

Safeguarding Australia's Wildlife

Lessons from the 2019-20 'Black Summer' Bushfires



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Foreword

As 2019 came to a close, our office in Sydney had been cloaked in bushfire smoke for months. Dozens of members of our Wildlife Land Trust program had already been terribly affected by fires throughout the country. We hoped that the end of what would come to be known as the 'Black Summer' was near, however it didn't take long to realise that was wishful thinking.

In the first week of 2020 the fire situation worsened drastically. As we arrived back at work after Christmas places like South Australia's Kangaroo Island, considered by many to be 'Australia's Galapagos', were in urgent need of help. Humane Society International Australia's CEO Erica Martin immediately made a call to mobilise our global disaster response team. Within days, staff from both our American and Australian offices were on the ferry to the island which was still shrouded in ominous plumes of smoke.

Humane Society International's first disaster deployment in Australia covered months of incredibly confronting scenes and is an experience none of us will forget. Understanding that due to climate change extreme weather events are only going to become more severe and frequent HSI, along with many other conservationists and wildlife rescuers, knew we had to do more to protect wildlife in the face of future disasters.

We commissioned BG Economics to conduct this study into the rescue and care of wildlife in the 2019-20 Black Summer bushfires to provide recommendations to be considered by all stakeholders as well as guide the development our growing disaster response program.

With no time to waste, we're already acting on the findings. This includes training staff in wildlife rescue and investing in emergency field stations, satellite phones and a thermal drone to deploy in disasters. It's just the start of this major new focus of Humane Society International Australia as we prepare to face more bushfires, floods, cyclones and other disaster events.

This approach is set to complement our considerable support of the largely volunteer wildlife rehabilitation sector. Our Wildlife Emergency Response Fund, established in November last year, has distributed more than \$1 million to wildlife carers to get through overwhelming disaster periods and build much-needed infrastructure for the future.

There's no shortage of work to do to prepare for, and respond to, these immense and mounting crises. *Safeguarding Australia's Wildlife* provides a roadmap which will help guide disaster response for all stakeholders who are united in their commitment to wildlife.



Evan Quartermain
Head of Programs
Humane Society International Australia

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EXECUTIVE SUMMARY

Australia has some of the most unique and diverse wildlife in the world. Only here are the wombat, quoll, platypus and a range of other species found. Wildlife is depicted on the country's coins and two animals are prominent on Australia's Coat of Arms, the kangaroo and the emu, chosen to 'symbolise a nation moving forward, based on the fact that neither animal can move backwards easily'. Such recognition is testament to the value placed on wildlife, at least in the sense that it evokes a sense of pride in Australians for their country.

Wildlife is, however, valued in different ways by different people. While the intrinsic value of wildlife is well understood, quantifying its value is a much more challenging task given that understanding and appreciating the economic value of wildlife in the context of its fundamental place in the environment is still a relatively new concept. It is likely many governments do not realise the full value of wildlife and therefore its protection becomes a lower order public policy priority.

Australia's wildlife can be negatively impacted in a number of ways, including by recreational hunting and disease. It can also be impacted by bushfire. Climate change is undeniably the most significant factor contributing to the more unpredictable weather events being experienced, including huge and destructive bushfires sometimes referred to as mega-fires. Climate change and changes in community structure were identified over a decade ago as factors increasing the potential risks of bushfires.

The 2019-20 Australian bushfires, known as the 'Black Summer' fires, are one of the most devastating bushfire events Australia has experienced in its recorded history. In the not too distant past, Australia has been able to better contain bushfires due to these being relatively less devastating, mostly confined to a single state or two, and also due to human and aerial firefighting resources from the northern hemisphere, particularly from the United States and Canada, being able to be utilised in their 'off season'. However, some overlap in seasons has begun to develop, making this strategy increasingly unsustainable. Widespread wildfires in California, for example, were still burning at the end of October 2020 as Australia's summer season was about to begin.

This report presents the results of a qualitative study undertaken by BG Economics into the rescue and care of wildlife by organisations and individuals in the Black Summer bushfires. The purpose of the study was to better understand the activities of organisations and individuals by investigating a number of key areas of the wildlife response including their preparedness, operational and post-operational experiences of their involvement in the bushfires as well as their motivations and views on what worked well and what did not.

The study comprised two components. First, 35 in-depth interviews¹ were conducted with organisations and individuals who were significantly involved in the rescue and care of wildlife affected by the 2019-20 bushfires. These included larger organisations like Currumbin Wildlife Hospital, Port Macquarie Koala Hospital, Zoos Victoria and RSPCA South Australia as well as smaller, mainly incorporated organisations from Queensland, NSW, ACT, Victoria, South Australia and Western Australia. Second, ten case studies were undertaken to gain a deeper insight into the practices and challenges faced by organisations and individuals.

The study found that the wildlife response was largely conducted by volunteer run organisations, often without on-the-ground coordination, appropriate resourcing or equipment. Volunteers sometimes did not have relevant training and many organisations did not have well developed policies and procedures in place, especially in written form, in advance of the bushfire season. This resulted in less than optimal planning and a disjointed and more inefficient response than might have otherwise been the case. Government agencies were often difficult to contact, with some participants reporting leaving messages for agency representatives and never hearing back or having to wait days or weeks for a response. This included requesting permission to enter firegrounds to rescue burnt and injured animals.

¹ Note - some organisations opted to complete the interview questions themselves due to the size of the organisation or time pressures

National parks are closed during bushfire events and volunteer organisations were unable to enter firegrounds without permission from, or being escorted by, rangers. This permission was often not granted or requests were ignored, leading to an increase in wildlife mortality and individuals taking matters into their own hands. An overall lack of coordination between organisations and government agencies, and between organisations themselves, meant resources were sometimes inefficiently distributed and communications were often poor.

Some participants found that locals were doing their best to support wildlife but were placing the wrong food at feed stations and engaging with animals in a manner that caused pain or further injury, ultimately placing them at further risk. The majority of participants relied on mobile phones as their primary source of communication however parts of Australia, especially in rural areas, have poor reception and black spots. Many participants stated that satellite phones would have been an enormous benefit to their wildlife rescue and care efforts. The use of drones, infrared cameras and trail cameras helped to find injured wildlife quickly however only a small number of organisations had access to these important technologies.

While many vets volunteered their time during the 2019-20 bushfire season, there was a lack of mobile vet clinics, particularly in more remote areas, and this often delayed medical treatment for animals. Some participants found that animals were being euthanased due to this lack of available veterinary treatment, when the nature of their injuries meant they could have been rehabilitated. A shortage of shooters and darters meant organisations sometimes had to rely on the police to euthanase an injured animal. Police should be a last resort, given it is unlikely they are provided sufficient training in wildlife euthanasia and have competing priorities.

The majority of participants considered themselves, or their organisations, to be not financially well resourced prior to the Black Summer bushfires which negatively affected their rescue and care capabilities. While some organisations are now in a healthy financial position due to large public donations, other organisations have not fared as well.

The psychological impact on volunteers has been significant, with participants reporting they cry randomly and experience increased stress and anxiety as a result of what they witnessed. However, only limited supported psychological interventions were offered over those generally available.

Undoubtedly, more resourcing will be required to help safeguard Australia's valuable wildlife for future generations, particularly given climate change projections. However, this does not mean simply 'throwing money' at the problem as the solution. Strategies will need to be more domestically focused with more efficient and effective use of available resources. Improved coordination and communications, including the widespread use of the latest technologies by all agencies, organisations and individuals involved will also be critical.

The report makes 12 recommendations in the key areas of: planning; training; coordination; communications; the availability and use of technologies; search and rescue; animal welfare; safety; financial resourcing; and health impacts on responders.

It is hoped that these recommendations will be considered by all stakeholders including governments and their agencies, wildlife rescue organisations and individuals.



*Evan Quartermain & Erica Martin on Kangaroo Island
South Australia*

Photo credit: Adam Ferguson

1

Key Findings and Recommendations



1.1 Key Findings

The key findings of the study into the rescue and care of wildlife by organisations and individuals in the devastating 2019-20 Black Summer bushfires are:

- **Volunteer led response:** The wildlife response to the 2019-20 bushfires was largely conducted by volunteer run organisations, often without on-the-ground coordination, appropriate resourcing or equipment. This led to many wildlife responders relying on donations and their own financial resources, typically without recompense.
- **Training constraints:** For a person or organisation to interfere with injured wildlife, they must hold the appropriate licence for their state or territory. A requirement of this licence is relevant training however some volunteers did not have this training in advance of the 2019-20 bushfire season and were unable to engage in on-the-ground support. A lack of training options, particularly in remote areas, further hampered these efforts.
- **Policies and procedures:** Many organisations did not have well developed policies and procedures in place, especially in written form, in advance of the bushfire season. This resulted in less than optimal planning and a disjointed and more inefficient response than might have otherwise been the case.
- **Government communication:** Government agencies were often difficult to contact, with participants reporting leaving messages for agency representatives and never hearing back or having to wait days or weeks for a response. This included requesting permission to enter firegrounds to rescue animals.
- **Access to national parks:** National parks are closed during bushfire events and volunteer organisations were unable to enter firegrounds without permission from, or being escorted by, rangers. This permission was often not granted, or requests were ignored, leading to an increase in wildlife suffering and mortality and individuals taking matters into their own hands.
- **Lack of coordination:** An overall lack of coordination between organisations and government agencies, and between organisations themselves, meant resources were sometimes inefficiently distributed and communications were often poor.
- **Well-intended intervention:** Some participants found that locals were doing their best to support wildlife but sometimes were placing the wrong food at feed stations and engaging with animals in a manner that caused pain or further injury, ultimately placing the animals at further risk.
- **Mobile phones:** The majority of participants relied on mobile phones as their primary source of communication however parts of Australia, especially in rural areas, have poor reception and black spots. Participants stated that satellite phones would have been an enormous benefit to their wildlife rescue and care efforts.
- **Technologies:** The use of drones, infrared cameras and trail cameras helped to find injured wildlife quickly however only a small number of organisations had access to these important technologies.
- **Access to vets:** While many vets volunteered their time during the 2019-20 bushfire season, there was a lack of mobile vet clinics, particularly in more remote areas, and this often delayed medical treatment for animals. Some participants found that animals were being euthanased due to this lack of available veterinarians, when the nature of their injuries meant they could have been rehabilitated.
- **Euthanasia:** A shortage of shooters and darters meant organisations sometimes had to rely on the police to euthanase an injured animal. Police should be a last resort given it is unlikely they are provided sufficient training in wildlife euthanasia, and have competing priorities.

- **Financial impacts:** The financial resources of organisations and individuals involved in the 2019-20 bushfires was a key factor in how well they were able to respond in the rescue and care of wildlife. The majority of participants considered themselves, or their organisations, to be not financially well resourced prior to the Black Summer bushfires. While some organisations are now in a healthy financial position due to large public donations, other organisations have not fared as well.
- **Health impacts:** The health impacts on volunteers has been mainly psychological which in some cases has been significant, with participants reporting they cry randomly and experience increased stress and anxiety as a result of what they witnessed. However, only limited supported psychological interventions appear to have been offered over those generally available.

1.2 Recommendations

The report makes the following recommendations:

1. Policy, procedure and protocol templates, backed by scientific intervention models, should be developed by governments in collaboration with representatives of wildlife organisations to streamline planned intervention processes for future bushfire events. [Planning]
2. Local and state government emergency and fire management plans should be enhanced to address the wildlife response. These should be developed in conjunction with local wildlife organisations to foster a sense of shared ownership which is likely to produce more efficient and effective outcomes for all stakeholders. [Planning]
3. Alternative training options, such as online courses, should be investigated and resourced in preparation for future bushfire seasons. [Training]
4. Paid coordination teams, suitably trained in bushfire and wildlife response, in each state and territory, should be considered as a conduit between government and organisations to determine where resources can be directed for the best outcomes. [Coordination]
5. An improved communication model should be developed by governments with input from wildlife organisations to expediate the flow of time critical information. [Communications]
6. Satellite phones and a reasonable monetary allowance should be made available by governments to organisations, or at a minimum should be subsidised. [Communications]
7. Sophisticated technologies, such as drones and infrared cameras, should be made available by governments to organisations or at a minimum should be subsidised. [Search & Rescue]
8. Numbers and availability of suitably qualified shooters and darters should be significantly increased. [Animal Welfare]
9. Increased investment in mobile wildlife vet clinics should be a priority, especially in areas not close to static veterinary hospitals and clinics. [Animal Welfare]
10. Individuals who have completed the relevant wildlife training course should be provided with a standard operations kit, including PPE. [Safety]
11. Wildlife organisations identified as being in a financially precarious position should receive emergency grant funding where longer term viability can be established. [Financial]
12. Volunteers should be given access, or increased access, to appropriate debriefing, trauma counselling and psychological support services. [Health]

2

Introduction



2.1 Overview

Australia has some of the most unique and diverse wildlife in the world. Only here are the wombat, quoll, platypus and a range of other species found. Wildlife is depicted on the country's coins and two animals are prominent on Australia's Coat of Arms, the kangaroo and the emu, chosen to 'symbolise a nation moving forward, based on the fact that neither animal can move backwards easily'.² Such recognition is testament to the value placed on wildlife, at least in the sense that it evokes a sense of pride in Australians for their country.

Wildlife is, however, valued in different ways by different people. While the intrinsic value of wildlife is well understood, quantifying its value is a much more challenging task given that understanding and appreciating the economic value of wildlife in the context of its fundamental place in the environment is still a relatively new concept. It is likely many governments do not realise the full value of wildlife and therefore its protection becomes a lower order public policy priority.

The health of the environment is a significant determinant of the health of the economy which in many countries is measured in terms of Gross Domestic Product (GDP), the total value of goods and services produced. GDP, however, does not account for the loss of environmental condition.³ However, there are countries where spending on wildlife conservation is now seen as an investment rather than a cost, for example in Botswana where elephants are included in the nation's environmental accounts.⁴

Australia's wildlife can be negatively impacted in a number of ways, including by recreational hunting and disease. It can also be impacted by bushfire. Climate change is undeniably the most significant factor contributing to the more unpredictable weather events being experienced, including huge and destructive bushfires sometimes referred to as mega-fires. Climate change and changes in community structure were identified over a decade ago as factors increasing the potential risks of bushfires.⁵

The 2019-20 Australian bushfires, known as the 'Black Summer' fires, are one of the most devastating bushfire events Australia has experienced in its recorded history. In the not too distant past, Australia has been able to better contain bushfires due to these being relatively less devastating, mostly confined to a single state or two, and also due to human and aerial firefighting resources from the northern hemisphere, particularly from the United States and Canada, being able to be utilised in their 'off season'. However, some overlap in seasons has begun to develop, making this strategy increasingly unsustainable. Widespread wildfires in California, for example, were still burning at the end of October 2020 as Australia's summer season was about to begin.

