

National Preparedness for Emergency Response to Wildlife Affected by Bushfire – Gaps and Activities Required

1. Executive summary

The unprecedented bushfires of the 2019-2020 summer exposed a number of deficiencies in Australia's arrangements for managing the response to, and recovery of, native wildlife affected by these events.

A Wildlife Health Australia (WHA) board-led task group was formed by WHA (for overview of WHA see end note) to assist in identifying priorities that the wildlife health community would need to improve preparedness and response to future bushfire incidents. The report and recommendations benefited from input from key WHA focus group members located in biosecurity and environment agencies in all states and territories of Australia. Key contributions came from the main wildlife health responders involved in the 2019-20 fires. These responders were part of a dedicated Wildlife Health Partners' Forum convened by WHA in July 2020. Further advice from across Australia was provided by experts with contemporary fire and wildlife emergency response experience. This document is the result of that work.

Overall the conclusion was that Australia needs immediate action to harness the capacity and capability that is currently latent in the wildlife health system to enable the effective, timely activation and deployment of wildlife responders for future emergencies including bushfires affecting wildlife.

Priority activities to develop preparedness that will underpin response and recovery activities include:

- Documentation - Develop veterinary and care documentation for wildlife including policy, standards and protocols to support an effective, constituent and timely emergency response.
- Training - Identify and train key, an on-ground cadre of wildlife responders and supporting managers in incident response:
 - Integration of wildlife health and welfare activities within the government led response is critical for success.
 - Wildlife responders need to develop an understanding of where they fit in the overall response and the priorities of the emergency services.
 - Development and adoption of dedicated wildlife roles, with supporting role statements, underpinning skill prerequisites and training.
 - Completion of the existing training as provided to other non-fire fighting agency personnel that allows the safe access to fire grounds as approved by incident management.

Development of a nationally coordinated and consistent framework for emergency response that integrates wildlife responders into the emergency management arrangements of each jurisdiction is an important longer term objective. This will require considerable work within and across jurisdictions. An all-hazards-type approach is recommended.

Unfortunately, the disastrous bushfire season of 2019-2020 is unlikely to be a stand-alone event. The size, scale and frequency of bushfires across Australia and other fire prone areas of the world has been steadily increasing over the last 20 plus years.

Though much good work has been done, the ability to effectively coordinate every level of the currently largely uncoordinated wildlife health system will be crucial to how native wildlife can be protected during future events. All parties, including government agencies and non-government organisations have a role to play. The development of additional capacity and capability in communications management and community engagement for the sector needs to be part of future developments for the wildlife sector.

The need to consider conservation outcomes and recognize the authority of state-based emergency management arrangements should be a central consideration going forward. Key partners and responsibilities are suggested.

2. The weaknesses and gaps

- Lack of relevant documentation such as standards, policies, protocols, and management systems and training that is applicable to and for the on-ground cadre of wildlife responders to native wildlife affected by bushfires.
- Varying levels of coordination and planning for the native wildlife affected by bushfires across jurisdictions and agencies.
- Need for integration of wildlife emergency response with an all hazards approach within emergency management. The immediate priority within an all hazards approach is for the natural hazards, with the specifics for biosecurity hazards being dealt with separately.
- A lack of understanding of emergency management structures by wildlife responders. It is particularly important that wildlife responders understand where they fit in the overall response and what the emergency services priorities are.
- Low level communications management and community engagement, in relation to between organisations, veterinarians, wildlife carers and the general public.

Effective preparedness is critical to delivering a structured and systematic emergency response. The unprecedented bushfires of the 2019-2020 summer exposed a number of deficiencies in Australia's arrangements for managing the response to, and recovery of, native wildlife affected by these events. The response to the needs of wildlife affected by the bushfires raised questions about the state of preparedness of the wildlife community, including understanding of response arrangements, response capability and capacity, appropriate standards for treatment and care, as well as supporting systems and documentation including policies and procedures for wildlife emergencies in general.

