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# WWF-AUSTRALIA BUSHFIRE RESPONSE

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## March 2020 update

Australia is experiencing a harrowing and unprecedented fire season. Thirty-four human lives, more than 2700 homes, Australian landscape exceeding 12 million hectares (29.6 million acres) and more than 1.25 billion native animals have been lost to these 'mega-blazes'.

Consecutive years of record-breaking summers and severe drought, have, as climate scientists warned, fueled these fires. The early onset of the fire season coupled with the increasing frequency of fire outbreaks and increased fire, intensity and scale.

This nation-wide catastrophe requires national leadership and coordination for wildlife response. WWF-Australia has stepped in to lead efforts across the nation with the proportionate magnitude required.



## WWF-Australia's Response Framework

WWF-Australia has established a national response framework. Mobilizing the funds raised through our Bushfire Appeal, we have been working rapidly to boost Australia's capacity to respond to wildlife in need, protect what we have not yet lost and work to restore our beautiful nation.

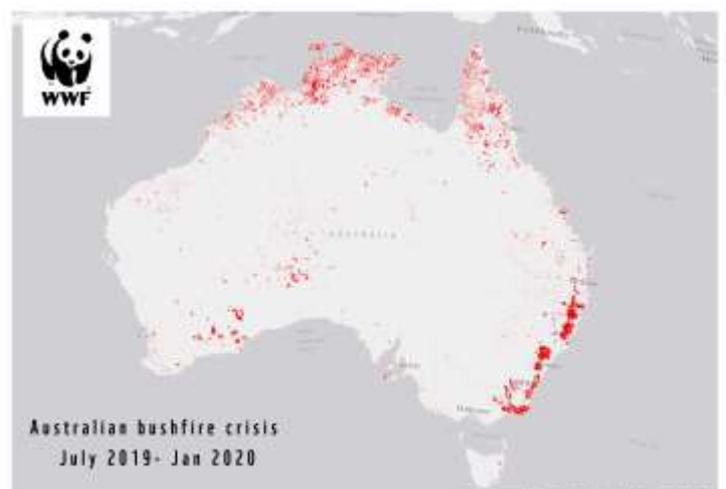
The framework guides WWF-Australia's national response to the Australian Bushfire Crisis. Examples listed within each frame provide an insight into interventions mobilized early within the fire season. Each need captured within this framework required urgent and generous resourcing that enabled WWF to respond, with the urgency and at the scale required.

Climate Scientists warn that fires will continue to increase in frequency and intensity as our planet warms. This knowledge, along with the recognition that Australia is already facing a species extinction crisis and millions of hectares of habitat have been destroyed with fires worsening across several Australian landscapes, makes interventions that protect what remains more critical than ever before. The challenge ahead is to ensure that protection interventions benefit both people and wildlife, for the ecological toll of these fires will only worsen if we fail to invest in protection interventions that do bring about a New Deal for people and wildlife.

**Respond:** As fires burn, respond to the needs of fire-impacted wildlife and species with urgency.

**Protect:** Protect what remains and deploy interventions that mitigate the processes that will increase the frequency and severity of both current and future fires.

**Restore:** Restore Australia's scorched landscapes drawing upon leading climate adaptation science so that our flora and fauna can flourish, and Australians can rely on vital ecosystem services long into the future.





## Wave 1: Wildlife Response

The bushfires are having a devastating impact on Australian wildlife. Professor Chris Dickman from the University of Sydney has released a conservative estimate stating that more than 1 billion animals have died in these fires to date. The number of injured animals has overwhelmed the capacity of Australian wildlife care organisations, requiring a herculean response that will continue for months after the fires have burnt out.

Environmental scientists harbor deep concerns that these fires may have triggered extinction events for a range of nationally threatened flora and fauna. In addition to these concerns, species with limited mobility, that are poorly adapted to fire, or already have small and isolated populations are likely to require intensive long-term recovery support if they are to avoid extinction.

WWF is partnering with reputable wildlife response organisation's across each fire affected State and Territory to enhance Australia's capacity to allow a swift and effective wildlife response.

