Submission to the Environment and Communications References Committee Inquiry on Recent Trends in and Preparedness for Extreme Weather Events

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This submission was prepared for the Australian Psychological Society by Dr Susie Burke and Heather Gridley, with expert input by members of the Disaster Preparedness and Response Reference Group, including Prof Joseph Reser, Prof Kevin Ronan, and Prof David Forbes.

Submitted to ec.sen@aph.gov.au

Overview

The Australian Psychological Society believes that the threat of extreme weather events on Australian communities requires coordinated, evidence-based efforts across 3 levels of government and across sectors to improve communities' capacity to prepare, respond and recover. Our submission focuses on the health sector and emergency services in particular, with special attention paid to the mental health, psychological and social wellbeing of people at risk of, or impacted by extreme weather events.

Overall we believe that State and Federal agencies need to broaden their frame for examining extreme weather events, and accept that the altered, climate-changed world in which Australians are now living requires a broader framing of risk communications and adaptation responses that encompasses both extreme weather events and climate change. This may require a rethinking of whether event-specific and season-specific disaster preparedness and warning initiatives are the best strategies going forward.

In our submission we have made the following key recommendations.

Costs of extreme weather events

Recommendation: Future estimations on the financial impact of extreme weather events need to include costs related to the widespread psychological, social and community effects of extreme weather events on whole communities, as well as psychosocial impacts from perceived 'threat' of disaster, near misses, and media coverage.

Recommendation: Government should consider using APS psychologist advisors to inform appropriate and effective media coverage of disaster events to minimise the psychological impacts on the wider population.

Improvements in health sector preparedness

Recommendation: A communication strategy is required to raise the level of knowledge and awareness of the health sector on the health impacts facing the population from increased risks of extreme weather events, and communicate this to its constituents, policy makers, and the general public.

Recommendation: The largest and most important gaps to fill to improve the health sector's capacity to respond to extreme weather emergencies include:
- Skill up communities to help those in a community look after themselves and others before, during and after an extreme event – e.g., by widespread dissemination of psychological preparedness and

psychological first aid strategies within the community, inclusion of Disaster Resilience Education in the National Curriculum

- Provide access to training for the mental health workforce to provide different levels of psychosocial and mental health care to disaster affected communities by funding professional organisations to train members across Australia in disaster response, and by funding targeted disaster training after an emergency to increase surge capacity in an affected area.

Early warning risk communication

Recommendation: A systematic evaluation of the range, messages and effectiveness of community education and risk communications needs to be conducted, and a set of recommendations collated about what constitutes the most effective messaging, both in terms of content (e.g., what are the most important messages?) and delivery (how best to deliver these messages to ensure the public takes them up).

Recommendation: Identifying valued and trusted organizations, such as the Bureau of Meteorology, health care providers, and others to provide risk communication materials, will increase the chance that people prepare and practice extreme weather survival plans. To the extent that these trusted sources can then be linked together in public awareness and guidance campaigns, research supports increased effectiveness.

Recommendation: Psychologists should be part of emergency planning teams to assist in formulating early warning messages and risk communications strategies that will achieve the desired outcomes. As well as providing event-specific information, these messages should also build ongoing resilience and adaptive capacity to meet the challenge of ongoing stressors.

Psychological preparedness

Recommendation: Emergency services need to include psychological preparedness in their community education initiatives.

Recommendation: Tailored psychological preparedness or other types of community preparedness and advice material needs to be provided for people who have had prior traumatic experience of severe warnings or direct encounters with extreme weather or natural disaster situations and who did not manage or cope very well.

Gaps in climate change adaptation framework

Recommendations: Australia's Climate Change Adaptation framework should also include greater consideration of psychological and mental health perspectives, as well as individual-level analysis which take into consideration variables within the individual which influence how they respond and adapt to climate change.

Other matters

The timing of this Inquiry is unfortunate in that it coincides with the summer disaster season, a time of peak activity for many of the individuals and organizations who could otherwise have contributed to this submission. The public hearings that follow may well be a better opportunity for the Inquiry to obtain the detailed evidence they seek in order to improve preparedness for extreme weather events.