Good preparedness is about appropriate governance, systems of management, documentation, capacity and capability and, exercise and rehearsal. Australia needs immediate action to harness the capacity and capability that is currently latent in the wildlife health system to enable it to be effectively and timely activated and deployed if and when needed in these and other similar wildlife emergencies.

The ability to effectively coordinate each level of the currently uncoordinated wildlife health system will be crucial to how native wildlife can be protected during future events. Wildlife responders need to develop an understanding of where they fit in an overall response and the priorities of the emergency services.

This enhanced understanding and in so doing increased participation by the wildlife responders will inform and increase further opportunities to reduce the likelihood of wildlife being affected by the actions of fire managers during the fires. .

A national approach by the wildlife community that clearly recognises the need for integration of activities into state-based systems is required. Coordination of activities of the non-government

stakeholders, and across sectors and jurisdictional boundaries needs to be a very high priority. The immediate need is to focus on non-government actors and their activities. Potential conservation outcomes should be considered. There is a need to investment in human resources to improve coordination, communications and outreach within the wildlife community.

3. The opportunities and what needs to be done

Preparedness activities to support predictable and sustainable responses for affected wildlife of the next and future bushfire seasons should include:

- Commencing as soon as practical, develop and validate documentation including standards, policies, procedures, and management systems and that are specifically relevant to wildlife responders. The development should acknowledge and use relevant pre-existing documentation and systems.
- Incorporation of wildlife health and welfare response as a standard component of jurisdictions' response arrangements and the development of a nationally accredited training program for wildlife responders to operate in an incident response (emergency management arrangements, working in an emergency operations centre, incident control system). Utilising and building on existing training programs within emergency response agencies, the first intake should prioritise incident control system (e.g. Australasian Inter-Service Incident Management System - AIIMS) training of key wildlife responders and commence as soon as practical. Subsequent intakes with completion of training and a training program should occur over subsequent years.
- Development of a nationally coordinated and consistent of emergency response for wildlife responders that could be integrated into the emergency management arrangements of each jurisdiction when required.¹
- Develop additional capacity and capability for communications management and community engagement, aimed at wildlife organisations, wildlife professionals including veterinarians, wildlife carers and the general public.
- Testing to validate the relevance and operational useful of the outcomes from the other activities.

The objective should be to establish the backbone of the key elements of preparedness and make those elements operationally ready as soon as possible and sustainable into the future

The five elements of good preparedness (governance, systems of management, documentation, capacity and capability and, exercise and rehearsal) provide the basis for developing an increased level of preparedness for wildlife responders to support an emergency response to native wildlife affected by bushfires.

Develop veterinary and care documentation for wildlife including policy, standards and protocols so that they support an effective and timely emergency response

¹ A state based approach could still feasibly result in consistent approaches across all states if there is good oversight/connection and communication from a national coordinating body. This would, however, be challenging given that there isn't seamless, established coordination of the sector outside emergencies: something that should be considered to be a very high priority for the space.

Development of a suite of documentation such as protocols and procedures for intervention by veterinarians and carers during bushfires and other emergencies is an immediate and urgent need. This should be a collaborative process and completed in parallel with other activities.²

The development of the documentation should acknowledge and make use of rather than be a substitute for any relevant documentation that may already be present at state / territory and national levels.

There are precedents in uniformed emergency management agencies that could be used to inform development of some of the documentations – especially for nationally coordinated resources. For example, the fire agencies actively use a National Resource Sharing Centre that has the responsibility of managing all resource requests regardless of agency across state and territory borders, and even international assistance. This national coordination capability is absent for the wildlife responders.

Documentation needs to cover a wide range of topics and subjects to reflect the varying jurisdictional law, policy and operational procedures related to wildlife and emergency management. A key area of focus will be the documentation that is specific to the tasks around wildlife affected by bushfires³. For example, standard operating procedures for consideration should include documentation for:

- Fireground assessment
- Triage processes
- Euthanasia indications / criteria and techniques
- Treatment of burns, traumatic injuries, dehydration/starvation, smoke inhalation and other health issues⁴ seen in fire affected wildlife
- Rehabilitation for release
- Supplementary feeding.

