into the way they maintain their properties currently, including generators for back-up, and various other protective measures to safeguard valuables or prepare for travel. They know too well the impact of a natural disaster to their community, their property and their lives and while perceptions of likelihood of future events vary, few are willing to take the risk of not being appropriately prepared should one arrive.

This knowledge and preparation – both mentally and logistically – gives them some confidence in what they might do in a natural disaster and indeed for those who have experienced one, assisted them in managing an extreme weather situation.

> *"Yeah I think I've learnt enough and know enough that I'll be able to manage most situations should they arise. I'm not saying it wouldn't be scary but I think I'd be ok."*
>
> *Traveller, VIC*

> *"Well you have to be prepared, don't you? You just do what you have to do. Make sure you've got everything in place, you've done everything you can, cleaned out the gutters, done the burnoffs, worked out with the neighbours what you're doing. It's all you can do really."*
>
> *Tourism operator, WA*

> "Our community is getting better- being prepared, being resilient "
>
> *Fire services volunteer, TAS*

Residents of regional/rural and major regional centres acknowledge the unpredictability of a natural disaster and an inability to be fully prepared

While they have some comfort in knowing as much as they do, this sense of unpredictability motivates their preparedness and they recognise that in many ways, they can only prepare to a point and the rest is out of their control.

> *"Well you're pretty much at the mercy of mother nature really. You can do as much as you can but what we saw, we'd never seen before, there wasn't much we could do when the winds turned."*
>
> *Farm owner, Kangaroo Valley*

> *"We regularly have floods and so we know what to do to prepare for that but all of a sudden we were dealing with bushfires."*

Community leader, Clarence Valley

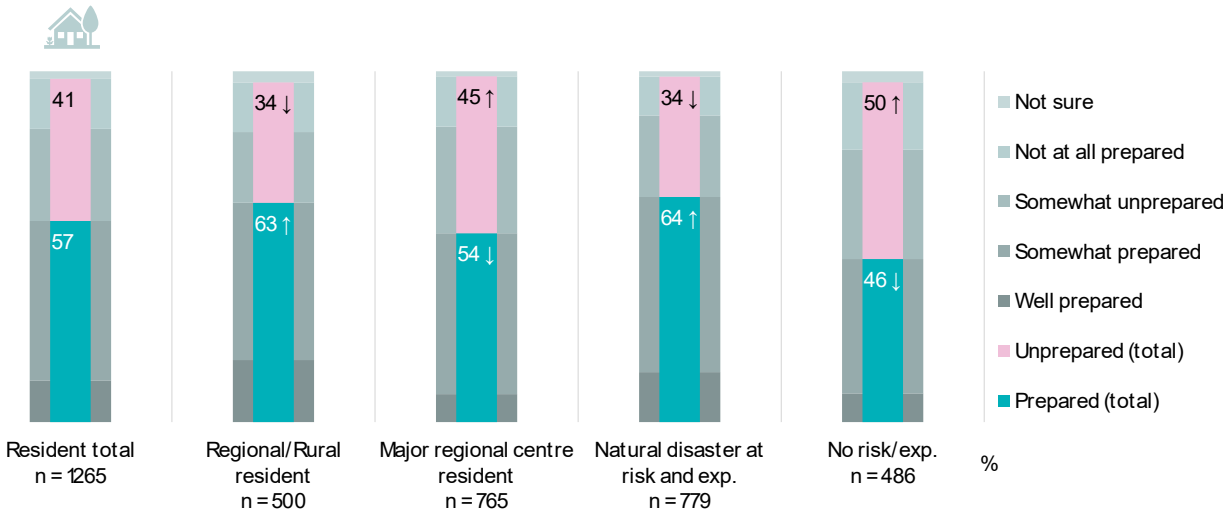
> *"Yep, if you want to go into the bush and not prepare for the worst, be it on your own head. You need to be prepared for anything, you just never know."*
>
> *Traveller, ACT*

Community leaders, particularly those who have been in the community for some time, acknowledge their community's understanding and familiarity with the known risks – there is very little uncertainty or question about the need to prepare. It is well embedded in the history, the community's culture and the behaviours within the community.

> *"Ohno, it's pretty clear. If you live here, you know all about it. I don't think anyone living here wouldn't know. Some may not be as prepared as others but you know."*
>
> Community leader, TAS
>
> "I think everyone took fire seriously before – we are in a fire prone area – you realise you need this and need that. Everyone has a fire plan"
>
> Community leader, SA

This was reflected in the survey results which found that regional/rural residents were more prepared (63%) than major regional centre residents (54%) for a natural disaster however among all residents, only the minority considered themselves 'well prepared' A large proportion (34%) of residents who live in areas that are at risk and have also experienced a natural disaster in the last 5 years consider that they/their household is not well prepared for a natural disaster. Therefore the majority of residents in disaster prone areas are open to reminders and information about preparation.

FIGURE 9: LEVEL OF PREPAREDNESS - RESIDENTS



Resident sample: n=1265. 'Q5 How prepared are you and your household for a natural disaster or extreme weather situation?

Plans were seen to be the most important part of preparations while preparing back up telecommunications was lower in priority

States and Territories have been effective in engaging this cohort to develop a Plan for what their household or family will do if a natural disaster hits. They understand the risks and the need for a plan to mitigate against them. The contents of this plan appears to vary, however it often starts with the key and overriding decision of whether they will stay or leave, which dictates their next steps. This is considered differently in terms of flood, cyclone or bushfire with the opportunities to choose to stay and protect their property or family or go depending on the amount of notice given for the impending event. By and large however the process of making this decision prior to an event appears to give families some sense of certainty which then facilitates further decision making about how to prepare accordingly.

"Well we knew that we would be leaving so we did as much as we could in the lead up to prepare the house and we had our emergency pack ready to go. We didn't need to go in the end but we felt organised."

Resident, NSW South Coast

"Our plan is very simple. We have insurance cover for property damage, we take the expensive items like tobacco and we evacuate"

Shop owner, regional VIC

"*When you grow up in the hills you just know that every summer there is the potential for things to go wrong. When we looked into opening the business, we knew we needed to have a plan.*

Business owner, rural WA

Most residents who have made the decision to stay and protect their property are more likely to undertake considerable planning in preparation. They explain that they can't afford nor want to lose what they have built and therefore prepare appropriately. They are most likely to consider all aspects of what they can do to protect their property, valuables and household members.

"Our plan is to stay. We've got too much to lose so we're pretty much working all the time, yeah there's a bit more focus in the lead up to bushfire season but it's all year round really to make sure we've got the best chance."

Farm owner, SA

Similarly, these more experienced residents know what to expect and have a level of confidence in managing the situation of a natural disaster which means they may make decisions about executing the plan and the priorities of what to do when, as the disaster unfolds.

"*I mean there are the usual things that you do, things that you do every year but we're always talking to the local RFS guys and with neighbours about what the conditions are, what's happening, what they're doing. That's just what you do."*

Resident, rural NSW

Those who have made the decision to go also have a list of actions they undertake in preparation and are equally committed to carrying out this plan – they know their route of evacuation, where they will go and what they will take with them.

"I've got the dogs leashes at the front door and in my mind I know that if I have one dog for each leash then I've got all the dogs them. And I put the emergency pack in the car and we're off. That's it, that's the plan."

Resident, urban fringe NSW

For residents in rural and remote areas, protecting one's property is a high priority

For experienced community members who have seen the devastation caused by a natural disaster, consideration for their property is paramount in their disaster preparedness. Rural and remote residents, many of whom live on properties that also produce their family income, are more likely to choose to stay and try to protect their property, particularly in bushfire prone or cyclone areas. They work year round to place their property in the best position to survive disasters.

"We do the physical preparations – lawns mowed, clear around the house. The house was well prepared – sprinklers on the roof and hooked to a fire pump but obviously someone had to be there to turn it on. Grass kept clear".

Farm owner, rural VIC

"We can't afford to lose the vineyards – they're not insured. You can't insure them. We've worked so hard and the thought of losing them, well…"

Owner, rural NSW

"We prepare the property, do a small burn in winter, remove debris. Have a water tank and have a long hose."

Regional tourism operator, NSW

"For cyclones it's all about removing branches and securing trampolines and outdoor furniture. So looking around to see what could cause damage in the winds."

Community leader, WA

For families who choose to leave, they also undertake preparations in the lead up to the season which help to minimise the risk and/or damage to their property once they have left. For bushfires, these residents also recognise their responsibility to prepare their home as a way of helping to reduce the spread of the fire once they have left.

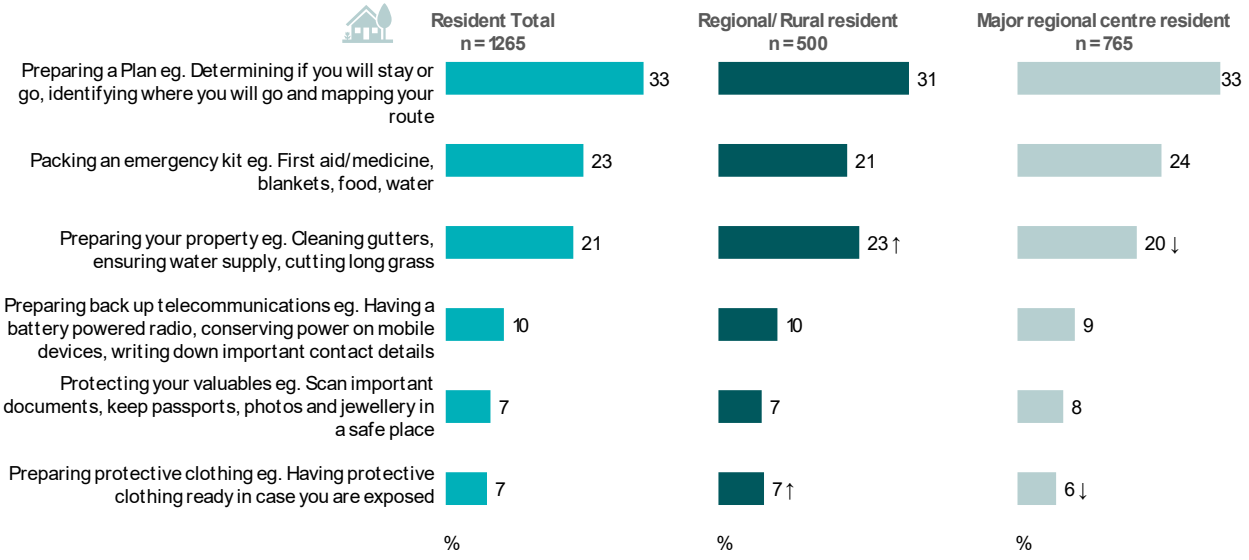
> "Our plan is that we'll maintain our property, we'll reduce the undergrowth, have bonfires during fire burning off season. If something was to come through we've decided we would pack up and go. We have a large water tank and water sprays and so we would just set that up and head off and leave"
>
> Farm owner, rural WA

As outlined, there is a sense of inevitability amongst this population who expect that they will have to face a natural disaster at some stage – it is the nature of living where they live and the weather is outside of their control. However, what they may be able to control is the impact it has on their property. The priority given to protecting their property reflects not just their concern for losing their home, farm or businesses, or their livelihood but also for protecting their family. They see these to be intertwined.

Key to protecting their property is the provision of power so many residents consider this to be a priority when planning. Regional/Rural residents were more likely to have alternative power sources including generators, AM radio and batteries and to have prepared in other ways such as researching the channel or broadcaster for emergency updates.

The survey results confirmed this showing that residents considered preparing a plan, having an emergency kit and preparing property as the most important actions for preparing for a natural disaster. Regional/rural residents considered preparing their property to be higher priority (second most important after a plan) while residents of major regional centres put emergency kits above preparing property. Preparing for back up telecommunications, protecting valuables and protective clothing was ranked on the list of importance.

FIGURE 10: PERCEIVED IMPORTANCE OF PREPARATION ACTIONS - RESIDENTS



People without relevant experience or understanding are less aware of the need to prepare in a disaster prone area

Community leaders and community members agree that those less familiar with living in disaster prone areas, who don't have experience of a natural disaster or who enjoy more reliable telecommunications have very little understanding of the risk of being in a disaster prone area, particularly in peak season.

Less familiar residents predominantly live in metropolitan and urban locations, and some live in in larger townships regional areas. They do not have the influence of a past experience with a natural disaster or of not being able to rely on telecommunications, and are largely unaware of the implications of being unprepared for a disaster. For example, community leaders in Morwell spoke of the lack of preparedness by residents in the township to understand the potential for loss of telecommunications during the open cut mine fire in 2014.

While attitudes and behaviours of locals outside of the township of Morwell were reflective of communities in the Maintenance Stage of Change (they understand, expect outages and prepare accordingly), many town dwellers, including specifically vulnerable audiences, more closely resembled a metropolitan perspective. This is similarly referenced in other major regional towns where cyclones, floods and bushfires are generally known to occur in the region yet there are community members with low awareness of the likelihood of telecommunications outages as a result.

> "*Yeah when we moved into the area, I had some idea that there might be bushfires but not really. I've never lived rurally before - we went from a suburban block to 23 acres. Yeah I probably wasn't really ready for this.*"
>
> Rural resident, NSW

> *"Well I sort of had some idea* [about the risk of bushfire] *– it's pretty rural out here but it's really just a hobby farm so I didn't really think about it. And we normally have pretty good reception out there so I wouldn't have expected that to be a problem. And no, I guess I had no idea it was such a big risk."*
>
> Rural property owner, NSW

> "*You definitely get those people who think it won't happen to me or last time* [the area was flooded] *it just missed their house so they don't feel the need to pay attention so they're the hardest ones to talk to.*"
>
> Local council

As outlined below, in addition to more 'urbanised' residents, there is a large portion of community members who travel to disaster prone regions and who do not have relevant experience or understanding of the risks and therefore do not prepare appropriately. Visitors to disaster prone areas clearly come from all over Australia, however it is more likely that those who reside in a metropolitan or urban area are less prepared for the likelihood of a disaster, and less able to manage should a disaster affect them while travelling.

Less than half of residents in regional/rural or major regional centres have alternative telecommunications or power supplies.