The APS would be happy to participate in any such hearings and provide clarification on the contents of this submission as required.

2.   Introduction

The Australian Psychological Society (APS) is the largest professional association for psychologists in Australia, representing over 20,000 members. The APS promotes and advocates for the psychology profession and discipline by providing advice and expertise to governments and other entities across a range of health and community related areas. The Society contributes significantly to community wellbeing through the promotion of psychological knowledge and evidence-based interventions across a range of domains to address pressing issues in the Australian community.

The APS welcomes the opportunity to provide input to the Inquiry into Extreme Weather Events. Australian psychologists, along with other members of the scientific and professional community, are gravely concerned about the safety and psychological health of people and their capacity under future climate change scenarios

The APS, through its Public Interest Team and Disaster Preparedness and Response Reference Group (DPRRG), has considerable expertise in disaster preparedness, disaster response and recovery. The APS had an extensive

involvement in the Black Saturday Victorian bushfires response, Queensland Floods and Cyclone Yasi (2009 to present). We have been involved in training mental health professionals to work with affected populations, established a disaster response network of over 1000 psychologists, participated in several multi-disciplinary expert reference groups, and worked with both Federal and State government departments on mental health and psychosocial recovery projects. The APS has also produced numerous articles, guidelines, tip sheets and brochures on psychological preparedness for disasters, including bushfires, cyclones, and floods. (For examples, see http://www.psychology.org.au/publications/tip_sheets/disasters/).

The APS also has a Climate Change and Environmental Threats Reference Group, comprised of psychological experts in environmental and social psychology. Our members have expertise in resilience, media representations of environmental threats, behaviour change, adaptation, preparedness and response, and risk perception, appraisal, and communication, amongst other areas of interest and expertise.
While the APS is not in a position to comment on every aspect of the Inquiry, we draw the committee's attention to the APS Position Statement on Psychology and the Natural Environment, based on a comprehensive Literature Review, and a number of related submissions made to government inquiries in recent years. These resources can be accessed at: http://www.psychology.org.au/community/public-interest/environment/.

3. Terms of Reference

It is beyond the scope of the APS to respond to all the terms of reference. In our submission, we provide comments on the following Terms of Reference

(b) (ii) the costs of extreme weather events and impacts on natural ecosystems, social and economic infrastructure and human health
 (c) an assessment of the preparedness of key sectors for extreme weather events, including health
(d) an assessment of the preparedness and the adequacy of resources in the emergency services sector to prevent and respond to extreme weather events
(e) the current roles and effectiveness of the division of responsibilities between different levels of government (federal, state and local) to manage extreme weather events
 (g) any gaps in Australia's Climate Change Adaptation Framework

4.   Costs of extreme weather events and impacts on social infrastructure and human health

Extreme weather events in Australia affect millions of people and cause substantial economic damage. A number of reports have attempted to quantify costs of extreme weather events around the world in financial terms (e.g., IPCC, 2001; DARA report), and the bill runs into billions in property and infrastructure damage alone.

Health costs and social impact costs are also critically important considerations, as well as adding billions to the economic toll. These health costs have been the subject of several recent reports. The Climate Commission report (Hughes & McMichael, 2011) reviewed reports of physical and mental health risks from heat waves, bushfires, cyclones, floods and severe storms (summarised below). The Climate Institute report (2011), which details the mental health impacts of climate change in Australia, includes several sections on the costs of extreme weather events. Even more recently, Reser et al., (2012b) surveyed over 4000 Australians' cumulative disaster experiences and recent experiences over a 12 month period (which included the 2010/2011 'Summer of disasters'). Many respondents reported extensive exposure to and experience with natural disasters: cyclones (18%), bushfires (23%), drought (25%) and floods (29%).

Physical health effects include increased deaths, disease and injury due to heat waves, floods, storms, fires and droughts, as well as increased risks of respiratory illnesses, food- and water-borne diseases and infectious diseases (from contamination of food and water supplies following floods, cyclones), increased incidences of heat related illnesses like exhaustion, heatstroke and renal failure during heat waves, and exacerbation of existing illnesses during heat waves, or resulting from reduced access to health care during the aftermath of a disaster (Hughes & McMichael, 2011).