It is important such procedures do not seek to be a substitute for professional knowledge and skills that would usually be associated with a role actively working with wildlife affected by bushfires.

In all cases, agreed upon treatment protocols will need to be based on and supported by evidence-based medicine. This will require a number of meetings to identify exactly what we need to know now based on available research and best practice, particularly with reference to human burns medicine⁵ and also what worked and what did not work during the recent fires.

As part of this work, research needed to fill gaps could also be identified and explored over the two years using data that may potentially be available from the recent events.⁶ Every effort should be

² A useful approach would be to develop agreed, normalised processes and protocols for peacetime (which are also needed). These can then be elevated during an emergency.

³ A larger parcel of work is required to develop general standards (Footnote 2 – Above).

⁴ This includes traumatic injuries which may have occurred during fires, during catch up/handling by first responders, fighting post fires (habitat with reduced carrying capacity, competition for resources), emaciation/dehydration, smoke inhalation, orphans.

⁵ Human medicine provides an excellent research/knowledge base on which to progress veterinary medicine. However, clear understanding of how this applies to wildlife medicine is required. For example, an historic inclusion of ‘% body surface area’ affected by burns in bushfire triage/decision making protocols fail to consider the importance of location of burns in wild animals. In koalas, severe burns to digit tips may only represent a very small body surface area, however this will carry a significantly worse prognosis than burns covering a larger % body surface area over body parts which are not required for climbing trees/manipulating food.

⁶ This may include additional prognostic indicators to assess/research, improved treatment of burns/systemic impacts of fire related injuries, as well as post release monitoring of animals which have been

made to take experiences to date and look at these from a scientific point of view and in a way that can result in publication and dissemination of learnings.

In addition, documentation relating to deployment protocols, equipment, supervision, insurance, health assessments and access to employee assistance programs needs to be considered and developed.

A system will be needed to maintain the currency of the extensive suite of documentation over time.

Identify and train key, on-ground cadre of wildlife responders in incident response

Individuals from the government agencies and described non-government organisations are well versed in the systems and structures of an emergency response. However, few of the wildlife carers and wildlife professionals including veterinarians who are likely to be involved in an emergency wildlife response come from government agencies. These non-government and community-based partners and stakeholders have little or no knowledge of the inner workings of an emergency response, and the needs and differences from their usual businesses. Emergency response arrangements are complex and vary between different jurisdictions.

Integration of wildlife health and welfare activities within a government led response is critical for success. There is a need for the development and adoption of dedicated wildlife roles, with supporting role statements, underpinning skill prerequisites and training. Training is both for wildlife responders to allow their integration into a response and response managers to support their ability to integrate the wildlife responders. The existing baseline training around operating in a control centre and / or incident control system for those such as the wildlife responders.

The success of an emergency response for wildlife affected by bushfire will heavily depend on the contributions of the non-government stakeholders. Preparedness activities will need to recognise this and expose these stakeholders to aspects of an emergency response that are relevant to their particular stakeholder groups and their role and contributions during a response. This includes the immediate need to develop within these groups a shared understanding of what a good response looks like and to understand their relationship to the lead emergency agencies within their respective jurisdictions.

Focusing preparedness activities on these non-government stakeholders is a great opportunity to increase engagement with this vital group of enthusiastic stakeholders. Enhancing preparedness for the wildlife sector for bushfires has the potential to address an important “gap area” in our national arrangements. The use of an all hazards-type approach will also enhance Australia’s overall preparedness for a wider suite of emergencies - floods, storms and even support national biosecurity responses.

The training of the wildlife carers and wildlife veterinarians for their participation during a bushfire response should be appropriate for their role and level of contributions. Wildlife carers and wildlife veterinarians have different knowledge and skill sets. They represent different areas of expertise and knowledge. These people do not need to be trained as response managers.