When it comes to preparing for a natural disaster and ensuring alternative options in case of a telecommunications or power outage, most residents claim they have done many of the preparations prompted with (4 on average). Regional/rural residents and those who had experienced a natural disaster in the last 5 years were likely to report having done more preparations and the most common preparations were in preparing emergency supplies and numbers, doing research and making plans.

Many (38%) also indicated having alternative telecommunications, most commonly an AM radio and batteries (36% for regional/rural, 33% for those who had experienced a natural disaster in the last 5 years and lived in an at risk area and 25% for residents from major regional centre). Other forms of out-going communication devices like satellite phones, walkie talkies, UHF radios were less common (under 1 in 10).

A similar proportion (37%) also had back-up power in the form of battery packs, generators or solar and again this was more likely for regional/rural residents (43%) and at risk, experienced residents (45%).

FIGURE 11: TYPES OF PREPARATIONS UNDERTAKEN - RESIDENTS

Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Natural disaster at risk and exp. n = 779	No risk/exp. n = 486
Any listed (total)	80	83↑	78↓	88↑	68↓
Emergency supplies / numbers (total)	64	67	62	71↑	52↓
An emergency kit eg. First aid/medicine, blankets, food, water	48	47	49	56↑	35↓
A list of important phone numbers written down	36	40	34	40↑	30↓
Protective clothing	28	34↑	24↓	33↑	20↓
Research (total)	54	58↑	52↓	64↑	39↓
Researched the disaster risks relevant to where you live	29	30	29	36↑	20↓
Researched the emergency services in your area	29	33↑	26↓	35↑	19↓
Researched who is your emergency broadcaster or the ABC Emergency channel you need to listen to for emergency updates	25	32↑	21↓	30↑	17↓
Researched how your local council can help you in an emergency	19	20	19	24↑	12↓
Plans (total)	47	51↑	44↓	57↑	31↓
A plan in the event for a natural disaster / extreme weather event	30	33	28	39↑	17↓
A plan about which information sources and authorities to connect with in your local area during an emergency	26	31↑	23↓	32↑	17↓
A plan about what you would do to support/connect with your surrounding neighbours	21	26↑	19↓	27↑	12↓
Alternative telecommunications (total)	38	46↑	33↓	43↑	31↓
AM radio and batteries for alternative means of telecommunications	29	36↑	25↓	33↑	23↓
Walkie talkie for alternative means of telecommunications	11	14↑	8↓	13↑	7↓
A UHF CB (Ultra High Frequency Citizen Band) radio for alternative means of telecommunications	10	13↑	8↓	13↑	6↓
Satellite phone for alternative means of telecommunications	4	5	3	4	3
Alternative power (total)	37	43↑	32↓	45↑	23↓
Battery pack as back-up / alternative power supply	23	24	22	28↑	14↓
Generator for back up / alternative power supply	17	24↑	12↓	22↑	10↓
Solar power as a back-up / alternative power supply	15	17	13	18↑	10↓
None of these	20	17↓	22↑	12↓	32↑

Resident sample: n=1265. Q6 Have you done or do you have any of the following to prepare for a natural disaster?

5.2.2. Information and communication channels - Residents

States and Territory emergency services information is highly trusted

Community members whose planning and preparation is part of their day to day lives have well established and reliable sources of information they regularly engage with in order to prepare year round, but particularly just prior to peak disaster season. Most community leaders and community members refer to their local representatives of State and Territory emergency service organisations who are widely recognised as the most authoritative in providing information about what happens in a natural disaster and instructions on what can be done to protect property and lives.

> "We know our local RFS guy. Have his mobile number in my phone and I just call him when I need to."
>
> Rural property owner, NSW

> *"The local RFS are very good and very proactive. There are public events where they have RFS vols there to talk about what's happening. And lots of local FB pages to help communicate"*
>
> *Rural property owner, WA*

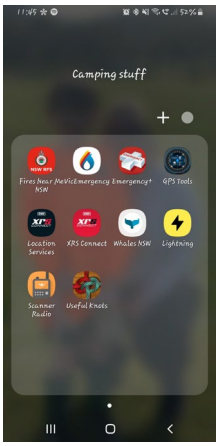
"We refer people directly to the CFA website now. There's no point in coming up with your own content or information – just link directly to their site."

Community leader, VIC

Travellers who are well prepared also regularly engage with information designed to help them ensure they are equipped and ready for anything on their travels. They research well and also refer to the State and Territory based agencies but mostly through online sites rather than local representatives given they are less connected to the communities they are travelling to.

"I've got all the apps from the fire and emergency services so can look at what's happening at any time. I expect that they would know most about this type of thing and I also expect that they've got the most up to date information and current information." See image (right).

Traveller, ACT



While there is some regional specific information relevant to the environment and to the climate of smaller geographic areas which is provided by local community groups (eg Hunter region or Clarence Valley), many local organisations including local councils and local branches of the emergency services agencies still refer community members to the relevant State and Territory websites to ensure consistent and authorised messaging about planning and preparation.

"*We have some information about our particular area but the messages about preparing and what to do are pretty much the same no matter where you live and so we refer to the CFS."*

Community leader, SA

The survey results highlight this reliance on emergency services for natural disaster preparedness with TV news (primarily delivered through Emergency Services spokespeople) the BOM website, emergency services websites and Apps, the internet, radio news and social media (again primarily those published by Emergency Services) were the most common channels for information and communication. Regional/rural residents were more likely to consult ABC radio and local fire brigades.

FIGURE 12: INFORMATION AND COMMUNICATION CHANNELS FOR PREPARING FOR A NATURAL DISASTER - RESIDENTS

Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Natural disaster at risk and exp. n = 779	No risk/exp. n = 486
TV news	52	49	54	52	52
BOM – Bureau of Meteorology website	44	37↓	48↑	50↑	34↓
Emergency services (total)	49	45↓	53↑	55↑	41↓
Emergency services website	38	35	40	42↑	31↓
Emergency services / alert App	29	25↓	32↑	35↑	21↓
Internet / Google search	42	32↓	49↑	45↑	37↓
Radio news	39	39	40	43↑	33↓
Friends/family	35	30↓	38↑	40↑	27↓
Social media (e.g. Facebook, Twitter, etc.)	34	25↓	40↑	41↑	23↓
ABC radio stations	33	42↑	27↓	36↑	28↓
Local Government / Council website	28	22↓	32↑	31↑	22↓
State Government website	25	19↓	30↑	28↑	20↓
Bushfire App	23	18↓	26↑	28↑	15↓
State fire services website	24	24	24	29↑	17↓
Local Fire Brigade/Community Group	21	26↑	18↓	24↑	16↓
Commercial radio stations	21	19	22	23	19
Local / Town meetings for the community about preparing for a natural disaster	8	9	7	8	6
Direct mail received from community fire groups	8	9	7	9↑	6↓
Local businesses	5	5	5	6↑	3↓
Town notice boards	5	6	5	6	4
Not sure	2	2	2	1↓	4↑
None of these	3	5↑	2↓	1↓	6↑

Resident sample: n=1265. Q7 What are the main sources of information or communication channels you use for information about how to prepare for a natural disaster or extreme weather situation?

Community is key to disaster preparation

For residents who are more familiar with natural disasters, but also for regular travellers who travel with others or who are familiar with the locals due to regular visits, the collaborative approach to preparing is incredibly effective in building community resilience prior to, during and after a disaster. People in these communities look out for each other, share information about how to best prepare and consider it to be integral to being part of a community that is at risk and could be significantly affected by a natural disaster.

They acknowledge a shared ownership of managing the risk of disasters agreeing there are actions that individuals can take to prepare and protect their and their neighbours' property while emergency services agencies work hard to protect the whole community. They know the local agency, the individuals who work or volunteer there and its responsibilities to manage public land and respond to emergencies. And they work collaboratively as a community to prepare and protect each other.

> "*Shared responsibility is the best approach. Helping them understand that we don't have a fire truck to put in front of everyone's home. It's your responsibility to help us to defend your property.*
>
> *Community leader, TAS*

> "*It's a full community awareness. We have a number of Facebook groups that are active in keeping people aware of fires and preparation*"
>
> *Rural business owner, WA*

In virtually every community there is a cohort who is more proactive and self-form community groups to coordinate a more community-based preparedness approach, particularly in smaller towns and remote locations. They reach out and engage others who may not be as proactive in sourcing information and implementing required preparations.

> *"We've got our local group on Facebook and we get updates on weather conditions, emergencies and incidents on that – amongst other things – but we all know that if something is happening, we post it on there to make sure our neighbours are aware."*
>
> *Resident, South Coast NSW*

"We decided to all buy walkie talkies and so everyone has one and we can talk to each other – it's everyone on our road but you know, there's maybe 5 or 6 who are kilometres away."

Resident, rural NSW

"Every year, actually it's coming up shortly, I organise a get together and we just talk about the upcoming bushfire season and what's happening and how we're feeling about it. Usually one of us has already spoken to the RFS so we talk about that."

Farm owner, rural NSW

Travellers in this cohort often engage with other like-minded community members through formal and informal channels and interest groups. Predominately online, these travellers connect through social media groups or travel apps where they share information, tips and advice based on experience and interest in travel.

"I'm part of a caravan and camping Facebook group and they talk about preparing for travelling to remote areas all the time so I've got some good tips from there."

Traveller, ACT

"We always travel with other families and most of us have travelled a fair bit so we all talk before we travel and between all of us we've got a good idea of what to do."

Traveller, Melbourne, VIC

Vulnerable community members are significantly disadvantaged

As outlined above, most community members and community leaders in disaster prone areas discussed the importance of strong local community connections to ensure a community-wide and community-led strategy of disaster preparedness. In these communities, those best prepared know their neighbours and they look after each other. For this reason, community leaders explained that community members who are not socially connected either due to age, homelessness or disability or if they are from CALD backgrounds or are indigenous, are more at risk when it comes to disasters.

"*Our older community members for example are often isolated and don't have that social network that allows them to be connected and supported to prepare for a natural disaster."*

Local council

"Because we are no longer a disability service provider, we have lost the connection with many of our community members with disabilities and that really worries me. I would normally ensure they are ok and have a list of people to check on but I don't have that anymore."

Local council

"It's very much about community connection. For new migrants, it's the induction process and how they learn what they need to know as part of now living in regional Australia. They rely very much on the local community for that. It's not really in the handbook"

CALD agency

In addition, with information about how to prepare for a natural disaster predominantly delivered through online communication channels and social media, they note that vulnerable community members who may also have limited access to devices or data are significantly disadvantaged.

"We just did a survey of our residents over 80 years of age and they said their main channel of communication (for anything) is television. That's telling, isn't it?"

Local Council

"The message doesn't need to be different for people with disability but it has to be accessible. Need to think about how they can access the information about preparing and the emergency services do a good job but it just needs to be given more thought."

Disability advocate, VIC

Information channel referenced during a natural disaster are more localised

The information and communication channels that would be consulted ***during*** a natural disaster were similar to those referenced in prepare with the most common channels would be TV news, radio news, the BOM website, emergency services website and apps and friends and family.

Those more familiar with natural disasters were again more likely to identify a broader range of channels they would obtain information from.

FIGURE 13: INFORMATION AND COMMUNICATION CHANNELS DURING A NATURAL DISASTER - RESIDENTS

Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Natural disaster at risk and exp. n = 779	No risk/exp. n = 486
TV news	50	45 ↓	53 ↑	52	48
Radio news	44	44	43	47 ↑	39 ↓
BOM – Bureau of Meteorology website	37	28 ↓	44 ↑	42 ↑	31 ↓
Emergency services (total)	48	42 ↓	52 ↑	52 ↑	41 ↓
Emergency services website	36	32 ↓	39 ↑	39 ↑	31 ↓
Emergency services / alert App	32	26 ↓	35 ↑	36 ↑	24 ↓
Friends/family	35	30 ↓	38 ↑	40 ↑	26 ↓
ABC radio stations	38	43 ↑	35 ↓	42 ↑	32 ↓
Internet / Google search	34	26 ↓	39 ↑	39 ↑	26 ↓
Social media (e.g. Facebook, Twitter, etc.)	31	22 ↓	38 ↑	40 ↑	18 ↓
Commercial radio stations	23	19 ↓	26 ↑	25	20
State fire services website	23	23	23	27 ↑	17 ↓
State Government website	24	20 ↓	27 ↑	27 ↑	20 ↓
Local Government / Council website	24	19 ↓	27 ↑	26 ↑	20 ↓
Bushfire App	23	20 ↓	25 ↑	28 ↑	15 ↓
Local Fire Brigade/Community Group	20	24 ↑	18 ↓	22 ↑	17 ↓
Local / Town meetings for the community	10	14 ↑	7 ↓	10	10
Local businesses	5	6	4	7 ↑	2 ↓
Town notice boards	4	6 ↑	3 ↓	5	4
Direct mail received from community fire groups	4	5	3	4	3
Not sure	5	7	5	2 ↓	11 ↑
None of these	2	3 ↑	1 ↓	0 ↓	3 ↑

Resident sample: n=1265. Q8 What about during or immediately after a natural disaster or extreme weather situation?

The survey results showed that there were some channels that would be used more for preparations or used more during a natural disaster

FIGURE 14: COMPARISON OF INFORMATION AND COMMUNICATION CHANNELS FOR PREPARATIONS VS. DURING A NATURAL DISASTER - RESIDENTS

Use equally for preparations and during disasters	Use relatively more for preparations	Used relatively more during
TV news	BOM–Bureau of Meteorology website	Emergency services / alert App
Emergency services (total)– website more than apps	Internet / Google search	Radio news
Radio news	Local Government / Council website	ABC radio stations
BOM–Bureau of Meteorology website	Local / Town meetings for the community about preparing for a natural disaster	Commercial radio stations
Internet / Google search	Direct mail received from community fire groups	
ABC radio stations	Social media (e.g. Facebook, Twitter, etc.)	
Friends/family		

5.2.3. Preparing to travel to a disaster prone area - Travellers

Many urban travellers to regional areas are not well prepared for natural disasters and can even exhibit overconfidence in their level of preparation.