We are also working with Government. Providing both reactive and proactive advice to Australia's Federal and State Government's calling for swift and effective interventions across wildlife response, nature protection and restoration. Providing all State and Territory fire affected Governments with advice via the development of a 10-step wildlife response plan informed by leading scientists within the first week of 2020. Issuing Wildlife Response Advice to the Federal Government collaborating with the Places You Love Alliance. And actively contributing to the Prime Ministers' Bushfire Response Roundtable and other relevant advisory groups.

Although the fire in Western Australia was now six weeks ago, Native Animal Rescue (NAR), are still finding injured animals during regular visits to replenish feeding and water stations for wildlife that haven't had a source of food or moisture for weeks. Animals that are rescued are taken in by carers who work to nurse them back to health.

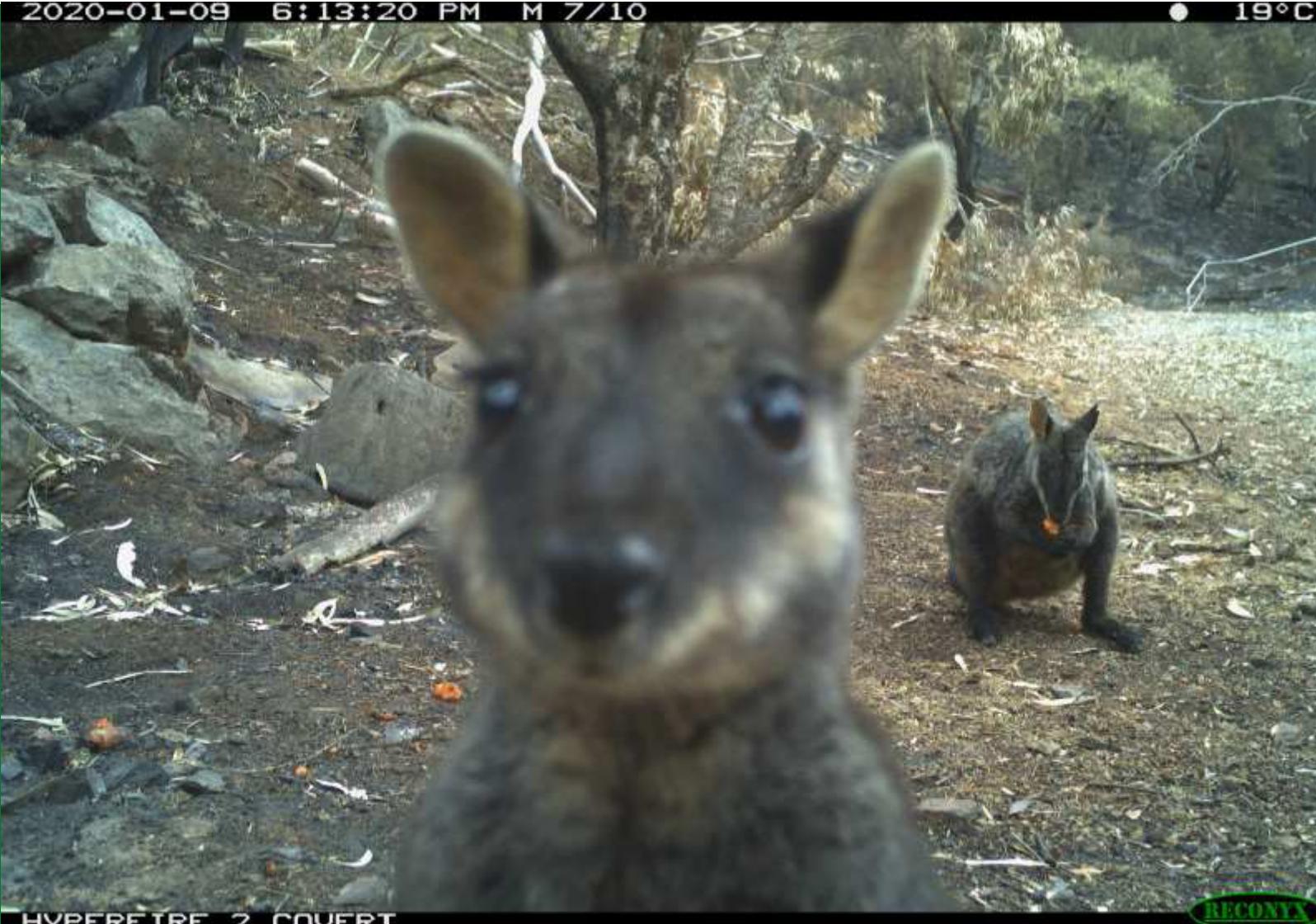
## List of confirmed wildlife response partners and projects

