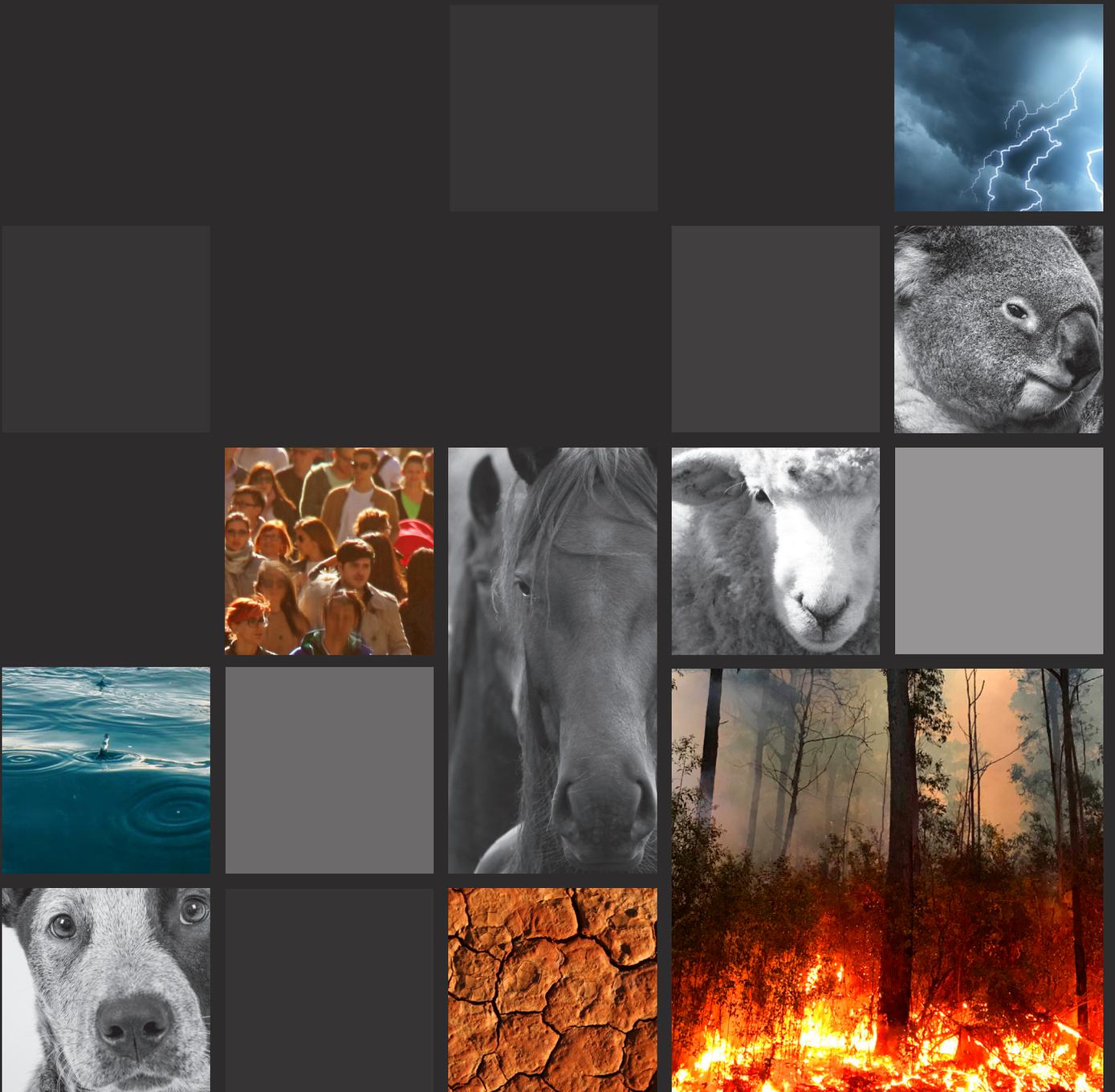




ANIMAL WELFARE IN A CHANGING CLIMATE

RSPCA Animal Welfare Seminar 2022
16-17 February (online)



PROGRAM

WEDNESDAY 16 FEBRUARY

(All times are in AEDT)

12:30–12:45pm	Welcome to day one of the Seminar
	<p>Chair: Dr Suzanne Fowler, Chief Science Officer, RSPCA Australia</p> <p>Official welcome: Richard Mussell, Chief Executive Officer, RSPCA Australia</p>
Facing disasters together	
12:45–1:35pm Keynote	<p>Setting the scene. Bad things happen: Impact of wildfires on wildlife</p> <p><u>Professor Chris Dickman</u>, Professor in Terrestrial Ecology, School of Life and Environmental Sciences, The University of Sydney</p>
1:35–2:10pm	<p>Examining the role of national planning principles for animals in Australian disaster response</p> <p><u>Dr Joshua Trigg</u>, Research Fellow, College of Medicine and Public Health, Flinders University</p>
2:10–2:25pm	Break
2:25–3:05pm	<p>Is connection the missing link to multiagency collaboration in animal emergency management?</p> <p><u>Dr Hayley Squance</u>, Massey University Joint Centre for Disaster Research, New Zealand</p>
3:05–3:50pm	<p>Animal Ready Communities (ARCs) – Community-based best practice in animal emergency management</p> <p><u>Dr Mel Taylor</u>, Honorary Associate Professor, Macquarie University</p>
3:50–4:00pm	End of day one