The qualitative research found that travellers to regional areas who have not had an experience with a natural disaster confess they are unprepared, and do not consider preparation of any form in case of one. For some visitors, a "holiday" mentality influences a lack of consideration for the implications of travelling to a potentially dangerous area–they are blinkered to some degree by their desire to rest and relax at their holiday destination and do not actively seek out information that might jeopardise this. If there is an immediate and imminent threat, some travellers may consider (not always) changing their travel plans however it is highly unlikely that they consider the implications of travelling to a disaster prone region when they pack their bags/vehicle. It is fair to say there is even less consideration of telecommunications during a natural disaster.

Some travellers were open and transparent about this lack of preparation while others are more likely to over report their knowledge of what to do.

> *"To be honest, no, I don't really think about it. I'm pretty much looking forward to my trip away and don't really expect or want it to be ruined by something out of the blue like a bushfire. Not sure that's the right thing but it's true!"*
>
> *Traveller, VIC*

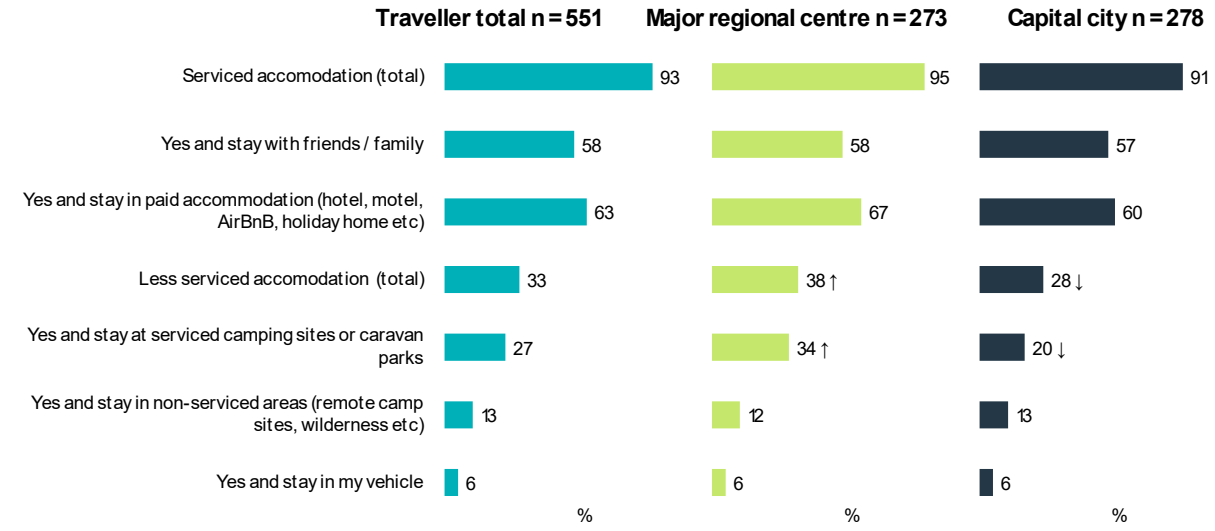
> *"Yes, I'm very on top of that sort of thing. It's just a part of travelling and being on the road, yes, I would say I'm familiar with what to do."*
>
> *Traveller, ACT*

While those living in regional/rural Australia are most likely to understand the need to be self-reliant to manage in a disaster prone area, those who live or travel to larger regional towns (eg Morwell, Bunbury) have less awareness of this and display attitudes that more commonly resemble metropolitan or urban dwellers.

The survey results show that when travelling to regional areas to visit friends/family, for holiday or work, most (93%) travellers from more urban areas stay in 'serviced' accommodation with friends/family or paid accommodation like hotels, motels, Airbnb or holiday homes. A large proportion also stay in less serviced accommodation (33%) such as camping sites or caravan parks or remote campsites. This is relatively more common among travellers from major regional centres than travellers from capital cities.

As such, most travellers are likely to be reliant on the facilities and services provided at the destination with only a minority who would need to bring supplies and alternative power supplies or additional equipment with them when travelling (the latter being campervan or camping travellers).

FIGURE 15: ACCOMMODATION TYPES TO REGIONAL AREAS - TRAVELLERS

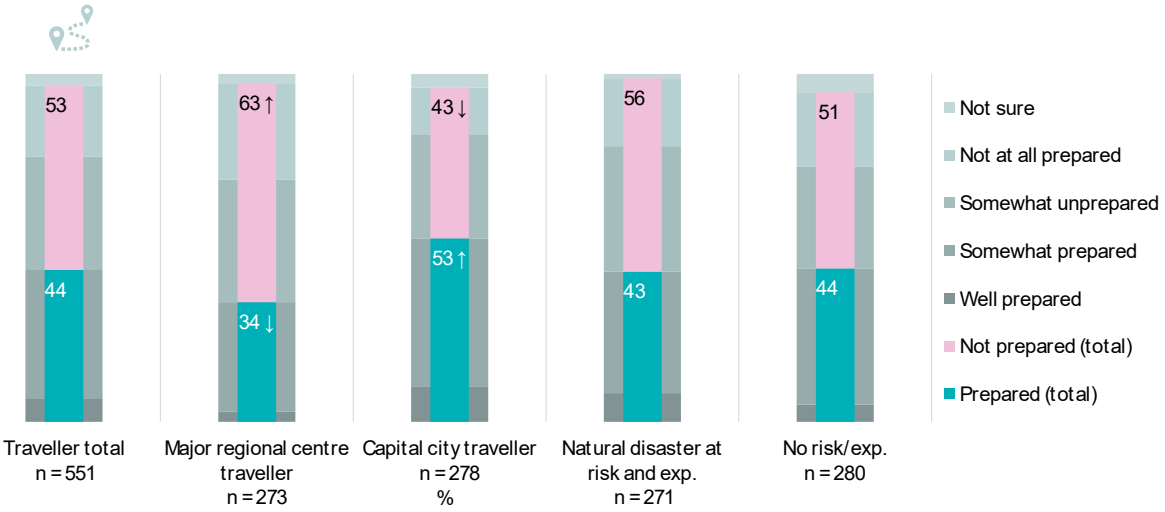


Traveller sample: S7 Do you travel to and stay at least one night in regional areas (including coastal towns or national park areas that are not in urban towns) for work, to visit friends / family or for holidays?

Travellers that live in more urbanised areas were more likely to be unprepared for a natural disaster if it were to occur in an area they were visiting. Only 44% felt prepared and with very few of those considering themselves to be well prepared. More travellers from capital cities considered themselves to be prepared than those from major regional centres (53% vs. 34% respectively) reflecting a sense of confidence displayed in the qualitative research. This, combined with less direct experience with natural disasters overall, makes metropolitan travellers potentially overconfident about how prepared they believe they are or similarly, as mentioned, are less likely to consider the real risks and the genuine need to prepare given their 'holiday' mindset.

Those travellers who stay in less serviced accommodation (like campsites) were more likely to have made more preparations for travel (on average 4.6 vs.3.9 for those staying in serviced accommodation with friends or bed and breakfasts, hotels, Airbnb etc). That said, those staying in less serviced areas were a minority.

FIGURE 16: LEVEL OF PREPAREDNESS WHEN TRAVELLING - TRAVELLERS



Traveller sample: T5 And when travelling to a regional area for holiday / to visit friends or family / work, how prepared would you be for a natural disaster like a bushfire, cyclone, storm or floods?

For travellers, preparation is most linked to evacuating

Travellers who understand the risks of natural disasters generally consider what is needed in order for them to be able to evacuate from the area as quickly as possible. Most however would prefer to avoid being in a situation of a possible natural disaster so would be more likely to consider the conditions of their destination before deciding to leave for their trip. This is most relevant for those camping and caravanning who are more self-reliant compared with those who stay in holiday homes and serviced accommodation, who are more likely to rely on their hosts or local contacts to help them should a disaster hit.

> "I use a wide range of apps that keep me informed about the area I'm in or going to. Up to date information on weather, road conditions and the like. As well as a well maintained vehicle, I always carry a bug out bag which includes an epirb and sat phone"
>
> Traveller, ACT

> "Knowing the roads is really important. And where we could go in order to be safer. The evacuation centres for example. Although we didn't really know where they were beforehand - we had to find them when we realised we needed to leave."
>
> Traveller, VIC

Holiday property owners who live in the same disaster prone community as the property are aware of the need to inform their tenants of the risk of natural disaster and provide information about what they can do to prepare. However many acknowledge that their visitors often don't read this information or acknowledge the risks They recognise that they're not necessarily in the right frame of mind to be considering "worst case scenarios" given the purpose of their visit is often to relax and unwind.

> "I don't think they consider it really. They're in holiday mode and not really wanting to hear about things that could go wrong. And to be fair, I want them to have a nice time and pointing out the dangers isn't going to make them relax really, is it?"
>
> AirBnB owner, rural NSW

Travellers can seek information from a range of sources when travelling that are both general media and emergency and disaster specific and include accommodation providers.

If travellers to a regional area were to be involved in a natural disaster, they suggest that they would reference emergency services, BOM, the internet and TV and radio news as the main channels to find out information about what was happening. Travellers also identified that they would also seek information from the accommodation provider where they are staying.

FIGURE 17: INFORMATION AND COMMUNICATION CHANNELS DURING A NATURAL DISASTER WHEN TRAVELLING - TRAVELLERS

Column %	Traveller total n = 551	Major regional centre traveller n = 273	Capital city traveller n = 278	Natural disaster at risk and exp. n = 271	No risk/exp. n = 280
Emergency services (total)	58	52 ↓	64 ↑	60	56
Emergency services website	45	43	48	48	43
Emergency services / alert App	38	32 ↓	43 ↑	37	38
BOM – Bureau of Meteorology website	42	44	39	45	39
Internet / Google search	41	44	38	48 ↑	34 ↓
TV news	39	42	36	42	37
Radio news	37	41	34	37	38
ABC radio stations	36	35	37	34	38
Accommodation owner / operator	34	38	31	35	33
State fire services website	31	27 ↓	36 ↑	29	34
Social media (e.g. Facebook, Twitter, etc.)	31	34	27	39 ↑	23 ↓
State Government website	31	27 ↓	35 ↑	32	29
Friends/family	30	32	29	34	26
Local Government / Council website	30	32	28	33	26
Bushfire App	30	28	31	32	28
Local Fire Brigade/Community Group	28	23 ↓	33 ↑	22 ↓	33 ↑
Local information centre	24	21	27	21	26
Commercial radio stations	20	22	18	19	21
Local / Town meetings for the community	12	10	14	13	12
Town notice boards	11	9	13	10	11
Local businesses	10	11	8	10	9
Direct mail received from community fire groups	4	2 ↓	6 ↑	4	4
Not sure	3	3	3	3	4
None of these	1	0	1	0 ↓	2 ↑

Traveller sample. T4 If you were to become involved in a natural disaster while staying overnight in a regional area, where do you think you would go / or what would you to do find help or information?

Residents of regional Australia are concerned about visitors in disasters

The qualitative research found that community leaders and community members in disaster prone areas and particularly those who have recentlyexperienced a natural disaster identify visitors to their local area to be most at risk when it comes to enduring and surviving a disaster. As outlined above local residents inherently understand the environment and potential impact of a natural disaster where they live and point to the less familiar visitors as the least likely to take appropriate precautions. This includes transient workforces, holiday makers and day trippers who visit disaster prone areas in peak seasons without researching or understanding the risks.

They believe that some visitors have a greater understanding of the risks and relevant preparations required to protect them in an extreme weather situation however locals feel a sense of obligation to ensure those who unknowingly enter into a disaster area are mentally and logistically prepared for the danger and service outages – or alternatively, that they leave early or don't come.

> *"Well it's concerning. We're ok, we know what we're in for and we've prepared as much as we can but I don't think they have thought about it and they'd probably be quite shocked."*
>
> *Resident, QLD*

> *"Particularly international visitors – that's a real worry."*
>
> *Community leader, SA*

> *"We've had holiday home renters be really mad when we've rung and said, don't come, it's dangerous. They don't get it."*
>
> *Community leader, NSW South Coast*

This means they want them to understand the risks, research prior to coming, to know what to do and to be prepared to lose services – and many suggest that this would assist with reducing panic that some saw in recent disaster events. While not critical of the visitors, some locals were concerned about the level of resourcing needed to support travellers and tourists who were poorly prepared or did not pay attention to evacuation messages – potentially because they did not understand the risks or take the threat seriously.

> *"I do know that the South Coast had a real problem with tourists and trying to encourage them to evacuate – for their own safety. I'm not saying that resources were unnecessarily tied up doing this because that was important but I think there was a lot going on and this maybe made things worse."*
>
> *Resident, South Coast NSW*

5.3. Telecommunications services

5.3.1. Understanding of and reliance on telecommunications

As technology has advanced, Australians have embraced new telecommunications services

The qualitative research confirmed general indications that, as technology has advanced, Australians have embraced new telecommunications services and integrated the key functionality and conveniences into their everyday life. Telecommunications has increased access to services and information for the full range of age and socio economic status groups. Smart devices offer invaluable and cost effective (for most) ways to share and access information, complete transactions and engage with others and there are some segments within the general population where the manual or less technologically advanced options are no longer known or accessible (and perhaps never were).

This environment contributes to a population that is generally very engaged in the benefits offered by telecommunications and the ways in which it can improve their life, make things easier and connect them with whatever they may need no matter where they are. That is, of course, until it doesn't.

> "Young people these days have never really known how to live without their phone. It never leaves their hand. It's a pretty sobering thing when they realise it might not be there when they feel like they need it most."
>
> Emergency Services
>
> "I think when you know what it can do, how important it is to saving lives, you know how important it is that we have good infrastructure and services, that it's reliable and that it works."
>
> Regional and rural advocate

The survey results found that most Australians have mobile services (with internet) as well as home internet. There was near to universal usage of mobile phone with internet but it was lower for regional/rural residents (84% vs. 95% for residents from major regional centres and 94% for capital city residents). Home internet and broadband were also common although again lower for regional/rural residents (79% vs. 86% major regional centres vs. 85% for capital city residents). Most believed their internet was fixed line broadband (7 in 10) with only a small minority that had satellite broadband (5% for regional/rural and between 1% - 2% for other regions).

Landline phones were less common although regional/rural residents were more likely to have them (53%).

