Public Health Association of Australia submission on Lessons to be learned in relation the Australian bushfire season 2019-20

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Preamble

The Public Health Association of Australia

The Public Health Association of Australia (PHAA) is recognised as the principal non-government organisation for public health in Australia working to promote the health and well-being of all Australians. It is the pre-eminent voice for the public’s health in Australia.

The PHAA works to ensure that the public’s health is improved through sustained and determined efforts of the Board, the National Office, the State and Territory Branches, the Special Interest Groups and members.

The efforts of the PHAA are enhanced by our vision for a healthy Australia and by engaging with like-minded stakeholders in order to build coalitions of interest that influence public opinion, the media, political parties and governments.

Health is a human right, a vital resource for everyday life, and key factor in sustainability. Health equity and inequity do not exist in isolation from the conditions that underpin people’s health. The health status of all people is impacted by the social, cultural, political, environmental and economic determinants of health. Specific focus on these determinants is necessary to reduce the unfair and unjust effects of conditions of living that cause poor health and disease. These determinants underpin the strategic direction of the Association.

All members of the Association are committed to better health outcomes based on these principles.

Vision for a healthy population

A healthy region, a healthy nation, healthy people: living in an equitable society underpinned by a well-functioning ecosystem and a healthy environment, improving and promoting health for all.

The reduction of social and health inequities should be an over-arching goal of national policy and recognised as a key measure of our progress as a society. All public health activities and related government policy should be directed towards reducing social and health inequity nationally and, where possible, internationally.

Mission for the Public Health Association of Australia

As the leading national peak body for public health representation and advocacy, to drive better health outcomes through increased knowledge, better access and equity, evidence informed policy and effective population-based practice in public health.
**Introduction**

PHAA welcomes the opportunity to provide input to the Committee’s inquiry. This submission discusses the relationship between the state of the environment and human wellbeing. We then address, in turn, issues surrounding the physical and the mental harms that resulted from last season’s bushfire events. We make comments on the ongoing need to build up resilience, given the certainty that catastrophic bushfires will recur. Finally, we make some observations about the challenge of dealing with the coming fire season while the restrictions of the COVID emergency are continuing.

*The bushfires we experienced from August 2019 to February 2020 amount to what was probably the worst environmental catastrophe our nation has experienced.*

Fire swept through more than 11 million hectares of land, estimated to include than 20% of all forested land in south-eastern Australia. Almost 3,000 homes were destroyed.

The human impact was massive. Not only were there 33 immediate fatalities, it has been estimated that over 400 ‘excess deaths’ can be attributed to bushfire smoke exposure.1 Hundreds of people were treated for injuries; thousands were evacuated or displaced.

In addition to death and injury of those in the direct path of fires, there were many forms of health impact, of which the two most noticeable effects of the bushfires on health were:

- respiratory and related problems due to prolonged exposure to smoke
- anxiety and other mental health impacts related to trauma arising from –
  - experience of immediate danger
  - uncertainty around the course and severity of ongoing fire situations
  - loss and dislocation resulting from fires.

Even with the enormity of COVID-19, for Australia, the overall toll of physical and mental harms means that the fires rank among our most significant historical public health emergencies. And the outcomes that we actually saw could have been so much worse; potentially hundreds of thousands of residents of affected areas were at direct risk as the crisis unfolded. Almost four out of every five Australians believe they were in fact affected in some way.2

The economic and personal costs of this season of bushfires continues to be assessed, but its impact on the physical and mental health of millions of Australians will clearly continue for decades to come. It must be assumed that this summer was not a one-off, but that similar public health impacts will recur, and will recur with increasing frequency and severity.

The 2019-20 disaster requires a complex and multi-layered response. The response must include a focus on preventing harms, protecting from adverse events and promoting wellbeing.

In future years we need to do better in protecting people from the health effects of fire and its associated smoke. The role of masks, filters, air filtration devices and smoke refuges together with the effect of behaviours such as avoiding exercise and staying indoors, need to be investigated so that health authorities can give proactive, evidence-based advice in future episodes, and preparations can be made to ensure required resources and infrastructure to act on such advice are available and accessible.

Impacts on those who are vulnerable, such as those with pre-existing heart and lung disease, pregnant women, infants and the elderly needs to be highlighted. They may need special intervention.
Improved systems for providing accurate, balanced evidence based and timely public health messaging and public health promotion will continue to be a vital component of our response to fire emergencies.