Mental health following disaster is a key public health issue. Mental health impacts differ according to the type, suddenness and scale of the catastrophe, and the social, historical and cultural context in which it occurs (Ozer et al., 2003). Impacts are compounded by the vulnerability of individuals and communities, the appropriateness of emergency responses, and the resources available to provide support and rebuild.

Mental health problems following disaster include not only the direct psychological impact of the disaster itself, but also difficulties with managing the emotional difficulties arising from confronting the secondary stressors that disasters generate, like subsequent displacement, unstable housing,

and lack of access to support services and employment (Larrance et al., 2007).

Most mental health problems following disaster are of mild-moderate severity (Kessler et al., 2008), but approximately 10-20% of people exposed to a disaster are at risk of developing significant mental health problems including depression, post-traumatic stress disorder, complicated grief, and substance use disorders.

Psychosocial Impacts and the psychological, social and community flow-on effects of an event. Larger numbers of people affected by extreme weather events suffer from a range of psychological and social problems that are not severe enough to constitute significant mental health problems requiring specialist intervention, but are distressing enough to cause disruptions to work, family life, relationships and everyday life.

Psychosocial impact assessment constitutes a more sensitive and encompassing approach and procedure for assessing the psychological and social impacts and consequences of an environmental threat, environmental stressors, or an introduced intervention or natural change in the environment. Psychosocial impacts occur at the level of individual or shared household or community experience, and can entail consequences such as anxiety or distress, heightened environmental concern, elevated preoccupation and vigilance, and optimism or pessimism about the future (e.g., APA, 2009; Reser & Bentrupperbäumer, 2001, 2005).

Psychosocial impacts can also include:
  - displacement, relocation, migration (Agyeman, Devine-Wright, & Prange, 2009)
  - disruption to communities, loss of social connections, loss of culture
  - loss of employment, financial strain
  - increased stress, grief, hopelessness, negative self-esteem (Sartore et al., 2007)
  - loss of 'sense of place' for local residents and indigenous people (Albrecht et al., 2007).
  - increased conflict and violence (e.g., heat-related violence) (Costello et al., 2009)
  - increased family stress, marital conflict, family violence (Raphael, 1998)
  - resource disputes (Reuveny, 2008)
  - chronic environmental stress (Albrecht et al., 2007)
  - cumulative mental health impacts from repeated exposure to natural disasters (Few, 2007)
  - greater disparity between social groups (Hogg, 2003)

Psychosocial impacts also result from the *perceived* threat of extreme weather events, and hence subjective exposure and vulnerability. Reser et al. (2012a, b) reported that forty-five percent of respondents said that they live within 50 km of areas frequently affected by extreme weather events or natural disasters. Every year, these people experience time living with the anxiety and anticipation of a potential extreme weather event. The psychosocial impact of living in a potential disaster zone is often not acknowledged in the literature. Also, assessments and inventories of natural disaster events and their human impacts rarely count events which do not result in an actual 'hit', even though these 'at risk' communities that have been stopped in their tracks for a few days or a week may have experienced quite dramatic psychosocial impacts (e.g., Dillon, Tinsley & Cronin, 2011; Reser, 1996). Were these 'near miss' situations and their respective human impacts calculated into a more inclusive impact of events compilation over time, the true amount of psychological and social impacts and costs would be far greater.

Another psychosocial impact is the vicarious distress that children and adults in non-affected areas may experience through the media. In recent years the media coverage of natural disaster events in Australia and internationally has been incessant in terms of 24/7 coverage, and often characterised by unnecessary and disturbing footage, thereby greatly increasing adverse psychological impacts. Better systems are needed to advise media outlets of appropriate disaster reporting that is likely to be effective but not traumatising to the wider public.