As such, there have been calls from numerous experts for an improved wildlife response model for future bushfire events, not least of which has come from the National Bushfire and Climate Summit 2020,⁶ where a specific recommendation was made to:

Ensure better coordination and resourcing of wildlife recovery efforts, noting the additional benefits for individual and community wellbeing that can come through being involved in this work. The coordination function could be taken on by an existing organisation with the necessary authority and legitimacy.⁷

Undoubtedly, more resourcing will be required to help safeguard Australia's valuable wildlife for future generations, particularly given climate change projections. However, this does not mean simply 'throwing money' at the problem as the solution. Strategies will need to be more domestically focused with more efficient and effective use of available resources. Improved coordination and communications, including the widespread use of the latest technologies by all agencies, organisations and individuals involved will also be critical.

² Australian Government. 2020. 'Commonwealth Coat of Arms'.

³ Vardon, M., Obst, C. & Lindenmayer, D. 2018. 'Elephants and economics: how to ensure we value wildlife properly'.

⁴ Ibid.

⁵ CSIRO. 2009. 'Bushfires in Australia'.

⁶ Emergency Leaders for Climate Action and the Climate Council of Australia Ltd. 2020. 'Australian Bushfire and Climate Plan: Final report of the National Bushfire and Climate Summit 2020'.

⁷ Ibid. Recommendation 123

2.2 Purpose

BG Economics was commissioned by Humane Society International Australia (HSI) to conduct a qualitative study into the rescue and care of wildlife by organisations and individuals in the devastating 2019-20 Black Summer bushfires. HSI responded to the bushfires in a number of ways, including sending a team to Kangaroo Island in January 2020 to assist with the rescue efforts of koalas and other animals while working with local and international organisations and individuals.

As a result, HSI saw the need for a deep investigation into what worked well and what could be improved for future bushfire wildlife response efforts.

The purpose of the study was to better understand the activities of organisations and individuals by investigating a number of key areas of the wildlife response including their preparedness, operational and post-operational experiences of their involvement in the bushfires as well as their motivations and views on what worked well and what did not.

Further, recommendations were to be provided, based on the analysis of the data, for reform for future bushfire responses to better safeguard wildlife.



HSI's Kelly Donithan on Kangaroo Island with an injured koala

2.3 Methodology

A qualitative study comprising two components was undertaken, commencing in June 2020. First, 35 in-depth interviews⁸ were conducted with 26 organisations and nine individuals who were significantly involved in the rescue and care of wildlife affected by the 2019-20 bushfires. These included larger organisations like Currumbin Wildlife Hospital, Port Macquarie Koala Hospital, Zoos Victoria and RSPCA South Australia as well as smaller, mainly incorporated organisations from Queensland, NSW, ACT, Victoria, South Australia and Western Australia. All study participant organisations and individuals are listed in Appendix 1.

Second, ten case studies were prepared to gain a deeper insight into the practices and challenges faced by a cross-section of these organisations and individuals.

Potential study participants were identified by way of internet searches to establish an initial database of organisations and individuals involved in the bushfires. Given the complexity of the task, some 'key players' were recruited to provide further names and to also contact organisations within their networks, thereby building upon the database.

Where organisations had only a social media page and no website, or a website and only an online contact form, these were messaged or a comment placed on their social media page asking them to contact the researchers.

⁸ Note - some organisations opted to complete the interview questions themselves due to the size of the organisation or time pressures

Emails were sent to identified organisations and individuals with a study information sheet and consent form attached.

The interview schedule was structured to include similar questions for organisations and individuals, to the extent possible, with both interview schedules being based on six study themes:

1. Participation
2. Capacity
3. Preparedness
4. Operations
5. Operational Barriers and Gaps
6. Post Operations

The interviews were conducted over a period of nearly seven weeks by professional interviewers. These typically took 45 – 60 minutes and were recorded with permission. Most participants provided verbal consent at the start of the interview and were also asked if they agreed to be identified in the report. The data from the interview recordings and transcripts were analysed by the research team in August and early September 2020.

2.4 Report Structure

The report comprises the following sections:

- Section 1 – Key Findings and Recommendations
- Section 2 – Introduction
- Section 3 – The 2019-20 Bushfires
- Section 4 – Study Data
- Section 5 – Analysis
- Section 6 – Case Studies
- Section 7 – Conclusion



HSI team assessment meeting in the field

3

The 2019-20 Bushfires



3.1 Overview

The 2019-20 bushfires are one of the largest and most devastating ever recorded in Australia. The Black Summer bushfires are unique in their scale and intensity, having started in early September 2019 prior to the usual bushfire season which occurs just before the first summer month of December. Other significant bushfire events have, of course, occurred in Australia. In more recent times, these include the 1983 Ash Wednesday and 2009 Black Saturday fires in Victoria, the 1993–94 Sydney fires, the 2006-07 bushfires in a number of parts of the country and the Tasmanian bushfires at the beginning of 2019.

However, the Black Summer bushfires are unique in that very large fires were burning in multiple sites in multiple states, at around the same time. They decimated koala and other wildlife populations across the top end of Australia, in southeast Queensland, along much of the east coast of NSW and Victoria, in some parts of Tasmania, South Australia including Kangaroo Island and Western Australia, especially in the south of the state. Such was the devastation, a Royal Commission into National Natural Disaster Arrangements was established by the Federal Government on 20 February 2020.⁹

New South Wales was especially hard hit. The northern region was affected from October 2019 and the southern region continued to be impacted over the Christmas/New Year period, with some of the worst impacts in early 2020.



A ringtail possum treated by rescue organisation LAOKO (NSW) for burns to all feet and ears

A fire in the Gospers Mountain region, started by a lightning strike on 26 October 2019, burned more than 512,000 hectares on the Central Coast and Blue Mountains regions.¹⁰

In Northern New South Wales, the fire in Nymboida (a town of less than 300 people) started in early November 2019 and destroyed 85 homes.¹¹

By February 2020 the fireground covered 7 per cent of the state (5.4 million hectares), which included 2.7 million hectares in national parks – accounting for 37 per cent of the national park area.¹²

The fires burned across the state until early March 2020.

Figure 1 shows the extent of the bushfires from 1 July 2019 to 22 June 2020.

⁹ Commonwealth, Royal Commission into National Natural Disaster Arrangements. 2020.

¹⁰ Parliament of Australia. 2020. '2019-20 Australian bushfires – frequently asked questions: a quick guide'.

¹¹ Jambor, C. & Martin, M. 2019. 'Nymboida lost 85 homes in bushfires – rebuilding them is still a long way off'.

¹² DPIE. 2020. 'Understanding the effects of the 2019-20 bushfires'.

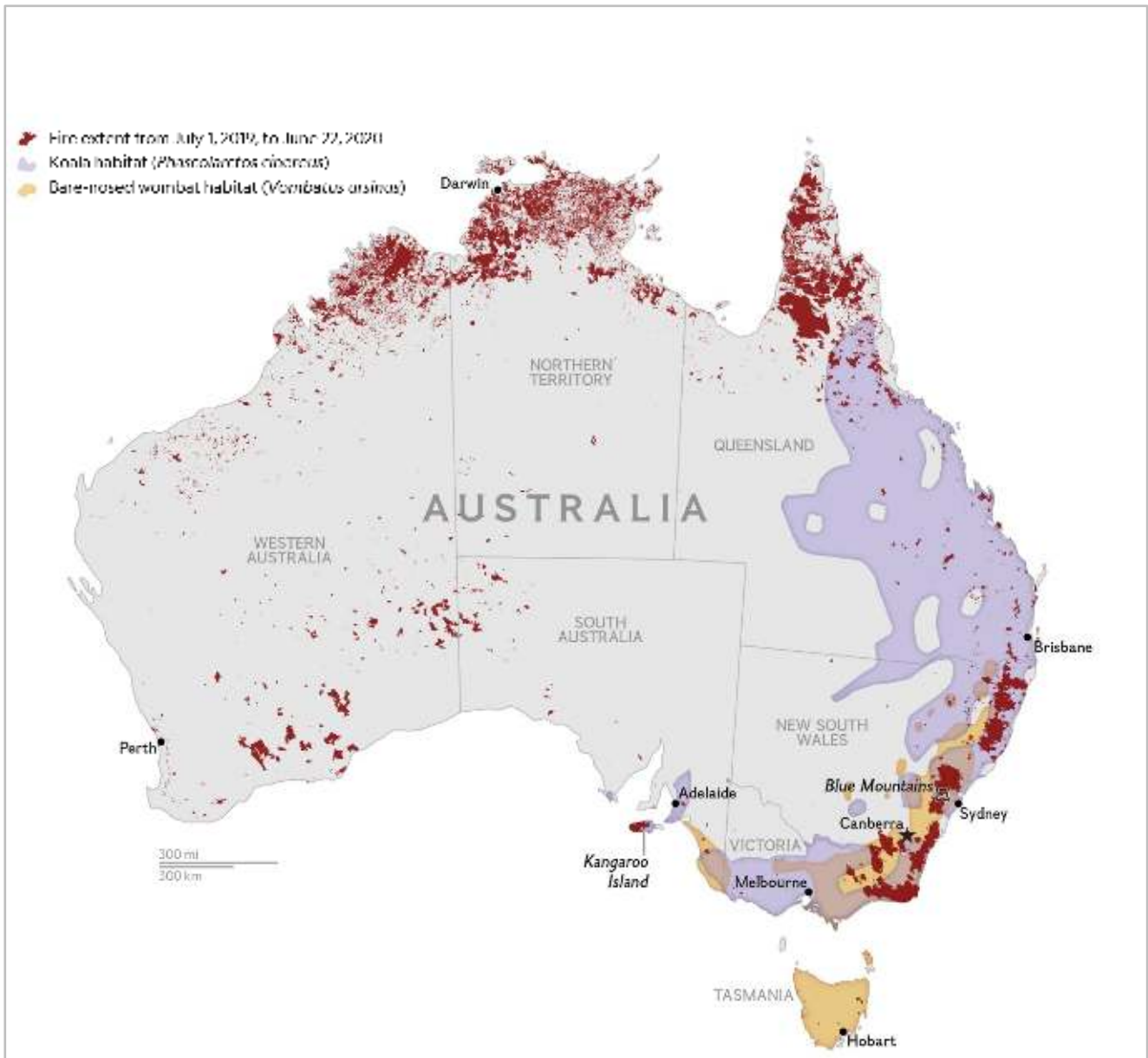


Figure 1: Extent of 2019-20 bushfires in Australia¹³

Credit: Christina Shintani

3.2 Number of Wildlife Affected

Although the full impact on Australian wildlife from the bushfires will be better understood in the coming years, some initial studies paint a devastating picture. By the start of February 2020, 22 per cent of the best koala habitat in New South Wales had been fire affected.¹⁴ Large areas of habitat had been altered and, due to the intensity of the fires in some areas, there was a scarcity of unburnt areas for wildlife to find refuge.¹⁵

One study has estimated the fires burnt around 97,000km² of vegetation across southern and eastern Australia, considered habitat for 832 species of native vertebrate fauna.¹⁶ Seventy taxa had a substantial proportion (>30%) of habitat impacted with 21 of these already listed as threatened with extinction.¹⁷

¹³ National Geographic. 2020. 'Koalas and other marsupials struggle to recover from Australia's bushfires'.

¹⁴ DPIE. 2020. 'Understanding the effects of the 2019-20 bushfires'.

¹⁵ DPIE. 2020. 'NSW Fire and the Environment 2019-20 Summary'.

¹⁶ Ward, M.; Tulloch, A. & Radford, J. et al. 2020. 'Impact of 2019–2020 mega-fires on Australian fauna habitat'.

¹⁷ Ibid.

A second study, by ten scientists from some of Australia's leading universities, has estimated that within the forests and woodlands that burned, there have been around three billion native vertebrates impacted, comprising more than: 143 million mammals; 2.46 billion reptiles; 180 million birds; and 51 million frogs.¹⁸

The direct and indirect factors impacting wildlife are:

- species' ability to flee or shelter from fire;
- varying fire behaviour (e.g., fire intensity, whether canopy was scorched, time of day);
- availability of suitable habitat, including unburnt refuges.
- smoke inhalation;
- heat stress;
- dehydration due to drought and low humidity;
- runoff of sediment into waterways; and
- decreased availability of and competition for resources, which may also result in increased predation risk.¹⁹



A koala being treated by Zoos Victoria

Source: ZV

3.3 Legal Framework for Rescue and Care of Wildlife

Jurisdiction for the management of national parks and native wildlife sits at the state and territory level in Australia. The Commonwealth Government has responsibility for native wildlife if they are part of the nine matters of national environmental significance, for example, nationally listed threatened species and ecological communities and migratory species.²⁰

A brief summary of the legislative framework of the jurisdictions included in the study is provided, given the legal context in which organisations and individuals operated was a significant factor in their rescue and care efforts. It is important to note however that there is also other legislation that authorities, like the police and emergency services, can use to direct wildlife rescuers.

Queensland

A new framework for the care and protection of native flora and fauna came into effect in August 2020, which includes a reduction in the number of licence categories.²¹ However, it is noted this change is not specifically in regard to emergency wildlife response. The following summary relates to the system in place during the 2019-20 bushfires.

A licence is required in order to:

¹⁸ World Wide Fund for Nature Australia. 2020. 'Australia's 2019-2020 Bushfires: The Wildlife Toll'. Interim report.

¹⁹ Ibid.

²⁰ DAWE. 2020. 'What does the EPBC Act protect?'.

²¹ Queensland Government. 2020. 'Nature Conservation Animals and Plants Regulation'.

- Tamper with an animal's breeding place,
- Rehabilitate sick, injured or orphaned animals so they can be returned to the wild, or
- Catch animals whose habitat has been destroyed by a natural disaster.²²

A permit is also required to move or transport a sick, injured or orphaned animal, such as to a vet, for treatment.²³ Licence holders are governed by the 'Code of Practice – Care of Sick, Injured or Orphaned Protected Animals in Queensland'²⁴ which provides the practical framework for care of protected animals, including rescue and handling, housing, transportation and euthanasia.²⁵

There is a requirement in the code for an organisation to provide new and inexperienced members with 'appropriate and ongoing training and mentoring for species that the individual rehabilitator wishes to care for'.²⁶ An emergency provision exists to allow for a non-licensed person to rescue sick, injured or orphaned native wildlife, which could be utilised during a bushfire. That person is required to give the animal to an individual or organisation with a rehabilitation permit immediately, or if not practical, within 72 hours.²⁷

National parks close during a bushfire for public safety, which restricts access to permitted people only, such as the fire service.²⁸

New South Wales

A person seeking to rescue a sick, injured or orphaned native animal, or undertake rescue and rehabilitation, such as capture, handling, treatment, release and euthanasia, must hold a wildlife rehabilitation licence. These licences are regulated by the Department of Planning, Industry and Environment (DPIE), under the *Biodiversity Conservation Act 2016* (NSW).²⁹ Licences are granted on an as needs basis and it is illegal to take a native animal into care without a licence.³⁰

Individuals or organisations holding a licence must operate according to the 'Code of Practice for Injured, Sick or Orphaned Protected Fauna'.³¹ Any individual operating under the licence must have the relevant training so they have 'appropriate knowledge and skills to ensure the welfare of fauna in their care'.³² A register must be maintained for all protected fauna encountered or rescued.³³

There are also individual codes for particular groups of species, including birds of prey, flying foxes, koalas, macropods and wombats.