Writing from the viewpoint of mid-May 2020, recent months have seen two major crises follow rapidly upon each other. As the bushfire crisis of spring and summer 2019-20 finally abated, the COVID-19 pandemic emerged. The latter has understandably overwhelmed the attention of Australians and their governments in recent months.

But the 2019-20 bushfire season and its lessons must not go overlooked. As we move into winter, it may seem that we have plenty of time before needing to think about bushfires again. However, the conditions which led to the fires will recur, and Australians will have to resume their guard against fire emergencies as early as August – just three months from now.

Fire conditions and dangers will not respect the COVID situation. Australian governments and communities will need to be planning now how to undertake fire management and emergency actions while the threat of community infection is still with us. In spite of COVID, the task of protecting the safety and health of the community from fire must continue.

The environment, health and fires

The role of a stable climate and environment in human wellbeing

The first and broadest lesson of the fires is the need to accept the multifaceted relationship between our wellbeing and the state of the environment in which we live.

There is abundant evidence, and global recognition, that global warming and climate disruption are deeply connected to the health and wellbeing of the human species. As climate disruption is already impacting our social systems and causing health impacts, prompt action is essential to safeguard the public’s health, including mental health and wellbeing, and ensure global health equity.3, 4

Climate disruption has both direct and indirect effects on physical and mental health. The World Health Organization categorises health risks from climate change as:

- direct impacts arising from the heightened frequency and severity of extreme weather events (including trauma impact of natural disasters);
- environmentally mediated impacts, including changing patterns of disease (including increasing rates of mental health problems); and
- socially mediated impacts, including population displacement and poverty, and increasing rates of mental health problems, arising from adverse pressure on human systems.5

PHAA maintains an extensive set of policy position statements on a range of public health matters including an ecologically sustainable human society, a ‘safe climate’ approach, outdoor air quality, climate disruption and many others. It is clear that policy-makers face a complex set of matters on which they must act to ensure that our complex industrial civilisation is sustainable.

The last bushfire season has changed people’s perceptions of the importance of looking after our environment. In the 4-month period from October 2019 to January 2020, the proportion of people who reported aspects of the environment as the most important issue or second most important issue facing Australia, rose from 42% to 50%.2
The reality of climate change in causing and worsening fire events

The evidence is very clear that global warming and related climate disruption was, and will remain, the primary driver of the increased duration and severity of our continent’s fire season.

Australia’s landscapes are vulnerable to a series of climatic and environmental changes, including high variability on rainfall, continuing overall increases in temperatures, increased drying of land and changes to water systems, and increases in flammability of forest and other vegetation.

It is also clear that there have always been, and will continue to be, sufficient occurrences of fire ignition occurring naturally to trigger large numbers of fire events annually. Ignition events are now expected to increase in frequency in a changing climate.6

We should not be unduly distracted from these facts by reports or commentary focused on people deliberately lighting bushfires. Human-initiated fires are in fact frequent, but the majority of cases involving human agency are due to unauthorised burn-offs in agricultural areas, involved the electricity distribution network or due to inadvertent or careless causes.7,8 These cases do not represent instances where a person deliberately intends to ignite a bushfire. Further, human-caused fires can be statistically numerous, but largely occur in places where they are soon detected and contained, resulting in small areas burned, in comparison to major, natural-causes bushfires that burn very large land areas. A review of arson concluded:

*Natural causes are responsible for most of the total area burned in Australia. These fires typically occur during comparatively short intervals within adverse bushfire seasons.*

*Nationally, deliberate fires, while most frequent, are responsible for a small proportion of the total area burned. Moreover, a large proportion of the total area burned by deliberate fires results from illegal burn-offs. This statistic belies the dangers associated with deliberate fire ignitions.*7

The focus of current scientific inquiry should be the drivers of the intensity and scale of fire events. It is clear that the environmental tendencies mentioned above add to the destructive intensity of fires, and to the scale of total areas burned. In short, climatic conditions are generating fires that are more catastrophic in extent and in damage. Extremely hot, dry conditions, underpinned by years of reduced rainfall and a severe drought, combined to provide conditions for the past fire season.9