Additionally, recent research is showing that there is now a very powerful climate change signal in extreme weather events and natural disasters (Reser et al., 2012a, b; Lieserowitz et al., 2012). In other words, the Australian public (and indeed publics around the world) are likely to perceive extreme weather events as evidence of climate change. This has many implications, but one of them is that the threat and risk of natural disasters is increasingly becoming a very salient and ongoing environmental stressor in Australia, in much the same way that global climate change is. This combines the ongoing stress of multiple environmental stressors, including climate change, with the intermittent acute stress and psychological impacts of severe extreme weather events. As well, the media coverage of these, for many, very close-to-home events, such as the current bushfire situation in Australia, paints a picture of a truly national emergency and disaster, and strongly validates public understandings of interconnections between climate change and natural disasters. All of this increases the perceived exposure and vulnerability of Australians, and exacerbates the stress people experience.

Vulnerable populations

There is increasingly clear recognition that the distribution of health impacts will tend to fall more heavily on low-income or otherwise more vulnerable populations (Frumkin et al, 2008). Vulnerable groups also include children and the elderly, and people with pre-existing illnesses. Some communities are more vulnerable to extreme weather events due to their location. Others are limited in their adaptive capacity due to poverty, limited infrastructure, poor access to services and economic reliance on vulnerable ecosystems (Brooks, 2003). Communities that are vulnerable on several counts are the ones who feel the most severe impacts of extreme weather events.

4. Costs of extreme weather events and impacts on social infrastructure and human health recommendations

Recommendation: Future estimations on the financial impact of extreme weather events need to include costs related to the widespread psychological, social and community effects of extreme weather events on whole communities, as well as psychosocial impacts from perceived 'threat' of disaster, near misses, and media coverage.

Recommendation: Government should consider using APS psychologist advisors to inform appropriate and effective media coverage of disaster events to minimise the psychological impacts on the wider population.

5. Preparedness of the health sector

A well resourced and prepared health sector that can provide timely, targeted care for disaster-affected people greatly decreases the risks of increased morbidity and longer term physical and mental health consequences in the aftermath of an extreme weather event.

There are 3 main ways in which the health sector needs to be prepared: i) increase awareness of threats; ii) improve early warning, iii) improve capacity to respond to extreme weather emergencies. Part ii), improve early warning, will be dealt with in the following section *4. Preparedness and adequacy of resources in the emergency services to prevent and respond to extreme weather events*

Increase awareness of threats

Health sector workers are ideally placed to identify ways in which extreme weather events damage people's physical and mental health and psychosocial wellbeing, and to communicate this to the public and to policy makers. Considerable improvements need to be made in this area. Below is a long list of suggestions, followed by a summary recommendation highlighting where the largest and most important gaps lie between current practice and recommended practice and what might be done to re-dress the gap.

- Increase the health sector's own knowledge and awareness of the health impacts facing the population from increased risks of extreme weather events.

- Increase awareness of specific threats for particular populations, e.g., children, elderly, people living in vulnerable communities because of climate risks or poverty.

- Increase our knowledge about national, state-wide and regional capacity to respond to the health consequences of extreme weather events. E.g., a recent Melbourne University survey has attempted to identify the current state of the disaster mental health workforce in Victoria (Reifels et al., 2012) through a comprehensive online survey of disaster mental health workers in the State.

- Communicate to the public about health threats of extreme weather events. (see section 4 for further information). The role of health professionals as trusted communicators and respected members of society is especially useful in explaining the effects of extreme weather events to affected individuals and educating the general public. Surveys have shown that they are among those most trusted to provide credible information about climate change. Health sector workers' past effectiveness in raising public awareness and advocating appropriate solutions to public health concerns, such as tobacco smoking or HIV-AIDS, provides a good example of how they could provide adaptation advice to individuals and wider groups.

- Communicate to policy makers about health threats caused by extreme weather events, and the importance of including health professionals like GPs and psychologists in natural disaster preparedness and planning, as well as in emergency response teams at the time of any crisis or disaster.

- Communicate public health-related risk and poverty-related problems caused by increased risk of extreme weather events. This would include linking public health concerns to larger preparedness efforts.