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1. Zoos Victoria Australia Wildlife Centre (Vic)
2. Kangaroo Island Glossy Black Cockatoo Rescue/Recovery (SA)
3. Kangaroo Island Dunnart Rescue/Recovery (SA)
4. FAWNA (WA)
5. Native Animal Rescue (WA)
6. RSPCA (Qld)
7. Bonorong Wildlife Sanctuary (Tas)
8. Biolink (North Coast Fire Affected Area NSW)
9. South-East Bioregion \*Ecological Australia, ELA (Qld-NSW)
10. Koala Detection Dogs \*OWAD (NSW)
11. Affected Wildlife Report (National)
12. NAILSMA Aboriginal Fire Practice (NT)
13. NSW Wildlife Care (NSW)
14. All-Australian Veterinary Association
15. Economic Impact Report – People and Wildlife
16. Rewilding – Booderee Jervis Bay quoll (NSW/National)
17. Emergency Food Drop NSW Govt/Woolworths (NSW)
18. Emergency Food Drop Activation –WWF Coordination
19. Friends of the Koala Hospital Lismore (NSW)
20. Drone Douglas Thron – Koala Detection (NSW)
21. Spicers Retreat – water deployment for koalas
22. BZE Hunter Valley Transition Research Partnership
23. Philip Island Nature Park – Koala Holding areas (Vic)
24. Great Eastern Ranges Partnership ^Phase 1
25. Total Environment Centre – Protection of MacArthur Koala pop.
26. Jali Local Aboriginal Land Council
27. NT Climate Justice Energy Transition Workshop ^TO engagement
28. ACT Wildlife Incorporated – Wildlife Response (bats)
29. Qld QUT Antechinus rapid assessment (Qld)
30. Birdlife Australia ^Superb Lyrebird (NSW)
31. Ecotourism Australia
32. Biolink – koala EPBC assessment

“Less than 5% of our funding comes from the government. Our ability to partner with organisations like WWF-Australia and to raise money through the community is what keeps us going and gives us the ability to help the 80 animals a day that we're receiving. Without WWF and the support of the community, we wouldn't be able to do the work we do, and that would be a real tragedy for the animals.”

CEO of RSPCA Queensland Darren Maier



## Wildlife response partner case studies

### ACT Wildlife

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WWF-Australia has dispersed funds to enable ACT Wildlife:

- Purchase specialist foods and other consumables such as fruit to feed the animals in their care.
  - In the last year ACT Wildlife spent about \$11,350 on food and expect that could possibly triple with the extra animals coming into care and the price rise expected due to drought
- Purchase food and volunteer travel costs for wombats that ACT Wildlife have released back into areas that have now been affected by fires
  - There was is no food left for surviving wombats have survived so volunteers were travelling great distances to do food drops on a regular basis and to monitor the animals.
- Conduct training for additional volunteers and continue to grow the capacity of the organisation to respond to future fires
- Purchase facilities for housing animals, such as humidicribs and aviaries



## Jali Local Aboriginal Council

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WWF-Australia is collaborating with the Jali Local Aboriginal Council on species detection in the Ngunya Jargoona Indigenous Protected Area (IPA). In November 2019, more than 85% of the IPA was devastated by wildfire. The Ngunya Jargoona IPA is the traditional country of people belonging to the Bundjalung language group and the people of the Nyangbal clan group.

The Jali lands are the largest and most significant wildlife corridors in the Lower Richmond Valley and cover over 1,114 hectares. Together with the adjoining Blackwall Range and Tuckean Swamp, the Jali lands provide a critical refuge for biodiversity in an otherwise fragmented landscape.

WWF-Australia is supporting the Jali Local Aboriginal Council to purchase equipment for rangers. This equipment will enable the rangers to survey and assess the impact of the fires and to detect wildlife and record the presence of threatened species, including the koala and the long-nose potoroo, across the Ngunya Jargoona (IPA).