FIGURE 18: TYPES OF TELECOMMUNICATIONS

Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Capital city traveller n = 278
Type of telecommunications services				
Mobile phone with voice / text and internet service	91	84 ↓	95 ↑	94
Home internet / broadband (including NBN, ADSL, Cable, Wireless, Satellite etc)	83	79 ↓	86 ↑	85
Landline phone	43	53 ↑	36 ↓	42
Mobile phone with voice / text service only (no internet)	14	17 ↑	12 ↓	15
VoIP / voice service using the internet	11	13	10	12
Satellite phone	3	5 ↑	2	2
A UHF CB (Ultra High Frequency Citizen Band) radio	11 ↑	15 ↑	8	4 ↓
Walkie Talkies	11	12	10	7
Broadband type				
Fixed line broadband (NBN, Fibre, ADSL or Cable)	67	60 ↓	72 ↑	72
Fixed wireless broadband	10	10	10	9
Satellite broadband	2	5 ↑	1 ↓	2
Unsure	2	3	2	1

Total sample: n=Q9 What types of telecommunications do you have available to you / your household?
Q10 For your broadband, is this…? Rebased to total respondents.

Many over-estimate their understanding of how telecommunications work

Many Australians purport to know how telecommunications work however most over-estimate their knowledge and when tested are not able to explain the implications of a power or telecommunications outage. For most, if all is working as it should, they believe they don't really need to understand it.

The internet and NBN seems to have complicated their understanding of telecommunications services with the physical infrastructure of landlines, wires and towers being confused by wifi, signals and other perceived intangibles that affect reception.

> "Pretty much the battery/power packs we use to charge our devices in power outages are the only means of communications -- however with our service being only outdoor coverage this isn't much help in a cyclone or other natural disaster where I can't go stand outside to make a call or sit outside to use the internet. Now I think about it- we have no means of making contact with the outside world if we are stuck inside with no power. No power = no phoneline, no nbn, no wifi, no service on mobile for calls or internet!"
>
> Resident, WA

And many Australians have high expectations of the resilience and recovery of telecommunications services in a natural disaster and expect that where outages affect services, that telecommunications providers work proactively to recover the services as quickly as possible.

High reliability increases reliance on these services

Overall, most Australians consider their mobile services to be reliable However, the qualitative research established that perceptions of reliability are likely to be influenced by the experience with the service, what they expect of the service and what they accept in terms of service outages. As such, while 87 per cent of residents in regional/rural areas of Australia consider their mobile phone reception to be mostly to very reliable, this does not suggest that their actual phone reception is as robust as those living in major regional or metropolitan areas.

FIGURE 19 PERCEIVED RELIABILITY OF MOBILE SERVICE

Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Capital city traveller n = 278
Reliability of mobile service				
Very - Mostly reliable	92	87 ↓	96 ↑	95
Unreliable total	6	10 ↑	4 ↓	4

Total sample: n=1543. Q12 How reliable is the mobile phone reception where you live? This includes your home and general surrounding area.?

For Australians living in metropolitan or urban areas where telecommunications services are considered highly reliable, there is much less understanding or appreciation for telecommunications disruptions. These residents rely heavily on their telecommunications and have very little need to consider the alternative ways to access information or communicate given the rare occasion of an outage.

> *"I have had no connectivity issues at home with either phone or Internet. Reception is reliable - speed could always be better but it serves the purpose of what we need. I travel for work so bought the mobile 5G hub to ensure connectivity wherever I am as is secure and I'm not using any public domain."*
>
> *Resident, regional town, WA*

> *"I haven't had any phone outages but I would feel very lost if I couldn't use my phone. I would rely on getting information from the radio and I would either use someone else's phone or go to an internet café to contact my family."*
>
> *Resident Urban ACT*

Despite this reliance, when these community members travel there is limited investigation undertaken to understand access to telecommunications services such as reception and availability of Wi-Fi at their destination (eg. caravan park, holiday home, rental property). A large number of hotel/caravan park/Air BnB operators in rural townships report that the first question asked prior to or upon arrival is about WIFI. They explain that manyvisitors are somewhat surprised to hear that coverage is not assured.

> *"There is a difference between choosing to turn off and having no choice - people come here knowing that it's a remote get away and a place to unplug but still expect the connection when they need or want it."*
>
> *Accommodation owner, Margaret River, WA*

> *"Yes when they get here and they want to Facebook their friends and there's no reception, I sort of have to remind them that we're in a vineyard, miles from anywhere and no, I haven't set up wifi for anyone to access."*
>
> *Venue operator, rural NSW*

High reliability of telecommunications services reduces the need to understand how they work

The majority of people in metropolitan, urban and large townships of Australia do not understand nor feel they need to understand how their telecommunications services work. Their telecommunications services generally work and when they don't they engage their local service provider representative to address the issue – which they do without providing much more clarification about the problem.

> *"Our internet speed at home is ok but not amazing. We had an internet outage last month for about 6 hours which made it impossible to work from home for an afternoon/ evening but thankfully outages have been infrequent."*
>
> *Resident, Regional town NSW*

> *"When I was growing up in the lower mountains we experienced many outages and there was also a blackspot for reception at our house. We would sometimes go out the front of our house if we needed to make or receive calls."*
>
> *Resident, Urban NSW*

> *"Yep so if we lost power, can I still get wifi at home? Can I? But I'd just use my data on my phone instead, wouldn't I? But can I still do that if telecommunications services are down? Can't I? Geez, I don't know."*
>
> *Traveller, VIC*

When it comes to mobile device reception, these travellers note in particular when they travel through 'black spots' or to locations where the reception may not be as reliable and assume their service provider may not have sufficient mobile towers in the area. However this is usually tolerated as it is not considered an outage, rather a location problem.

"You know that spot just after Cann River you know you're going to hit a black spot there but it's not long before your reception comes back."

Traveller, VIC

"Yes we travel through areas where there is no reception but we pretty much know where we are going so we don't need GPS or anything like that. And I just know that I can't make calls when we lose reception but that's ok."

Traveller, ACT

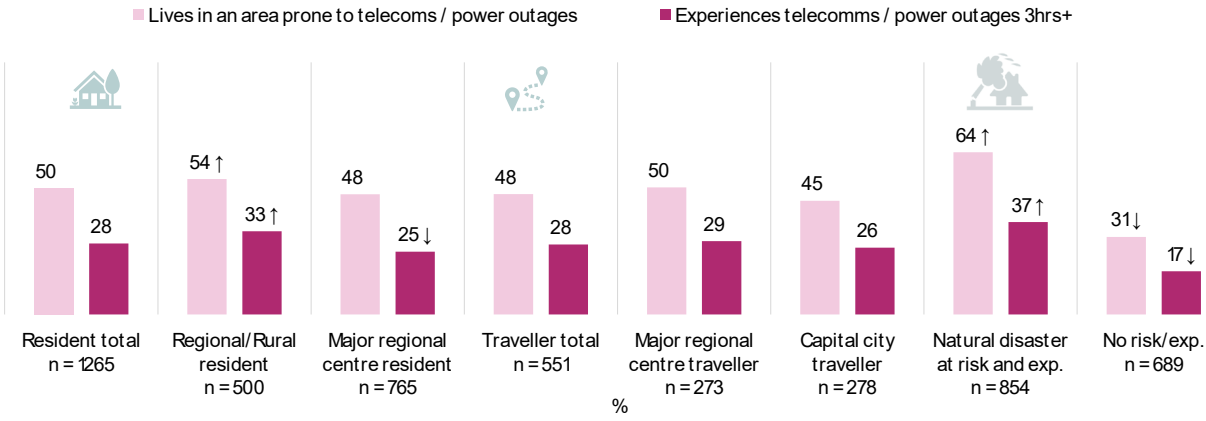
5.3.2. Experiences with telecommunications or power outages

Regardless of where they live, many Australians considered themselves to live in an area prone to telecommunications and power outages and many claimed to experience significant loss or disruption to services.

Half (50%) of residents from regional/rural areas and major regional centres indicated they lived in an area prone to telecommunications or power outages although these are more likely to be shorter disruptions of less than 3 hours. Around 3 in 10 (28%) of residents claimed to experience power or telecommunications outages of more than 3 hours and this was higher among regional/rural residents (33% vs 25% of residents from major regional centres). That said, even those living in capital cities (26%) believed they were subject to telecommunications or power outages.

Residents who lived in at risk areas and had experienced a natural disaster in the last 5 years were much more likely to encounter telecommunications or power outages where they live (64% also considered the area they live to be prone to telecommunications or power outages and 37% had experienced outages of more than 3 hours).

FIGURE 20: EXPERIENCE WITH TELECOMMUNICATIONS DISRUPTIONS



Total sample: n=1543. S6 Would you consider the area you live in to be at risk or prone to…?, Q11 Is it common for you to experience any of the following where you live…? Often/regularly

Rural and remote Australians have a more pragmatic approach to telecommunications disruptions or breakdowns

The qualitative research found that regional and rural residents in general are more familiar with inconsistent and unreliable telecommunications on the basis of regularly experiencing outages or living in an area with limited reception. While they value the benefits offered by telecommunications, they know they are not 100 per cent reliable and their lifestyle is not dependent on having access to services and information made available through mobile devices and internet services. They have learnt that they need to have different communication channels or that they effectively need to 'wait it out' until services return which is what most do in non-emergency situations.

This varied experience with telecommunications and a lack of reliability means they have developed a good working knowledge of how their telecommunications work as this often assists them in determining solutions to disruptions. There are some within this cohort who lack confidence with technology and generally disengage with new telecommunications services instead relying on the traditional land line, UHF radio and satellite phone options. However most regional and rural residents undertake some research to better understand what equipment they have and how it connects both in terms of power and telecommunications networks in order to get the most out of them.

> *"Reception is terrible! You cannot walk around and talk. There are only certain spots in the house you can talk. We have never had any mobile service outages that I remember, but our internet regularly drops out. The speed has improved a lot since NBN, but the cabling from the "green box" to the house is still the aged original copper wiring, that very obviously slows down in wet weather. We have learnt to just live with the bad internet. We know it would cost far too much for the telco's to actually replace the wiring."*
>
> *Resident, Urban fringe WA*

> *"I don't recall telecommunications being affected during the floods. The worst things was that we had no power for a few days so could not use a landline and there were issues with charging mobile phones. These days if it would occur again, I would make sure we have power banks charged for our phones."*
>
> *Resident regional QLD*

> *"Telecoms often experience outages in natural disasters. I know it's a good idea to have a radio with batteries in case of a power outage but I don't think there's much you can do if the mobile phone towers are affected. I would have to find someone whose phone was working or who had a landline as long as the phone lines hadn't also been affected. I guess if the phone lines are down too then no one would have internet, so there would be no way to contact people. I think when the fires were on last year that the emergency services people had to go around personally to check on people. I'd hope I'd be able to use my car and get out of that area."*
>
> *Resident, regional WA*

Workarounds for telecommunications issues in particular include using UHF radios; equipping family members living in separate houses but within close range with walkie talkies; for black spots, they'll travel to where they know they can get better reception; for full outages, they'll drive to neighbours to exchange information in person; or they'll have the local radio station on through their car stereo or battery-operated radio.

> *"There are so many communication tools available to us nowadays. A simple yet often overlooked communication tool is AM radio. During the 2003 bushfires in Canberra, I didn't have a smart phone, I relied on the ABC radio broadcasts to keep me up to date."*
>
> *Resident, ACT*

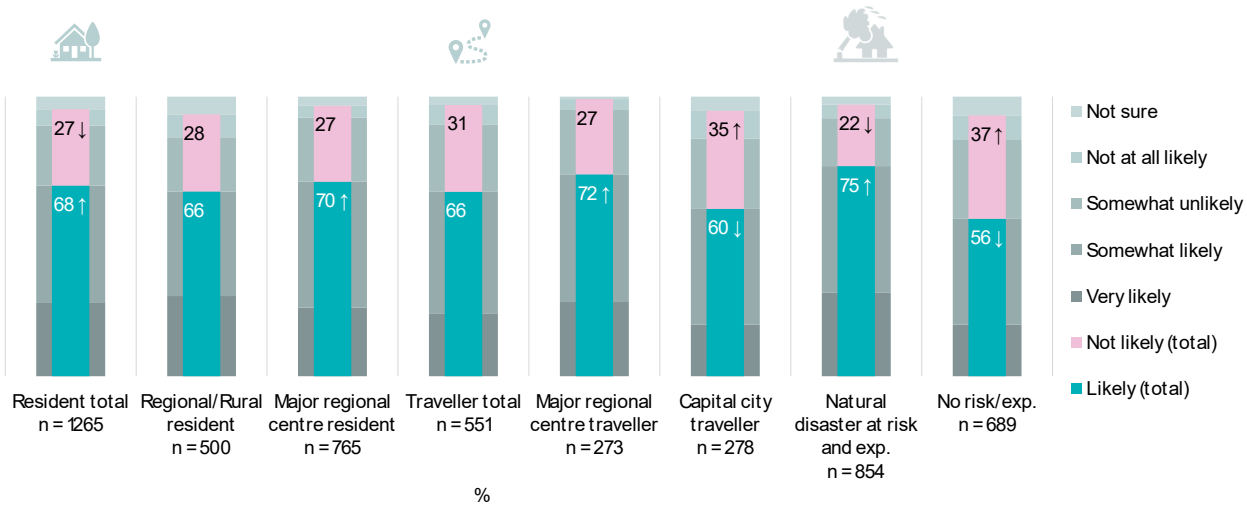
5.4. Telecommunications during a natural disaster

5.4.1. Understanding the likelihood and impact of a natural disaster on telecommunications services

Australians are aware of the potential to lose telecommunications during a natural disaster

Most Australians acknowledge that during a natural disaster, it is likely that their telecommunications could be disrupted or lost for a significant period of time (66% regional/rural residents, 70% major regional centre residents and 60% capital city residents). Residents familiar with natural disasters were more likely to recognise the likelihood of a loss of telecommunications during a disaster (75% vs. 56% of less experienced/ at risk residents).