- Inclusion in the National Curriculum of Disaster Resilience Education would be an ideal way to assist tomorrow's adults be more aware of dealing with future risks, including extreme weather events, the public health risks and costs associated, and how to solve problems related to future risks at individual, family and community levels. As an example, a recent study done in Canberra with youth coming from underprivileged backgrounds, and currently under review for publication (Webb & Ronan, 2013), found a brief 5-session innovative education program helped significantly increase young person's knowledge, decrease their anxiety and increase their preparedness for extreme events (including weather events, bushfires, floods). In addition, between pre- and post-test, parents of these young people reported an increase of just under 6 additional activities at home designed to help prepare a household and mitigate future risks for extreme events. This most recent study is part of a developing database that supports teaching, and involving, children to become more active in assisting communities of today and to problem-solve and prepare in relation to future risk, including but not limited to those related to extreme weather events (e.g., Ronan, Crellin, & Johnston, 2012; see also Ronan & Johnston, 2005).

Improve capacity for emergency response to extreme events
Australian's national health care systems need to be prepared to deal with an increase in health problems caused by extreme weather events. Recommendations to improve this capacity include:

- Preparing communities to prepare more effectively prior to events, including having the ability to engage in self-help strategies, is part of an emergent paradigm moving emergency management away from a command and control focus to one that empowers communities to help those in a community look after themselves and others before, during and after an extreme event. While having skilled workforces is absolutely necessary, a skilled-up community has increased potential to respond and recover more effectively from an extreme event.

- Preparing skilled workforces to provide information to communities in advance of extreme events as well as to be ready themselves to provide appropriate care is recommended. Professions here would include all health and allied health professions, particularly GPs, psychologists, and other mental health providers.

The APS and other professional organisations like the Australian Centre for Post-traumatic Mental Health (ACPMH) are attempting to better prepare professionals by developing and implementing training programs to skill them up to provide three levels of psychosocial care following disasters, ones that complement the theme of helping a community to help itself through efforts that empower people to look after themselves most effectively. Level 1 includes a broad approach (informed by Psychological First Aid) delivered by lay and professional community members focussing on self-care, looking out for others, and building community resilience. Level 2 includes brief and effective skills (based on Skills for Psychological Recovery) delivered by health and community workers to help people with low severity mental health problems. Level 3 includes formal mental health interventions delivered by mental health specialists to help people with more severe mental health problems. With a specific focus on training professionals on level 2 and level 3 interventions, the APS and ACPMH are currently seeking funding to develop online training in Skills for Psychological recovery. Government funding for these sorts of initiatives is critically important.

- Involving health professionals in Federal, State and Local Government natural disaster planning and as part of response teams during disasters or emergencies across all three jurisdictional layers.

- Ensuring professional help from the health sector is provided in a coordinated way. Typically in Australia governments have relied on considerable volunteer support from health professionals like GPs and psychologists. It is important, however, that this professional help is provided in a coordinated way. Whilst the professional groups make considerable efforts to coordinate these offers of help, many improvements can be made by making sure that policymakers at all levels of government and health practitioners across Australia are more aware of the issues involved in natural disaster planning and emergency management, and the optimum role of health professionals in these situations.

- Ensuring the Australian Government retains standard protocols to use in an emergency or disaster situation, such as:
  - Flexible use of Medicare Provider Numbers
  - Access to Medicare Benefits while practising in temporary premises
  - Access to services for people who have lost Medicare/DVA/health care cards
  - Flexibility in claiming some of the MBS mental health items

(See 'Involvement of GPs in Disaster and Emergency Planning – 2012 Position Statement' https://ama.com.au/position-statement/involvement-gps-disaster-and-emergency-planning-2012)

- Developing surge capacity to provide emergency health and mental health care

- Building and refurbishing healthcare facilities and infrastructure for sustainability and to ensure they are fit for and resilient to future climate impacts.

5. Preparedness of the health sector recommendations

Recommendation: A communication strategy is required to raise the level of knowledge and awareness of the health sector on the health impacts facing the population from increased risks of extreme weather events, and communicate this to its constituents, policy makers, and the general public

Recommendation: The largest and most important gaps to fill to improve the health sector's capacity to respond to extreme weather emergencies include:
- *Skill up communities to help those in a community look after themselves and others before, during and after an extreme event – e.g., by widespread dissemination of psychological preparedness and psychological first aid strategies within the community, inclusion of Disaster Resilience Education in the National Curriculum*
- Provide access to training for the *mental health workforce to provide different levels of psychosocial and mental health care to disaster affected communities by funding professional organisations to train members across Australia in disaster response, and by funding targeted disaster training after an emergency to increase surge capacity in an affected area.*

4.   Preparedness and adequacy of resources in the emergency services to prevent and respond to extreme weather events

In this section we address the importance of early warning communications to help people prepare and protect themselves from extreme weather threats. This includes warning and advice for both physical health protection as well as mental health protection. As psychologists, we recognize the

mutual interplay between physical and psychological preparedness, with one complementing and enhancing the other.