The National Parks and Wildlife Service is responsible for the care and welfare of animals in national parks. Animals within a national park cannot be fed without approval from the park's authority. This includes leaving any 'vegetable matter, agricultural materials or containers'.

Similar to Queensland, national parks are closed during bushfires.³⁴

²² DES. 2016. 'Plants and Animals'.

²³ Queensland Government. 2020. 'Moving native and exotic wildlife'.

²⁴ DES. 2020. 'Code of Practice: Care of Sick, Injured or Orphaned Protected Animals in Queensland'.

²⁵ Ibid.

²⁶ Ibid.

²⁷ DES. 2015. 'Rehabilitation of Sick, injured and orphaned animals'.

²⁸ DES. 2019. 'Parks and Forests'.

²⁹ DPIE. 2020. 'Wildlife rehabilitation licences'.

³⁰ DPIE. 2019. 'Who can help with a sick or injured animal?'.

³¹ Office of Environment and Heritage. 2011. 'Code of Practice for Injured, Sick and Orphaned Protected Fauna'.

³² Ibid, Clause 13.

³³ Ibid, Clause 14.

³⁴ DPIE. 2020. 'Helping wildlife in emergencies'.

Australian Capital Territory

It is an offence to interfere with or conduct activities in relation to a native species without a licence.³⁵ Chapter 6 of the *Nature Conservation Act 2014* (ACT) contains a range of penalties for interfering with or conducting activities in relation to a native species without a licence.³⁶ All licence holders must keep records of the animals that are in their care.³⁷

National parks are closed to the public during bushfire events, or when there is a threat of a bushfire event.³⁸

Victoria

It is an offence to kill, take, control or harm wildlife, without authorisation under the *Wildlife Act 1975* (VIC).³⁹ Only authorised shelters or foster carers are able to look after sick, injured or orphaned wildlife.⁴⁰ There is a requirement to keep accurate records and case history.⁴¹ Where a person or organisation has an authority, they are required to follow the Wildlife Shelter and Foster Carer Authorisation Guide, which includes enclosure size, euthanasia and release of wildlife.⁴²

The Department of Environment, Land, Water and Planning (DELWP) recommends rehabilitators attend regular training courses and they are able to apply for funding through DELWP for such attendance.⁴³ During a bushfire emergency, DELWP has Wildlife Assessment Teams that work with authorised volunteers to undertake an assessment of the wildlife impact in fire affected areas. Authorised volunteers are required to have undertaken a training and accreditation program, be registered, use approved personal protective equipment and follow approved emergency management processes.⁴⁴

No other volunteers can enter the firegrounds during bushfires.⁴⁵

South Australia

A permit is required in order to rescue a native animal, become a wildlife carer, establish a rehabilitation facility or to keep protected animals that cannot be released back into the wild.⁴⁶ Licence holders are required to follow the 'General Guidelines for the Management of Protected Wildlife in Captivity in South Australia'.⁴⁷ These guidelines set out the rules in relation to enclosure sizes, record keeping and euthanasia, among others.⁴⁸

There are also species guidelines for the keeping and treatment of specific animals, such as for wombats and koalas.⁴⁹

Access to national parks after a bushfire event is restricted, and permission to enter a bushfire ground is required from the National Parks and Wildlife SA. During the 2019-20 bushfires on Kangaroo Island, for example, RSPCA SA volunteers were given permission to enter bushfire zones in the Flinders Chase National Park, but this did not occur until a month after the fires.⁵⁰

³⁵ DEPSDD. 2020. 'Licensing of plants and animals'.

³⁶ Nature Conservation Act 2014 (ACT) Ch 6.

³⁷ DEPSDD. 2020. 'Animal Licence Holder Responsibilities'.

³⁸ DEPSDD. 2020. 'Total Fire Ban'.

³⁹ DELWP. 2020. 'Wildlife management and control authorisations'.

⁴⁰ DELWP. 2020. 'Sick, injured or orphaned wildlife'.

⁴¹ DELWP. 2020. 'Wildlife rehabilitation shelters and foster carers'.

⁴² DELWP. 2019. 'Wildlife Shelter and Foster Carer Authorisation Guide'.

⁴³ Ibid.

⁴⁴ DELWP. 2020. 'Bushfire Response – Wildlife Shelters and Carers'.

⁴⁵ Wildlife Victoria. 2020. 'How you can help wildlife in the bushfires'.

⁴⁶ DEW. 2020. 'Rescue or Rehabilitate native animals'.

⁴⁷ DEW. n.d. 'General Guidelines for the Management of Protected Wildlife in Captivity in South Australia'.

⁴⁸ Ibid.

⁴⁹ DEW. 2020. 'Captive Management Guidelines'.

⁵⁰ RSPCA SA. 2020. 'RSPCA SA volunteer teams given access to Flinders Chase National Park, first feeding stations set up'.

Western Australia

All fauna in Western Australia is protected under the *Biodiversity Conservation Act 2016* (WA).⁵¹ A person or organisation that is in possession of native wildlife for more than 72 hours is required to hold a 'Fauna possessing (other purposes) licence'.⁵² An 'Advanced' licence is required for anyone seeking to possess the native animal for the purposes of rehabilitation.⁵³

The Code of Practice for Wildlife Rehabilitation in Western Australia sets out the minimum standards for wildlife rehabilitators, including clauses relating to the provision of food and water, hygiene and housing. All licence holders are required to comply with this code.⁵⁴

The 'Wildlife Rehabilitation Standards and Guidelines – Making decisions on the fate of rehabilitated fauna' provides guidance about how to determine when fauna cannot be rehabilitated and released back into the wild.⁵⁵ The 'Wildlife Rehabilitation Standards and Guidelines – Management of rehabilitated wildlife that cannot be released into the wild' provides extra guidance on how to care for an animal that cannot be returned to the wild.

As with other states and territories, national parks are closed to the public in the event of a bushfire.⁵⁶



HSI team members Adam Parascandola and Georgie Dolphin

⁵¹ DBCA. 2020. 'Code of Practice for Wildlife Rehabilitation in Western Australia'.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ DBCA. 2020. 'Wildlife Rehabilitation Standards and Guidelines – Making decisions on the fate of rehabilitate fauna'.

⁵⁶ Logan, T. & Dobson, J. 2020. 'Western Australia bushfires devastate the Stirling Ranges – one of the world's richest biodiversity hotspots'.

4

Study Data



4.1 Overview

This section presents the data collected in the interviews with organisations and individuals who participated in the study. A total of 35 participants, including 26 organisations and nine individuals, generated the data collected.

It is noted that in a few instances, study participants chose not to answer some questions.

The data has been organised into seven categories as follows:

- Section 4.2 – information about the participant organisations.
- Section 4.3 – the type of services provided by both organisations and individuals and for how long these interventions lasted.
- Sections 4.4 & 4.5 – the resources available to the organisations and individuals and how prepared they were to respond to the 2019-20 bushfires.
- Section 4.6 – wildlife rescue and care operations, including the types of technologies used, the level of communication and where information was sourced. Also, whether there were any coordinating organisations.
- Section 4.7 – the operational barriers and gaps, including what worked well during the wildlife response and what could be improved.
- Section 4.8 – post operation considerations, including what organisations and individuals are doing to prepare for the next bushfire event, financial impacts, psychological impacts and trauma from dealing with the crisis and other impacts to the organisation as a result of the 2019-20 bushfires.

4.2 Participant Organisations

Figure 2 shows how long organisations have been in operation. Most organisations have been operating for more than 20 years. It is noted that the nine individuals in the study are not included in the chart.

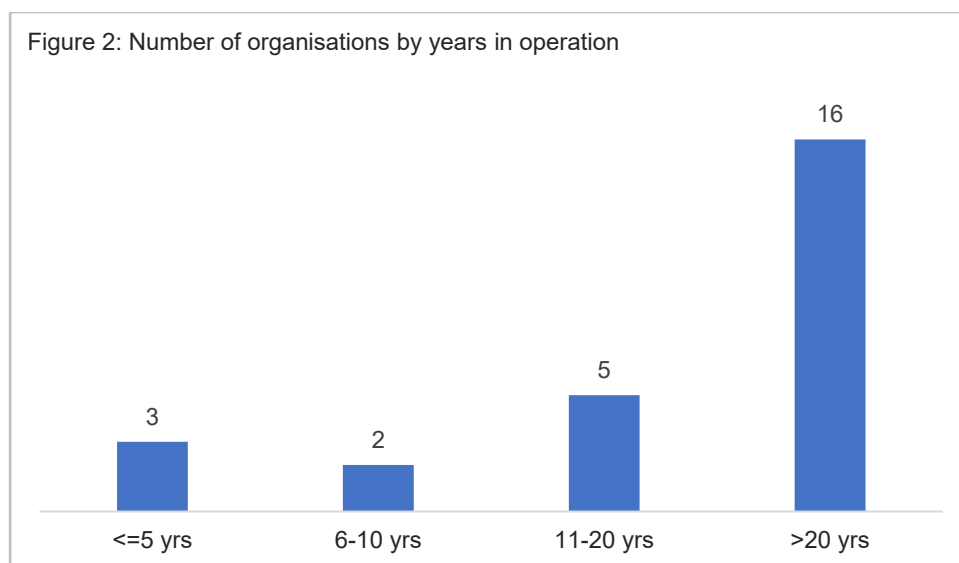
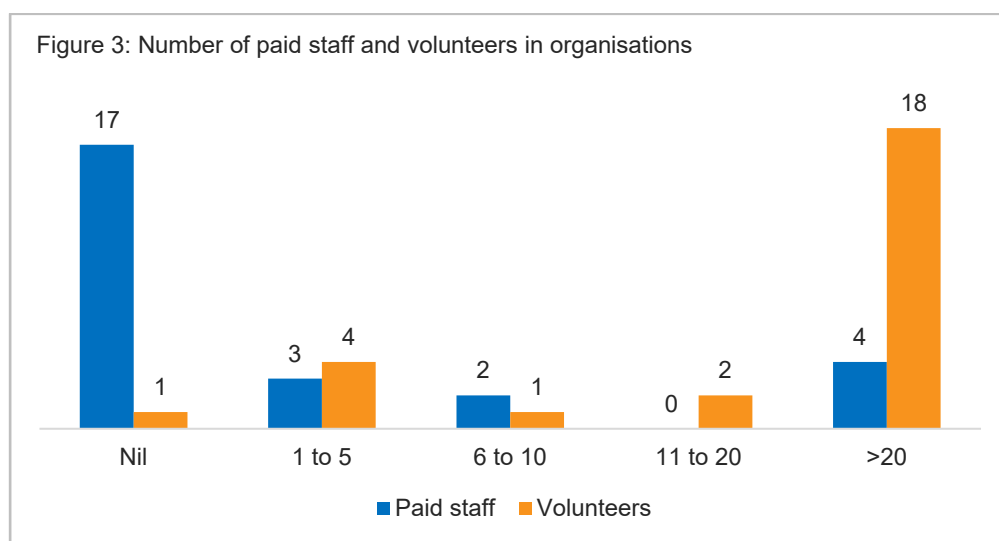


Table 1 shows the income sources for each of the organisations (note - individual participants were not required to answer this question). Organisations identified multiple income sources. The majority of income comes from donations and fundraising, followed by government (including grant funding). Most organisations stated they receive less than 10 per cent of their funding from government.

Table 1: Organisation income sources					
Govt.	Donations	Fundraising	Sales	Bequests	Other sources
13	21	17	4	5	8

Figure 3 shows how many organisations have paid staff (full time, part time or casual) compared to volunteers. Individuals were not asked this question. 17 of the 26 organisations had no paid staff with 18 organisations having more than 20 volunteers, meaning the majority of organisations are volunteer based.



4.3 Services Provided and Length of Time

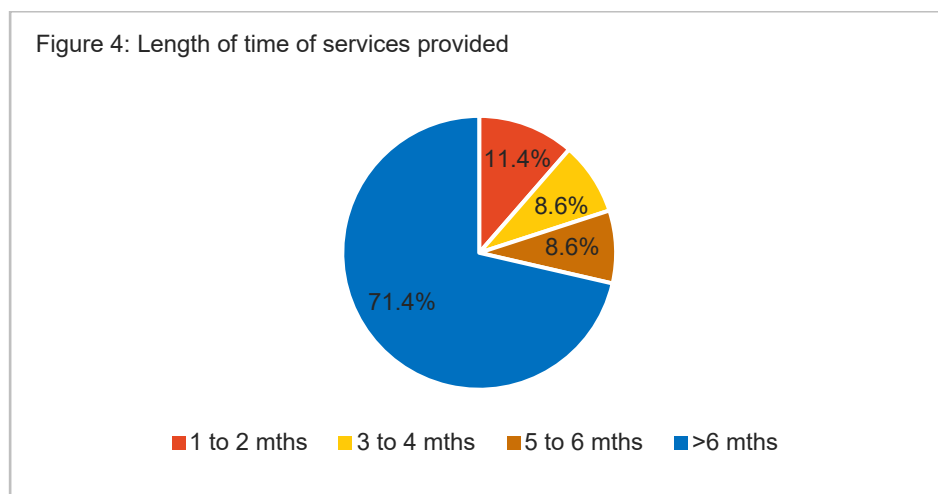
Table 2 presents the types of services organisations and individuals provided to wildlife in the 2019-20 bushfires. Most organisations and individuals provided more than one type of intervention.

Table 2: Services provided	
Search and rescue	27
Supplementary feeding	28
Emergency vet station	21
Wildlife care	28
Rehabilitation and release	28



Hay delivery to a LAOKO carer's property after the fire

Figure 4 shows the majority of interventions lasted for more than six months (71.4%). Many interventions were still ongoing at the time of interviewing. It is noted that different interventions were undertaken for different lengths of time and the longest time period was used.



4.4 Resources

Table 3 shows how well-resourced study participants were to respond to the bushfire event. It is noted that one organisation did not respond to this question.

Table 3: How well organisations and individuals were resourced						
	Very well resourced	Well resourced	Neutral	Not well resourced	Not at all resourced	Not applicable
<i>Facilities and equipment (e.g. buildings or rooms at home, vehicles)</i>	5	11	6	4	8	0
<i>Financial</i>	1	8	6	13	6	0
<i>Medical supplies</i>	5	10	6	6	5	2
<i>Human resources (staff)*</i>	4	13	2	5	1	0

* the human resource question was not asked of individual participants

4.5 Preparedness

Table 4 shows how prepared participants were in terms of training and operating procedures in order to respond to a bushfire event. It is noted that one organisation did not respond to this question.

Table 4: Preparedness for 2019-20 bushfires						
	Very well prepared	Well prepared	Neutral	Not well prepared	Not at all prepared	Not applicable
<i>Staff training</i>	6	7	6	5	9	1
<i>Written operating procedures & guidelines</i>	3	6	7	6	10	2
<i>Verbal operating procedures & guidelines</i>	9	8	4	3	9	1

4.6 Operations

The data shows that communications and coordination came from a variety of organisations and individuals however, in some cases, there was no communication or coordination at all. Some of the participants, for example on Kangaroo Island (South Australia), had daily on-ground briefings between organisations, individuals and state government authorities.