FIGURE 21: LIKELIHOOD OF A LOSS OF TELECOMMUNICATIONS DURING A NATURAL DISASTER



Total sample: n=1543. Q14 As a result of a natural disaster or extreme weather situation, how likely do you think it is that there could be a loss of all telecommunications (internet, mobile, phone) where you live for a significant length of time (more than 3 hours)?

While most are aware that there can be a loss of telecommunications and power, they are unsure of what this means

Across cohorts, there was generally high levels of recognition that power and telecommunications could be affected during a natural disaster however many did not believe landline phones (around 3 in 10) or mobile or internet services (around 2 in 10) could be affected. Those with less experience with natural disasters or telecommunications outages were more likely to believe some services would be exempt from disruptions.

FIGURE 22: KNOWLEDGE OF WHAT CAN BE AFFECTED DURING A NATURAL DISASTER

Column %	Total n = 1543	Resident total n = 1265	Regional/ Rural resident n = 500	Major regional centre resident n = 765	Traveller total n = 551	Major regional centre traveller n = 273	Capital city traveller n = 278	Natural disaster at risk and exp. n = 854	No risk/exp. n = 689	Telecoms/ Power outage risk and exp. n = 324	No risk/exp. with T/P outage n = 1219
Any of these (total)	97	97	96	98	98	99	97	98↑	95↓	98	97
Power supply	93	93	91	94↑	93	94	91	94	91	93	92
Mobile phone services	77	78	72↓	82↑	79	86↑	73	82↑	71↓	82↑	76↓
Broadband / Internet access	78	78	72↓	82↑	79	83↑	76	82↑	73↓	84↑	76↓
Landline phone	68	68	66	69	71	75↑	66	71↑	63↓	67	68
Not sure	2	2	3	2	1↓	1	1	1↓	3↑	1	2
None of these	1	1	1	0↓	1	0	2	0↓	2↑	0	1

Total sample: n=1543. Q17 Which of the following do you think can be affected by natural disasters or extreme weather situations?

A lack of knowledge contributes to a lack of understanding of resilience issues of telecommunications in a natural disaster

Given those who are in disaster prone areas have more experience with outages, these residents understand that extreme weather situations can cause damage to power and telecommunications infrastructure and disruptions to telecommunications signals – they generally expect that when there is a major storm, flood, cyclone or bushfire that power goes out and their telecommunications services will too. Regional/rural residents appear to better understand the flow on effects of these outages which other members of the community are less aware of – that a loss of power means that fuel pumps don't work, that back-up generators are good options for power until they run out of fuel, that ATM machines and EFTPOS machines don't work, that cash is the only option for buying goods and that calls to 000 won't go through.

These more familiar residents may not always understand the exact reason or are sure of what circumstance led to the telecommunications outage – damage to power lines, physical damage to telecommunications

towers, smoke disrupting signals - but they are familiar with the vulnerabilities of power and telecommunications and generally accept this as their reality.

Community members without an understanding of how telecommunications work, without experience with telecommunications outages and without experience in a natural disaster have very little understanding of the resilience issues of telecommunications in a disaster.

Further, they are substantially less aware of the full impact of these outages – many have not fully considered the implications of not being able to use their mobile devices or access the internet in daily life, let alone during a natural disaster. At best, their preparation for telecommunications will be a spare phone charger – but the idea they may need multiple power sources, or ensure one phone is reserved with maximum battery storage for emergencies, or maintaining a battery operated radio is very low on the list for these cohorts.

> *"Well if we lose power I know we can't use internet, wifi or landline - because now we have NBN we lose our phone too when the power goes out. There may be some sort of battery available that keeps your phone on for a while after a power outage but I'm not sure. I think I will check with Telstra, but it would probably only be a short term back up"*
>
> *Resident, regional NSW*

> *"Hmmm - if the repeater poles are compromised then mobile outage is a real issue. Good to always keep a radio am/fm with batteries handy. Hopefully by the time communications may become an issue I would have evacuated and be in a safe area where communication would be through announcement to the group over speaker or megaphone."*
>
> *Resident, regional QLD*

> *"There is a high chance of outages due to bushfires as the RFS need to turn off power near the fire for everyone's safety and that can affect us greatly".*
>
> *Resident, regional NSW*

> *"I feel having a great mobile phone service we would have easy reliable communication if there was an outage. But in saying that we always have a back up radio/uhf if we were ever in a sticky position"*
>
> *Traveller, ACT*

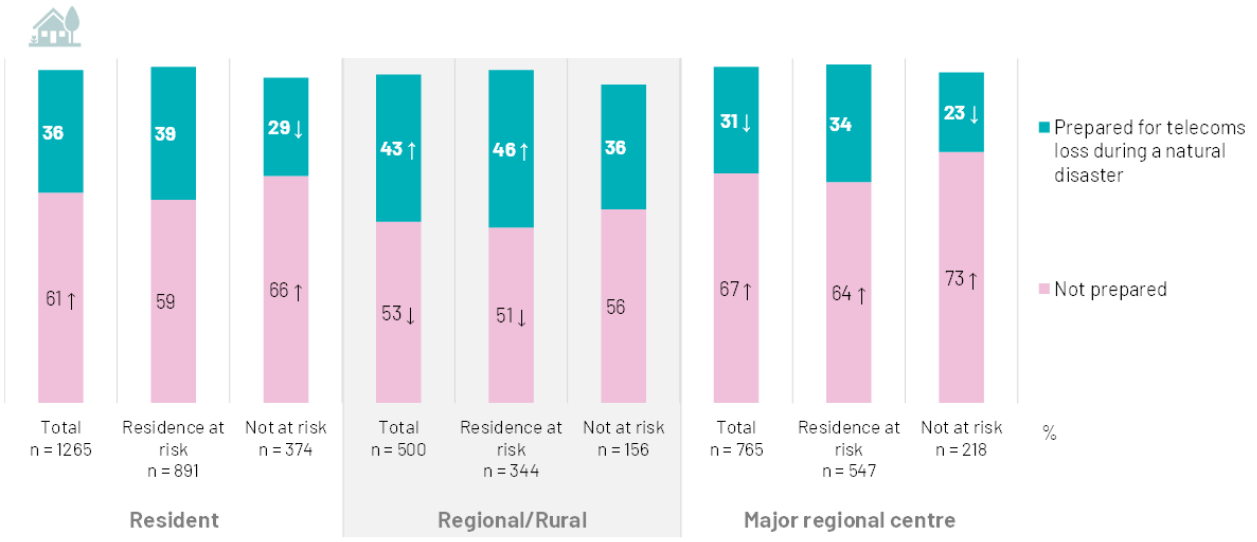
5.5. Preparing for a loss of telecommunications during a natural disaster

5.5.1. Knowledge of how to prepare for a loss of telecommunications services in a natural disaster

There are many who despite living in disaster prone areas, are not prepared for telecommunications loss

Less than 4 in 10 of residents who consider the area in which they live to be at risk of natural disasters believe they are prepared for a telecommunications outage should they experience a natural disaster. Regional/rural residents that live in an area prone to natural disasters are more likely to be prepared for a telecommunications loss (46%) compared with those who are at risk but reside in a major regional centre (34%).

FIGURE 23: PREPAREDNESS FOR TELECOMS LOSS BY REGION AND RISK



Resident sample. Q20 How prepared are you and your household if you were to lose all telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours) as a result of a natural disaster or extreme weather situation?

For those less familiar with natural disasters, preparing for a possible telecommunications outage during a disaster is not top of mind

Residents and travellers who have little experience with natural disasters and are unlikely to genuinely expect to experience one have not considered the likelihood of an outage in a natural disaster and the impact this will have on their ability to keep up to date and connected. They therefore have not considered to identify what they can do to help prepare for this. It has simply not crossed their mind.

Once prompted with the scenario of a telecommunications outage in a natural disaster, these residents and travellers in the qualitative research suggested that the issue is likely to be rectified, as per what happens during an outage on a normal day at home, before it becomes a problem. When asked what they could do if telecommunications services are compromised for a longer period of time, these residents acknowledge they don't know what they would do nor what they could do to prepare if they did recognise the potential for an outage.

> *"Ummm, yeah I don't know. What are the options? What can you do? Yeah I'm not really sure."*
>
> *Metropolitan resident, NSW*

> *"Here in Ipswich I actually get good reception – it's actually better than where I work in the Fortitude Valley. If I did have an outage here where I live, I'm actually lucky that I do have a pay phone just out on the footpath and also my neighbours are very close to each other."*
>
> *Resident, regional, QLD*

> *"Even if we don't have power outages, and our mobiles maintain battery power, telecommunications infrastructure can be damaged and we may still lose service. I know understand this and the thought is scary. I don't really know what can be done to stay informed if we were to lose everything."*
>
> *Resident ACT*

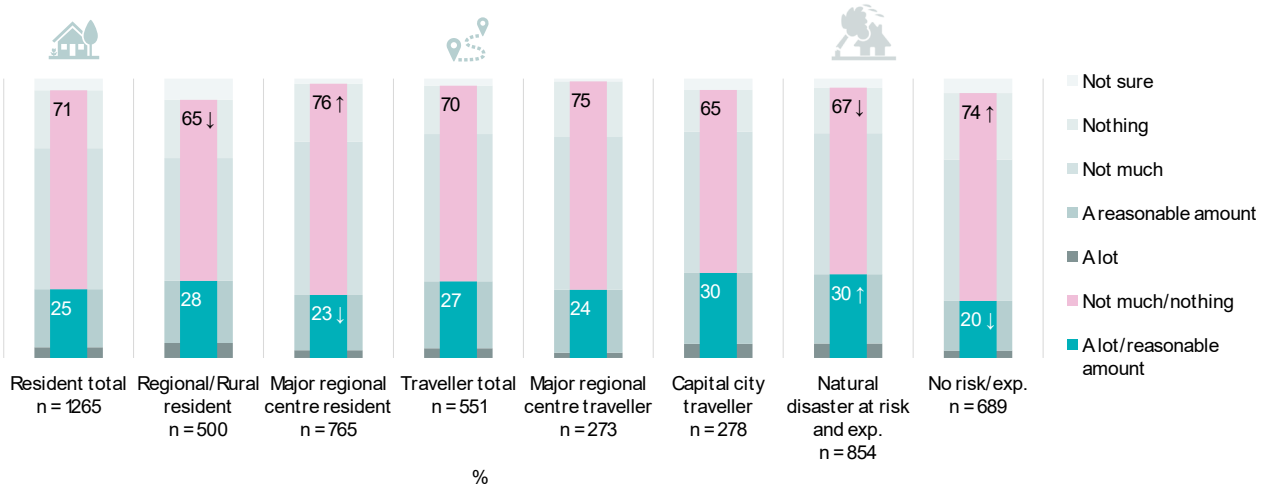
Few residents or travellers know how to prepare for a long period of no telecommunication services

The majority of residents (71%) and travellers to regional areas (70%) indicated that they didn't know much about how to prepare for a loss of telecommunications of 3 hours or more with fewer than 3 in 10 saying they felt they knew a reasonable amount or more (27% of regional/rural residents, 23% of major regional centre residents and 27% of travellers). Again, travellers from capital cities exhibited some overconfidence as the

cohort with the highest proportion of people who considered themselves to know a reasonable amount or more about how to prepared for a loss of telecommunications (30%).

Residents who live in at risk areas and had experience with natural disasters, appear to acknowledge that they may not know enough with only 30% reporting that they know a reasonable amount or more although this proportion was higher than those were not at risk or experienced (20%).

FIGURE 24: KNOWLEDGE ABOUT HOW TO PREPARE FOR LOSS OF TELECOMMUNICATIONS FOR A SIGNIFICANT LENGTH OF TIME



Total sample: n=1543. Q18 What do you know about how to prepare for loss of telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours)?

Of those who said they knew anything about preparing for the loss of telecommunications (30%) all said they learnt about it as part of preparing for natural disasters (this equated to a quarter of the total sample surveyed) and was consistent across all cohorts surveyed. The minority that said they knew a lot or a reasonable amount were more likely to cite learning about after experiencing a natural disaster or extreme weather situation (56%).

Around a quarter who said they knew anything also indicated learning about it as part of information specific to telecommunications disruptions or loss (1 in 5 of the total sample).

Only a third who knew something about how to prepare for a loss of telecommunications learnt about it via natural disaster planning which suggests there is a need to increase telecommunications preparedness within disaster preparation education

5.5.2. Alternatives in a telecommunications outage

Genuine back up options for telecommunications outages are minimal

While Australians more familiar with natural disasters are more likely to have alternative communications equipment to enable communications during telecommunications outages, most agree that in reality, there are minimal back up options that provide the same level of connectedness that comes with telecommunications services.

Satellite phones, UHF radios, walkie talkies and PLBs are considered options for communicating with others to provide updates, to share information and receive details about the progress of the disaster, and most will have at least one of these. However they are not considered to be true alternatives that replace telecommunications - they each offer someform of communication and connectedness but the community recognises they need to be able to survive a natural disaster without the access, information and connection provided by telecommunications services.

Residents with experience, in addition to those listed for non-emergency situations, identify two key ways to keep connected in a natural disaster:

1. driving to the local fire or emergency services station to talk to relevant authorities or to tap into their communications; and
2. ensuring they are listening to the ABC radio station as compared to a local commercial station which they may do in a non-emergency situation.

ABC radio is considered the most reliable and available source of information in a telecommunications outage and they identify both their vehicles and battery operated radios as the main ways in which to access it. ABC radio is widely and highly regarded as the most trusted source of information during a natural disaster and while some questioned the accuracy of updates in recent events, they understood the challenges of providing up to date and location specific information during a disaster.

Overall, the ABC was considered essential to emergency information broadcasting – communities feel passionately about their local ABC radio station. For many, there is an emotional connection – it not only offers facts and practical information to help listeners survive an emergency, but they feel supported by the broadcaster, they relate to the stories, they hear from their neighbours and others in their situation and for many, it gives them hope and optimism when facing the challenges of living through and recovering from a really challenging event.

As mentioned above, given the known vulnerabilities, these community members generally rely on those geographically closest to them for information. They are the ones who are expected to be most connected with what is happening in their immediate local area – direct contact is prioritised through local emergency service agencies who are considered the most informed and knowledgeable.