They need a sound grounding in the emergency management arrangements including who has authority to do what where and when, operating in and from an emergency operations centre and the incident control system (or ICS as it is commonly known). This is essential to enable wildlife

treated/completed rehabilitation and are released back to the wild to further understand the impact of veterinary/carers response, and how to improve this approach to result in better outcomes.

veterinarians to assist with their expertise, assisted by handlers moving animals to triage centres where more vets are stationed, and then passing animals on to wildlife carers to look after. Carers are an essential cog in the wheel but are needed at the end of the triage continuum.

The system of training to develop the appropriate skills and knowledge for wildlife carers and wildlife veterinarians should be consistent nationally and acknowledge the need for currency of the relevant skills and knowledge. The training should be specific to their role in a response. Currency should be applicable where relevant i.e. requiring a predetermined update or refresher assessed against national competency standards.

In the future accreditation of the relevant personnel may flow for acquisition of the skills and knowledge and in so doing support deployment into specific roles and no accreditation means no deployment. Accreditation is already used by emergency management agencies to inform the deployment of personnel in specific roles e.g. those from the media must be accredited to allow their access to fire grounds.

Develop a nationally coordinated and consistent component of emergency response that could integrate wildlife responders into the emergency management arrangements of each jurisdiction

The recent bushfires exposed the stark reality that despite the best efforts of wildlife response there is an immediate and crucial need to coordinate the many layers of wildlife responders. There is a need to give a high priority to further development of management systems that can be used to support deployment consistently across all states and territories. In so doing this will result in better support for the lead or combat agencies in responding to bushfires involving native wildlife.

To inform the successful development of a systematic approach a validated understanding of the following is required:

- A shared understanding of the standards of care for wildlife rather than the different needs of the respective jurisdictions' lead emergency agencies and even across agencies within a jurisdiction with respect to the appropriate standards of care for wildlife impacted by the bushfires
- Their legislative liabilities and operational environment and
- How wildlife response is incorporated into an emergency response.

It is important to recognise the federated system, the authority of the lead emergency agency(s) in each jurisdiction, and that all jurisdictions have slightly different approaches and operating environments.⁷ Seamless integration is a necessity. However, the needs and expectations of the public and wildlife health community must be acknowledge and met. This will support empowering the wildlife responders by facilitating ownership and integration that will lead to a more sustainable outcome than either government or non-government parties acting in isolation of each another.

Existing relationships such as those between the environment agencies and the wildlife carers and wildlife veterinarians has an important part to play here. The responsibility for wildlife at state / territory and national levels is vested in the environment agencies. These same agencies typically have key roles in emergency management including bushfire response. Existing relationships need to

⁷ Sorting out the health and welfare protocols and procedures are independent of the emergency structure – It is worth noting that people who design and act in the emergency structures often make a best guess at what is right in the animal health and welfare space – the opportunity for better organising this space is to give them direction – expert driven rather than a “best guess” during the heat of the response.

be built on rather than just seeking to develop new and alternative pathways to engage with those who will deliver the services on the ground.

The governance arrangements for the management of wildlife responders must be clear and obvious to all the stakeholders. Primary industries and, to a lesser extent, environment agencies are not practiced at interacting or making use of volunteers. This is a gap that would need to be addressed in order to make use of wildlife responders. The volunteer based fires agencies and State Emergency Service models that integrate volunteers might be useful to consider.

There is a need to develop a nationally coordinated and consistent framework of emergency response that integrates wildlife responders into the emergency management arrangements of each jurisdiction. This will take time and is a potentially large project that would need to run over a number of years.

Develop additional capacity and capability for communications management and community engagement for wildlife responders

There is a need for a system to ensure coordinated communications management and engagement for and between stakeholders, organisations, veterinarians, wildlife carers and the general public, both during and outside of the response.

Timely flow of tailored and relevant information around wildlife affected by bushfires or another impact to affected communities, the broader public and other stakeholders is critical to effective incident management. Good communications can mean the difference between well-meaning helpers being helpful or becoming a hinderance to the response. The processes, roles and responsibilities for liaison and public information as part of incident control are well defined.