However, a significant number of participants from other states reported that there were limited state-based communications and coordination was often poor. These organisations and individuals often found more information coming from local radio stations and social media than from the authorities.

Figure 5 shows that just over half of study participants (57.1%) reported there were coordinating organisations in the bushfire wildlife response. The data shows that across Australia, there was no one organisation or government department coordinating the wildlife response and four in ten organisations (42.9%) stated they ended up coordinating their own operations. This was due to a lack of resources on the ground, as well as the speed at which government and the larger organisations responded to the wildlife crisis.

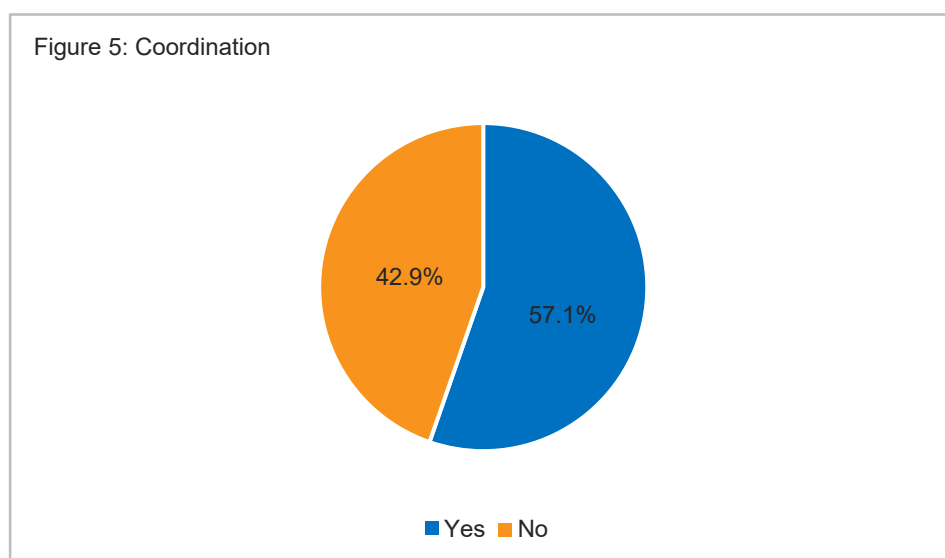


Table 5 shows the range of different technologies utilised by participants during the bushfire event, including more sophisticated technologies like infrared drones and satellite phones to provide coverage in areas where there is no mobile reception to smartphones, Google Docs and laptops.

Many participants noted that they only had access to more 'high-tech' devices such as satellite phone and drones when the international community (e.g. Canada) arrived, or when the larger organisations came to assist.

Of importance to note is the number of participants who stated mobile phone coverage was poor and having access to a satellite phone would have saved the lives of many more animals.



Source: Healing Hands Wildlife Care (WA)

Table 5: Technologies used to deliver services	
Smartphones	27
Laptops / Tablets / Home Computers	11
Drones (including infrared and thermal)	11
Email / Google Docs / Internet / Social Media	10
GRN radio network / field radios / walkie talkies	6
GPS / Satellite Mapping	6
Satellite phones	5
Cameras, including video cameras	4
Trail cameras	4
Infrared / thermal imagery	3
Veterinary equipment e.g. X-Ray, Ultrasound, Incubators, Hydration Pumps	1

4.7 Operational Gaps and Barriers

Participants were asked to reflect on what worked well during the wildlife response to the 2019-20 bushfires. It is noted not all participants identified what worked well. Response themes are presented in **Table 6**.

Participants were then asked what could be improved for future bushfire events. Response themes are presented in **Table 7**.

Table 6: What worked well during the 2019-20 bushfires	
The level of community engagement and public response to wildlife	10
Support from a crisis manager / emergency response coordinator	4
Having trained, on the ground rescue teams	4
Support from other wildlife carers	4
The use of drones and other technologies	3
Having an effective feeding program	1
Giving people a channel to donate and to help	1
Developed an emergency response from previous fires / implementing learnings from previous fire events	1

Table 7: What could be improved for future bushfire events	
Proactive government engagement with volunteers and volunteer organisations, including enhanced communication between volunteers and fire fighters	21
Quicker access to national parks and fire grounds by government agencies to speed up the wildlife response	19
Enhanced training prior to bushfire seasons, including fireground training, PPE and equipment so the response is not reactive and to avoid inexperience making it worse.	18
Centralised and enhanced communication, so volunteers know where the fires are, which organisations are working where and what is needed	13
Enhanced resources e.g. funding, technology, facilities, trained volunteers and staff so volunteers are not self-funded, trained 'on the go' or impacted by failed technologies	12
Coordination, which could be alleviated by having paid coordinators on the ground in each state/territory	11
Better planning for crisis events e.g. protocols and processes in place, emergency response plan that includes a wildlife response	10
Having experienced shooters available, rather than having to rely on police to euthanise wildlife	7
Acknowledgement of the need to respond to wildlife, so that it is faster and more effective	7
Having a government body to look after wildlife, including consistent legal frameworks allowing for emergency licences for care/capture of injured wildlife	7
Access to vets or permission to carry out minor medical procedures without a vet	3
Government providing a one stop shop guide to rescue, treatment and rehabilitation of wildlife	2
Better care for staff and volunteers, to deal with psychological trauma	1

4.8 Post Operations

The final part of the interviews asked participants to reflect on the impacts the wildlife response to the bushfires has had on their organisation, including financial and psychological impacts, and any changes they are making. This data is presented in **Table 8**.

Table 8: Changes made to organisations post 2019-20 bushfires	
Additional training including animal care and RFS fireground training	13
Developing policies and procedures (or upgrading existing procedures)	11
Purchasing additional equipment / cages / facilities / technologies	10
Understanding what the most useful supplies are and having those supplies in advance e.g. hoses	7
Appointed wildlife emergency welfare coordinator / responsible branch officer	3
Discussing methods and ways to respond earlier	2
Nil/no changes required	2
Proactively dealing with psychological impacts and more aware of how awful it can be on the ground	2
Working on improving fundraising skills	1
Developing a team of spotters	1
Increasing the number of mobile clinics available	1

The majority of organisations are self-funded and largely rely on donations and grants. **Table 9** details the financial impacts the 2019-20 bushfires have had on these organisations. Interestingly, some organisations are now better off financially due to the large donations received. However, other organisations have not fared so well.

Table 9: Financial impacts	
There has been an increase in grants / donations / membership subscriptions, both nationally and internationally	17
Self-funding of things like fuel, food, equipment and medication often without refund placed a financial burden on organisations	10
Unable to raise enough money to cover unplanned-for costs e.g. PPE and vet bills	6
Rehabilitation work that had been previously funded destroyed in the fires.	1
Neutral / No impact	1

Table 10 details the personal impacts (both positive and negative) to staff and volunteers involved in the bushfires.

Table 10: Personal impacts on staff / volunteers	
Increased anxiety / PTSD	19
Increased stress / burn out / anger / weight loss	11
Loss faith / frustration regarding no government support	7
Had to take unpaid leave from work (pre-COVID)	6
Fuel and food costs that were personally funded by volunteers	4
Financial problems for volunteers e.g. personal vehicles being written off	4
Feelings of frustration at lack of collaboration with others e.g. bullying on social media	3
Not enough resources available to appropriately respond e.g. financial and human resources	2
Showed how well people can work together / relationship building	2
A feeling of increased connections with other wildlife carers	1

Finally, participants were asked if there were any other impacts on their organisation, both positive and negative, as a result of the 2019-20 bushfires. This data is presented in **Table 11**.

Table 11: Other impacts on organisations	
Increased exposure for the organisation nationally and internationally	7
An increase in community support for the organisation and local wildlife	4
Increased volunteers and needing to train them, which has then been impacted by COVID-19	3
Feeling of pride at being able to help at a time of national crisis	3
Realisation that they weren't prepared but will be next time – heightened awareness and education	3
Struggling to recruit new volunteers / loss of volunteers	3
Good to see new growth coming back already	1
Better media / social media campaigns to increase awareness	1

5

Analysis



5.1 Overview

This section presents the analysis of the data in Section 4 and explores the themes that emerged from the state and territory participants, as well as identifying issues relating to particular jurisdictions.

5.2 Preparation and Training for a Major Bushfire Event

In order to meet the requirements of wildlife licencing across Australian jurisdictions, volunteers must be adequately trained in wildlife rescue and care.⁵⁷ In New South Wales, for example, this training is provided by organisations such as Taronga Zoo,⁵⁸ Sydney Wildlife,⁵⁹ and WIRES⁶⁰ and includes both written assessment and competency-based training.⁶¹ These training programs occur throughout the year. However, a number of participants raised this as a barrier to securing additional volunteer help during the bushfires. Some organisations had to turn people away from volunteering, as they did not have the appropriate training and there was no time to train people during the crisis.

Participants from non-metropolitan areas, particularly in regional Western Australia, stated that while they would appreciate some training in order to be better prepared for the next fire event, the relevant training is not available in their areas. It seems that very few, if any, of these training courses are available online. Instead, they require 'in-person' presence, usually in the larger urban areas of their state. This, combined with a clear increase in volunteer numbers for some (not all) organisations and the constraints of COVID-19 and social distancing measures, indicates that without the development of online training platforms there will be a limited increase in the number of trained volunteers to respond to the next bushfire event.

One respondent presented valid evidence to support the need for more and diverse training options. Due to the lack of training and preparation to respond to bushfires of this scale, untrained individuals who were trying to help were observed to sometimes do the wrong thing. This was due to them not knowing what they needed to do, whether this was providing incorrect supplementary food for a species or endangering or further injuring the wildlife they were attempting to assist.



Source: Kangaloola Wildlife Shelter (Victoria)

If governments want to continue to rely on a volunteer-led response to bushfires, then there is a clear need for increased resourcing for more face-to-face training, online platforms and refresher courses to be made available. In this COVID-19 period, alternative training options such as online courses need to be investigated and resourced in preparation for future fire seasons.

However, preparation goes further than simply having trained volunteers ready to deploy in a time of crisis. Many organisations and individuals, as well as state and territory governments, were simply not prepared for a bushfire event of the scale and magnitude of the Black Summer bushfires.

⁵⁷ DPIE. 2020. 'Getting involved in wildlife rehabilitation'.

⁵⁸ Taronga Zoo. 2020. 'Certificate Courses'.

⁵⁹ Sydney Wildlife. 2020. 'Registrations for the next Rescue and Care Course have been put on hold'.

⁶⁰ WIRES. 2020. 'Wildlife Training'.

⁶¹ Office of Environment and Heritage. 2011. 'Code of Practice for Injured, Sick and Orphaned Protected Fauna'.

Most organisations stated they did not have written policies and procedures in place to guide volunteers on how to respond or what they needed to do, instead relying on mostly verbal directions. State and local government emergency and fire management plans were reported to lack sufficient information about how to respond to wildlife, although these were not investigated in detail as part of this study so this cannot be verified.

While the subsequent flood of resources, for example, money, equipment and food was welcome, it was often too late to be able to assist the wildlife in the 2019-20 bushfires. Without procedures on how to respond or training to know what supplies to ask for, many organisations are now inundated with a range of supplies that may or may not be useful in the future.

As previously stated, governments around Australia rely on volunteer organisations to respond to not just wildlife, but also the fires and other emergencies (the latter two through the various rural fire services and state emergency services). Without appropriate support and resourcing, these wildlife organisations cannot undertake the appropriate emergency planning to respond to bushfire events.

The development of policy, procedure and protocol templates, backed by scientific intervention models, may assist organisations with developing streamlined planned intervention processes for future bushfire events. Further, local and state government emergency and fire management plans should ideally be enhanced to incorporate wildlife responses. These responses should be developed in conjunction with local wildlife organisations to foster a sense of shared ownership, which is likely to produce more efficient and effective outcomes for all stakeholders.

I think we need to learn from this situation, and we need to be better prepared than we were. We really need to learn that once we have had the bushfire it is too late to wish you had the skills and the resources. We need to anticipate future needs better and not just wait until the day it happens.

5.3 Resourcing

The international scientific consensus is that countries, including Australia, will face hotter and drier summers as a result of climate change, increasing the risk of extreme bushfire events like those seen in 2019-20. In addition to factors identified previously, there ideally should be appropriate resourcing of volunteer organisations if they are going to be frontline or first responders.

Participants were asked to explain how and where they received their funding. The vast majority are considered small or micro organisations, with annual income of less than \$250,000 with some operating on less than \$20,000 per annum. In considering where this funding comes from, while nearly all organisations received some government funding, usually in the form of small one-off grants, this often accounted for less than 10 per cent of total income. Most rely on membership fees, donations and fundraising, for example, Native Animal Rescue Group NSW (NARG) through the sale of an annual wombat calendar (see Case Study 9).

Many organisations received an increase in donations and membership fees during the 2019-20 bushfire season. However, being so used to running on minimal funds, many stated they were 'too scared' or 'hesitant' to spend too much, as they knew it was not a sustainable income source.

We are still sending teams, building wombat enclosures, still doing restoration.

In addition to unsustainable income sources, the length of the intervention must be considered. Participants were asked how long they spent undertaking the various activities. While search and rescue or supplementary feeding lasted from several weeks to several months, activities such as rehabilitation, release and long-term care often lasted for

more than six months, with many participants still undertaking these activities at the time of interview. This is of concern, as the 2020-21 bushfire season is due to commence.

The data shows there is a situation of financial insecurity for many organisations, a fear of spending too much money only to have funds run dry, where volunteer organisations are still undertaking activities to care for wildlife from the previous fire season and therefore are unable to fully prepare for the upcoming fire season. While government funding represents a very small proportion of funds needed, it relies on volunteer organisations to provide the wildlife response. It is evident that this situation requires further investigation.

Volunteer organisations of all sizes need appropriate funding to respond in a 'professional' way, as they are required to do by law. To do this they need the right equipment and medical supplies, as well as PPE and other safety supports.

5.4 Government Engagement

The overriding narrative from most participants was that there was a limited government response in regard to affected wildlife. The protection of private property led governments and national parks authorities to focus their attention in that direction, and did not seem to include a comprehensive and coordinated wildlife response. This has been alluded to in the previous section but requires further analysis.

Governments had the data and information about where bushfires were occurring, who was responding to the fires and, in many cases, it has been reported they did not share this information with wildlife responders. Some participants stated they were repeatedly calling the relevant government departments for information, at the very least to gain permission to enter a fireground for wildlife rescue, but did not receive a response. Other organisations and individuals reported that government officials actively prevented them from rescuing animals and, in some cases, they had to wait several weeks to obtain permission to enter fire grounds, often to retrieve dead animals that might have been saved if they were able to respond quicker.