Climate change also plays a role in hindering our efforts at fire risk minimisation. Declining rainfall and increased temperatures, combining into regular record breaking hot dry years, have fundamentally changed the starting point for minimising the risk of fires. The fire season has lengthened and the number of high fire danger days has increased. More high fire danger days means fewer days available for hazard reduction burning.9 Increased fire danger is also being experienced in more locations in Australia and at more periods of the calendar than previously experienced. In 2019-20 catastrophic fire danger ratings were experienced in locations and times of the year for the first time in recorded history.9

The sharing of equipment and resources during the fire season has become a feature of firefighting around the world. Australia has often relied upon this to boost our own capacity to respond to severe bushfires. This however, relies upon severe fires occurring in different parts of the world at different time. As climate change lengthens the fire season in Australia and globally, the fire seasons are increasingly overlapping.8 This is reducing the opportunities for sharing of equipment and resources needed to respond to fires as they occur.

Without effective, sustained global measures to reduce greenhouse gas emissions and slow the rate of climate change, there is every reason to anticipate that the unprecedented fire season of 2019-20 will be repeated.
Physical health impacts of bushfires

Mortality and injury from fire events

A large fire is one of the most dangerous of environmental health threats. Every fire emergency is an immediate public health emergency, threatening the lives of potentially thousands of people. In Australia’s worst fire season in terms of mortality – the 2009 ‘Black Saturday’ fires north-east of Melbourne – over 170 lives were lost. It rightly follows that governments and emergency services place the protection of life, and the prevention of harm, at the centre of fire response strategies.

The events of 2019-20 saw 33 direct fire-related deaths, including 6 deaths of active fire-fighting personnel. Given the massive scale of this year’s burned area, and the severity of the fires that occurred, the toll of lives seems fortuitously low. Attention should turn to learning the positive lessons which kept this loss of life to a minimum, including:

- the heightened efficacy of public messaging systems, including official warnings, and the vital role of the ABC as the emergency broadcaster
- improved policies regarding advising residents when to stay, and when to evacuate
- improved policies regarding the safety of firefighting personnel during active events

As mentioned above, one study has estimated that over 400 additional deaths from smoke-related impacts occurred as an indirect result of fires. In addition, there is likely to be increased (but so far unmeasured) injury and mortality in the community from substance use and self-harm due to mental impacts of the crisis and its aftermath.

Safety and wellbeing of firefighting personnel

Of all people involved in fire emergencies, those at greatest risk of harm and mortality are fire-fighting personnel, including professional workers, trained volunteers, as well as individuals caught up in emergencies.

With the scale and severity of fire events set to increase in coming decades, and to occur over a longer seasonal period, leading to demand for more personnel, active over longer periods of time, in more inherently dangerous conditions, the risks of harm to firefighting personnel constitute a specific public health challenge.

It is not ethical for Australians to expect extraordinary service from firefighters without minimising the hazards to which they are exposed and adequately resourcing their work. Every possible means of minimising the risks facing those on active service protecting their communities should be taken.

Decreased air quality

The populations of a large part of south-eastern Australia, including over 9 million people in Canberra, Sydney and Melbourne were exposed to hazardous levels of particulate air pollution for extended periods between December 2019 and February 2020. On January 3 the National Environment Protection Measures (NEPM) recording station in Monash, ACT, recorded an Air Quality Index value of 5109 – the worst air quality anywhere on earth. This was 25 times the hazardous level, and was composed almost entirely of smoke from the surrounding bushfires. The impact of particulate air pollution can be severe, particularly on those with pre-existing lung and cardiac disorders.
A study estimated health impacts in NSW, Queensland, the ACT and Victoria between 1 October 2019 and 10 February 2020 that could be attributed to bushfire smoke exposure. This study estimated that bushfire smoke was responsible for 417 excess deaths, 1124 cardiovascular related hospital admissions, 2027 respiratory related hospital admissions, and 1305 emergency department presentations. These numbers (which are for only the four east-coast jurisdictions) far outweigh the tally of 33 deaths Australia-wide for the fires.

The smoke conditions over summer highlighted the need for an evidence based and consistent program to translate emerging evidence about air quality into protective advice to the public.

PHAA has proposed in our most recent annual Budget submission an “AirSmart” program, modelled on our experience with the “SunSmart” program which has been successful in changing Australian attitudes and behaviour relating to sun protection and skin cancer prevention. The latter program not only conducts public education programs, but is embedded in science, research and public policy issues related to UV exposure and related issues. So too there is a need for a public facing program which identifies and promotes the most up to date reliable and accurate scientific and public health advice on air quality.