## Coporate partner case studies

In addition to deploying funds and partnering with wildlife response partners we have formed corporate partnerships where we work together to empower people to support bushfire recovery of all scales. As well as building on existing partnership to deliver innovative on-ground response to the needs of fire-impacted wildlife and species with urgency.

It is truly incredible to see corporate partners and people from all over Australia and the world banding together to protect our wildlife and wild places.

### TOMRA

The TOMRA has partnered with WWF-Australia to raise funds for our Wildlife and Nature Recovery Fund. 'Cans for Koalas' recycling appeal aims to raise \$250,000 by the end of May.

Every eligible drink bottle or can donated through a TOMRA Reverse Vending Machine will raise 10 cents to help our wildlife recover from the bushfires. Including supporting veterinarians who are providing care and medical treatment to injured wildlife across Australia, providing food and water to animals in bushfire impacted regions and the restoration of habitats through tree planting projects.

**DONATION STATION**

**Cans for Koalas**

Every bottle or can donated raises 10c to help our Australian wildlife recover from the bushfires.

To know updated visit [cansfor koalas.org.au](http://cansfor koalas.org.au)

**TOMRA** **WWF** **Australian Wildlife and Nature Recovery Fund**



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## Woolworths

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Woolworths, Foodbank and WWF-Australia have partnered to support the NSW Government's aerial food drop program.

Woolworths and Foodbank are donating carrots and sweet potatoes, and WWF-Australia is funding more helicopter flights, to deliver emergency food to the endangered Brush-tailed rock-wallaby while other food sources become available. Tens of thousands more sweet potatoes and carrots have been flown by helicopter into NSW national parks.





Action	Partner	Outcome
Support the evacuation of threatened and fire sensitive species from fire lines into safe care.	Biolink	Surveying burnt forests in the north coast fire-affected area. Rapid searches by trained ecologists locate koala scats at the base of koala feed trees. If koala scats are found, searches of the trees are made to try to locate koalas.
Fund establishment of wildlife triage field sites in situ to assist with wildlife response.	Zoos Victoria Australian Wildlife Health Centre	Assisted in the evacuation of priority threatened species and supporting the ongoing care of koalas from the Mallacoota fire. Funds also supported the set-up of wildlife triage sites directly within fire-affected areas.
Enable leading wildlife hospitals to mobilise veterinary care.	Bonorong Wildlife Sanctuary	Provided urgent medical care and rehabilitation to injured animals through the dedicated wildlife clinic.
Respond to the wildlife care and recovery needs of species on the brink of extinction.	Kangaroo Island Land for Wildlife	Lead the response to save the remaining endangered Kangaroo Island dunnarts.
	Nature Foundation SA	Provided urgent support for the endangered Kangaroo Island glossy black cockatoo.
Replacing valuable research equipment aiding the recovery of species, install new camera traps to allow for immediate surveys and support local landowners to assist recovery efforts.	Friends of the Koala, Lismore	Funded supplies, including an ultrasound machine, and built koala housing to expand the capacity of the in-house clinic so that more koalas can be cared for on-site.
Provide operational resourcing for the hundreds of vets generously tending to bushfire-affected wildlife.	TOMRA	All proceeds received through the partnership with TOMRA will support veterinarians provide care and medical treatment to injured wildlife across Australia, providing food and water to animals in bushfire impacted regions and the restoration of habitats through tree planting projects.

Action	Partner	Outcome
Support emergency food drops for critical populations of wildlife at risk of perishing within fire affected areas.	Wildcare Queanbeyan	Provided food drops and veterinarian medical supplies in Tallaganda National Park, NSW, home of eastern grey kangaroos, swamp wallabies, red-necked wallabies, possums and gliders, including the threatened greater glider.
	Native Animal Rescue	Provided back feeding and water supplies for fire-affected kangaroos and wallabies, over the next 12 months, as well as feeding and rehabilitation for injured black cockatoos and orphaned wildlife.
	FAWNA Inc	Supported the provision of much-needed emergency supplies required for animals found during black walks, as well as back-feeding and watering that is going to be desperately needed to help the surviving animals.
Commission detection dogs to help establish Koala survival rates across NSW North Coast Fire Affected Koala Habitat and QLD's South-East Bioregion.	OWAD Environment	<p>Koala detection dogs were deployed to burnt forests around Cunningham's Gap, west of Brisbane, to rapidly locate koalas which may be at risk from starvation, dehydration and disease from infected burns.</p> <p>Over five days of field searches, a visual was obtained on 11 individuals, including 10 live koalas and one dead koala (hit by a vehicle on the highway).</p> <p>There is evidence of at least another 10 survivors in the area.</p>
Deploy innovative technology such as infra-red thermal imaging drone surveys to identify surviving animals such as Koala's remaining in fire affected areas.	US drone operator and cinematographer Douglas Thron	Douglas Thron is testing his hi-tech drone-mounted infrared camera to rapidly search burnt forests to locate koalas and other mammals that may require rescuing.