I knew there was no government response...the only assistance for the animals is voluntary groups.... I was aware that the animals would have no water and food and became aware there was a massive gap. And that is why I did it.



Source: Kangaloola Wildlife Shelter (Victoria)

A number of participants indicated that there is a lack of trust between the community and government. This has led to a dearth of planning or coordination for a concerted approach to wildlife rescue as 'we need collaboration and a plan to get things moving faster'. Some participants went further, suggesting that the management program currently employed by the government is causing fires of greater intensity and regularity.

Another participant reported that government officers went into the fire zones and were shooting animals, even though it would have been possible to save and rehabilitate them. In response, volunteers were informed that the government has no protocols

on what to do with wildlife after a fire and so they were not authorised to remove the animals. Killing them was the only option available.

Participants from the Kangaroo Island bushfires reported that daily briefings were occurring between government agencies, the rural fire service and volunteers. Organisations in Victoria, who have taken learnings from events such as the Black Saturday bushfires, reported regular weekly and bi-weekly contact with the Department and state control centre. However, this was not the norm across Australia. Some participants

stated that they got more up to date information from social media platforms and local radio stations, long before they received information from government agencies, if they ever did. A phrase regularly repeated was that the government turned a blind eye to wildlife. Their priority was to put the fires out and move on.

Not only to achieve a coordinated wildlife response, but also for public health and safety, improved communication and logistics from government to wildlife rescue organisations is required. Failure to do so led some participants to state they were aware of people entering firegrounds without permission or undertaking other activities without full knowledge of the conditions due to the lack of information coming from government authorities. This could have led to people becoming injured, or worse. An improved information sharing, coordination and logistics model from government agencies to wildlife organisations is paramount. However, this should not be a top down approach, dictating to organisations, but rather a collaboration between organisations and governments to establish a best practice model.

5.5 Barriers to Entering National Parks and Firegrounds

Almost all study participants identified the active blocking by authorities of volunteer organisations entering national parks as a significant barrier to wildlife rescue missions during the bushfires. Others reported that the authorities responsible for national parks did not communicate with wildlife rescuers and when assistance was requested, they were ignored. In some cases, this led volunteer organisations to break the law in order to enter national parks to save wildlife. In almost all jurisdictions, only people or organisations holding a licence and adequate training can assist in wildlife rescue. National parks, once closed due to fire, are inaccessible to wildlife organisations which results in vast numbers of wildlife dying due to secondary issues such as starvation and dehydration.

While public health and safety must always be the paramount consideration, there may be scope for a more flexible response. For example, Victoria has experienced a number of significant bushfire events in recent decades. This has led the state government to develop improved practice models for all forms of bushfire responses.



HSI on Kangaroo Island conducting search and rescue operations

One such model is the establishment of 'Wildlife Assessment Teams', which is a body of trained government staff who work with a specially trained group of volunteers to enter fire grounds and determine the wildlife impact and direct search and rescue teams to the appropriate locations. A similar model could be established in other jurisdictions to reduce the barriers to entering national parks and firegrounds, to enable a timelier response to rescuing wildlife.

Another example of best practice are the various state emergency services and rural fire services (e.g. the Rural Fire Service in NSW). Volunteers in these organisations are provided with distinctive uniforms (such as the orange overalls of the 'SES'), significant training, appropriate personal protective equipment (PPE) and other resources needed to respond to fire events and other emergency situations. They are typically covered by government insurance and have access to the government employee assistance program, as a way of acknowledging the significant trauma they face in their line of volunteer work. Through this analysis, it appears

an important part of the bushfire response framework in Australia is neglected – the wildlife response. A similar ‘quasi’ wildlife service could be established that provides equivalent public recognition and supports, structures and safety for volunteers in registered organisations, or in certain cases as individuals (see Kailas Wild - Case Study 2), who are responding to the equally dangerous and traumatic situations while still allowing them to retain some autonomy.

5.6 Timeliness and Appropriateness of Response

The previous sections have demonstrated there was a significant concern around the timeliness of the response to injured wildlife. In many cases, it took more than two weeks post a bushfire event for volunteers to gain permission to enter fire zones. By this time, vast numbers of animals had perished, not only due to injuries sustained from the fire but also from starvation and dehydration.

Another issue that emerged from the data is the appropriateness of the response. While many vets provided support in a volunteer capacity, there was a lack of people qualified to euthanise animals.⁶² One respondent stated that when they found an animal that needed to be euthanised, they had to look to the police to perform the task, often with mixed results. Others reported that animals were being euthanised on the spot, when they should have been assessed and might have been rehabilitated. A lack of suitably qualified shooters and dart teams led to significant negative outcomes for wildlife.

I think the animals were let down because we weren't acting quick enough.



SAVEM field station in operation on Kangaroo Island

Other participants found that while people were providing assistance with the best of intentions, they would often put out the wrong feed or engage with the animal in ways that placed them at risk of pain or further injury. This relates to many of the points raised in preceding sections, such as lack of preparation, lack of training opportunities and a lack of appropriate resourcing – both financial and physical resources.

Increasing the availability of suitably qualified shooters and darters would ease the impact on the animals and people on the ground, as well as reducing the burden of police officers who are not trained nor should have to be the de facto on-the-ground euthanasia team.

5.7 Communications and Technologies

Many of the firegrounds were in areas that were difficult to access, with limited or no mobile phone or internet connectivity. However, the vast majority of participants were relying on mobile phones, personal laptops and tablets as the key mode by which they sourced information and communicated with one another. Some participants stated it was only when volunteers from overseas or large Australian organisations arrived, that they had access to satellite phones, drones and infrared cameras.

⁶² The rules regarding euthanasia are contained in the state and territory legislation and codes of practice and must only be done by suitably qualified people.

The lack of technologies available to these organisations is a public health and safety concern. Volunteers entering firegrounds, without having mobile phone reception, are being placed at risk of harm. A shift in wind direction, a small flare up of fire activity and with no means of communicating this information to the volunteers, could lead to injury or even death.

At a minimum, the availability of satellite phones should ideally be made available to volunteer participants. Further, the use of more sophisticated technologies such as drones and infrared cameras would allow individuals to pinpoint exactly the areas they need to go in advance, rather than wandering over terrain in the hope of finding wildlife which is an inefficient use of human and financial resources.



Douglas Thron conducting HSI drone operations

5.8 Coordination

The lack of coordination on the ground put not only the wildlife at risk but also the welfare of the responders. While organisations like the SES and RFS, government agencies and to an extent, the larger wildlife organisations receive funding, donations and equipment, some of the smaller organisations and individuals that took part in this study received no support in their wildlife response endeavours.

These organisations did all they could, in some cases relying on donations from local supermarkets to provide food. At the time of the interviews, some were still waiting for a return phone call from government agencies. If governments wish to rely on volunteer organisations to provide the wildlife response, they must resource these organisations appropriately and engage with them in a timely way.

It should never have been left to volunteers and there should have been a comprehensive strategic response regarding the wildlife before this disaster. This is a responsibility of authorities that needs to occur prior to the event. Being prepared is everything.

It is imperative that a central source of coordination and information about wildlife comes from government. A comprehensive manual for rescue, triage, treatment and rehabilitation of wildlife needs to be provided so that all agencies who assist at these dangerous and stressful times are all doing the same thing and not working differently to each other. It will also provide ability to train people from different agencies in the same information and methods.

In addition to this, the study data clearly shows the lack of on-the-ground coordination. Many participants stated they coordinated themselves and/or others, there was no coordination or suggested a myriad of 20-plus organisations who may have been coordinating in their area.

Information was often not shared from government to wildlife rescue organisations, or from organisation to organisation. Some had nowhere to go for information, relying on local radio stations, social media or word of mouth. Criticism and bullying between organisations were also reported in some locations.

A paid coordination team, suitably trained in bushfire responses and wildlife responses in each state and territory, would assist to alleviate some of these issues.

These could be the conduit between government and organisations and work with, for example, the Emergency Response Teams to determine where resources should be directed for the best outcome and address any concerns between organisations and provide timely information to those on the ground. These paid coordinators should either be government representatives or funded by government, but working for a state-based volunteer organisation.

5.9 Financial Impacts

The financial resources of organisations and individuals involved in the 2019-20 bushfires was a key factor in how well they were able to respond in the rescue and care of wildlife. As the data showed, the majority of income comes from donations and fundraising, followed by government (including grant funding). However, most organisations receive less than 10 per cent of their funding from government.

Only nine organisations and individuals considered themselves financially well resourced, six considered themselves neither well nor not well financially resourced (neutral) and 19 considered themselves not financially well resourced.

Since the Black Summer bushfires, the financial impacts on many individuals and some organisations has been difficult. The self-funding of things like fuel, food, equipment and medication, often without recompense, has placed a significant financial burden on these volunteers and entities.

The financial impacts on individuals is exemplified as follows:

- *'It cost me lots, probably a couple of thousand dollars ... petrol, food, accommodation, feed'.*
- *'\$30/week since February out of pocket. Buying things that charity doesn't provide us for (hay, carrots, sweet potato). Of course, the petrol costs a fortune'.*
- *'Financially, there has been some impact as we have had to pay for petrol and wildlife care is not cheap but they need our help so we continue to do it'.*

Another respondent reported being out of pocket upwards of \$6,000 and damaging their personal motor vehicle.

Other organisations however experienced an increase in income largely through donations from the public. Around half of participants reported an increase in grants/donations/membership subscriptions, both nationally and internationally.

For example, case study organisations F.A.W.N.A. (NSW) and NARG experienced an increase in funds from a generous public. The Rescue Collective in Queensland raised around \$3 million through donations in conjunction with ARC (Animal Rescue Cooperative). Willow Wood Sanctuary in South Australia set up GoFundMe and Give Easy pages and raised around \$250,000. Zoos Victoria had a successful bushfire appeal. WIRES reportedly received around \$60 million in donations of which \$25 million will be used on ongoing long-term relief and a further \$25 million for risk-reduction and a national recovery framework.⁶³

This disparity in outcomes, while not unusual, does raise the question of whether wildlife organisations identified as being in a financially precarious position should receive emergency grant funding where longer term viability can be established.

⁶³ Greenbank, A. 2020. 'Why animal charity that got \$60m during Australia's bushfire crisis was 'loath to spend it'

5.10 Health Impacts

The health impacts on individuals, in particular mental health impacts, while not unexpected are a reminder that there can be significant trauma in wildlife rescue and care. Some participants reported they now spontaneously burst into tears. Others have noted the significant mental health impacts on their volunteers, some of whom have not returned.

While the psychological impact of being a wildlife responder during the 2019-20 bushfires has been significant, no study participant stated that a government agency has offered them access to an employee assistance program, counselling services or assistance in recognition of these impacts and their service. If governments wish to continue to rely on volunteer organisations to respond to injured wildlife, ideally, they should provide access to appropriate debriefing, trauma counselling and psychological support.

In terms of physical health, study participants reported breathing difficulties and health impacts as a result of breathing in smoke, without having access to appropriate PPE. Some received shoulder, leg and knee injuries while on the fire grounds. This has impacted their ability to work or perform day-to-day functions. If there continues to be a reliance on volunteers for the wildlife response, it seems reasonable that volunteers should also have access to medical assistance from any injuries sustained while performing this vital role.

6

Case Studies



6.1 Overview

In addition to the in-depth interviews conducted for the study, ten case studies were prepared to better understand the experiences of wildlife organisations and individuals involved in the 2019-20 bushfires.

A brief description of the organisations and individuals is as follows:

- Case 1 – F.A.W.N.A. (NSW), a not-for-profit organisation located in Wauchope operating on NSW's mid-north coast including MidCoast, Port Macquarie-Hastings and Kempsey, an area of 18,000km².
- Case 2 – Kailas (Kai) Wild, a self-employed qualified arborist in Sydney who drove to Kangaroo Island in South Australia to rescue koalas in trees. Kai attracted mainstream media attention for his efforts.
- Case 3 – Kagaloola Wildlife Shelter, a not-for-profit charity private shelter that is not open to the general public. The organisation rescues sick, injured and orphaned native Australian wildlife '24/7' and rehabilitates and releases back into the wild. Kagaloola services a large area of northeast Victoria within a 150km radius of the shelter which is among the largest wildlife shelters in the state and typically handles 250-350 animals a year.
- Case 4 – LAOKO, operates a 24-hour wildlife rescue service, 365 days of the year, and cares for orphaned and injured native wildlife until they are ready for release back into their natural environment. LAOKO is independently operated and is based in the Snowy Monaro region of NSW.
- Case 5 – The Rescue Collective, a relatively new organisation established specifically to support other wildlife organisations, rescuers and carers with feed, supplies and equipment. The organisation is unique in that they do not handle animals. Based in Brisbane, they service predominantly Queensland and northern NSW as well as Victoria and South Australia.
- Case 6 – Healing Hands Wildlife Care, a not-for-profit wildlife rescue and care organisation established in 2018. Based in Albany, Western Australia, they take in mostly marsupials from roadkill, shooters and from bushfires. They also care for native birds and endangered possums.
- Case 7 – Zoos Victoria, a large not-for-profit zoo-based conservation organisation, dedicated to fighting wildlife extinction. They operate three zoos in the state being the Healesville Sanctuary, Melbourne Zoo and Werribee Open Range Zoo. The zoos attract visitors from all around the world.
- Case 8 – Willow Wood Sanctuary, a native animal sanctuary and a registered charity. They operate from the northern suburbs of Adelaide and their operations include animal rescue, relocation of large kangaroos, lobbying and raising money for the support of smaller groups in South Australia and elsewhere.
- Case 9 – Native Animal Rescue Group NSW (NARG), a small animal rescue group based in the southeast corner of New South Wales. They host a 24-hour, 7 day a week telephone line for members of the public to report animals in need of assistance in the Braidwood area.
- Case 10 – Currumbin Wildlife Hospital, a medium size not-for-profit organisation located on the Gold Coast, Queensland. The hospital provides veterinary responses to injured and sick wildlife, mainly in southeast Queensland and northern NSW. They see more than 12,000 animals a year and the service is offered seven days a week.

CASE 1

F.A.W.N.A. (NSW)

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Wauchope, NSW

YEARS IN OPERATION: 31

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 190 active, 110 supporting

ORGANISATION SIZE: Small

WEBSITE: www.fawna.org.au



President Meredith Ryan and secretary Andrew Ryan

About F.A.W.N.A.

F.A.W.N.A. (NSW) Inc. offers private home-based care from its Wauchope base and operates on NSW's mid-north coast including MidCoast, Port Macquarie-Hastings and Kempsey, an area of 18,000km². The organisation was established in 1989. They receive 65 per cent of their income from grants, fundraising and appeals, 26 per cent from donations, 2 per cent from memberships, around 1.5 per cent from government with the remainder from interest, sales and training fees. It has no paid staff and is entirely run by volunteers.