Development of additional capacity and capability for the wildlife responder community in communications management and community engagement is also important during “peacetime” having the potential added advantage of facilitating fundraising and sponsorship activities that may contribute to ongoing costs of activities and achievement of optimal, longer term wildlife conservation outcomes.

There is a need for more liaison from government bodies with the wildlife health community (vets, wildlife carers and volunteers).

Conduct an exercise(s) to validate the relevance and operational useful of the outcomes from the other activities.

A key element of preparedness is exercising or rehearsal. Exercises provide the opportunity to validate the mission readiness of the other four elements of preparedness. Exercises can be used to target specific aspects of a response such as activation and deployment right through to the field application of procedures designed to inform decision making and actions by the wildlife carers and wildlife veterinarians.

A series of smaller exercises within each jurisdiction that seek to explore different aspects of a response provide the opportunity to engage with a broad range of stakeholders and in so doing build relationships.

Exercises also seek to develop skills and knowledge through experiential learning so the first-time activities are undertaken are not during a response. The activities should be intuitive once in a

response. It is particularly important that wildlife responders understand where they fit in the overall response and what the emergency services priorities are.

Given recovery plans for a number of Australia's threatened species recognise fire as a 'key threatening process' and knowing that fire can have a significant impact on the viability of fragmented or isolated populations, inclusion of management responses to threatened species affected by fire would be a necessary inclusion to any exercise(s).

4. Key partners and responsibilities

Partners and stakeholders should include at least the following representation for each preparedness activity:

Documentation - standards and protocols

Organisations, agencies and stakeholders that are likely to be make contributions to the development and validation are:

- Relevant environmental agencies in each jurisdiction - recognising that meaningful engagement with these agencies has been a challenge for the wildlife community in the past
- Australian Veterinary Association (AVA),
- Wildlife Disease Association Australasia (WDA-A),
- Zoo and Aquarium Association (ZAA) and Australian zoos with veterinarians on staff, particularly those which provide veterinary care/rehabilitation for free-ranging Australian wildlife. While these zoos will be members of ZAA, they provide an excellent source of expertise which are complementary to the skills offered by the ZAA itself.

The value of zoo vets cannot be underestimated, this is a key group to be engaged and their deployment needs to be prioritised ahead of others. Zoo vets work with wildlife on a daily basis, are familiar with handling, drug use, husbandry and can rapidly pass this knowledge on to small or large animal clinicians at the coal face.⁸

- Wildlife carer groups and environment management agencies (government land managers) for supporting care and immediate relief of affected wildlife⁹
- Animal welfare organisations (such as RSPCA, IFAW, HSI), and other environmental organisations with a focus on wildlife health and welfare
- University veterinary schools and other university schools with relevant expertise.

Training of key, on-ground cadre of wildlife responders

Training on wildlife welfare, triage and care should be developed and delivered to an agreed national standard. Many of the wildlife carers deal with a wildlife emergency each time they receive an animal – so the protocols and procedures should apply each time an animal is handled.

Training should leverage any existing relevant training provided by many of agencies in each state / territory and nationally. Licensing requirements for some wildlife carers requires training that could be used as the basis for further response training. The focus for such training should not default to

⁸ In mobilising zoo vets, controllers need to be mindful that this resource is limited and a significant proportion of these people will not be available because they are required to ensure services to their particular zoo. The case is similar for experienced vet nurses, keepers and handlers.

⁹ Jurisdictions should maintain lists of key contracts for their jurisdiction.

those agencies that deliver and support training for biosecurity responses. Whilst some content may be relevant, much of it is not likely to be.

Environment agencies that often routinely interact with wildlife groups and professionals and also have emergency management responsibilities including fire management and whole of government emergency management agencies provide training that is likely to be applicable to wildlife carers and wildlife veterinarians. It is important that any training is contextualized for this audience.

Potential parties for delivering training are:

- State and Territory agencies including environment agencies and emergency management agencies
- Procedure / job specific experts from across the sector, recognizing that some states and territories may not have the relevant expertise as it relates to native wildlife
- Accredited training providers to ensure that training is delivered consistently and to an agreed national standard.