Physical preparedness
Emergency services play an active role in communicating messages to the public about household preparedness through community education, tip sheets, websites, and the print, radio, television and online media.

While there now exists an explosion of disaster preparedness, community education and risk communication materials put out by many parties, none of these are being systematically evaluated. Community members are hit by a barrage of communications at particular times of the year, like the start of summer, which may well have conflicting or confusing (and paralysingly frightening) messages (stay and defend? leave early?). There is a high risk that these multiple communications and media channels may well be acting against each other rather than complementing each other. Another risk is that messages are not taken up by the public because there is too much information and that information is not prioritised. Quite simply, there are some preparedness activities that are far more critical than others and these are the ones that need 'first uptake' by the public. Given such issues, this is an area of crucial evaluation research need.

Despite the preparedness efforts made by emergency services and other bodies, many individuals and communities are still largely unprepared for the event of a disaster. Research shows clearly that this state of affairs is true in very high hazard zones as well as in areas that have previously been hit by extreme events. There are many practical and psychological barriers that get in the way of good preparation including a whole set of beliefs that research has identified and that need to be countered in preparedness messaging. An important new framing for some of these beliefs is 'psychological distancing' (e.g., Uzzell, 2000; Spence et al., 2012; Reser et al., 2012b) along with what are already known as 'protection motivation' approaches. This would include beliefs such as not feeling particularly at risk on the one hand to fatalism on the other, and a whole set of others (e.g., avoidance of preparation because of anxiety; belief that preparedness won't help or that preparedness and response is government responsibility; a belief that 'I'll get it right on the day'; optimism bias; normalization bias; 'unreality' of the event, warnings losing their impact). See APS tip sheet Preparing for and coping with the threat and experience of natural disasters for more information -
http://www.psychology.org.au/publications/tip_sheets/disasters/) .

What also much be factored in to a person's capacity to prepare for an extreme weather event is the simultaneous experience of multiple

background stressors, including the ongoing threat and physical environmental impacts of climate change. Together with the more episodic acute stress of specific extreme weather events, these create a cumulative stress and adversity load which can dramatically influence the preparedness and adaptive capacity of individuals and communities.

Research indicates that the effectiveness of preparedness at the community and individual level is improved with relevant education about disaster preparedness leading up to a potential risk period (for review see Ronan & Johnston, 2005 and Morrissey & Reser, 2001, 2003, APA 2006). Factors that improve rates of people to prepare and practise a plan include:
- Planning and preparedness is supported by a consortium of government, NGO, business and other organisations, including local media, that ensures it has an increased profile
- Structures within the community make planning a normal part of community activities and development (meetings, school based education, etc)
- Disaster preparedness activities are tied to other community-based activities (e.g., first aid training)
- Information disseminated across agencies provides:
  o clear, concise and truthful communications (including ambiguous elements if these are present)
  o specific guidance
  o through multiple media
  o across different, linked, trusted organisations
  o across time
- Education efforts recognise the importance of continual repetition of key preparedness messages
- Simulations are run by councils, schools, and other agencies to promote community preparedness.
- Significant others in their community have spoken with them about their own plans
- Seeing others prepare

Of key importance is the role of trusted disaster warning messengers. The public is more likely to heed advice that comes from organisations that are valued and trusted. The agency(ies) responsible for communicating early warning messages should be identified ahead of any disaster, and clear lines of command identified.

The Bureau of Meteorology, for example, is a trusted source with weather forecasting and general scientific expertise, and is an organization which is well placed to go beyond weather advice and provide risk communication

materials. As discussed above, health providers can also be trusted communicators in the eyes of the public.