THURSDAY 17 FEBRUARY

(All times are in AEDT)

12:30–12:40pm	Welcome to day two of the Seminar
	<p>Chair: Dr Suzanne Fowler, Chief Science Officer, RSPCA Australia</p>
Looking to the future	
12:40–1:15pm	<p>Setting the scene. Toward a more complete assessment of climate impacts</p> <p><u>Professor Katie McShane</u>, Department of Philosophy, Colorado State University</p>
1:15–2:00pm Keynote	<p>Australia's changing climate: Impacts on animals and ecosystems</p> <p><u>Professor Lesley Hughes</u>, Distinguished Professor of Biology and Pro Vice-Chancellor research at Macquarie University and Councillor with the Climate Council of Australia</p>
2:00–2:15pm	Break
2:15–2:55pm	<p>One Health: Wildlife health and welfare – a human responsibility</p> <p><u>Professor Anna Meredith</u>, Head, Melbourne Veterinary School, The University of Melbourne</p>
2:55–3:30pm	<p>Australian rangelands under climate change: Threats and adaptation options</p> <p><u>Dr Cécile Godde</u>, Food Systems Research Scientist, CSIRO Agriculture and Food</p>
We're all in this together	
3:30–4:10pm	<p>NGO Panel</p> <p><u>Australian Conservation Foundation</u> <u>Farmers for Climate Action</u> <u>Vets for Climate Action</u> <u>WWF-Australia</u> <u>Zoos Victoria</u></p>
4:10–4:15pm	Close of Seminar

SPEAKERS



PROFESSOR CHRIS DICKMAN

Professor in Terrestrial Ecology, School of Life and Environmental Sciences, The University of Sydney

Chris Dickman has long been fascinated by patterns in biological diversity and in the factors that affect it. His work focuses mostly on mammals and other vertebrates, and encompasses wide-ranging projects in applied conservation and management such as the impacts of bushfires and introduced predators on native fauna. His estimates of the 3 billion animals killed in the mega-fires in 2019–2020 were widely reported. Chris is a Professor in Ecology at the University of Sydney and also a Fellow of the Australian Academy of Science and the Royal Zoological Society of NSW. He has supervised around 150 honours, masters and PhD students over the last 30 years and has published over 500 research papers and several books. He is the recipient of several national and international awards, including New South Wales Plant and Animal Scientist of the Year in 2010 and the Clarke Medal for distinguished work in zoology in 2015.

ABSTRACT

Bad things happen: Impacts of wildfires on wildlife

Fire has long been a part of the Australian environment and remains a potent force in shaping the adaptations of species, the dynamics of populations, and the structure of ecological communities. However, climate change is upon us. Fire seasons are longer, wet vegetation types that do not usually burn are now at risk, and fire intensity and severity are currently greater than in the recent past. A particularly widespread event occurred in the forest and woodland regions of Australia over the summer of 2019–2020. Termed the 'Black Summer' bushfires, remotely sensed data indicate that 11.5 million hectares of forest were burned, as well as more than six million hectares of grassland and savanna.

The unprecedented geographical scale of the Black Summer fires, as well as the severity and speed of fire spread, led to widespread concern about the ecological damage that was caused. Estimates suggest that almost three billion vertebrates were affected by the fires, with some animals killed directly by fire but many more dying later due to resource shortages, starvation and predation. Fires were experienced in part of the geographical ranges of 832 vertebrate species and 37 threatened ecological communities, with some entities feared to be at risk of extinction. Huge numbers of injured and displaced animals were brought into care, overwhelming capacity and leading to burn-out and stress among carers.

Field assessments of ecological recovery have been slowed by COVID-19 restrictions, and also by a diminution in ecological monitoring that occurred before the last fire season. Still, the bush is now regenerating and populations of many species are showing strong signs of recovery. In this talk, I propose a series of steps, including establishment of a Biodiversity Bureau, to help achieve ecological recovery and mitigate the effects of future mega-fires for both people and wildlife.



DR JOSHUA TRIGG

Research Fellow, College of Medicine and Public Health,
Flinders University

Joshua Trigg is a public health researcher with experience in social, health, and risk psychology. His work spans public health and safety, lifestyle health risk factors, theoretical and practical understandings of human-animal bonds and interactions, as well as motivators and inhibitors of emergency risk-taking behaviour and quality of life. His research in the emergency management space has involved a range of projects with emergency decision making and animal welfare implications, relating to bushfire and flood, in collaboration with non-profit and government organisations. Joshua's research publications can be accessed at Research Gate, and he is based at Flinders University, South Australia.

ABSTRACT

Examining the role of national planning principles for animals in Australian disaster response

Introduction. Animals' place in disaster planning was tested during Australia's 2019-20 bushfire season, with the unprecedented loss of animal life emphasising connections between human and animal welfare. The National Planning Principles for Animals in Disasters are a publicly accessible tool designed to guide effective animal integration into disaster response arrangements. In this project, Australian organisations with a stake in animal emergency management were surveyed and interviewed to examine awareness and implementation of these Principles in disaster planning.