Development of nationally coordinated and consistent emergency response arrangements that will integrate wildlife responders into each jurisdiction's emergency management arrangements

Potential key partners include:

- Relevant state and territory agencies
- Commonwealth including the Department of Agriculture, Water and Environment (DAWE) Bushfire Response Taskforce and the National Bushfire Recovery Agency.

Non-government partners include:

- Associations such as the Australian Veterinary Association, Wildlife Disease Association (Australasia) and Zoo and Aquarium Association and their members¹⁰
- National training and volunteer coordinating bodies such as Vets Beyond Borders
- Wildlife carer groups and organisations/charities with a wildlife health/welfare focus
- Wildlife veterinarian groups, wildlife researchers and field workers
- Universities
- RSPCA
- Current private regional or proposed veterinary emergency management organisations such as and South Australian Veterinary Emergency Management and Veterinary Emergency Management Australia.

Conduct an exercise(s) to validate the relevance and operational usefulness of the outcomes from the other activities

A series of jurisdictional based exercises should be developed, conducted and evaluated. This will necessitate an exercise planning team(s) and a team (often the same team(s) to conduct the exercise(s)). These teams provide an opportunity to recruit people with relevant expertise and knowledge from key stakeholder groups, including one or more of those already listed previously.

¹⁰ It is important to include member zoos in addition to the overarching body as many of the teams with considerable first-hand experience in bushfire response are those veterinarian/keeping teams who work in the ZAA member zoos.

Each exercise(s) should be developed on the basis that it is transferable to others for use in the future.

5. Future activities

It is essential to continue to review and de-brief as soon as possible after events to gather information while people are still thinking about the issues. Wildlife response activities performed during periods of significant fire periods should be reviewed to inform the ongoing preparedness plan. The intention should be to hardwire an education and training component into national arrangements as core business to ensure that a cadre of response-ready emergency wildlife practitioners, carers and first responders is available to Australia and that this capacity and capability is maintained and grown.

A subsequent project to be considered would be to look at future proofing Australia in the area of wildlife health emergency preparedness and response on an all hazards basis including biosecurity responses. This document focusses on bushfires. However, in collating feedback, a universal message was the need to develop a system that addresses all-hazards rather than just bushfires. A sustainable, coordinating, communications and outreach framework is required that would bring non-government stakeholders into the system in a way that assists governments rather than hinders their activities. Leadership along with significant and on-going investment would be required on an ongoing basis.

About Wildlife Health Australia

Wildlife Health Australia (WHA) is a small nonprofit, membership organisation consisting of the people and organisations that champion wildlife health in Australia. The WHA network includes 40 agencies and organisations and over 750 members. Its mission is to lead national action on wildlife health to protect and enhance the natural environment, biodiversity, economy and animal and human health through strong partnerships. WHA assists Australian governments as the central part of our national wildlife health system and is trusted by government and non-government stakeholders. A management committee, chaired by an appointee of the Australian government, provides leadership and a small number of dedicated staff steward, facilitate and coordinate the trust-based relationships and collaborations needed to help manage the adverse effects of wildlife diseases on Australia's environment, biodiversity, animal and human health, trade and tourism. This is achieved by generating norms and standards for monitoring, surveillance, and on-ground action, as well as facilitating the development of capacity, tools and resources which improve wildlife health in the areas of surveillance and investigation, research and knowledge, communications and outreach, education and training. An important job for WHA is to help Australian governments and others identify priorities for wildlife health and facilitate funding and action.

WHA members are invariably requested to assist with any wildlife emergency occurring within Australia be it fire, flood, drought, disease or oil spill response. WHA is custodian of the [National Emergency Wildlife Disease Response Guidelines](#), reports to AGSOC via the Animal Health Committee and the National Biosecurity Committee, and has observer status on the Environment and Invasives Committee. WHA provides Australia's focal point for wildlife health and representative to the International Union for the Conservation of Nature Veterinary Specialist Group.