There is also a good argument for developing extreme weather event preparedness and response communications that build ongoing resilience and adaptive capacity to meet the challenge of ongoing stressors rather than simply tailoring such risk communication and warning messages to specific and discrete events. In many ways this better characterises the ethos and logic of preparedness programs and interventions more generally.

Early warning system recommendations

Recommendation: A systematic evaluation of the range, messages and effectiveness of community education and risk communications needs to be conducted, and a set of recommendations collated about what constitutes the most effective messaging, both in terms of content (e.g., what are the most important messages?) and delivery (how best to deliver these messages to ensure the public takes them up).

Recommendation: Identifying valued and trusted organizations, such as the Bureau of Meteorology, health care providers, and others to provide early warning and risk communication materials, will increase the chance that people prepare and practice extreme weather survival plans. These trusted sources can then be linked together in public awareness and guidance campaigns, to further increase effectiveness.

Recommendation: Psychologists should be part of emergency planning teams to assist in formulating early warning messages and risk communications strategies that will achieve the desired outcomes. As well as providing event-specific information, these messages should also build ongoing resilience and adaptive capacity to meet the challenge of ongoing stressors.

Psychological Preparedness
As discussed earlier, there is a clear link between physical and psychological preparedness, between how people act and how they feel and think. As a simple example, the most evidence-supported intervention for depression is helping people engage in more activities, including (re-)activating social support networks. Called *Behavioural Activation (BA)*, the principles that underpin BA are the same ones that underpin the link between physical and psychological factors across the Prevention Preparedness Response and Recovery (PPRR) spectrum. In preparedness terms, when one is more

physically prepared for an extreme event, this preparedness is highly likely to confer an increased sense of control and confidence. In turn, an increased sense of control and confidence is likely to promote more quality decision-making under stress. Decision-making under stress is a factor that is implicated during the Response phase and can make the difference between a decision that saves lives and one that has unfortunate consequences. Looking at the relationship between physical and psychological preparedness from the other direction, the better one is able to manage stress and other states common during the Response and Recovery phases, the better able they will be to get onto physical response- and recovery-related activities designed to assist themselves and others. The APS considers that a missing link in much of the preparedness information currently available is the one that speaks to psychological preparedness and response and their relationship with physical preparedness and response.

Emergency Services have typically provided very little information about psychological preparedness. The Australian Red Cross (ARC) is a notable exception with their recent publication *Psychological Preparedness for Disasters* (http://www.redcross.org.au/files/RED_Prep_Psyc_Booklet_F.pdf).

Psychological preparedness refers to the process of anticipating how one will react to a threat or disaster, and identifying which emotions and cognitions are unhelpful (and helpful), in order to manage one's reactions to the event most effectively. People need to be aware that anxiety can get in the way of coping effectively. Having a better understanding of their own likely psychological responses in emergency warning situations can help people feel more in control and better able to cope. Being psychologically prepared can assist people to think more clearly and reduce the risk of serious injury and loss of life or property. Being cooler, calmer and more collected can also be very helpful to family members and others who may not be as well prepared psychologically for what is happening (Morrissey & Reser, 2001).

The APS has produced a series of preparedness resources including:
- Tip sheet: Psychological preparation for natural disasters
  http://www.psychology.org.au/publications/tip_sheets/disasters/
- Bushfire brochure: Don't panic, be prepared
- Cyclone brochure: Don't panic, be prepared
- Preparing children for the threat of cyclones
- Preparing children for the threat of bushfire
  http://www.psychology.org.au/community/topics/bushfire/community/

Research by Reser and Morrissey and others suggests that a very important group of people to specifically target with tailored material and possibly

group work are those who have had prior traumatic experience of severe warnings or direct encounters with extreme weather or natural disaster situations and who did not manage or cope very well. These individuals need more than generic psychological preparedness or other types of community preparedness and advice material, and indeed current materials and warning messages can simply increase their anxiety and impede preparedness at the beginning of, for example, the cyclone or bushfire season, or during a warning situation (e.g., Morrissey & Reser, 2003; Reser & Morrissey, 2008).