Methodology. A national survey was distributed in emergency and animal management networks in late 2020. Analyses described differences in implementation of the Principles in disaster planning, relating to owned animals, across organisation types and animal categories. Respondent descriptions of implementing the Principles were categorised for further analysis, with perspectives on the Principles qualitatively analysed.

Main Results. Stakeholders (n=137) worked in local government, emergency services, and animal-focused non-profits, interacted with animal owners (74.5%), and had oversight for animal management (78.1%), and understood emergency animal arrangements for their state or territory (73.0%). For stakeholders aware of the Principles (58.1%), half had implemented them (53.8%). Implemented Principles for creating plans most often related to welfare benefits to humans and animals from animal inclusion in plans, and to identifying responsibilities for animals. Principles relating to need for animal welfare consultation, acknowledging local government expertise, and use of accessible language were less often implemented. Disaster planning arrangements indicated a need to focus on prevention and recovery arrangements for animal welfare. Plans supported Principles for animal management logistical challenges in disaster response. However less implementation of formalised animal welfare support arrangements and plan testing requirements was seen.

Implications. Emergency animal management stakeholders see value in applying the Principles, although there is a need to further promote and monitor implementation of specific Principles in animal welfare planning arrangements.



DR HAYLEY SQUANCE

Massey University Joint Centre for Disaster Research,
New Zealand

Hayley Squance is a veterinary technologist, emergency management practitioner, researcher and educator. Hayley identified a gap in veterinary response capacity for emergency situations. She developed and led Australasia's first veterinary emergency response team hosted by Massey University Vet School. She was deployed to various events including to the red zone during the 2011 Christchurch earthquakes, floods in Thailand and individual animal rescues.

Hayley's research interest in animal welfare emergency management evolved into a PhD in Emergency Management, development of an animal welfare emergency management course at Massey University and various international assignments. Hayley spent time in North Slope Borough in North Alaska to assist with addressing animal welfare gaps in emergency management arrangements in remote communities. She has delivered animal welfare emergency management workshops internationally, is a renowned international speaker and expert in animal welfare emergency management.

Hayley was the national animal welfare emergency management coordinator for 5 years for the Ministry for Primary Industries in New Zealand and coordinated animal welfare to over 50 disaster events including earthquakes, floods, wildfires, terrorist attack, and the COVID-19 pandemic. She is the only non-veterinarian member of the OIE ad hoc working group for veterinary emergencies. Hayley spent time at the OIE headquarters in Paris and led the development of core competencies for veterinary services in emergencies for agrocrime and agroterrorism in conjunction with INTERPOL. She is also a member of the OIE Collaborating Centre Network for Veterinary Emergencies (EmVetNet) COVID-19 Thematic Platform on Animal Welfare working group.

ABSTRACT

Is connection the missing link to multiagency collaboration in animal emergency management?

Growing interest and activity in animal emergency management (AEM) across a range of organisations suggests that AEM is increasingly recognised as a vital component of emergency management systems. This is especially so in countries where agriculture has a significant contribution to Gross Domestic Product (GDP) and where the protection of animals in emergencies is linked to food security and the protection of livelihoods, biodiversity, human wellbeing and communities.

As animals become included in emergency management frameworks, various government agencies and non-government organisations play important mandated and voluntary roles in supporting animal owners before, during and after disasters. However, frequently post-incident reports and reflections on disasters, such as the 2009 Victorian Black Saturday bushfires, 2016 Kaikoura earthquake, 2017 Port Hill fires and the recent 2019-20 NSW bush fire, express concerns over the lack of collaboration between agencies including those who experience the human-animal interface.

This presentation will explore AEM multiagency collaboration challenges and enhancements through action research based on three case studies: wildfire and flood events. The research findings highlight how professional silos and a failure to understand the importance of human-animal-environment (h-a-e) interdependencies has resulted in AEM being largely disconnected from emergency management overall. Additionally, we will discuss how the adoption of a One Welfare (OW) approach will support a shift from a focus on individual emergency management domains towards a transdisciplinary approach that acknowledges the interdependencies of the h-a-e interface, a range of knowledge systems (including indigenous knowledge) and, ultimately, optimises outcomes for AEM.



DR MEL TAYLOR

Honorary Associate Professor, Macquarie University

Mel Taylor is an applied psychologist. She is an Honorary Associate Professor at Macquarie University and partner in Enduring Advantage Consulting. Mel's research involves studying people and their behaviour in the context of risk. Her research focusses on factors that influence protective behaviours, such as emergency preparedness in natural hazard contexts and biosecurity practices in emergency animal diseases and zoonoses. In recent years, she has worked mostly in the areas of natural hazard emergencies and disasters, as a lead researcher with the Bushfire and Natural Hazards CRC where she has led two large research projects. One on best practice approaches to the management of animals in disasters and another on people's behaviour around floodwater and flood risk communication. Recently, she has been working with the Australian Institute for Disaster Resilience to scope a national handbook on animal welfare in disasters. Mel is a long-standing advocate for 'One Health' and 'One Welfare', and has worked on a number of multidisciplinary research projects with veterinarians and government policy makers.