F.A.W.N.A.'s role in 2019-20 bushfires

F.A.W.N.A. was involved in search and rescue, supplementary feeding, wildlife care, rehabilitation and release which started in mid-November 2019 and remains ongoing in one area. They 'tag on' with the Koala Conservation Australia (Port Macquarie Koala Hospital) search teams and have volunteers with firearm licences. In terms of supplementary feeding, they mounted appeals and set up 42 food stations where members of the public could collect food for their local wildlife. F.A.W.N.A. bought macropod food and wild bird seed. Unfortunately, due to the intensity and coverage of the bushfires, they did not get a lot of wildlife in and the last animal was released in July 2020.



Bushfire approaching at Birdwood

F.A.W.N.A. coordinates a lot of their work themselves however on fire grounds they work with the local controller, either the Forestry Corporation, National Parks & Wildlife Service or the NSW Rural Fire Service with whom they have a very good relationship. Communication and information during the bushfires were achieved using the following technologies: email; mobile phones; two-way radios during searches; websites; apps e.g. 'Fires Near Me'; satellite internet and some social media. They say mobile towers could be improved given communication blackspots in the region.

More trained volunteers needed

F.A.W.N.A. was well resourced in terms of facilities and equipment at the time of the bushfires, and quickly secured financial and medical supplies. They describe their volunteer training as being well prepared and have both written and verbal procedures, however their verbal procedures are much more developed than their written ones.

Despite having a large number of volunteers in the organisation, F.A.W.N.A. says it needs far more active, younger and fit trained members. They say going away on search and rescue every day cannot happen as they also need to take care of rescued wildlife. They need more people who can do the fireground course so they can get onto black ground earlier. 'We have volunteers with bushfire awareness accreditation and a whole lot were due to be retrained on November 11th. The NSW Rural Fire Service cancelled that course and without currency a lot of us couldn't enter the fireground', says President Meredith Ryan.

Wildlife needs to be included in government bushfire response

One of the main issues is not being allowed to access national parks where so many more animals could have been saved. There is also a need for greater funding to better equip their members with PPE, estimated at around \$400.00 per person.

Meredith says the NSW Government has to accept responsibility for wildlife and for it to be included in emergency management response. There needs to be a much greater coordinated effort and that can only happen when wildlife becomes part of the emergency response plan.

NSW Government has to accept responsibility for wildlife to be included in emergency management, it just has to happen. They are working on it now. Wildlife has to be part of the emergency response mechanism, with someone responsible for wildlife response. Meredith Ryan

Organisation impacts of the bushfires and future operations

One major positive for the organisation was the significant increase in donations which they say is setting them up for future wildlife rescue and care efforts. They are implementing an integrated management system and also looking to be equipped as safe as possible. F.A.W.N.A.'s website 'Food4Wildlife and Nest Box Appeal' was extremely successful and they have now partnered with MidCoast Council, Forestry Corporation and Macleay Landcare Network to run installation and monitoring programs for the nest boxes.

Meredith says that with wildlife rehabilitation you've got to work with your head, not your heart. The personal impacts on volunteers has been enormous. One of her members said recently, 'I never want to go through that again' and this raises the importance of counselling services and these being easily available for people.



Squirrel glider nesting box

It is hoped that a greater awareness of how badly wildlife is affected and how many lives have been lost will bring an increased understanding of the wildlife sector and how important it is. Meredith says it has brought a lot of their members closer together.

F.A.W.N.A. would like to thank organisations and individuals that came with help e.g. IFAW who provided burn cream, Animal Rescue Collective who provided other medications and the Foundation for National Parks and Wildlife's Wildlife Heroes program, as well as an enormous number of private donors.

CASE 2

Kailas Wild

Personal profile

NAME: Kailas Wild

LIVES: Sydney, NSW

OCCUPATION: Arborist



Kai Wild

Photo credit: Daniel Berehulak

About Kailas

Kailas (Kai) Wild is a self-employed qualified arborist in Sydney. He is a State Emergency Services volunteer, has studied native animal rehabilitation at TAFE and has experience in catching and rehabilitating wild koalas. Kai says he volunteered to help during the bushfires, along with other individuals, because he cared about the affected wildlife and he had the skills and experience to participate.

Kai's role in 2019-20 bushfires

When Kai heard about the bushfires on Kangaroo Island in January 2020 and the impact on the large koala colony on the island, he drove his ute loaded with tree climbing equipment from Sydney, a 17-hour trip. He would be there for almost two months. He and a second climber went out searching for wildlife to rescue after determining what equipment was required and the structural integrity of fire-affected trees which had a koala in them. They then climbed up the trees to rescue the individual koalas and transported them to the wildlife hospital where they received medical assistance and rehabilitation.

To locate the koalas, they used GPS (Global Positioning System), a satellite-based navigation tool, to search for animals in need and also to monitor emergency fire conditions. The GPS provided them with the coordinates of where they needed to go. They also used other technologies including smartphones to communicate with each other and send imagery. Additionally, they used the satellite mapping provided and drones equipped with thermal imaging to locate the injured animals.



Kai and koala in the trees

Although Kai has not attended any specific training for bushfire events in terms of animal rescue and does not have any written operating procedures or guidelines to work from, he believes he was quite well prepared through his volunteering with the State Emergency Service (SES), WIRES and tree work.

'I think that personally having a lot of significant existing experience in wildlife handling and rescuing and my training and experience as an arborist meant that I could hit the ground running. I had the needed skills already. No-one had to train me. Also, that I was self-employed and I had my own insurance meant I could operate myself', say Kai.

Little initial coordination and limited communication

When Kai arrived at Kangaroo Island, he found very little coordination and that had to be created given there was no visibility of a government body actively overseeing the search and rescue effort. He says rescue groups and individuals eventually worked well together to coordinate things but believes if there had been a central coordinating government agency to provide everything that was needed, this would have changed everything as they would have had the contacts in the area with experience in coordinating emergency responses.

Having that agency ready to go would have meant the activities getting up and running quicker, resulting in a better response time for the animals and reduced stress on the volunteers.

One positive, he says, was that Kangaroo Island Plantation Timbers, which owns the vast majority of plantation timbers on the island, did not prevent them from trying to access and assist koalas on their land.

Communication was not fantastic between the groups. There was no real system for communication. They all used a shared map where they decided who was searching in what area. They had regular communication with each other as individuals and only occasionally caught up as a group.

Everything could have been improved and it is hard to put his finger on single things, says Kai. Despite many shortcomings in coordination, communication and resources, he believes everyone did a really good job in the circumstances but if things had been anticipated at a government level and wildlife organisations had been better resourced and less swamped, things would have worked better and his involvement may have not even been necessary.

I think we did a really good job in the circumstances but if things had been anticipated at a government level and wildlife organisations had been better resourced and less swamped, things would have worked better. Kai Wild

Individual impacts of the bushfires and the future

Kai says that new procedures have come out of the 2019-20 bushfires for him personally and as a rescuer and he would use these in a future bushfire event. Although he brought his own equipment to the rescue effort, it was also left to him to cover his own expenses which he thankfully was able to do through crowdfunding. Having a strong social media presence undoubtedly assisted with this. He has received no government financial support for his efforts.



Kai with a rescued koala joey 'Joey Kai'

The toll of the rescue effort however also has meant Kai has suffered post-traumatic stress from his time rescuing badly injured wildlife and he had to have counselling during and after the event. Although he is now feeling much better, he is left with a reduced capacity for stressful situations. In addition, there is the physical toll and he also suffered a damaged shoulder.

The takeaway message from Kai is that everyone needs to learn from this event and needs to be significantly better prepared than in 2019-20. Kai says we need to learn that once we have the bushfire, it is too late to wish we had the skills and the resources on hand. We need to anticipate future needs better and not just wait until the day it happens.

CASE 3

Kangaloola Wildlife Shelter

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Yackandandah, Victoria

YEARS IN OPERATION: 30

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 3 to 5

ORGANISATION SIZE: Small

WEBSITE: www.kangaloolawildlifeshelter.org.au



Delivery of much needed supplies to Kangaloola

About Kangaloola

Kangaloola Wildlife Shelter Inc. is an incorporated not-for-profit charity private shelter that is not open to the general public. The organisation rescues sick, injured and orphaned native Australian wildlife '24/7' and rehabilitates and releases back into the wild. Kangaloola was founded by Glenda Elliott and services a large area of northeast Victoria within a 150km radius of the shelter which is among the largest wildlife shelters in the state. They typically handle 250-350 animals a year. The organisation receives nearly two-thirds of its income from donations and around one-third from fundraising. Only a very small amount of money is received from government.

Kangaloola's role in 2019-20 bushfires

Kangaloola was involved in wildlife care, rehabilitation and release in northeast Victoria around the Abbeyard, Wodonga, Beechworth and Corryong areas for more than six months. They still have joeys (kangaroo and koala) from the fires and the summer drought conditions.

Volunteer Chris Lehmann says that when you have an orphaned joey, that's feeding every 4 hours, there is so much involved with it. For koalas, you need to ensure that you are feeding tender new growth, in large quantities and fresh. This takes time to find and cultivate. Even just two burned koalas and you have your hands full. They had the most koalas they have ever had.



Rescued black wallaby

Chris says they were not used to dealing with animals who had been burned. For orphaned animals they were completely ready but for burned animals 'we had not dealt

with these since the 2003 fires'. This required very quick learning on the job for most of the volunteers from Glenda who would assign and then assess based on the skills they had already shown. He says the public responded so well to the fires and they received many donations. 'The public support was amazing during fires, the public mirrored our enthusiasm to help', says Chris.

Doing it on their own

Chris says the organisation was quite well resourced for first aid and the basics but usually struggles for veterinary support on demand. They did however use local veterinary resources who supported them on an 'as needed' basis and they have fostered that relationship over time. They understood that 'help is not coming from government or government bodies, it's all through people we have built relationships with over time'.

Kangaloola's volunteer numbers stayed about the same during the bushfires. Enquiries and offers increased dramatically but due to the risk of wind change and fires coming from either side they were not sure if they would have to evacuate at some stage. Chris says they felt too many volunteers might actually hinder more than help and they couldn't spare the time to train up or take on more people as volunteers. Because they didn't know if they would evacuate, they needed as small a team as possible. Although this meant fewer hands, people could dedicate their time to animals and not training. 'There's no time or resources for regular training. You just deal with things as it comes, as needed with verbal operating procedures mostly, with some basic documentation', according to Chris.

We need authorities to consult with us about what their plans are and how to best approach disasters ... they need to trust us. Authorities need to work on building relationships with rescue organisations. Right now, it is appalling. During the bushfires we were told that we cannot rescue or take action like feeding or water stations. Chris Lehmann

Communication and coordination

Most of the information Kangaloola received was from members of the public calling it in. They say they were waiting for someone to make contact and it didn't happen quite as they expected. They were not able to go onto the fire grounds which hampered their efforts and they probably got less communication during this period. Regarding technologies they used, they were limited to watching the fire apps all day and all night and using their mobile phones to talk to each other to know what was going on in their area. In terms of coordination, it was pretty much non-existent. It was all informal, based on networking.



'Smokey' rescued as an orphan from the Leneva fire

Room for improvement by authorities

According to Chris, the main thing that can be improved for future wildlife rescue and care in bushfires, especially major fires, is a focus on a coordinated effort that has wildlife outcomes as its priority. One where organisations like Kangaloola work alongside authorities and government agencies and supported by the necessary veterinary and ICU facilities which are capable and experienced and able to handle the workload.

He says, 'we would love a Wildlife Rescue Co-ordinator for Victoria. It doesn't exist right now but going forward this would make a huge difference. Just an authorised group of volunteers (like SES or CFA) who can determine and send people where they need to go'. If they were better informed, and knew where fires were, how bad, and predicted routes – they could make informed decisions based on this information. However, they were not able to get in and help. Fire ground training is very important and much needed, says Chris.

CASE 4

LAOKO

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Snowy Mountains, NSW

YEARS IN OPERATION: 33

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 37

NUMBER OF MEMBERS: 111

ORGANISATION SIZE: Small

WEBSITE: www.laokosmwr.org



LAOKO members Dee Willoughby-Cotton, LAOKO triage centre manager, Elena Guarracino, with HUHA NZ CEO Carolyn Press-McKenzie, veterinarian Dr Sarah Barry, Jo Raymond, Vicki Harwood and Amy Hooper.

About LAOKO

Looking After Our Kosciuszko Orphans, (LAOKO), Snowy Mountains Wildlife Rescue, operates a 24-hour wildlife rescue service, 365 days of the year, and cares for orphaned and injured native wildlife until they are ready for release back into their natural environment. LAOKO is independently operated and is based in the Snowy Monaro region of NSW. The organisation relies on the generosity of the public for donations, applies for funding and receives a \$2,500 grant from the National Parks and Wildlife Service (NPWS) each year.

LAOKO's role in 2019-20 bushfires

LAOKO's role in the bushfires was multi-faceted and included running search and rescue, a wildlife triage centre, outreach vet operations, rehabilitation sites for animals being treated over a 4-month period and a



VBB Vet nurse Emma Cash

bushfire and drought recovery feeding program. Search and rescue was initially carried out at Cathcart by the New Zealand group HUHA NZ (Helping You Help Animals). Vets Beyond Borders through their AVERT (Australian Veterinary Emergency Response Team) program also supplied darters, vets and vet nurses to assist with search and rescue and the triage centre. Vets for Compassion also assisted in some operations.

HUHA NZ and LAOKO set up a wildlife triage centre in the recreation room of the Cooma Snowy Mountains Tourist Park on January 26. Volunteer vets, vet nurses and the triage centre manager stayed at the caravan park while the triage centre operated over a four-month period. Vets Beyond Borders provided 13 vets and 13 vet nurses for the duration of the triage centre, which operated 24 hours a day, 7 days a week.

Burnt and injured animals were brought to the clinic by the search and rescue teams but also members of the public, police and the Rural Fire Service volunteers. Enclosures were set up at a number of locations to house the burnt animals which required 2 to 3 months treatment and rehabilitation, including bandage changes every three days. These sites were at the caravan park, and on three private properties near Cooma and Numeralla.

Resourcing an issue

While LAOKO had a basic disaster response plan, it lacked the capacity to properly resource it with enough volunteers and co-ordinators needed for all the operations it was involved in: search and rescue; treatment; rehabilitation; the feeding / recovery program; communications; and funding. The problems of noise and human activity around injured wild adult macropods were very difficult to manage and finding a suitable site, close to the fire grounds and accommodation for the veterinary team and volunteers proved very difficult. Access to blood testing, drugs and x-rays was problematic.

Enormous demands were placed on a small number of key LAOKO volunteers during the bushfire response, in addition to their usual LAOKO roles and other community roles, juggling work, family, protecting their properties from the bushfires and firefighting with the Rural Fire Service. LAOKO is grateful for the support of all the volunteer vets and vet nurses, LAOKO volunteers, neighbouring wildlife group Wildcare Queanbeyan and Sydney Wildlife, the Cooma Snowy Mountains Tourist Park, local businesses, and others who helped with the bushfire response. Elena says the local council and correctional service helped at the triage centre, but there was no help from other state or federal government authorities.