Psychological preparedness recommendations

Recommendation: Emergency services need to include psychological preparedness in their community education initiatives and encompass self-regulation and emotion management as well as problem-focused coping strategies.

Recommendation: Tailored psychological preparedness or other types of community preparedness and advice material needs to be provided for people who have had prior traumatic experience of severe warnings or direct encounters with extreme weather or natural disaster situations and who did not manage or cope very well.

6.   Gaps in Australia's Climate Change Adaptation Framework

Australia's Climate Change Adaptation framework should also include greater consideration of psychological and mental health perspectives, including:

- Greater reference to adverse **psychological** impacts of the threat and implications of climate change and extreme weather. This would include elevated concern, worry, distress, frustration, preoccupation, pessimism, powerlessness, feeling vulnerable, guilt, depression, feeling responsible, erosion of perceived and experienced quality of life and environment, as well as possible associated mental health issues. All psychology-based studies in Australia addressing the psychological and mental health impacts of the threat of climate change show that these impacts are appreciable and increasing (Reser et al., 2012, a,b,c).

- Greater reference to **psychosocial** impacts of climate change, such as economic impacts, displacement from communities due to degraded

environments, increased stress on families, increased conflict and violence from higher temperatures, and flow on mental health implications.

- Better understanding of how people are thinking, feeling and behaving in response to perceived and experienced threats of climate change. How people are responding to threats has important implications for how well they prepare and adapt, as well as how they engage in mitigation behaviours. Reser et al. (2012) found that people who were distressed about climate change were much more likely to engage in climate adaptation and to take action to reduce the threats of climate change.

- **Individual level** of analysis that examines the importance of intra-personal variables, like prior experience, dispositional factors, coping style, individual risk appraisal, vulnerabilities, psychological processes. These are critically important considerations in understanding how people are responding to climate change, and what changes are needed.

- A **broader framing** of adaptation and preparedness responses relating to extreme weather events, to also include climate change.

- Acknowledgment that direct experience with both extreme weather events and perceived climate change events and manifestations, while stressful, can marshal and activate very strong and enduring psychological engagement and adaptation responses and resiliency.

- Understanding the fundamental importance of **psychological adaptation** and the roles these convergent intra-individual psychological processes play in proactive, anticipatory coping and resilience conferral as well as in-situ coping in the context of disasters and extreme weather events.

- Psychological and social and health science representation and expertise in policy making, developing adaptation (and mitigation) strategies, disaster planning and management.

- Acknowledgment that **mitigation** behaviours need to be addressed as a critical component of psychological adaptation. Research evidence suggests that behavioural engagement and taking action can have multiple benefits for the individual and the environment, and such engagement can be a powerful and effective form of psychological adaptation and coping.

- Consideration of the impact of **media representations** of climate change, extreme weather events and climate threats and risk. The many

multi-media representations of the threat of climate change have appreciable psychological and social impacts (e.g., Krosnick, Holbrook & Visser, 2000; Reser et al., 2011; 2012a,b,c). These impacts include disseminating attitudes, understandings, beliefs, distress, stress, personal vulnerability, scepticism, doubt, waning interest (e.g., Reser et al., 2011).

- Acknowledgement of and attention to the **psychological costs** of adaptation behaviours. Whatever people do to adjust, adapt or cope with the threat of climate change (like changing where they are living, or altering their lifestyle, or having less contact with loved ones who live far away) will have an impact psychologically. People can become weary, even exhausted, coping with change, stress and anxiety. Climate change is a challenging threat, thus quite taxing on people's inner resources. So the adjustments that people make to prevent, minimize or adapt to threats have multiple costs that need to be considered in adaptation initiatives.

- Greater reference to beliefs that both promote and reduce the tendency to engage in preparedness and mitigation efforts. Recent research underscores the range of beliefs, and related factors, that should be considered in public messaging efforts aimed at assisting the public to prepare for extreme events (Becker, Johnston, Paton, & Ronan, 2012; 2013).

Recommendations: Australia's Climate Change Adaptation framework should also include greater consideration of psychological and mental health perspectives, as well as individual-level analysis which take into consideration variables within the individual which influence how they respond and adapt to climate change.

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