Such a program must help negotiate and communicate developments on agreed standards and measures of air quality, and support and encourage appropriate institutional and individual responses to those measures and standards.

As an essential component of that, ongoing core funding could be provided to the “AirRater” program that already exists at www.airrater.org. Currently based at the University of Tasmania, AirRater provides a free downloadable easy to use app which gives access to the best available air quality data on a real time basis. It also provides a vehicle to capture real time symptoms experienced by users and therefore valuable data about the ongoing impacts of poor air quality.

We estimate that the AirRater program would require a core grant of around $1 million pa to upgrade the existing program and expand its data capture and reporting program. We further estimate that a national “AirSmart” program would require around $9 million pa for four years to become effective.

**Decreased water quality**

Bushfires are well recognised to be a serious threat to water catchments and potentially can reduce the quality of water available to human communities, native animals, and agricultural stock. Ash from fires and erosion of riverbanks from which vegetation is lost mobilise nutrients into dams, increasing the potential for algal blooms. After the 2003 Canberra and the 2009 Black Saturday bushfires, increases in turbidity and metallic ion levels occurred in affected catchments which disrupted water use during periods of significant drought. Decomposition of vegetable matter washed into water or deposited can reduce oxygen levels in water, leading to fish-kills. Erosion and runoff of soil and contaminants can be hundreds of times higher after rain occurs in burnt compared to unburnt catchments.

**Substance use**

Distressed and mentally ill people show a tendency to self-medicate using alcohol and other drugs. This in turn has flow on harms, generating increased need for drug and alcohol health services. Governments will need to allow for increased resourcing to take additional protective and preventive measures to try to forestall such harms, but also resourcing for additional drug and alcohol services in response.
Special impacts on vulnerable people

The impacts of fires are greatest for at-risk groups including:

- children, pregnant women
- people with asthma and other respiratory-related illnesses
- the elderly
- people from culturally and linguistically diverse communities
- people with pre-existing psychiatric disorders, mental disorders or medical conditions
- people who perceive that they have experienced high threats to their lives or the lives of significant others
- people who are physically injured
- people faced with circumstances of low controllability and predictability
- people who experience disproportionate distress or dissociation at the time
- people who have experienced multiple losses of relatives, friends and colleagues to whom they are close, and losses of property that is important to them
- people who have been exposed to dead bodies and grotesque scenes
- people who have endured higher degrees of community destruction
- people with perceived limited social support
- people exposed to subsequent life stress or who have been exposed to a major traumatic event previously.

Aboriginal and Torres Strait Islander people with close emotional and ancestral ties to land are also likely to be disproportionately affected by environmental change and extreme weather events.12

Impacts on infrastructure essential to health and safety

The Australian electrical grid is vulnerable to acute disruption from fires. In January 2020 the Australian Energy Market Operator (AEMO) warned that the bushfires could cut transmission lines, leading to blackouts in NSW and Victoria. On 4 January 2020 the link between NSW and Victoria generators was cut, requiring the NSW Energy Minister to urge the public to cut their power consumption. Power was lost to the South Coast and Tumbarumba during the catastrophic New Year fires.

The loss of power supplies poses a serious risk of multiplying the impact of hazardous heat and smoke levels experienced during fires, as well as making fighting fires themselves more difficult. Without the capacity to use air conditioning the adverse health effects of smoke from bushfires are considerably worsened, particularly for vulnerable members of society.

Similarly the effect of extreme heat events (it was a maximum of 45.5 degrees in western Sydney on 4 January 2020) is multiplied if disruption of power supplies is caused by fire.

A separate but related issue is the threat of major fires to infrastructure that supports the telecommunications network.

In towns in the NSW south coast, a number of GP practices were physically destroyed during the bushfires. Fortunately, no hospital facilities were damaged. Reconstruction of facilities for effective delivery of health services should be a priority.

Reports indicate that smoke from the fires affected vital medical equipment in The Canberra Hospital during this summer, leading to days where particular equipment including in intensive care and surgical wards was unable to be used.10,13
Mental health impacts of bushfires

The psychological trauma caused by directly experiencing uncontrolled bushfires, and the destruction or loss of life they cause, can be profound and long lasting. Indirect mental health impacts can include feelings of fear, dread, powerlessness, and worry about the future that can result from either experiencing, or the expectation of, gradual changes in the climate and environment that occur over the long-term and impact people’s lives. These climate change related emotions have been referred to as ecoanxiety. Elevated rates of depression, post-traumatic stress disorder (PTSD) and psychological distress occur in communities impacted by major bushfires. This can be protracted by disruption of community bonds, loss of a familiar environment and a decreased sense of safety. While clinical services have rightly been devoted to addressing some of these impacts, it is far more desirable to reduce the likelihood of them occurring.