There clearly needs to be a better arrangement for search and rescue in national parks. LAOKO search and rescue teams were not permitted in the national parks in the Snowy Mountains, despite the parks being closed to the public. While we understand the dangers of falling trees and other risks on the fire ground, a drone could have been used and the perimeter patrolled. Also, a feeding program would have drawn out injured and starving animals. NPWS needs to either have their own search and rescue teams, or accredit and allow outside teams in. There was no risk to the public from darters or shooters as the parks were closed during and after the bushfires. It was tragic that burnt animals were not rescued or helped, which had huge animal welfare implications. Elena Guarracino

Lack of management and coordination a problem

LAOKO struggled to meet the overwhelming demands of managing and coordinating the many different bushfire response operations. Elena says managing all the demands, offers of help, disaster tourists and



LAOKO triage centre manager, Elena Guarracino with VBB vet Dr Karina Argandona, LAOKO carers Alison and Richard Swain & VBB vet nurse Sue Borg at a koala vet check in pre-release in Numeralla.

intense media interest was a constant challenge, which compromised the operation of the triage centre and rehabilitation of the animals in care at times. She was surprised that NPWS or the peak wildlife group - NSW Wildlife Council (NWC) did not provide leadership or play a more active role in assisting wildlife groups impacted by bushfires.

Future operations

LAOKO has undertaken a debriefing of their bushfire response. Elena says LAOKO now has a better understanding of what is involved in the event of another bushfire and is better prepared. 'We have learnt a lot. It has been a long and exhausting roller-coaster ride. Finding volunteers and people to co-ordinate all the operations required and a suitable site is a still a long way from being addressed and remains a challenge'.

CASE 5

The Rescue Collective

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Brisbane, Queensland

YEARS IN OPERATION: 2.5 years

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 14 executive, 70 total

ORGANISATION SIZE: Small to medium

WEBSITE: www.therescuecollective.org.au



The Rescue Collective 'A-TEAM'

About The Rescue Collective

The Rescue Collective Inc. (TRC) is a relatively new organisation established specifically to support other wildlife organisations, rescuers and carers with feed, supplies and equipment. The organisation is unique in that they do not handle animals. Based in Brisbane, they mainly service Queensland and northern NSW as well as Victoria and South Australia. Their income is almost all from the general public along with some fundraising activities. While they usually operate on a small budget, they raised around \$3 million through donations in conjunction with ARC (Animal Rescue Cooperative) over the 2019-20 bushfire season.

The Rescue Collective's role in 2019-20 bushfires

As a support organisation, TRC's main task was to making sure their client organisations had all the supplies to take in the maximum animals possible and to share kits like chocolates to say thank you, to make sure they knew people were thinking of them. They started at Stanthorpe in August and then on to Peregian (Qld) in September before heading south into NSW to Port Macquarie and Nowra, then to Gippsland and Mallacoota, and finally to Kangaroo Island, South Australia. They are still providing services 12 months on.



TRC founder, Nicole Blums

More specifically, TRC conducted a lot of food drops into the areas decimated by the fires, sending chaff and macropod pellets, water stations and feed. They also provided car loads of supply kits for injured animals, formula to ICUs, medical supplies and a lot of fresh sterile water to feed and wash the animals. They worked with ARC who generally look after the bottom of Australia with TRC looking after the top half, on the east coast.

Significant increase in volunteers

Like many other organisations, TRC saw an increase in the number of people wanting to volunteer to help in any way they could. However, the sudden increase in volunteers caught them by surprise, according to founder and CEO Nicole Blums. 'We went from 4,000 supporters on Facebook to 64,000 ... we were just throwing people in. It was reactive rather than proactive as we hadn't anticipated any growth. We went from a team of four to a team of 70 in a week', she says.

As a result, their staff training was mostly 'on the job' and while their verbal procedures and guidelines were reasonably well developed, their written equivalents were not.

Resources, communication and coordination

TRC was not well resourced in terms of facilities and equipment (e.g. buildings or rooms, vehicles) although they were quite well resourced in medical supplies and had a good relationship with hospitals. There was a constant wage and fuel cost given they were driving interstate.

They received their information through social media, talking to carers recommending other people, watching the news, seeing where the fires were hitting the hardest and using networking and volunteers. They utilised their smartphones and laptops to provide their services.

I could say it was very disjointed, difficult. The whole of Australia was burning with each state/shire/council to themselves. As a whole there is not a good support for wildlife whether from carer or rescue groups. The fire rescue people, their job is to save humans and there's no backup for sanctuaries and wildlife. There needs to be a national, state or council evaluation for those places. Nicole Blums

Key learnings for future bushfire events

Nicole says TRC definitely learnt a lot out of being involved in the 2019-20 bushfires. This includes developing policies and procedures and having things ready to go from a network point of view including having 'drop offs' and setting up 'hotspot hubs' around Queensland to make sure they can react faster and not so far away. They also plan to be more proactive for the rescuers and to be able to supply them with hoses and other things to better protect themselves.

Understanding the supplies and equipment which are most useful is also a key learning. They had a lot of things that were not really applicable; they had an oversupply of some things and under supply of other things. They were all in petrol vehicles whereas they required diesel vehicles.

Nicole says being involved in the bushfires is a 'double-edged sword'. They have definitely seen some things they cannot unsee and that does have an impact on the mental health of volunteers. On the other hand, they also experienced fantastic community help and resilience which carried them through every day.



TRC volunteers in the supply shed

A lot of TRC's volunteers took soup and sandwiches to rescuers and carers who were so time poor, to give them some mental reprieve. The carers were taking it all in, the injured animals and the ones too hard to rehabilitate. One of their goals was to support their mental health. With no government support and without their help they could've lost a lot to mental disorders because it was 'pretty rough', she says.

CASE 6

Healing Hands Wildlife Care

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Albany, Western Australia

YEARS IN OPERATION: 2

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 35

ORGANISATION SIZE: Small

WEBSITE: www.healinghandsgreatsouthernwa.com.au



Healing Hands Wildlife Care members conducting black walks in the Stirling Range National Park

About Healing Hands Wildlife Care

Healing Hands Wildlife Care (Great Southern WA) Inc. is a not-for-profit wildlife rescue and care organisation established in 2018, based in Albany. They take in mostly marsupials from roadkill, shooters and from bushfires. They also care for native birds and endangered possums. The organisation is 50 per cent funded by grants (e.g. wildlife grants such as WIRES) with donations (30%), fundraising (10%) and membership fees (10%) comprising the other half. They are governed by the requirements of the Department of Biodiversity, Conservation and Attractions (DBCA), and the regulations that apply to incorporated associations.

Healing Hands Wildlife Care's role in 2019-20 bushfires

Members of the organisation were involved in various aspects of the wildlife response in the southern part of the state. They initially conducted on-foot black walks in the Stirling Range National Park, then monitored trail cameras at four watering pod stations to check for injured wildlife, and to investigate which species of wildlife were frequenting the area. This continued for 3 to 4 months post the bushfires.



Kangaroo receiving vet care

They were also involved in initial supplementary feeding along the emergency access trails throughout the National Park, although they did not go off the main tracks. Wildlife was cared for in private homes for up to six months. This included daily dressings, medication administration and regular vet checks. Some animals were taken to Perth for specialised treatment. Once recovered and rehabilitated, the wildlife went through a dehumanising process before eventually being released.

Members used smartphones with GPS locations, and laptop computers. They also used a drone and trail cameras for observations of wildlife. Two-way radios were utilised for communication in isolated areas.

Initially under-prepared and under-resourced

Healing Hands Wildlife Care was somewhat under-prepared and under-resourced for such a major fire event, which is not surprising given it is a relatively new organisation. They initially prepared rescue packs, appropriate footwear and high-vis gear, but it was only word of mouth amongst the group when co-ordinating rescues. As for medical supplies, Lauren Johnson initially thought they had what they needed, though it soon became apparent that they were short of some special items e.g. certain types of bandages. However, they were offered specialised treatment from Native ARC in Perth, along with local vets, who also offered vital assistance. Financially, at first, they were not well resourced however they held a fundraiser which was successful.

Likewise, in terms of training and procedures, the organisation found itself on a steep learning curve. Like many other organisations, written procedures were still in the development stage, and education in some areas was lacking, however verbal communication and 'on-the-spot' planning was good. They knew what was needed, how many members were needed, and where they were going.

Co-ordination and communication with higher levels was troublesome at the start, particularly with local agencies. Lauren says they understood the government needed to focus their resources into controlling the bushfires and to ensure areas were safe to enter, however, it was quite some time before agencies eventually brought wildlife burn victims to them, and started to see them as a help. DBCA incident coordinators gave permission to use a drone to search for injured wildlife, stated where and how to access specific areas, and advised on the regulations surrounding food drops and the monitoring of water pods.

We worked with DBCA. Initially, it was like pulling teeth, as communication was difficult as we tried to get our name and contact details across – this was a nightmare. Eventually we got in touch with the person in charge, but communications were delayed, we were not a priority for the Department, but understandably, fighting the fire was at the forefront. Lauren Johnson



Kangaroo in care

What would have helped

Having open communication with DBCA on the ground would definitely have been helpful, says Lauren. Also, having specific training for bushfire assistance of wildlife would have been highly beneficial. Lauren said it was a massive fireground, and they just did not have enough people to service the entire area.

Initially, DBCA advised that the wildlife group could not enter the national park, even after requests for a volunteer firefighter to accompany them. This would have been a huge help and facilitated an ongoing relationship with the Parks and Wildlife Department. Obtaining approval to enter the national park was difficult, and seemed inaccessible to the group. It would have also been helpful to communicate with surrounding property owners, who could have called to inform when injured wildlife came onto their properties.

Future operations

Healing Hands Wildlife Care is preparing more wildlife rescue kits purposed for bushfire events. They are hoping to access training for search and rescue in respect to bushfires, and be better equipped for wildlife burn victims. Their wish is to work with other wildlife groups and government agencies collaboratively in the future. They have been offered help they did not expect from a wide range of sources such as universities and individuals as far as the United States. Lauren says this is very much appreciated.

CASE 7

Zoos Victoria

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Victoria

YEARS IN OPERATION: 160

NUMBER OF STAFF: 700 F/T, 200 P/T

NUMBER OF USUAL VOLUNTEERS: 900

ORGANISATION SIZE: Large (>250,000 members)

WEBSITE: www.zoo.org.au



Zoos Victoria staff

About Zoos Victoria

Zoos Victoria is a not-for-profit zoo-based conservation organisation, dedicated to fighting wildlife extinction. They operate three zoos in the state being the Healesville Sanctuary, Melbourne Zoo and Werribee Open Range Zoo. The zoos attract visitors from all around the world.

Their work includes breeding and recovery programs and to do this they have developed partnerships with local communities, fellow conservationists and like-minded organisations. As a government statutory authority, around 30 per cent of its income comes from government with gate-takings, memberships and donations being the other 70 per cent. Zoos Victoria has a sizeable 900 volunteers, in addition to its large number of paid staff. Successful volunteer candidates are required to complete a training program before commencing the role.

Zoos Victoria's role in 2019-20 bushfires



Zoos Victoria staff

The organisation provided their services primarily around the Mallacoota, Bairnsdale and Corryong areas. They were involved in all facets of the rescue and care effort to varying degrees and based on their strengths and expertise. In terms of emergency vet stations, they provided vets, vet nurses and keepers to triage centres in those three locations and they led the effort on behalf of the Victorian Government.

They also co-led with the State Department of Environment, Land, Water and Planning (DELWP) the operation to evacuate the eastern bristlebirds in front of the fire and cared for the evacuated birds.

Based on some trial work in the Victorian high country, they provided feeders and feed for fire affected mountain pygmy possums in NSW. In terms of wildlife care and rehabilitation they took dozens of injured animals into their care.

Their goal was always to bring these animals back to good health and to get them back to their habitat. They worked in collaboration with many other significant organisations in the rehabilitation of koalas.

Coordinated by DELWP

The organisation primarily worked with DELWP which coordinated the overall fire response to wildlife in Victoria through the state's emergency management structure. They had regular (daily at a minimum) contact with DELWP, and all work was directed via the state centre, e.g. where staff were being sent, what to expect in terms of workload and duties. Craig Whiteford, General Manager of Threatened Species, Wildlife Conservation & Science says communication with DELWP was very open and easy.

The biggest challenge is the number of organisations and their willingness to respect the procedures in place. There will be plans for better coordination as a result and some of those are being addressed now. Craig Whiteford

They also worked with a variety of universities and NGOs, for example Birdlife, Trust for Nature and also interstate organisations like Currumbin Wildlife Sanctuary who assisted with the emergency extraction of the bristlebirds.

What worked well (and what could be improved)

The 2019-20 bushfire was the first time Zoos Victoria had been involved to such a high level in an emergency wildlife response of this scale. Craig says although things worked reasonably well, there is also a lot of reflection about opportunities for improvement too. During the bushfires, a lot of independent operators initiated activities outside the emergency management structure and without any critical incident supervision which raised a number of issues. He says there has not been a universal adherence to the state wide structure and processes and this is something that needs to be discussed to ensure a coordinated approach is taken in future emergencies.



Supplies being loaded into an RAAF plane

Zoos Victoria has since appointed a Wildlife Emergency Welfare Coordinator to help deliver training packages for processes and procedures to better equip personnel for emergency triage assignments. They have also appointed an Emergency Management Coordinator to better prepare the organisation and streamline its emergency processes in accordance with the Victorian Emergency Management Framework.

In addition, Zoos Victoria is enhancing its facilities so they have a greater capability to have animals brought to the zoo for health and welfare or insurance reasons.

All this is possible thanks to the generosity of people and organisations in Australia and around the world who gave to the ZV Bushfire appeal.

CASE 8

Willow Wood Sanctuary

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Penfield Gardens, South Australia

YEARS IN OPERATION: 15

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 3

ORGANISATION SIZE: Small

FACEBOOK: www.facebook.com/willowwoodsanctuary/



Mark Aldridge

About Willow Wood Sanctuary

Willow Wood Sanctuary Inc. is a native animal sanctuary and a registered charity with the ACNC. They operate from the northern suburbs of Adelaide and their operations include animal rescue, relocation of large kangaroos, lobbying and raising money for support of smaller groups in South Australia and elsewhere. The organisation is usually totally self-funded and operates with a very small budget however in the bushfires they set up GoFundMe and Give Easy pages and raised around \$250,000, which was mostly given out to other charities and organisations to help in the rescue and care of animals.

The organisation has no paid staff and usually operates with a small volunteer group of three. However, during the past four or five bushfires they have had up to 100 volunteers involved in mostly delivery of feed, etcetera.

Willow Wood Sanctuary's role in 2019-20 bushfires

The team at Willow Wood Sanctuary was involved in search and rescue, supplementary feeding, establishing emergency medical care and wildlife care as well as rehabilitation services. They used their van and other vans to go in quickly to organise with vet teams to accompany and also to know the locations of vets for major work.



Supplementary feeding of kangaroos

They went to Kangaroo Island with \$70,000 worth of feed and delivered to where the animals were. While there were emergency vet stations there, they also set up some to give the wildlife their best chance of survival. They had areas to release animals into cages and the like with full-time carers. Koalas were released into a pocket of land where they could be monitored. Mark Aldridge says South Australia does not have release programs and it is illegal so they generally pick up an animal, check for injuries, apply medical aid and quick release.