Social media is considered invaluable when it can be used

Community leaders and community members agree that social media is invaluable in engaging and connecting people within their community and is particularly useful in providing information about the local environment. As outlined above, many Facebook groups have been established for local residents and they are used regularly to provide updates about what is happening locally both in terms of emergency and non-emergency situations.

Community leaders explain that they leverage social media in their communication strategies as a cost effective and timely way of engaging with community members at all times. It allows them to provide tailored information about relevant natural disasters, timely information about incidents and forecasted threats. They reference not only their own social media channels but also list groups established by proactive community members which have become the 'go to' place for local emergency related information. It is fair to say that many of these self initiated sources despite not always having endorsement from local emergency services, are highly trusted in rural and remote communities.

However community leaders also note that social media and in particular community-based journalism presents some challenges. Talk back radio and social media provide a platform for local community members to communicate and share their experiences with others and this is not always factual or helpful. Those in formal communication roles suggest that efforts to educate or influence attitudes and behaviours are hampered when those potentially less familiar with how natural disasters work and how to best prepare or manage, share their views with local communities, family and friends through social media channels.

In addition, there is also a concern about the potential for social media to panic a community with people reporting their experience and perceptions with strong emotions and anxiety. Live streams, recorded videos and calls to talk back radio allow voices to be heard and visuals to be seen which may exacerbate the situation rather than encourage considered and calm behaviour.

Of course, the other key issue acknowledged is that social media relies upon telecommunications and this valuable tool therefore becomes inaccessible during an outage.

5.5.3. Perceptions of the impact of a loss of telecommunications services in a natural disaster

For those unfamiliar, a telecommunications outage in a natural disaster is considered to be a critical issue but not until they understand the impact

While experienced residents of disaster prone areas are more pragmatic about the implications of telecommunications outages during natural disasters, those who aren't as familiar are far more alarmed and concerned. For visitors in particular, once the proposition of an outage is considered, there is significant anxiety. This level of concern by visitors is what raises concern for the community leaders. They are aware of the reliance of visitors on telecommunications, of their lack of understanding, preparation and essentially, resilience in disaster situations and this causes significant issues for the whole community.

Once prompted, potential visitors to disaster prone areas realise their dependency on telecommunications and acknowledge they are considerably unprepared for an outage in a natural disaster, have limited understanding of the alternative options, and that they haven't thought about what they might do should they not be able to use their device. And when considering this within the context of being exposed to a natural disaster – something they are quite unfamiliar with – they begin to feel incredibly nervous.

> *"Well that's extremely concerning, isn't it? I definitely should be made aware of that. Why hasn't anyone told us that?"*
>
> *Rural property owner, NSW*

> *"I have major issues with that. I'm not sure how they can allow that to happen. Surely they're doing something about that?"*
>
> *Traveller, NSW*

> *"Tourists were not at all prepared – clothing, comms, everything. Not expecting what happened at all – telecoms was not on the radar and so there were so many at the wharf saying "My phone doesn't work"*
>
> *Property manager, VIC*

Aside from the obvious impacts of telecommunications outages such as not being able to make or receive calls or messages and access the internet, less experienced residents are unaware of the extent of the impacts of telecommunications outages during a natural disaster.

Community leaders are more likely to highlight these impacts as critical issues noting that particularly for visitors who are not prepared nor expect the impacts, it is not just information and connection that is problematic in times of natural disaster but other impacts such as banking and access to money, particularly where consumers use their mobile device to purchase items, access EFTPOS machines and Emergency Alert systems and pump fuel at fuel stations.

> *"People don't understand that when telecoms are down, it's not just phone calls. There is such a great reliance – eg. Tap and go. There was no provision for electronic cash after the flood in Halls Creek. The practicalities were if you haven't got cash, you're not getting it. Need to include cash in your emergency kit."*
>
> *Emergency Services, WA*

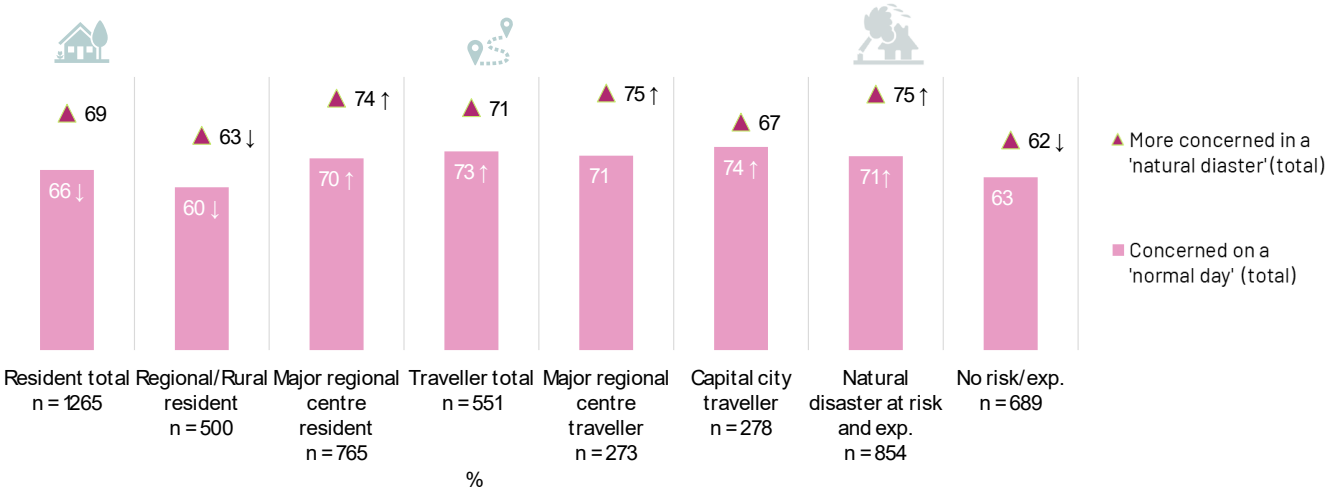
Australians are concerned about losing telecommunications on any given day which is further intensified if they were in a natural disaster situation

Most Australians indicated they would be very or somewhat concerned if they lost telecommunications in day to day life (60% regional/rural residents, 70% major regional centre residents and 74% capital residents). If they lost telecommunications in a natural disaster, the majority would be even more concerned (63% regional/rural, 74% major regional centre and 67% capital residents).

Regional/rural residents were the least concerned about the loss of telecommunications on a 'normal day' (60% vs. 70% major regional centres residents), reflecting their pragmatism based on higher experience with telecommunication disruptions.

Residents familiar with natural disasters were more likely than those who weren't, to indicate having concerns about losing telecommunications both on a normal day and in a natural disaster.

FIGURE 25: CONCERNS ABOUT LOSING TELECOMMUNICATIONS ON A 'NORMAL DAY' VS. NATURAL DISASTER SITUATION

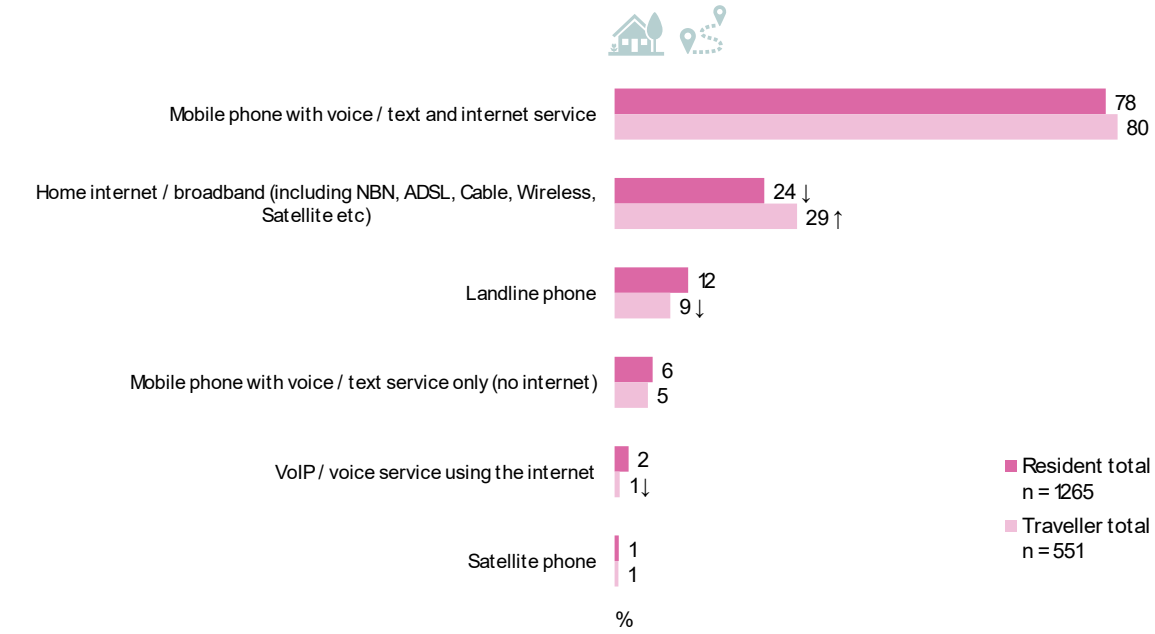


Total sample: n=1543. Q13 In day to day life vs. Q15 in a natural disaster or extreme weather situation…how concerned would you be to lose telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours)?

Australians would be most concerned about losing mobile services with internet

Around 8 in 10 identified mobile services with internet as the service they would be most concerned about losing.

FIGURE 26: TELECOMMUNICATION SERVICE MOST CONCERNED ABOUT LOSING



Total sample: n=1543. Q16 Which telecommunication service would you be most concerned about losing?

Those more familiar community members are pragmatic about the disruptions caused by disasters

Given the day to day telecommunications resilience issues experienced by these residents and travellers experience and their experience with natural disasters, they understand and expect that power and telecommunications will be disrupted during and after a natural disaster. In addition, this perspective means they are significantly less reliant on telecommunications in a natural disaster situation and engage their established workarounds or alternative devices usually employed in outages.

Some residents explain that during a natural disaster the focus is on the disaster – on fighting the fire or bunkering down to wait for the cyclone to pass and that in terms of priority, telecommunications is less essential at this time. While they understand that telecommunications services may improve access to emergency services to assist them manage the disaster and communicate with loved ones not in the direct locale, the primary need during a disaster is protection of their property.

> *"We pretty much know where everyone close to us is – they're doing what they have to do to prepare and fight. For us during the fires, our focus was on the fires and doing what we could to protect the farm. Having phone service wasn't going to help with that."*
>
> *Rural property owner, VIC*

> *"What for? To ring the CFS? Well we knew if they could be there, they would."*
>
> *Farm owner, SA*

> *"We were keeping an eye on the app and we had the local radio station on the whole time but we could see where the fire was – we knew before it reported where it was going so we weren't sure the app was as up to date as us!"*
>
> *Rural property owner, NSW*

With an understanding of what can be done to prepare for a telecommunications outage, there is a degree of pragmatism about the options. These community members understand that natural disasters cause damage to infrastructure and that this affects telecommunications, that services will go down and that they need other ways to access information or connect with others. It's the reality of the situation.

For travellers who are also familiar with outages in regional/rural areas, they too are quite pragmatic. Their goal is to find the best evacuation route or evacuation point and they know they can't rely on reception in a natural disaster – and potentially not even radio reception. Their preparations ensure they have more manual ways to determine how they can move out of the danger zones such as hard copy maps or maps that can still be accessed on phones without service (i.e. not live).

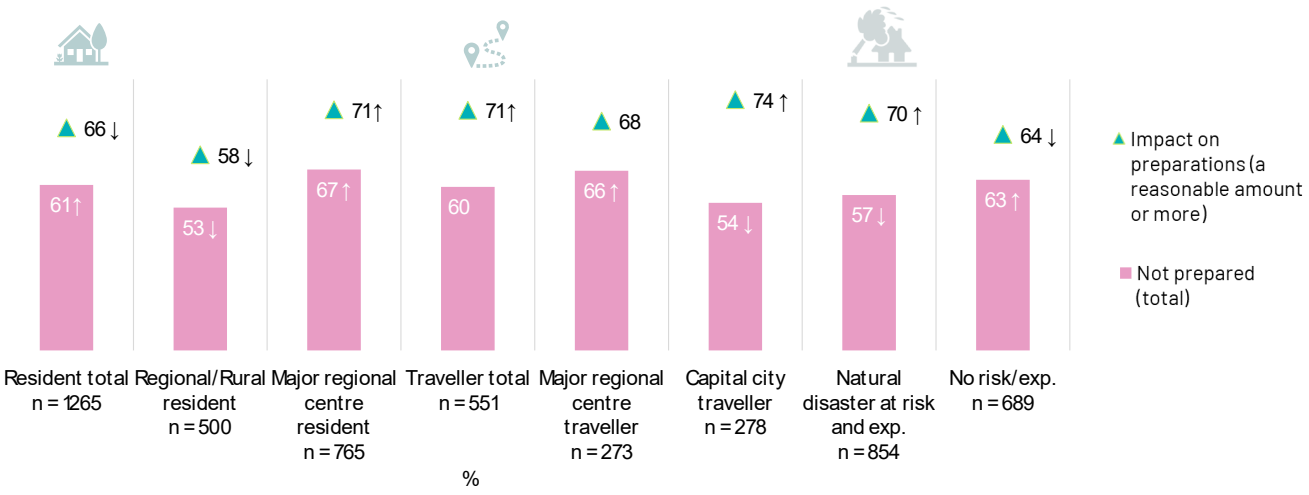
As outlined below, like residents, travellers also rely heavily on ABC radio as the best way to access information about what is happening around them if telecommunications services are down.

Further, the survey results also reinforce the qualitative findings that showed that regional and rural residents familiar with living in disaster prone areas are more cautious about overstating their confidence in preparing despite potentially being the most prepared in comparison to others. Similarly those who live in urban areas may be overstating their knowledge of how to prepare on the basis of a sense of confidence given outages for significant periods of time are not as common.

Most Australians indicate they would do more to prepare for a telecommunications outage in a natural disaster if they knew to expect it

As outlined above over half of residents who live in a disaster prone area report that they are unprepared for a telecommunications outage in a natural disaster and there are low levels of knowledge about how to prepare - this clearly contributes to their attitude towards preparing if they knew to expect it. Across all cohorts, the majority of survey respondents (around 7 in 10) indicate that knowing that telecommunications may be unavailable during a natural disaster would impact their preparations.