Mental trauma impacts of fires on individuals directly affected by bushfire

There are many factors that may impact the onset of mental health problems in the disaster context. Some of these include the nature of the disaster, the extent of property damage (particularly destruction of the family home), fear for loved ones or bereavement, physical injuries, and the level of risk experienced during fires. Those in the age range 40-60 years may be more at risk because of the competing demands of child rearing, jobs, and caring for elderly parents. While single survivors may be more vulnerable than those who are married, increased marital conflict has been demonstrated following disasters. Those most at risk of persistent or delayed mental health problems are those who are exposed to the more severe trauma exposure during the disaster, as well as those who suffer adverse life events in the aftermath of the event.

Mental health impacts at a broader population level

The fire emergency brought indirect mental health effects at a broader population level. These have included vicarious trauma, worry and anxiety about the future potential impact of a bushfire and climate change more broadly.

In the 2019-20 bushfires, more than half of Australian adults were anxious or worried about the fires. The strongest predictor was in fact not having directly experienced the impact of the fires, but rather having a friend or family member whose home was threatened by fire.

Acknowledging the trauma that the bushfire crisis has caused on Australians, particularly those directly affected by the disaster, the Australian Government released a special allocation of funds to support the mental health of individuals, families, businesses and communities – the Supporting Mental Health of Australians Affected by Bushfires initiative. This included psychological services offered immediately to front-line workers and people directly affected by the fires.

Utilising evidence from the 2009 Black Saturday event, early reviews of this funding allocation suggest that the $76 million mental health boost will not be adequate to fully meet demand, with almost 1 in 4 (22%) people who resided in areas that were directly impacted by the crisis continuing to report mental health condition symptoms at 5 years post-event, at twice the rate of the population average. With a large proportion of victims of the 2019-2020 disaster residing in rural and remote areas and, consequently, already experiencing significant barriers to accessing mental health care, the inequity in mental health and adequate support is anticipated to grow.
It is also important to ensure that mental health services provided to affected individuals and communities are appropriate in nature and in duration. While emergency ‘fly in’ service delivery is valuable, it may suffer from being delivered by providers who are not part of the affected communities. It would ideally be best if services could be provided by local, community-based services and professionals who have an enduring presence in the community. Similarly, telehealth services, while of value, may not be an appropriate substitute for more direct mental health assistance.

Overall, the need for services raises squarely the issue of resourcing (funding and staffing) of ongoing, regular, in-community mental health services. Many regional communities have significant limits at present in this regard. To deal with crises of this magnitude and recurring frequency, services must be sustained over time. Another key lesson of the fires is therefore that health system planners (and funding governments) will need to appreciate that allocating resources to bushfire mental wellbeing services is effectively a permanent need from now on.

**Mental health services for longer-term recovery**

A small proportion of affected persons may require long-term mental health services in response to their needs.19 Evidence-based treatments are available for patients with active psychiatric disorders, but psychosocial interventions such as psychological first aid, psychological debriefing, crisis counseling, and psychoeducation for individuals with distress have not been sufficiently evaluated to establish their benefit or harm in disaster settings.24

A 2013 study noted that during the February 2009 Victoria bushfire emergency, calls received by Kids Helpline, Mensline, and Lifeline differed considerably in nature from ‘regular’ crisis calls. The bushfire-crisis calls did not appear to follow obvious patterns and were more diverse and complex than usual calls. The high levels of client distress and the complexity of the problems often made the intake calls difficult to manage, and also made screening measures difficult to administer for counselling staff. Further, crisis calls were reported to be more intense, demanding and slightly longer in duration than ordinary calls to such services. All three helplines increased staffing in the period following the 2009 bushfires and all services provided additional training to their helpline counsellors including managing trauma and grief and briefing on the disaster itself.25

It must be recognised that the mental health consequences of disasters can persist for many years after the event. Helpline services need to be prepared for a progressive increase in need over a period of approximately two years following these types of events.26 Governments need to allocate resources towards those who are most at risk as a result of substantive losses and ongoing life stressors.20 Surveillance and clinical assessment are required by a proportion of survivors who are thought to be at particular risk.