Action	Partner	Outcome
Work with leading Scientists to deploy rapid mammal, bird and reptile surveys within priority affected areas.	Ecological Australia	Undertaking rapid assessments of the impacts of the bushfires on reptiles, birds, mammals and potentially frogs across four areas in the north coast fire-affected area.
Partner with the University of Sydney to verify national wildlife death calculation estimates.	Professor Chris Dickman and Dr Lily van Eeden from the University of Sydney	Released a conservative estimate stating that more than 1.25 billion animals have died in these fires to date.
Notify the Australian community of cumulative wildlife death counts and draw international attention and support.	Media statistics	1.5k editorial mentions. WWF was mentioned in 86 total countries to date
Produce an end of fire season report to enable our tragic loss of wildlife to remain front of mind as post fire responses are developed.	National Animal Fatalities Report (see appendix 1)	Dr van Eeden will lead drafting of a manuscript for publication in a peer reviewed science journal, with WWF staff as co-authors.  Expert comment upon draft taxa density datasets and fire mortality rates would be sought from ecologists via the Ecological Society of Australia.  This would enable review and verification of the datasets and assumptions.  The draft report would be received by WWF in the last week of March.



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## Wave 2: Restoration and Protection | Future-Proofing

Timeframe: 2020 Post Fires

Climate Scientists warn that fires will continue to increase in frequency and intensity as our planet warms. This knowledge, along with the recognition that Australia is already facing a species extinction crisis and millions of hectares of habitat have been destroyed with fires worsening across a number of Australian landscapes, makes interventions that protect what remains more critical than ever before. The challenge ahead is to ensure that protection interventions benefit both people and wildlife, for the ecological toll of these fires will only worsen if we fail to invest in protection interventions that do bring about a New Deal for people and wildlife.

On top of rampant tree-clearing, Australia's bushfire emergency is destroying homes and habitats, killing livestock, erasing livelihoods and releasing enormous volumes of carbon dioxide. Some forest communities have been largely destroyed. The mental health impacts, trauma and financial losses will be felt for many years. Too many of our species and ecosystems have been catastrophically affected by these fires. Fortunately, trees are a natural climate solution to global heating, provide habitat for many species and can add value to community wellbeing.



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Australia is the 16<sup>th</sup> largest emitter globally and one of the largest exporters of coal and gas in the world. Our emissions have increased in the past five years without a credible Federal policy to reduce them. Nine of Australia's top ten warmest year's on record have occurred since 2005, and we are one of the most vulnerable developed countries to the impacts of climate change.

Climate Scientists have provided warnings for many years urging stronger action. Yet Australia continues to contribute so little to the global solution. This must change. The Australian Climate Council, Australia's authoritative voice on leading climate science, have unequivocally stated that climate change has worsened the current bushfire crisis. We cannot have endured this loss as a nation for nothing.

These fires must be the point at which Australia demonstrates global leadership. Burning coal is the number one cause of climate damage. If Australia is to contribute to a global solution, we must transition our economy towards renewable energy and share our lessons of inaction internationally.

Indigenous rangers across Australia have advocated for more effective management of country for many years, though rarely has this advice been heeded at scale. Whilst numbers of indigenous rangers have slowly risen in recent years, the number of indigenous men and women with secure employment working on country remains too low. Once corrected, Australia can and will benefit from the solutions that Traditional Owners can provide.

The status quo is not working for both people and nature. It is time to collaborate across all sectors of society to co-design a compelling vision for the regeneration of Australia.



#### Aim 1: Habitat

Protect critical unburnt habitat through sharing advice informed by science to key stakeholders as well as accelerating WWF-Australia's Towards 2 Billion Trees 10- Point Plan.