ABSTRACT

Animal Ready Communities (ARCs) Community-based best practice in animal emergency management

Communities are increasingly being placed at the centre of emergency management doctrine. Phrases referring to 'community values' and 'protecting what the community values' are increasingly common and are driving new approaches in emergency management and community recovery.

Australian household pet ownership is high and we are regarded as an animal-loving nation; typically considering our pets part of our families, and valuing them as such. A recent study, commissioned by Animal Medicines Australia, estimates that since 2019 (during the COVID19 pandemic) pet ownership levels have increased from 61 to 69 per cent of households, with the numbers of cats and dogs alone estimated to be in excess of 11 million. Therefore, it is evident that, in emergency situations, individuals need to accept primary responsibility for their animals, as this would clearly be beyond the capacity of emergency services and other entities to manage, such as local government, NGOs, or agricultural departments. The emergency management system is, however, complex and can be tough to navigate without support.

This presentation will review the role of communities in animal emergency management, identifying challenges and providing case studies of two approaches currently being used in New South Wales to engage communities in emergency preparedness for their animals. The concept of 'Animal Ready Communities' will be outlined and the two case studies, one in the Blue Mountains primarily focussed on small household pets, and the other in the Hawkesbury- Nepean Valley focussed on horses and larger animals, will be discussed.



PROFESSOR KATIE MCSHANE

Department of Philosophy, Colorado State University

Katie McShane is a professor in the Philosophy Department at Colorado State University. She received her B.A. from Northwestern University and her Ph.D. from the University of Michigan. Her research interests are primarily in environmental ethics and ethical theory. She has written articles on ecosystem health, biodiversity, loss and damage in climate change, the moral importance of animal welfare, meaning in animal lives, and the nature of awe and respect for the nonhuman world. Her work has been published in journals such as *Philosophical Studies*, *Environmental Ethics*, *Environmental Values*, and *Ethics & the Environment*.

ABSTRACT

Setting the scene. Toward a more complete assessment of climate impacts.

Climate change poses a great threat to welfare of animals, but the literature on climate impacts almost entirely ignores animal welfare. Using the IPCC's 5th Assessment Report as a case study, I consider what the assessments of climate impacts do contain: careful studies of the projected effects of climate change on economies, ecosystem services, biodiversity, and human welfare. None of these, however, is a good proxy for animal welfare. Whereas discussions of climate impacts on human welfare detail the various ways that quality of life for humans will be affected, in the case of animals all that is considered is whether they will exist, in what numbers, and with what degree of diversity. I argue that there is no justification for ignoring impacts on the quality of life for animals in this way.



ABSTRACT

Australia's changing climate: Impacts on animals and ecosystems

The Earth's climate is changing at a rate and scale almost unprecedented in its geological history. As the planet warms, the frequency and severity of extreme climate events, such as heatwaves, bushfires, floods and drought, are increasing. While all natural and human sectors are being affected, our wildlife and dependent animals are particularly vulnerable. The talk will briefly summarise global and Australian climate trends and outline the direct and indirect impacts on wildlife, livestock and pets.

PROFESSOR LESLEY HUGHES

Distinguished Professor of Biology and
Pro Vice-Chancellor research at Macquarie University
and Councillor with the Climate Council of Australia

Lesley Hughes is Distinguished Professor of Biology and Pro Vice-Chancellor (Research Integrity & Development) at Macquarie University. Her principal research interest has been the impacts of climate change on species and ecosystems and the implications for conservation. She is a former Lead Author in the IPCC's 4th and 5th Assessment Report, a former federal Climate Commissioner and now a Councillor with the Climate Council of Australia. She is also a member of the Wentworth Group of Concerned Scientists, a Director of WWF-Australia and climate change science advisor for Pollination.



PROFESSOR ANNA MEREDITH

Head, Melbourne Veterinary School,
The University of Melbourne

Anna Meredith is Professor of Zoological and Conservation Medicine and joined the University of Melbourne in 2018 as Head of Melbourne Veterinary School. Her interests and expertise lie at the interface between animal, human and ecosystem health (One Health), the conservation of biodiversity, and wildlife population health.

Professor Meredith graduated from the University of Oxford (MA Physiological Sciences), University of Cambridge (Bachelor of Medical Sciences and Bachelor of Veterinary Medicine) and University of Edinburgh (PhD), where she worked at the Royal (Dick) School of Veterinary Studies until moving to Australia. She is a Royal College of Veterinary Surgeons (RCVS) Recognised Specialist in Zoological Medicine and a European College of Zoological Medicine (ECZM) Specialist in Wildlife Population Health. Anna has nearly 30 years of veterinary clinical, teaching and research experience in wild animal health and welfare, over 100 journal publications and has authored or edited over 30 veterinary books and book chapters. She was appointed as a Fellow of the RCVS for meritorious contributions to clinical practice and serves on their Science Advisory Panel, and is a Board member of Zoos Victoria and Wildlife Health Australia. In 2019, Anna was awarded an OBE in recognition of her services to animal welfare and the veterinary profession.