Comprehensive stepped care models of disaster mental health service provision have specifically stipulated the benefits of offering three distinct levels of services, including Psychological First Aid (Level 1), Skills for Psychological Recovery (Level 2) and more intensive mental health treatments (Level 3) closely aligned with the varying nature of client needs presenting in the short-, medium- and long-term. Telemental health agencies should plan to adopt such differential service models in the event of future disasters.25
Ordinary individual debriefing sessions are not necessarily appropriate for primary survivors in the context of massive chaos and ongoing stress. In this situation, the first priority is to restore order and meet people’s practical needs. If people have a desire to discuss their experiences, it is useful to provide them with support to do this, but in a way that does not encourage disclosure beyond the level that they wish to discuss.\textsuperscript{27}

Optimally, any treatment services should be linked to the existing health services in which disaster victims have confidence prior to the event.\textsuperscript{26}

**Longer term impact of wider anxiety in the community**

There are many long-term, population-level mental wellbeing impacts from fire disasters.

Direct mental health impacts from extreme weather events and disasters related to climate change include post-traumatic stress disorder, major depressive disorder, anxiety, grief, suicidal ideation,\textsuperscript{28} and solastalgia (defined as the distress produced by environmental change that impacts on people directly connected to their environment).\textsuperscript{14}

The 2020 Lancet Commission report *A future for the world’s children?* found that rising inequality and environmental crises are major threats to peace and stability.\textsuperscript{29}

Children and youth have increased vulnerability to the mental health impacts from climate change as their coping capacity is still developing, representing a vulnerable group that are likely to disproportionately suffer the direct and indirect health impacts caused by climate change.\textsuperscript{30}

Indigenous people as well as all people in rural and remote communities can have increased vulnerability to the mental health impacts of climate change.

Environmental degradation, extreme weather events and climate change are currently having a direct effect on the way we live and work, making it clear that, as a determinant of our health and wellbeing, adaptation in the near term will be necessary.

Ongoing environmental change, more frequent and severe weather events, combined with the social and economic impacts, increase the risk that people will experience problems like violence, economic insecurity, disrupted education and social dislocation.

Climate change has societal effects, and marginalised children and families may be affected most. Children are at increased risk of the direct and indirect psychological impacts of climate change.\textsuperscript{31}

Research shows psychological therapies are effective in the prevention of PTSD and reduction of symptoms in children and adolescents exposed to trauma (including natural disasters).\textsuperscript{32} Children can benefit from developing positive images of the future.\textsuperscript{33}

Indigenous people are particularly affected by landscape destruction. Aboriginal and Torres Strait Islander people’s knowledge of the Australian environment and traditional processes of community engagement may prove valuable in developing responses to emergencies, both for Indigenous and non-Indigenous people.

Findings from bushfire recovery in Victoria show that three to four years after the bushfires the majority of people had shown resilience to the disaster experience and its aftermath. However, a significant minority were reporting symptoms which indicated mental health problems that were beyond levels likely to be manageable and may require professional support.\textsuperscript{21}

The US Department of Health and Human Services has developed a *Phases of Disaster* model of how a disaster is experienced.\textsuperscript{34} Other models include those developed by McFarlane and Williams\textsuperscript{35} and by Williams Bisson and Kemp.\textsuperscript{19}
Future research and policy should focus on a systems approach to mental health promotion and prevention. This should involve strengthening community systems to build resilience and enable climate change mitigation and adaptation to climate related events.

The mental health system needs to be better equipped to meet surges in demand following natural disasters. This includes:

- The expansion of mental health services in rural and remote areas.
- Additional culturally appropriate mental health and wellbeing services for Aboriginal and Torres Strait Islander people.
- Support for the mental health and wellbeing of mental health professionals facing additional challenges.
- Investment in expanding mental health services so they can better respond to surges in demand resulting from drought and extreme weather events.

Governments should also:

- Explore school based mental health promotion activities that build resilience and promote psychological adaptation to climate change.
- Increase avenues for children and young people to have a say on important issues and public affairs such as responding to climate change, ensuring their views are taken into account and action taken.
- Increase avenues for Aboriginal and Torres Strait Islander people to have a say on important issues and public affairs such as responding to climate change, ensuring their views are taken into account and action taken.