#### Aim 2: Nature Laws

Harness the once in a decade opportunity presented in 2020 through the Review of the Australian Nature Laws (EPBC Review) to ensure a strong case is made through the review process to enhance the effectiveness of Australian law in protecting our natural assets, in light of the increased risks of early, more frequent and more severe fires.

#### Aim 3: Species Recovery and Adaptation

Climate Change is worsening Australia's species Extinction Crisis. WWF will draw on innovative solutions to identify key species across high risk landscapes within each Australian bioregion to identify and trial solutions that will better enable recovery, community preparedness, species adaptation and increased species resilience to warming.

#### Aim 4: Restoration

Work to restore what we have lost with urgency and mobilise Australia behind WWF-Australia's vision Towards Two Billion Trees.



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#### Aim 5: Climate

Draw on leading Climate Science to assist Australia in mobilising critical and urgent interventions to help stabilise our climate and support WWF International Climate initiatives. The primary focus will be on helping Australia seize the opportunity to become a world leading exporter of renewable energy by 2030.

#### Aim 6: International links

Ensure strong links into WWF International Climate Campaigns

#### Aim 7: Indigenous Ranger Capacity

Enhance the number of indigenous rangers on country, bolster the capacity of indigenous ranger groups where feasible prioritizing high risk and fire affected landscapes, and harness opportunities to draw on traditional owner knowledge to assist with fire preparedness.

#### Aim 8: Innovation

We will identify and support innovative regenerative solutions from around the world to be implemented in priority Australian bioregions. In the process we will position Australia as the testbed for impactful, innovative and regenerative solutions capable of replication and scaling globally.

## Appendices - reports

### Appendix 1: National Animal Fatalities Report

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WWF-Australia is commissioning a report estimating the loss of wildlife nationally from the bushfires in 2019/20. Drawing upon updated data together with published papers and expert knowledge regarding faunal density data and mortality rates, this report will build on the 2007 report developed by respected ecologists (Johnson, C., Cogger, H., Dickman, C. and Ford, H. 2007. Impacts of Landclearing; The Impacts of Approved Clearing of Native Vegetation on Australian Wildlife in New South Wales. WWF-Australia Report, WWF-Australia, Sydney.)

WWF's public statements that an estimated 1.25 billion animals were likely to die from the bushfires. This figure was extrapolated from the estimates of wildlife mortality from land clearing – not bushfires – in NSW.

The updated National Animal Fatalities Report will:

- expand the number of taxa included beyond those in the 2007 report, to also include bats, frogs, perhaps fish, and potentially insects and arthropods
- review the scientific literature and grey reports to determine whether assumptions of fauna mortality from land clearing can be directly applied to bushfires, or require revision; and
- develop the first national assessment of the loss of wildlife from bushfires.

A new report from the World Wide Fund for Nature has estimated the cost of carbon dioxide emissions caused by the bushfire crisis – and it could run to billions.

While economic assessments so far have focused on buildings, infrastructure, farm output, retail sales and tourism bookings, “Burnt Assets: The 2019-2020 Australian Bushfires” is the first to estimate the impacts on natural wealth.

WWF acknowledges that the bushfire season is not yet over. This assessment is from September 2019 to January 2020, when over 12 million hectares burned across Australia.

It’s estimated the bushfires released between 400 and 700 million tonnes of carbon dioxide.

That’s comparable to Australia’s total emissions of 530 million tonnes in the 12 months to June 2019.

How much of that carbon gets soaked up again as forests regrow will depend on the recovery of trees and other vegetation over the next decade.

Many ecologists fear that, due to the severity of the fires and climate change, as well as ongoing forest conversion, large areas may be permanently altered with different species and fewer trees.

Recovery will not be 100% and affected areas won’t store the same amount of carbon as previously.

“Nature is incredibly resilient. Given a chance, burnt forests will grow back and absorb most of carbon released by bushfires. But there is likely to be a gap which represents a significant loss of Australia’s natural capital,” said report author, WWF-Australia economist Dr Josh Bishop, who calculated costs based on two scenarios.

“In the first scenario, assuming total emissions of 700 million tonnes of carbon dioxide and only 90% natural regrowth by 2030, there would be a net loss of 70 million tonnes.