Mark believes Willow Wood Sanctuary is one of the biggest supplementary feeding organisations in South Australia. At their peak they had 55 people with trailers who came and went with supplies after directing them where to deliver it. Mark says this required quite a deal of organisation and logistical know-how. This is done all on private property to keep animals away from the fires. They are still providing supplementary feeding to wildlife. They also send supplies outside of the state including Sydney, Victoria and Queensland by QANTAS.

Service provision on Kangaroo Island

Service provision to affected wildlife on Kangaroo Island was disjointed and there was sometimes conflict between organisations on the best way to provide the services. 'There was a lot of infighting on Kangaroo Island and usually I don't have that problem, generally a lot of people help', says Mark. They had particular issues with National Parks and Wildlife Service and the RSPCA who were averse to 'anyone wanting to get things done'. Particularly upsetting was the decision to euthanise a lot of animals and Mark says there is an

I think there needs to be communication with actual experience and carers and access into areas to alleviate pain and suffering and to rescue animals. Animals left lying there for some time, a week, it's just not acceptable. Mark Aldridge

opportunity in the future to establish better communication with authorities and to have a better understanding of the expertise of smaller organisations in this area. 'Other groups thought they knew what they were doing, ran their own show and didn't talk to us', says Mark.

Mark says at one point the police were going to arrest him for providing medication to kangaroos to alleviate their pain and suffering, which he thought was over the top given he believes he has sufficient experience in this area.

Opportunities for improvement in the future

Mark has identified a number of improvements that would make future wildlife rescue and care efforts more efficient and effective. While he says there is no substitute to 'knocking on doors' in the community to gather information on what is needed, satellite phones would have been a big help given mobile reception was patchy due to the towers in the fire zones being down. Some people had drones which seemed to be useful too.

The other major reform that should happen, according to Mark, is a training scheme to get people accredited to be able to carry out minor medical procedures without a vet and the use of medications to ensure wildlife can be treated more quickly on the spot. They cannot always get enough vets onsite.

Also, to have qualified shooters with them. He says they would be denied access a whole day and it was painful as they knew there were animals and what the environment was like. More compassionate shooters with experience in regard to when the animal can or cannot be saved to alleviate suffering would be useful.

'We are trying to get legislation changed to allow us to do minor medical produces on site, better access into disaster zones and to be able to euthanise animals through PIRSA (Department of Primary Industries and Regions). There's a big push to get that in place', Mark says.



Willow Wood Sanctuary van with supplies

CASE 9

Native Animal Rescue Group NSW

Organisation profile

ORGANISATION TYPE: Not-for-profit

LOCATION: Braidwood, NSW

YEARS IN OPERATION: 14

NUMBER OF STAFF: 0

NUMBER OF USUAL VOLUNTEERS: 20

ORGANISATION SIZE: Small

WEBSITE: www.narg.asn.au



NARG volunteers

About Native Animal Rescue Group NSW Inc.

Native Animal Rescue Group NSW Inc. (NARG) is an animal rescue group based in the southeast corner of New South Wales. They host a 24-hour, 7 day a week telephone line for members of the public to report animals in need of assistance in the Braidwood area. Bill Waterhouse, president, says NARG has a very modest network of experienced carers who look after a large variety of animals including wombats, echidnas, kangaroos, possums, sugar gliders, bats, birds and everything in between.

Until this year, all of NARG's income came from fundraising by volunteers and sales from their 'wombat calendar'. However, during the fires, WIRES (among other charities) gave them \$20,000 to assist with their feeding of wild animals. Government help had been 'zero' except for a grant of \$10,000 from the Foundation for National Parks and Wildlife to purchase feed for animals on the edges of the local firegrounds.



A wombat cared for by NARG

NARG's role in 2019-20 bushfires

NARG became involved in the bushfires at the end of November 2019. Over the next few months, they conducted search and rescue activities where they sent people trained to do 'black walks' with three international teams joining them from Europe and Canada. Frustratingly, they were told not to enter fire grounds and national parks so that limited their efforts.

They also had 180 wildlife feeding stations and had it marked on Google Maps to see where people had been and where to go. NARG's base was a centre of distribution. The racetrack provided a cool room which allowed them to store fruit and vegetables with support from members of the public in town, which was wonderful.

An emergency vet station which operated for a month was established quite late with Vets for Compassion arriving in March.

They did a lot of search and rescue and found seven koalas but no land animals. They used 'Bear the wonder dog' and drones to help find them.

Coordination and Communications

NARG did not experience a huge increase in volunteers, so no extra training was required. They worked with Wildcare Queanbeyan which went modestly well and they bought food for them. In return, they helped organise fire ground training for two NARG members. Another organisation they worked with was LAOKO where they inherited some of their animals and they also donated some panels for them to use which was very good of them, says Bill. ARC provided a shipping container for storage as well as much of the food, fruit and vegetables distributed. Canberra Pet Rescue was also quite helpful in their northern area for feed for the wildlife and stock and pets. The disappointing thing for NARG was that the NPWS or DPI could have coordinated wildlife rescue efforts but were too short staffed to do so, due to government cuts over many years.

It was disappointing that government agencies stayed away, no calls, emails, texts, no contact at all by anybody in government, in parliament, in the public service. Not a single contact except one: Cate Faehrmann of The Greens in Sydney, she brought a load of food in a van for us. Bill Waterhouse

Those government agencies should have been able to put someone in the field with communications and a truck with wireless, Wi-Fi, computer technology, etc. for them to travel to any of the areas. A good communications system could have assisted volunteers, both local and international, and wildlife groups working together could have been greatly improved.

Communications were really restricted to listening to the local radio station so they knew where the fires were. Some of the firefighters found animals for them, as due to the restrictions they were not allowed into some places. Technologies used were the usual things like mobile phones however the failure of the network disrupted their efforts. Bill says they live 100km from the ACT and he is often 'out of zone'. They are not issued with appropriate emergency radios or anything like that. 'Communication was a failure', he says.

The future

Bill says what made their rescue and care efforts work well was 'the passion of the people who were helping, the public support ... the most wonderful, generous human beings'. One example would include people sewing pouches from Europe and locals servicing the feeding stations along the edges of the fireground.



Many hands make light work

Despite the devastation and loss of wildlife, NARG experienced a huge increase in funds from a generous public which means they do not have to worry as much in the near future. They are in the process of rebuilding their caring and release sites and Bill says that although they lost some things, they are lucky they did not lose more facilities or enclosures.

The aim now is to expand their capacity and to develop beginner training for members of the public and then re-establish their specific training. Bill says they could do with assistance from NPWS but acknowledges it is also not well funded, at least not to the level that it should be.

CASE 10

Currumbin Wildlife Hospital

Business profile

BUSINESS TYPE: Not-for-profit

LOCATION: Currumbin, Queensland

YEARS IN OPERATION: 31

NUMBER OF STAFF: 18 (F/T & P/T)

NUMBER OF USUAL VOLUNTEERS: 120 +
25 students

ORGANISATION SIZE: Medium

WEBSITE: www.currumbinwildlifehospital.org.au



Dr. Michael Pyne & Steph Pilgrim

About Currumbin Wildlife Hospital

Currumbin Wildlife Hospital is located on the Gold Coast and provides veterinary responses to injured and sick wildlife, mainly in southeast Queensland and northern NSW. The hospital sees more than 12,000 animals a year and the service is offered seven days a week.

The hospital is funded in a number of ways with approximately half of their budget coming from donations, 25 per cent from fundraising activities, 20 per cent from government and five per cent from merchandise sales. In order to raise enough money to cover their substantial expenses, they have had to be creative in their fundraising activities which include 'Walkways for Wildlife' pavers which are purchased and laid at the hospital, engraved with a special message or business name and logo. They also have corporate partner packages.

Currumbin Wildlife Hospital's role in 2019-20 bushfires



Injured koala being treated in the hospital

The hospital was involved in the bushfire response in two primary ways; as an emergency veterinary station and wildlife care which they provided for longer than six months. They provided a very high level of veterinary care to treated burnt animals through a general anaesthetic and full medical workup, including administering fluids and antibiotics.

Follow-up care services were also provided with ongoing management of wounds, pain and hydration to animals which were subsequently moved to an area for rehabilitation and then later fostered to wildlife cares.

Unlike many other organisations, most of the technologies used by the hospital in the bushfires were medical related including x-ray, ultrasound, incubators and hydration pumps.

They worked with other wildlife organisations including Wildcare Australia, Bats Queensland, Friends of the Koala in Lismore, RSPCA Queensland, Australia Zoo and Tweed Valley Wildlife Care. General manager and senior veterinarian, Dr. Michael Pyne, says the hospital has a collaborative relationship with these organisations and many more. They release animals to carers and if one hospital is full then they transfer animals between them.

No increase in staff, worked harder and longer

Dr. Pyne says they had no increase in staff but their existing staff worked harder and longer during the 2019-20 bushfires. They deal with emergencies all the time and their staff are well trained to deal with, and cope with, this. In a typical day they admit 70 to 80 cases, so it was normal for them to deal with emergencies. 'When you throw something like this at staff they can deal and cope with it, we do it every day', he says.

In terms of facilities, equipment and medical supplies, he says they were only just adequately resourced most of the time however there were times at which they could have had more resources given the increased number of wildlife treated.

On-the-ground coordinator needed

While things worked relatively well at the hospital, Dr. Pyne feels having a paid person to organise the on-the-ground response would be beneficial. A dedicated one point of contact. Ideally, this coordinator would be attached to state government or council.

It would work well to have a paid person to organise on the ground response. A dedicated person as one point of contact on the ground would be helpful. Ideally, this coordinator would be attached to state government or council. Having one person to manage these things would make life easier. Dr. Michael Pyne

Future operation of the hospital

Dr. Pyne says they would like to increase the capacity of the wildlife hospital to triage patients when faced with emergencies such as the bushfires.

There is also a need for further rehabilitation facilities for the long-term patients. These necessary expansions are purely limited by the funding available.



Hospital staff Leslie Vega, Steph Pilgrim, Natasha Graham, and Emma Whitlock

7

Conclusion



The 2019-20 Black Summer bushfires are one of the most devastating bushfire events Australia has experienced in its recorded history. In the not too distant past, Australia has been able to better contain bushfires both due to these being relatively less devastating and also due to human and aerial firefighting resources from the northern hemisphere, particularly from the United States and Canada, being able to be utilised in their 'off season'. However, some overlap in seasons has begun to develop, making this strategy increasingly unsustainable.

This study found:

- The wildlife response to the 2019-20 bushfires was largely conducted by volunteer run organisations, often without on-the-ground coordination, appropriate resourcing or equipment. This led to many wildlife responders relying on donations and their own financial resources, typically without recompense.
- Some volunteers did not have the required training in advance of the 2019-20 bushfire season and were unable to engage in on-the-ground support. A lack of training options, particularly in remote areas, further hampered these efforts.
- Many organisations did not have well developed policies and procedures in place, especially in written form, in advance of the bushfire season. This resulted in less than optimal planning and a disjointed and more inefficient response than might have otherwise been the case.
- Government agencies were often difficult to contact, with participants reporting leaving messages for agency representatives and never hearing back or having to wait days or weeks for a response. This included requesting permission to enter firegrounds to rescue animals.
- Volunteer organisations were unable to enter national park firegrounds without permission from, or being escorted by, rangers. This permission was often not granted or requests were ignored, leading to an increase in wildlife mortality and individuals taking matters into their own hands.
- An overall lack of coordination between organisations and government agencies, and between organisations themselves, meant resources were sometimes inefficiently distributed and communication was often poor.
- Locals were doing their best to support wildlife but sometimes were placing the wrong food at feed stations and engaging with animals in a manner that caused pain or further injury, ultimately placing the animals at further risk.
- The majority of participants relied on mobile phones as their primary source of communication however parts of Australia, especially in rural areas, have poor reception and black spots. Many stated that satellite phones would have been an enormous benefit to their wildlife rescue and care efforts.
- The use of drones, infrared cameras and trail cameras helped to find injured wildlife quickly however only a small number of organisations had access to these important technologies.
- There was a lack of mobile vet clinics, particularly in more remote areas, and this often delayed medical treatment for animals. Some participants found that animals were being euthanased due to a lack of available veterinarians, when the nature of their injuries meant they could have been rehabilitated.
- A shortage of shooters and darters meant organisations sometimes had to rely on the police to euthanase an injured animal. Police should be a last resort given it is unlikely they are provided sufficient training in wildlife euthanasia and have competing priorities.

- The financial resources of organisations and individuals involved in the 2019-20 bushfires was a key factor in how well they were able to respond in the rescue and care of wildlife. The majority of participants considered themselves or their organisations not financially well resourced prior to the Black Summer bushfires. While some organisations are now in a healthy financial position due to large public donations, other organisations have not fared as well.
- The health impacts on volunteers have been mainly psychological which in some cases has been significant, with participants reporting they cry randomly and experience increased stress and anxiety as a result of what they witnessed. However, only limited supported psychological interventions appear to have been offered over those generally available.

The report made 12 recommendations in the key areas of: planning; training; coordination; communication; the availability and use of technologies; search and rescue; animal welfare; safety; financial resourcing; and health impacts on responders.

It is hoped these recommendations will be considered by stakeholders including governments and their agencies, wildlife rescue organisations and individuals to safeguard Australia's wildlife future.

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APPENDIX 1: Study Participant Organisations and Individuals

Queensland

Currumbin Wildlife Hospital
Wildcare Australia Inc.
The Rescue Collective Inc.
Orphan Native Animal Rear and Release Association Inc. (O.N.A.R.R.)
RSPCA Queensland

New South Wales

Hunter Wildlife Rescue (NATF) Inc.
Sydney Metropolitan Wildlife Services Inc (Sydney Wildlife)
Native Animal Rescue Group NSW Inc. (NARG)
Koala Conservation Australia Inc. (Koala Hospital)
Looking After Our Kosciuszko Orphans (LAOKO)
Wombat Care Bundanoon
NSW Wildlife Information Rescue and Education Service Inc. (WIRES)
F.A.W.N.A. (NSW) Inc.
Tree of Compassion Inc.
Lynleigh Greig
Kailas Wild
Robynne Burchell
Sonja Elwood
Tracy Dods
Anonymous

ACT

ACT Wildlife Inc.
Evan Croker

Victoria

Kangaloola Wildlife Shelter Inc.
Zoos Victoria
Barbara Hansen

South Australia

Minton Farm, Animal Rescue Centre
Kangaroo Island Wildlife Park / Kangaroo Island Koala and Wildlife Rescue Centre
Willow Wood Sanctuary Inc.
RSPCA South Australia

Western Australia

Maroo Wildlife Refuge Inc.
Native Animal Rescue Inc.
Healing Hands Wildlife Care (Great Southern WA) Inc.
Wildlife Care WA Inc.
Roy's Retreat Inc.
Pauline Pearce

Humane Society International (Aust.)

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