Longer-term resilience

Increasing resilience to the health impacts of bushfires

Resilience is a crucial concept in regard to the repeated nature of bushfires as a public health threat. The concept should work to remind governments and communities that investments in this area should be ongoing in character, and should be preparatory and protective of the next crisis, not merely responsive to the last one.

PHAA endorses the decision of the NSW government to establish a Resilience Commissioner, with respected former NSW RFS Commissioner Shane Fitzsimmons as the initial appointee. This Commission will be able to play a useful role in integrating the public reaction to multiple situations, since the COVID situation will for the short term become its major initial focus.

PHAA welcomes the multiple initiatives and funding announcements brought forward by the Commonwealth government, and related announcements by state governments, to address this need. However, we still believe that it is vital to develop such system resourcing in terms of long term, ongoing, community-based services, and not as short-term services ‘parachuted’ into local communities.
Increasing resilience of physical infrastructure

**Increased resilience of electrical supplies against fire damage**

The 2019-2020 fires demonstrated that reliance on the baseload electrical grid for power during severe fire events poses a significant threat to the health of communities directly and indirectly impacted by fires. Interruption of power to towns actively combatting an approaching fire, either due to destruction of lines or because power is cut for safety, can result in immediate reductions in water pressure to people who have elected to defend their properties. Furthermore, loss of power-lines to areas surrounding fires can result in the loss of the ability to mitigate the harmful effects of smoke and heat.

For this reason the ability of communities to provide locally generated power should be enhanced, including the provision of battery or other storage media in potentially affected areas. This would significantly increase the resilience of populations to fire damage.

**Increased resilience of water supplies against fire damage**

Reticulated water supplies and large catchments are potentially vulnerable to fire damage, and this can combine with the effects of drought to reduce the overall quality and quantity of water available to fire prone areas. Increased investment in local water catchments, such as water tank supplies, and the capacity for water recycling in fire prone areas would increase the resilience of these areas to disruptions caused by fire damage to catchments. It should also be noted that locally available water is more likely to be usable when fighting fires than supplies which can be lost due to reduced pumping from remote storages. Overall, protection of ground water resources such as wetlands, rivers and other features in the vicinity of fire prone areas would be sound investment in increasing resilience against fire.

**Fires in the time of COVID**

Planning for the coming bushfire season – and, perhaps, for years beyond that - will also need to address the social and physical restrictions created by the COVID pandemic. Some of the questions that need to be considered include:

- impacts on physical safety of firefighting staff, training and working in close proximity and sharing equipment
- management of disaster ‘refugee’ facilities in terms of physical distancing and hygiene
- operation of emergency management centres
- impacts of economic disruption on supplies of materials to firefighting services
- impacts of travel and social distancing restrictions on off-season firefighter training programmes

In addition, Australia has come to expect annual arrival of overseas firefighting crews and equipment from northern hemisphere nations – the US and Canada in particular. We provide crews northward in return, allowing not only for boosted staff and equipment in both directions, but for useful training and technology exchanges. These valuable exchanges, which were already under pressure from the extension to the length of fire seasons in both hemispheres, may not now be possible. Governments need to scope the implications of the cessation or reduction of these arrangements.
Due to the coming together of these two public health challenges, the progress of the coming 2020-21 fire season will be uniquely challenging. There may be a sense in some quarters that the scale of the last fire season creates a ‘hazard reduction’ buffer against similar catastrophic fires in the near term. While the probability is that next fire season may give a reprieve, this is not predictable. Complacency would be a mistake, with potentially tragic consequences. Planning must be put in place urgently to organise communities and agencies to be ready for the coming season in uniquely difficult times.

**Recommendations**

PHAA is keen to that the following themes are addressed through the deliberations and report of the committee:

- the need to prevent damage to and protect complex system of interrelationships between our environment and our health and wellbeing
- the need to appreciate the interactions between human society and the condition of the environment and climate as a cause of fire emergencies
- The importance of air quality monitoring and provision of protective services to people vulnerable to the health impacts of pervasive smoke conditions
- The broad, complex and lasting issues of mental wellbeing, including substance use, arising from fire emergencies
- The need to adequately resource emergency services to cope with fire crises

The PHAA appreciates the opportunity to make this submission. Please do not hesitate to contact me should you require additional information or have any queries in relation to this submission.

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Chief Executive Officer  
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