“Replacing these natural carbon stocks would cost between A\$1.05 and \$2.8 billion, depending on the price paid for carbon offsets,” he said.

Dr Bishop said the lost carbon stocks could be replaced through the purchase of offsets overseas, which are generally more expensive, or by funding Australian projects to reduce greenhouse gas emissions or store carbon in biomass.

Examples are early dry season burning of savannahs (which prevent large-scale late-season fires which release more carbon dioxide), revegetation of forests and farmland, or methane capture from landfill.

In the other scenario, assuming lower emissions of 400 million tonnes of carbon dioxide and 95% regrowth of burnt forest by 2030, it would still cost between A\$300 and \$800 million to replace the final 5% of carbon stocks lost to bushfires.

In either situation, Dr Bishop said it would be a wise investment because the benefits of avoiding climate change damages would comfortably exceed the cost of restoring or replacing the forest carbon lost to bushfires.

Assuming 95% forest regrowth, the global benefit of restoring or replacing lost carbon stocks would be A\$1.54 billion while in the 90% regrowth scenario it would be up to A\$5.39 billion, an excellent return on investment.

Carbon dioxide emissions from bushfires are considered a natural disturbance event under the rules of the UN Climate Convention, so technically Australia is not obliged to account or make up for these emissions.

“However, climate change does not care about technicalities and the impacts are felt no matter where the carbon emissions come from,” Dr Bishop said.

To-date the combined total of Federal and State funding commitments for bushfire recovery, plus private charitable donations, amounts to around A\$3.2 billion, of which only 3%, or about A\$100 million, has been allocated to protect and restore wildlife and habitat.

“Based on our analysis, WWF believes that governments at all levels should increase their budgets for emissions reduction by at least A\$300 million – simply based on carbon losses from bushfires,” Dr Bishop said.

“Efforts to assist species recovery and habitat restoration are another story and will require additional significant outlays.”

He said the government could achieve emissions reductions by funding programs to assist the natural regeneration of forests. This includes removing weeds that smother tree seedlings and keeping livestock out of burned areas, so they don't trample or graze on young trees.

Dr Bishop added that forests provide many ecosystem services and his report only examined the loss of carbon storage.

Other environmental impacts are more difficult to value but are no less important socially and economically.

These include streams, lakes and reservoirs polluted by runoff from burned areas, the diminished appeal of affected areas for tourism and recreational uses, loss or damage to sites of historical and cultural significance, reduced amenity value of rural residential properties, loss of natural pollination and pest control services, loss of non-wood forest products (e.g. honey), human health impacts from smoke, and numbers of wildlife killed or injured.

Dr Bishop acknowledged that no economic assessment can fully capture the cost of the bushfires, in terms of lives and livelihoods lost, physical and emotional injury, and the pain and suffering of millions of animals.

But he said factoring in the loss of natural wealth provided by forests was a crucial part of assessing bushfire damages, and essential for identifying investment priorities for restoration. This important environmental economic accounting is still to be done.

“An important and beloved part of Australia has suffered significant damage from the fires. A strong commitment to protecting our remaining forests and helping burned areas regenerate will restore our natural capital and do so much more,” Dr Bishop said.



# THANK YOU

WWF's mission is to build a world in which people live in harmony with nature. This is our moment. We are privileged to be given a gift by our amazing supporters to seize this moment to innovate – to both rethink and create a new future for Australia.

# WWF advancing environmental protection in Australia since 1978

## TREE-CLEARING

WWF-Australia campaigns alongside farmers, industry and local and state governments to help see excessive tree-clearing in Queensland and New South Wales significantly reduced.

## FOOD

WWF works towards having sustainable food more widely available than ever before while striving for deeper reductions in food wastage.



## SPECIES

WWF focuses on bringing some of our most-loved Aussie wildlife species, including the black-flanked rock-wallaby, green turtle, quokka, and koala, back from the brink of extinction.

## LOW-CARBON FUTURE

We promote innovative, low-carbon and zero carbon solutions to achieve a more climate-resilient future before 2050.

## PROTECT OUR MARINE LIFE

We work with partners, governments, Indigenous communities and corporate partners to protect the marine migratory pathways of our turtles, whales, penguins and other marine species.



### Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

[wwf.org.au](http://wwf.org.au)

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