ABSTRACT

One Health: Wildlife health and welfare – a human responsibility

One Health recognises the interconnections between animal and human health and the health of the environment on which we all depend. Since the 1990s, One Health is an increasingly recognised and unifying concept and approach for a wide range of governmental and non-governmental organisations concerned with animal and human health, wildlife conservation and environmental sustainability. This is most recently evidenced and emphasised by the 2021 global announcement of a newly formed unified operational definition of One Health from the WHO, FAO, OIE and UNEP.

Human activities create an ever-increasing interface between humans and wildlife and are the drivers of global wildlife population declines and extinctions, which are increasing at an alarming and exponential rate. The recent COVID19 pandemic has further highlighted the role of wildlife health in a One Health approach, and zoonotic disease spillover from wildlife reservoirs accounts for the majority of emerging infectious diseases in humans and livestock. Wildlife are not only potential sources of disease, but also victims of disease, and sentinels for disease and ecosystem health. The major threats to wildlife are the result of many other drivers alongside pathogens and parasites, including habitat loss, globalisation of trade, land-use pressure, and climate change. Thus, healthy wildlife populations are of vital importance for human and animal health and welfare, and for conservation of biodiversity and wildlife management.

Whilst there is much focus on wildlife populations, the impacts of human activities, including disease, also have major effects on individual wild animal welfare. This presentation will provide a high-level overview from a One Health perspective, to demonstrate that wildlife health and welfare is not simply a human responsibility, but an absolute human necessity for our own health and the sustainability of the planet.



DR CÉCILE GODDE

Food Systems Research Scientist, CSIRO Agriculture and Food

Cécile Godde is a Food Systems Research Scientist working at CSIRO in the Food Systems and Global Change Group. She is passionate about the challenges in relation to agriculture, food security and global change, at farm level as well as in regional and global contexts. In particular, she uses analytical and modelling approaches to better understand the role of grass-fed livestock production within the planet's natural resource capacity and in the context of other sustainability objectives.

ABSTRACT

Northern Australian rangelands under climate change: threats and adaptation strategies

Northern Australia can be broadly defined as the land area north of the tropic of Capricorn. In that region, beef production covers about 60% of the land and plays a key socio-economic role. The beef sector is also entrusted with the responsibilities to preserve the environment and ensure animal welfare.

Climate change represents a major threat for the northern Australian beef industry. It can adversely affect the sector at a range of levels, from farm production to processing, storage, transportation, retailing and human consumption, with implications for rangeland ecosystems, animal welfare, human labour, the economy, and livelihoods.

In this seminar, we explore what the future climate may look like in northern Australia, the potential climate impacts along the supply chain and the adaptation options that might be required in the face of climate change and future inherent uncertainties.

NGO PANEL



**AUSTRALIAN
CONSERVATION
FOUNDATION**

KELLY O'SHANASSY

Chief Executive Officer
Australian Conservation Foundation

Kelly O'Shanassy is the CEO of the Australian Conservation Foundation and a sustainability leader, experienced in executive roles in business, government and the community sector. In her career, Kelly has led the charge to boost clean energy, save water and protect Australia's rivers, reefs, forests and wildlife. She believes strongly in building people power and unusual partnerships to advocate for a better future. When not advocating for nature, you can find her kayaking along Australia's rivers.

AUSTRALIAN CONSERVATION FOUNDATION

The Australian Conservation Foundation (ACF) is Australia's national environment organisation. We are 700,000 people who speak out for the air we breathe, the water we drink, and the places and wildlife we love.

A pollution and extinction crisis threatens our living world. Climate damage, leading to catastrophic floods and bushfires, blistering heatwaves and severe drought, coupled with habitat destruction, are our biggest challenges. The impacts on wildlife and livestock are rapidly escalating.

To solve this we need big, systemic change. At ACF we are focusing on four big goals. We are working to:

- Solve the climate crisis,
- Stand up for nature,
- Redesign our economy, and
- Fix our democracy

Our lives and livelihoods depend on thriving nature. We need strong national nature protection laws to stop Australia's worsening extinction crisis, and support nature as a climate solution. ACF is working together to revitalise our democracy, fix the systems that are destroying life, and create a world that works for everyone and every living thing.

Our change strategy:

- Change the story – we're disrupting the old story that destruction is inevitable. We are seeding new stories of hope, courage and connection to inspire people to act.
- Build people power – We are building a wave of people who care and act into powerful, organised communities.
- Fix the system – We're taking on the big structural challenges – laws, institutions and decisions – so we can keep enjoying life in Australia.



CHARLIE PRELL

Chair
Farmers for Climate Action

Charlie Prell is a sheep farmer from Crookwell, an hour north of Canberra in the Southern Tablelands of NSW. He is one of four farmers under the Crookwell 2 windfarm. He has had 20 years of experience in renewables, focusing on wind farms. He is a strong public supporter of the benefits wind and solar farms can bring to small regional communities. He is a passionate advocate for an inclusive “benefit sharing” model for renewable energy developments, where the whole community benefits from the infrastructure, not just the few who host it. He worked as the NSW Regional Organiser for the Australian Wind Alliance (now the RE-Alliance) for five years from July 2014 until August 2019.