FIGURE 27: PERCEIVED PREPAREDNESS FOR A LOSS OF TELECOMMUNICATIONS DURING A NATURAL DISASTER AND IMPACT ON PREPARATIONS



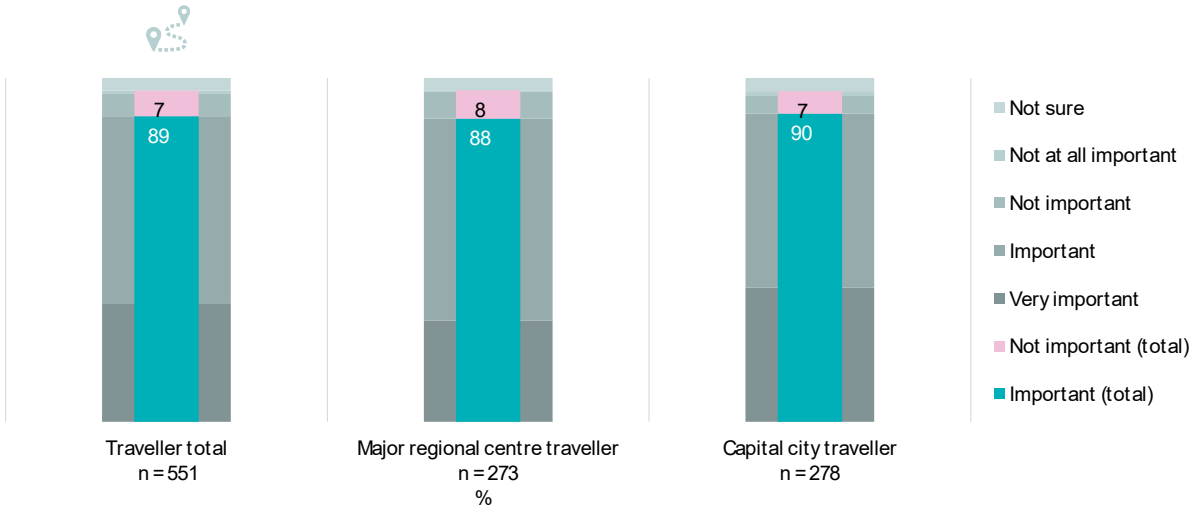
Total sample: n=1543. Q20 How prepared are you and your household if you were to lose all telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours) as a result of a natural disaster or extreme weather situation? Q21 If you were aware that telecommunications services may be unavailable during a natural disaster, how much would this affect your preparation?

5.5.4. Preparing for telecommunications loss when travelling

Despite agreeing that it is important to be prepared for potential loss of telecommunications when travelling, most urban travellers acknowledge they are unprepared for them

The vast majority (89%) of urban travellers to disaster prone regional areas believe it is important that people are prepared for potential telecommunication disruptions or loss should they encounter a natural disaster There was no difference observed between those that had experienced a natural disaster in the last 5 years and those that hadn't.

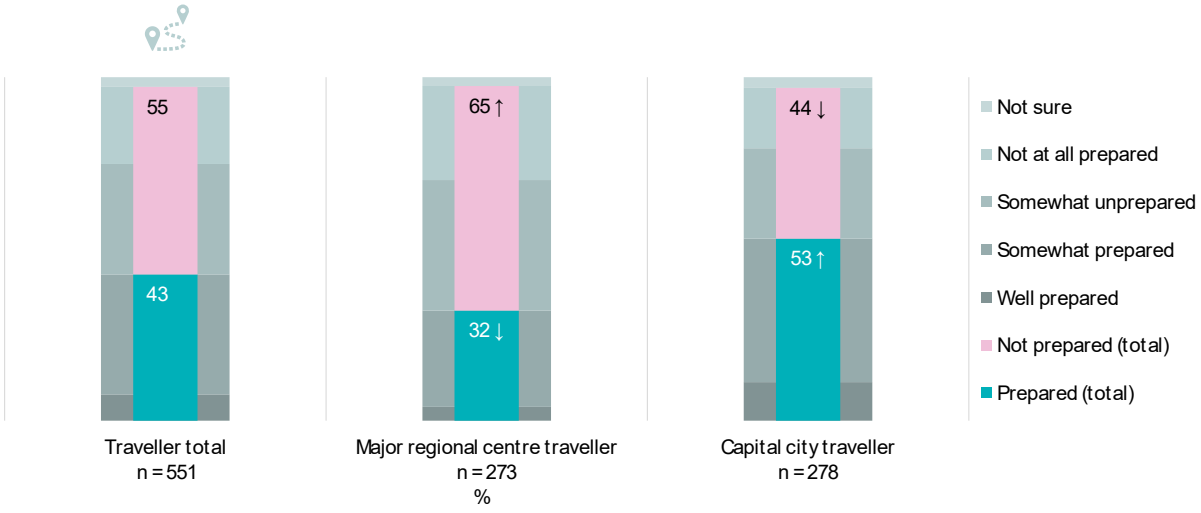
FIGURE 28: IMPORTANCE OF BEING PREPARED FOR A LOSS OF TELECOMMUNICATIONS DURING A NATURAL DISASTERS WHEN TRAVELLING



Traveller sample: T7 How important is it that people who travel to a regional area for holiday / to visit friends or family / work be prepared for potential telecommunications disruptions or loss of telecommunications when travelling?

Despite this, most urban travellers are not prepared for a telecommunications loss when travelling with only 42% who considered themselves prepared and almost none who considered themselves 'well prepared' Travellers from major regional centres were even less likely to consider themselves prepared (32%) while capital city dwellers may exhibit some overconfidence with 53% who believed they are prepared. There was no difference observed between those who came from at risk areas and had experience with natural disasters.

FIGURE 29: PREPAREDNESS FOR A LOSS OF TELECOMMUNICATIONS DURING A NATURAL DISASTER WHEN TRAVELLING



Traveller sample: T8 How prepared would you be if you were to lose all telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours) as a result of a natural disaster or extreme weather situation when staying overnight in a regional area for holiday / to visit friends or family / work?

Residents in disaster prone areas don't bring their knowledge about disaster preparedness with them when travelling

The qualitative and quantitative research both indicate that there is no evidence to suggest that people will automatically take their precautions or preparations with them when travelling, as seen when comparing levels of preparedness among travellers who are more familiar with natural disasters with those who are not.

Additionally, the earlier observation that travellers from capital cities appear to be 'overconfident' in their perceived preparation is also reflected in this area with more from this cohort believing they are prepared for a loss of telecommunications during a natural disaster when they travel. This is not to say that there are urban residents who understand and prepare appropriately for a natural disaster when they travel, just that there are likely to be fewer who are actually prepared than those who believe they are.

FIGURE 30: PREPAREDNESS FOR A LOSS OF TELECOMMUNICATIONS DURING A NATURAL DISASTER WHEN TRAVELLING BY LEVEL RISK LEVELS AT PLACE OF RESIDENCE

Column %	Traveller total		Major regional centre traveller		Capital city traveller	
	Natural disaster at risk and exp. n = 271	No risk/exp. n = 280	Natural disaster at risk and exp. n = 196	No risk/exp. n = 77	Natural disaster at risk and exp. n = 75	No risk/exp. n = 203
Well prepared	10 ↑	5 ↓	6	0 ↓	21 ↑	7
Somewhat prepared	31	38	29 ↓	27	38	43 ↑
Somewhat unprepared	35	29	37	39	29	25 ↓
Not at all prepared	22	23	27	29	11 ↓	20
Not sure	1 ↓	4 ↑	1	5	1	4
Prepared (total)	41	44	34 ↓	27 ↓	59 ↑	51 ↑
Not prepared (total)	57	52	64 ↑	68 ↑	40 ↓	46 ↓

Traveller sample: T8 How prepared would you be if you were to lose all telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours) as a result of a natural disaster or extreme weather situation when staying overnight in a regional area for holiday / to visit friends or family / work?

Interestingly, when asked what preparations they have when travelling, the majority of urban travellers to regional areas did identify a range of actions they have taken (on average 3.9 of the listed preparations). The most common preparations were emergency supplies and research into the area or emergency services. Nearly half (45%) indicated having alternative power suppliers and this was higher for travellers from capital cities (52%). Many travellers from capital cities also indicated having alternative communications (43% vs. 35%

of travellers from major regional centres), the most common being an AM radio and batteries (31% travellers from capital cities vs. 25% major regional centres).

Those more familiar with natural disasters were more likely to have conducted some research about risks or emergency services and channels for the area they were travelling. The differences between those who are from at risk areas versus those who are not are not as divergent as one would expect suggesting people don't always wear their 'disaster preparedness' hat when they are travelling.

FIGURE 31: TYPES OF PREPARATIONS UNDERTAKEN WHEN TRAVELLING

Column %	Traveller total n = 551	Major regional centre traveller n = 273	Capital city traveller n = 278	Natural disaster at risk and exp. n = 271	No risk/exp. n = 280
Any listed (total)	84	81	86	88 ↑	80 ↓
Emergency supplies / numbers (total)	69	66	71	72	66
An emergency kit eg. First aid/medicine, blankets, food, water	55	57	54	59	52
A list of important phone numbers written down	36	32	40	37	36
Protective clothing	34	31	38	36	33
Research (total)	56	55	58	66 ↑	47 ↓
Researched the disaster risks relevant to where you travel	31	29	33	36 ↑	27 ↓
Understand the local emergency services in the area	31	32	30	35 ↑	27 ↓
Researched the emergency services in the area	27	28	26	35 ↑	20 ↓
Researched the emergency broadcaster or the ABC Emergency channel you need to listen to for emergency updates	23	22	23	25	20
Alternative power (total)	45	38 ↓	52 ↑	49	41
Battery pack and inverter as back-up / alternative power supply	33	29 ↓	38 ↑	38 ↑	29 ↓
Solar power as a back-up / alternative power supply	18	13 ↓	23 ↑	19	17
Generator for back up / alternative power supply	14	12	16	12	16
Alternative communications (total)	39	35	43	42	36
AM radio and batteries for alternative means of telecommunications	28	25	31	29	28
A UHF CB (Ultra High Frequency Citizen Band) radio for alternative means of telecommunications	12	10	13	12	12
Walkie talkie for alternative means of telecommunications	11	10	13	16 ↑	8 ↓
Satellite phone for alternative means of telecommunications	6	3 ↓	8 ↑	5	6
A plan in the event for a natural disaster / extreme weather event	30	28	31	35 ↑	24 ↓
None of these	16	19	14	12 ↓	20 ↑

Traveller sample: T10 What types of things do you have in place / or bring with you that could help you in the event of a natural disaster where you may lose telecommunications for a significant length of time (more than 3 hours) when travelling to regional areas for work / holiday/visiting friends or family?

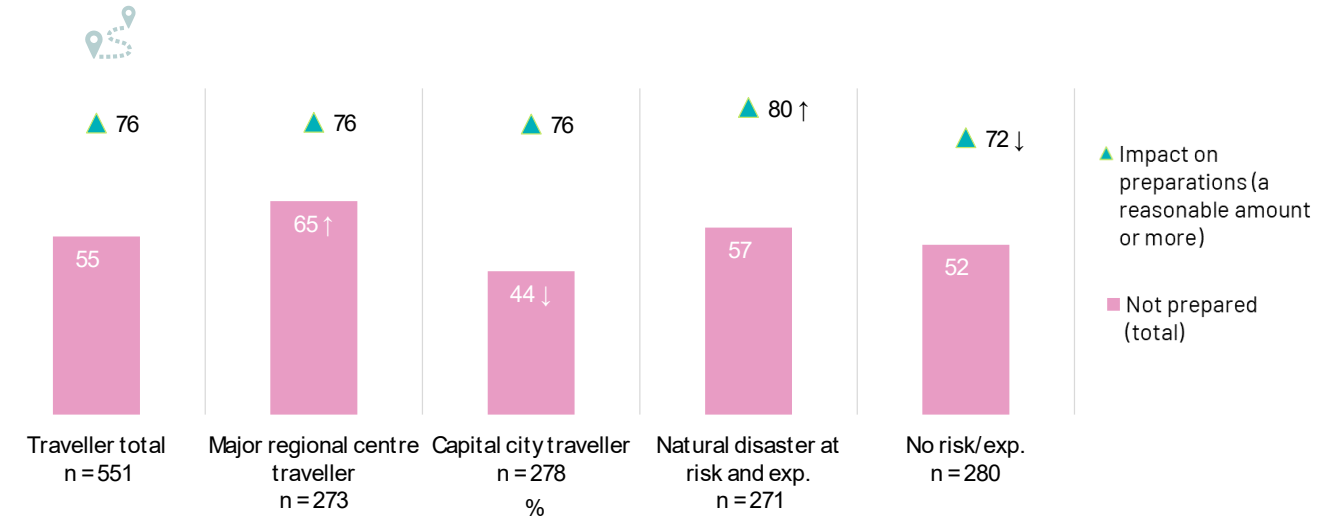
5.5.5. The impact of knowing about the resilience of telecommunications services on travelling

Knowing a natural disaster could occur and impact telecommunications when travelling can influence preparations and even whether travel proceeds.

As with residents, most (76%) urban travellers (with the exception of some potentially over-confident travellers from capital cities) who recognise they would be unprepared if travelling and they experienced a loss of telecommunications due to a natural disaster indicated that knowing that telecommunications may be unavailable due to a natural disaster would impact their preparations.

Those who are familiar with natural disasters were even more likely to indicate (80%) that it would have a significant impact on their preparations than those without experience (72%)

FIGURE 32: PERCEIVED PREPAREDNESS FOR A LOSS OF TELECOMMUNICATIONS DURING A NATURAL DISASTER AND IMPACT ON PREPARATIONS WHEN TRAVELLING



Traveller sample: T8 How prepared would you be if you were to lose all telecommunications (internet, mobile, phone) for a significant length of time (more than 3 hours) as a result of a natural disaster or extreme weather situation when staying overnight in a regional area for holiday / to visit friends or family / work? T9 If you were aware that telecommunications services may be unavailable during a natural disaster, how much would this affect your preparation when travelling to regional areas for holiday / to visit friends or family / work?