Charlie was part of the working group and then the steering committee that formed “Farmers for Climate Action”. He was previously co-chair and deputy chair of Farmers for Climate Action. He has been Chair of Farmers for Climate Action since October 2020.

Charlie is passionate about the health and well-being of small regional communities and in assisting these communities to meet the challenge of climate change. He also promotes the opportunities that meeting these challenges can bring to individual farmers and the small regional communities where they live.

FARMERS FOR CLIMATE ACTION

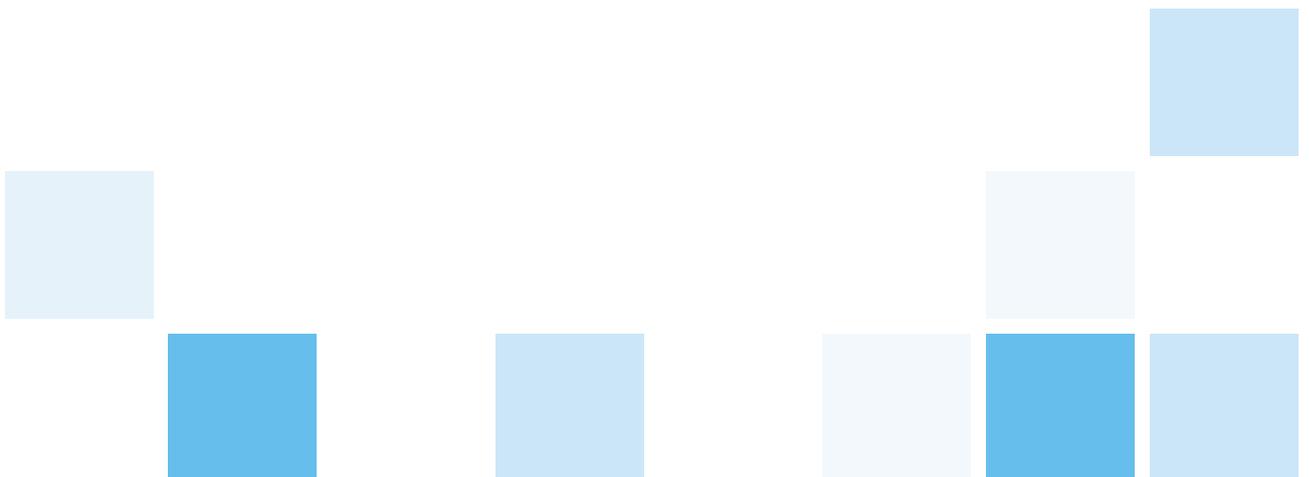
Farmers for Climate Action is a movement of farmers, agricultural leaders and rural Australians working to influence Australia to adopt strong climate policies by growing the number of farmers, farming communities and elected representatives championing ambitious action.

We connect farmers with each other and support them to advocate for and enact climate solutions both on and off farm.

We are independent, non-profit and non-partisan. We represent almost 7,000 farmers across Australia, and our supporter base includes over 35,000 Australians committed to climate action for agriculture.

Our members and our Board can be found across the country from the tropical north of Queensland to the cooler climes of Tasmania, and from the wine growing regions of Western Australia right across to the sheep and cropping farms of New South Wales. Our staff members are spread across Australia, working remotely and from our office hubs.

We work closely with people and organisations across the agricultural and climate sectors to find opportunities to tackle the challenge of climate change and ensure rural communities’ interests are represented.





A **Voice**
for all Animals

DR JEANNET KESSELS

Chair
Veterinarians for Climate Action

Dr Jeannet Kessels is a veterinary surgeon with 31 years' experience in mixed and small animal clinical practice. She feels privileged to inspire, engage and empower the veterinary profession towards meaningful climate action and has personally shifted from caring for individual pets and their families to driving national action for the animals we all love and need. The ongoing support of the extraordinary staff at Greater Springfield Veterinary group allows Jeannet to direct substantial focus, time and energy to Vets for Climate Action.

VETERINARIANS FOR CLIMATE ACTION

Veterinarians for Climate Action (VfCA), a Voice for All Animals, is harnessing the extraordinary energy within the veterinary profession to bring about real policy change.

We are devastated that in 2019/2020 alone, three billion of our precious Australian wildlife were burnt alive or displaced in the megafires. We have witnessed livestock suffer in decades-long droughts ravaging rural communities. Six hundred thousand cattle perished in North Qld floods and the Barrier Reef is experiencing devastating bleaching events.

As trusted professionals, veterinarians work day in and day out with animals, caring passionately about their welfare and the people who love and need them.

VfCA communicates the urgency of the climate crisis and its impacts on pets, wildlife and livestock. We call for action to reduce climate pollution, preserve our environment, and protect our animals. We collaborate with fellow scientists, calling on governments to regulate and reduce carbon pollution and stop the heating of our shared world.

Our strategy is three-fold:

- Reduce emissions within our own profession through our world-first veterinary sustainability program, Climate Smart.
- Advocate for an urgent focus on climate action.
- Raise public awareness of the impacts of climate change on the animals we love and need.

We work closely with a learned and experienced cohort of 28 former Chief Veterinary Officers and are honoured that Nobel Laureate and veterinarian, Professor Peter Doherty, has chosen to be our Patron.

VfCA is growing rapidly with two full time staff, nine teams of smart and focussed volunteers and over 1000 supporters.

On this, the hinge of history, the veterinary profession is taking collective responsibility for the deep challenges facing both animals and humanity for generations to come.



DR PRISHANI VENGETAS

Wildlife Recovery Project Coordinator
WWF-Australia

Dr Prishani Vengetas is the Wildlife Recovery Project Coordinator and Veterinarian at WWF-Australia. She has 10 years of experience in animal health and field experience with local communities and wildlife organisations in South-east Asia to plan and implement a sustainable behavioural enrichment program for pangolins rescued from wildlife trafficking in Vietnam and promote the conservation of native rainforest and wildlife in Borneo. Prishani has also provided emergency wildlife bushfire response in America, Borneo and Australia conducting search and rescue and assisting in the setup of rapid response emergency triage centers. Prishani is currently leading wildlife treatment and care under the Koalas Forever and Bushfire Recovery programs at WWF.

WWF-AUSTRALIA

WWF-Australia has been working to create a world where people live in harmony with nature since 1978. WWF's mission is to stop the degradation of the earth's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

Environmental extremes including the 2019-20 Australian Bushfires which impacted nearly 3 billion native animals are symptoms of broader conservation issues such as climate and land use changes which undermine the health and resilience of wildlife, humans, and the environment.

WWF-Australia has launched Regenerate Australia, our vision and program of action to ensure our environment, people and wildlife thrive. It is the largest and most innovative wildlife and landscape regeneration program in Australia's history. This ambitious program aims to protect threatened species in the face of climate change and trial innovative solutions to alleviate threats at landscape scale.

Through this program, WWF-Australia is investing over \$1M in innovative climate adaptation projects in collaboration with leading researchers, environmental organisations, and community and Traditional Owner groups. These projects will involve implementing practical actions and trialling innovative approaches to managing and mitigating the impacts of climate change, while strengthening the resilience of individuals, populations, and communities.

With commitment and courage, we can bounce back from the bushfires, we can secure and recover our wildlife, stabilise our climate and ensure communities are more resilient. In doing so, we'll continue to listen to communities, act on the advice of scientists and Indigenous partners, and learn and adapt from experience.



DR SARAH FRITH

Veterinarian
Zoos Victoria

Dr Sarah Frith graduated from Melbourne University in 2007. She started her career as a small animal veterinarian before going on to do a Masters in Conservation Medicine at Murdoch University. She has been working as a zoo and wildlife veterinarian for the past 13 years, most recently at Melbourne Zoo. She has been responsible for the veterinary care of a wide range of exotic and native zoo residents as well as sick and injured Australian wildlife including marine mammals and birds via Melbourne Zoo's Marine Response Unit. She has particular interest in wildlife emergency response including bushfire triage and flying fox heat stress events. Sarah has very recently started in a Wildlife Outreach role at Zoos Victoria which aims to increase the welfare of Victorian wildlife by increasing engagement with veterinarians, veterinary nurses, wildlife carers and key stakeholders in the wildlife welfare space.