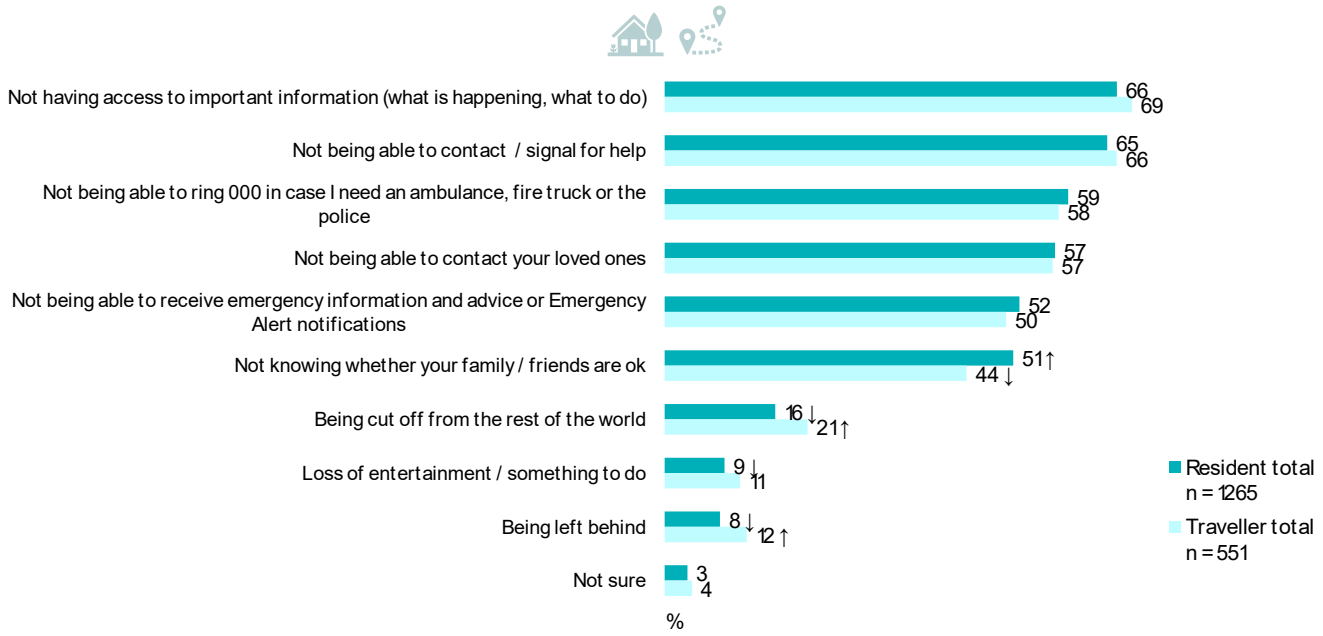
Additionally, 9 in 10 (88%) of urban travellers believe they would cancel their trip if they heard that a natural disaster might affect the area that are travelling to.

5.6. Resilience during a natural disaster

Most Australians share the same concernsabout not being able to access disaster relevant information if they lost telecommunications during a natural disaster

Overall, residents and travellers generally shared the same concerns about losing telecommunications during a natural disaster, the most common concerns being unable to access information, signal or call for help and contacting loved ones. Urban travellers were also relatively more likely than residents from regional/rural and major regional centres to be concerned about not being able to access important information about what to do or contact / signal for help if they lost telecommunications during a natural disaster while travelling.

FIGURE 33: MOST CONCERNED ABOUT IF LOST TELECOMMUNICATIONS IN A NATURAL DISASTER



Total sample: n=1543. Q23. If you experience a loss of telecommunications (internet, mobile, phone) for a period of time (more than 3 hours) as a result of a natural disaster or extreme weather situation, what would you be most concerned about? / If you are travelling to regional areas outside of where you live and you experience a loss of telecommunications (internet, mobile, phone) for a period of time (more than 3 hours) as a result of a natural disaster or extreme weather situation, what would you be most concerned about?

Timely and accurate information during a natural disaster is considered key and all Australians appear to understand that relevant Apps, websites and social media are becoming (and have already become in metro) the most accessible way to find out about what is happening in their general vicinity. Those without experience in a natural disaster and with expectations that they would be able to use online communication channels identify the inability to access updates about the local situation as particularly concerning.

> *"Yeah I guess it would be hard to keep up to date with the information published on Fires Near Me app if telecoms go down. I thought that was really good having access to that it updated quite regularly so without it, I'm a bit unsure about what I would do."*
>
> *Traveller, VIC*

> *"The Bureau of Meteorology is a really important site for our community when we have a cyclone on the radar so that would be something that they would want to be able to keep an eye on."*
>
> *Rural resident, WA*

> *"Our local community Facebook group posts important and critical information about events and incidents so I would be keen to be able to make sure I could reference that as much as possible."*
>
> *Rural property owner, NSW*

Travellers with few personal relationships with locals were particularly concerned about not having direct access to local information unlike residents who have those local and personal connections with individuals who will have the latest information about the natural disaster.

> *"Yeah we were really pleased that we could get all the information we needed online when we were evacuated during the January bushfires. I'm not sure we would have been so lucky if we didn't have that."*
>
> *Traveller, VIC*

The inability to connect with family and friends is also quite concerning

Australians are also quite concerned about the inability to connect with other people in times of natural disasters – to communicate with others and let them know they are safe. While the survey data shows that residents and travellers are equally concerned about this, the qualitative data indicates that travellers in particular consider this to be especially problematic given their need to advise family and friends at home of their safety.

> *"I guess for me if there was an emergency and telecommunications went down I would want my family to know how we could get in contact with each other. I think an emergency kit is important but for most natural disasters there is a safe place you can meet at which would normally have those supplies. So having a plan to contact family would be more important to me"*
>
> *Traveller, VIC*

> *"Not being able to communicate with others in the event of an emergency - the only thing I would be concerned about is ensuring all my loved ones were safe."*
>
> *Rural property owner, QLD*

> *"No if I knew that my daughter couldn't get in touch with me during the fire, I wouldn't have stayed. She was quite upset and I can't imagine what she would have been like if she wasn't able to speak with me."*
>
> *Rural property owner, NSW*

There is confusion about the ability to receive Emergency Alert messages in an outage

Residents, travellers and community leaders are unsure about the impact of telecommunications outages during a natural disaster on the Emergency Alert system. Some suggest (based on their lack of understanding of how telecommunications work) that despite the telecommunications outage the Alert system will still be able to be broadcast and received, while others understand that notifications will not be received during an outage.

> *"We are signed up to our Shire's emergency text service that lets us know if there is a disaster in our area. We have received texts in the past about bush fires or storms, so I would hope it would work in a dire emergency."*
>
> *Resident, regional NSW*

> *"Does that work when the telecoms are down? I'm not sure it can. It's a great idea because I understand they text people who are within the geographic area so it would be good if it still worked."*
>
> *Traveller, VIC*

> *"Yeah we got the evacuation message after we had evacuated so that was helpful."*
>
> *Resident NSW*

Most Australians will be impacted negatively if they lost telecommunications during a natural disaster

When asked about their feelings if they were to lose telecommunications during a natural disaster, a notable proportion of residents indicated they would be completely lost and wouldn't know what to do (73%) although this was higher among major regional centre residents (45%). They were also more likely to consider the situation to be 'extremely frightening' (53% vs. 38% of regional/rural residents).

This is due to the survey results that shows more regional/rural residents believe they had other ways of communicating (64% vs. 75% residents from major regional centres that agreed they 'would have no other ways of communicating with others').

In the context of travelling to regional areas, urban travellers indicated more concerns and fears about losing telecommunications during a natural disaster when travelling. In addition to most believing they wouldn't have other ways of communicating with others (78%), more than half (55%) described the possibility as 'extremely

frightening' and nearly half (44%) would be 'completely lost and wouldn't know what to do'. There were some that would not be worried as they were less reliant on mobile or internet but this was a minority. There were more regional/rural residents were not worried (35%) and some travellers from capital cities (31%) and these people tended to be older.

FIGURE 34: ATTITUDES TO LOSING TELECOMMUNICATIONS

If I lost telecommunications...	At home			When travelling						
Strongly agree/ agree Column %	Resident total n = 1265	Regional/Rural resident n = 500	Major regional centre resident n = 765	Traveller total n = 551	Major regional centre traveller n = 273	Capital city traveller n = 278	Natural disaster at risk and exp. n = 854	No risk/exp. n = 689	Telecomms /Power outage risk and exp. n = 324	No risk/exp. with T/P outage n = 1219
I would have no other way of communicating with others	71↓	64↓	75↑	78↑	75	81↑	73	72	77	71
I would be completely lost and wouldn't know what to do	37↓	26↓	45↑	44↑	41	46↑	40	37	42	38
It would be extremely frightening	47↓	38↓	53↑	55↑	52	58↑	50	47	54↑	48↓
It wouldn't happen for long so I'd be ok	30	36↑	27↓	30	27	33	31	31	31	31
I would not be that worried as I don't rely on mobile or internet communications	25↓	35↑	18↓	23	16↓	31↑	24↓	29↑	27	26

Total sample: n=1543. Q22 If you were in a natural disaster or extreme weather situation that impacted telecommunications systems / when travelling...If I lost telecommunications (including mobile and internet)...Strongly Agree / Agree

5.6.1. Resilience index

To provide a gage of telecommunications resilience, an index of the attitudes towards telecommunications loss was developed. The index is an average of the scores for these four attitudinal statements which have been weighted to reflect higher or lower levels of resilience.

Attitudes (Q22)	Index Weight
I would have no other way of communicating with others	
I would be completely lost and wouldn't know what to do	Strongly agree:100, Agree:50, Neither: 0, Disagree: 50, Strongly Disagree: 100
It would be extremely frightening	
I would not be that worried as I don't rely on mobile or internet communications	Strongly agree:100, Agree:50, Neither: 0, Disagree:-50, Strongly Disagree:-100

This resilience index does not reflect concern (because there is high concern for managing in a natural disaster without telecommunications services) however it is more a reflection of an better ability to cope.

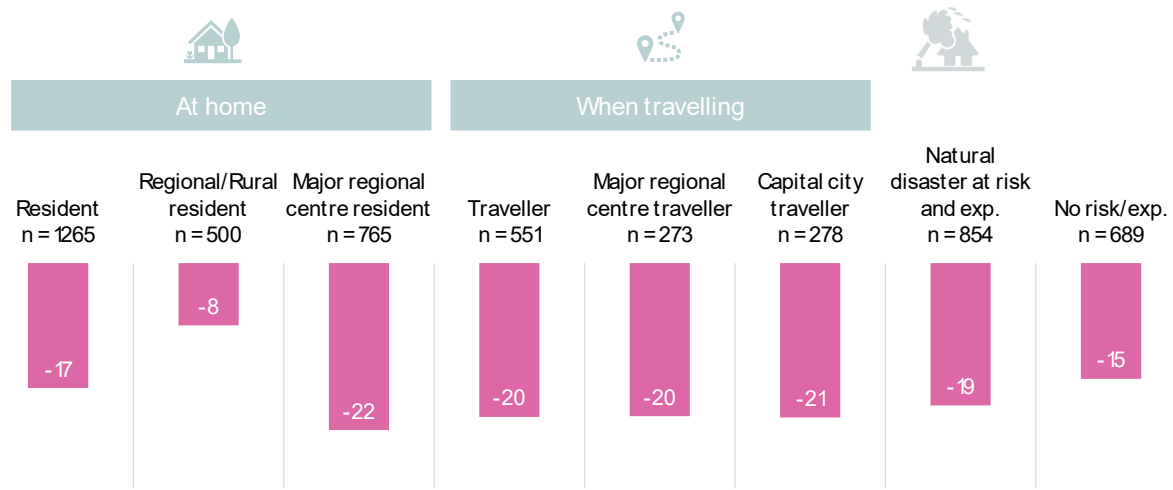
Resilience levels for managing a telecommunications outage during a natural disaster are low

The index suggests that across Australia, resilience to telecommunications loss during a natural disaster is low (-17). There was a stark difference between the resilience of regional/rural residents compared to others (-8 for regional/rural vs. -22 for major regional centres and -21 for capital city travellers) indicating they would be much more 'resilient' to a loss of telecommunications during a natural disaster.

Residents who live in a disaster prone area which includes major regional centres, regional areas and rural and remote locations overall received a low resilience index of -19. And while regional/rural residents are likely to be the most resilient, -8 is low. Concern coupled with poor specific knowledge about what constitutes good preparation makes many feel unequipped if faced with a loss of telecommunications during a disaster or emergency situation.

These figures suggest that even though some cohorts (like regional/rural residents) may be more accepting of telecommunications disruptions and have work arounds, losing telecommunications in a natural disaster would further exacerbate an already stressful and potentially traumatising experience.

FIGURE 35: RESILIENCE INDEX



Total sample: n=1543. Q22 If you were in a natural disaster or extreme weather situation that impacted telecommunications systems / when travelling...If I lost telecommunications (including mobile and internet)...Responses weighted for Index of Resilience.

There is a clear need for more education or assistance about how to be better prepared for a loss of telecommunications during a natural disaster across all cohorts but particularly for those living in areas where the probability of a natural disaster occurring is higher

Overall, communities are extremely resilient during natural disasters and telecommunications outages

Many community leaders and community members discuss with great pride the resilience of their local community during natural disasters and in light of the challenges presented by telecommunications outages. They reference the commitment and incredible passion shown by many locals who activate and work very hard to connect their fellow community members with information, support and services. They explain that within each community, there are 'personalities' that take the initiative to step up and produce offline communication options to keep locals engaged given they are sometimes the only way to communicate.

While some community members and/or local agencies may have back up options such as satellite phones or UHF radios most people do not and so there is a greater emphasis on the need to travel to others to connect with them and ensure they're safe until telecommunications services return. In addition, those who have been through a natural disaster report that the bush telegraph activates with volunteers who offer to print off information to share with others either in person or by leaving it in key locations around the community such as local stores, at relief centres and door to door.