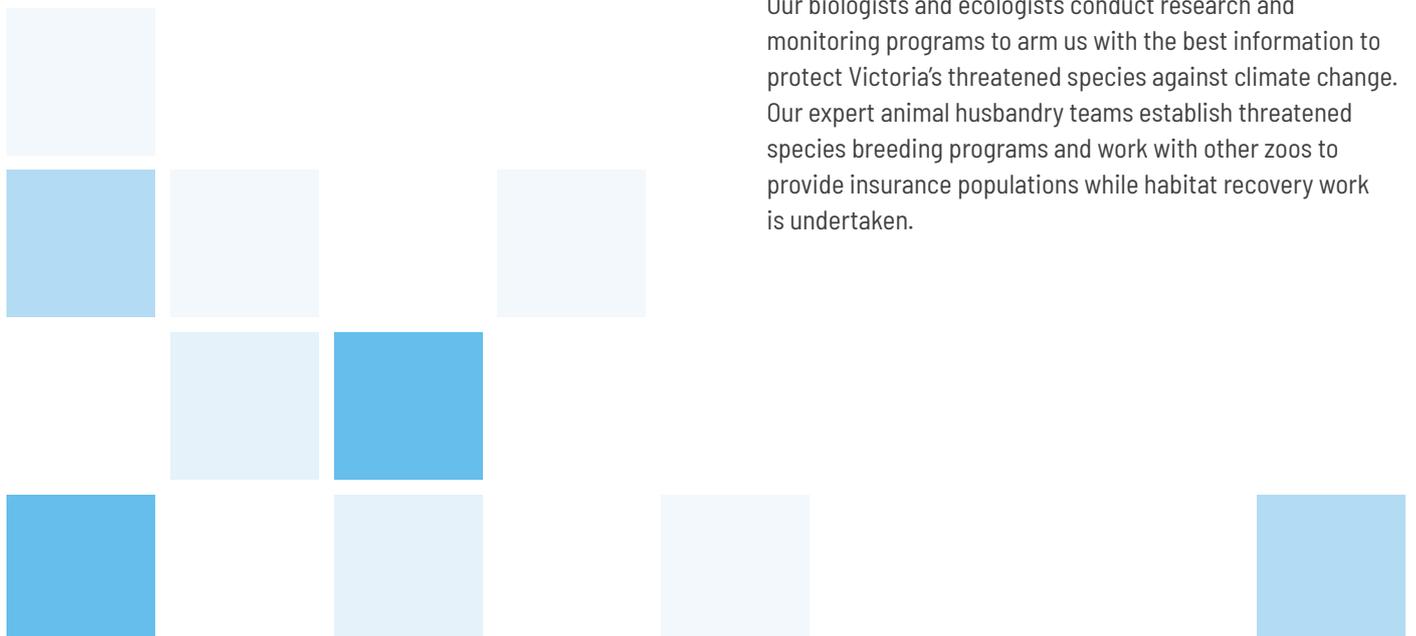
ZOOS VICTORIA

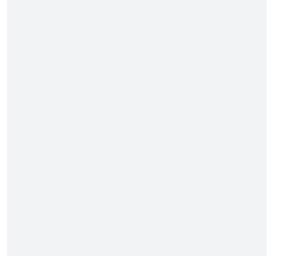
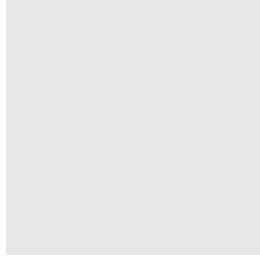
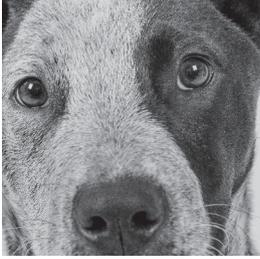
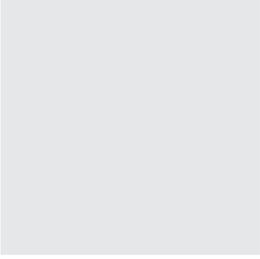
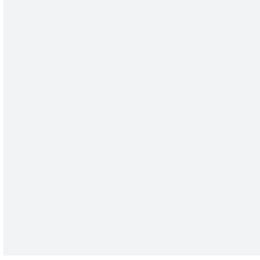
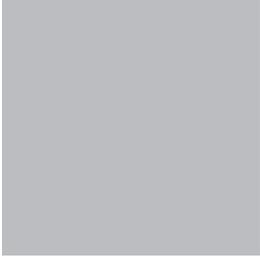
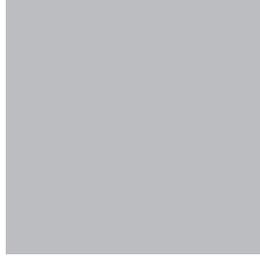
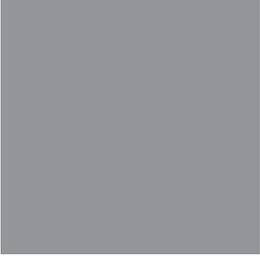
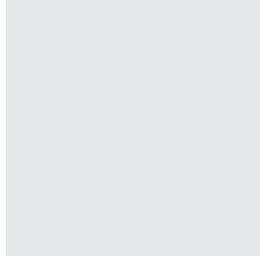
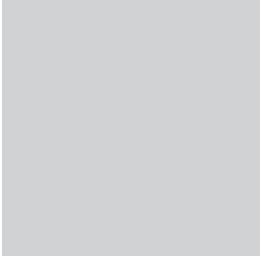
Climate change is threatening the ongoing existence of the diverse wildlife that shares our planet. Zoos Victoria is a not-for-profit conservation organisation committed to fighting wildlife extinction. We have identified 27 priority native wildlife species that need immediate help and we raise awareness and support of our wildlife conservation and science work to visitors at Melbourne Zoo, Werribee Open Range Zoo and Healesville Sanctuary.

As a zoo-based conservation organisation it is our duty and purpose to urgently tackle the devastating threats from climate change, through our own actions, those of our community and in our vast and varied work for wildlife.

Our wildlife emergency work means our veterinarians and veterinary nurses witness first-hand the impact our volatile climate has on wildlife welfare. Our work sees us on the frontline providing first aid to wildlife in bushfire triage sites and continued care to those animals requiring on-going hospitalisation following a fire event. We also provide urgent veterinary support for species susceptible to adverse weather events, such as Grey-headed flying foxes vulnerable to heat stress and marine species via our Marine Response Unit.

Outside immediate response, our scientists are providing expert species knowledge as part of essential bushfire recovery work for our threatened species recovery programs. Our biologists and ecologists conduct research and monitoring programs to arm us with the best information to protect Victoria's threatened species against climate change. Our expert animal husbandry teams establish threatened species breeding programs and work with other zoos to provide insurance populations while habitat recovery work is undertaken.





Australian Government



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RSPCA AUSTRALIA

PO Box 265
Deakin West ACT 2600
02 6282 8300
rspca@rspca.org.au
rspca.org.au