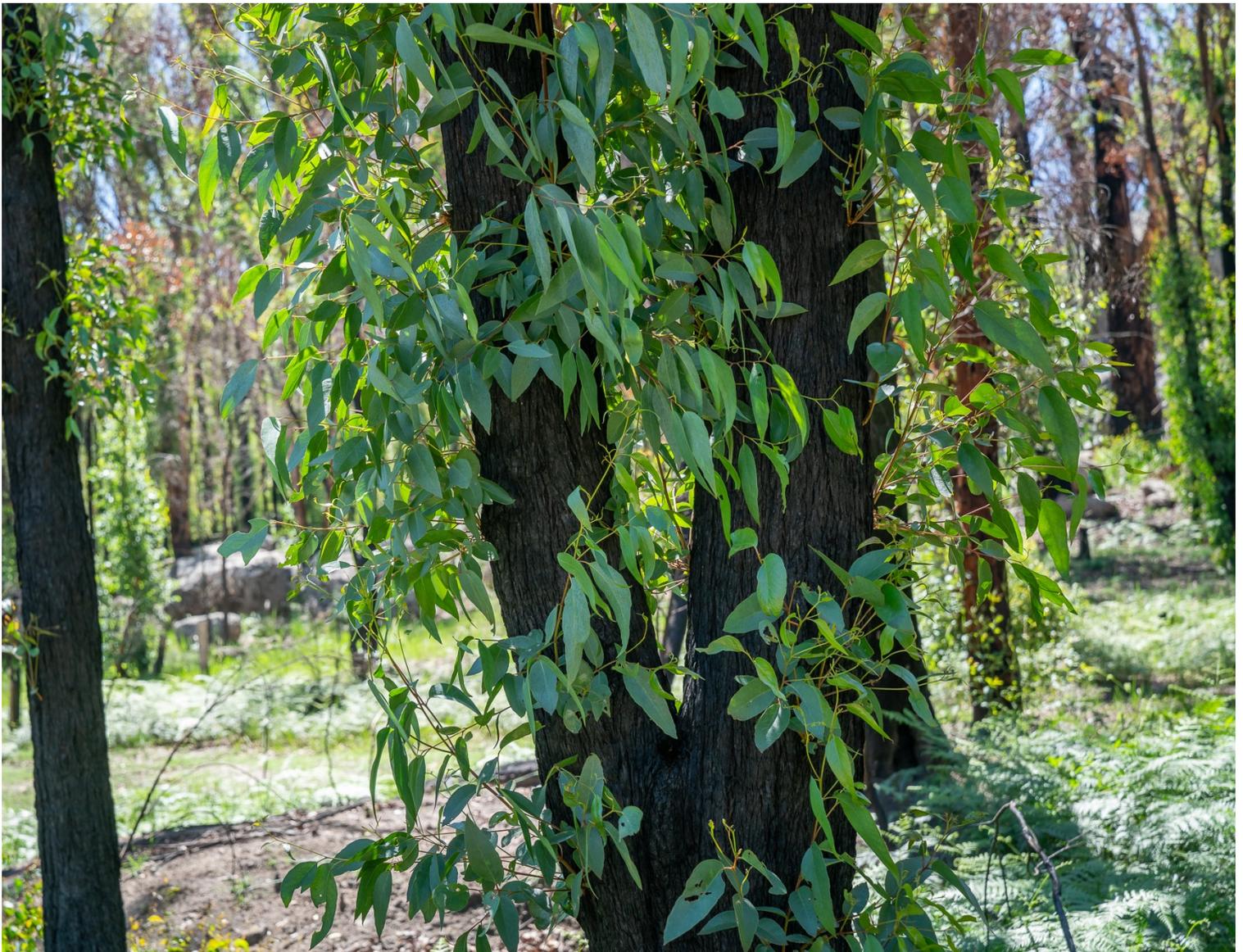




DEPARTMENT OF PLANNING, INDUSTRY & ENVIRONMENT

# NSW Wildlife and Conservation Bushfire Recovery

Supplement B – Report on the *Immediate Response January 2020*



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Cover photo: Post-fire regrowth, Torrington State Conservation Area. John Spencer/DPIE

### ***Acknowledgement of Country***

We acknowledge the traditional custodians of Country and pay our respects to Elders past, present and emerging. The land management of earlier generations, including the Elders, who have fought for their rights in the management of our natural environment are valued and respected. We acknowledge the grief of Aboriginal people in response to the recent fires, and recognise that the actions we take today impact on the natural environment, and we commit to collaborating with Aboriginal people who continue to hold the knowledge of our traditional custodians to improve the way we manage our natural environment now and into the future.

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Environment, Energy and Science  
Department of Planning, Industry and Environment  
Locked Bag 5022, Parramatta NSW 2124  
Phone: +61 2 9995 5000 (switchboard)  
Phone: 1300 361 967 (Environment, Energy and Science enquiries)  
TTY users: phone 133 677, then ask for 1300 361 967  
Speak and listen users: phone 1300 555 727, then ask for 1300 361 967  
Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au)  
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## 1. Introduction

Immediately following the 2019–20 bushfires, the NSW Government released the *Wildlife and Conservation Bushfire Recovery: Immediate Response January 2020* (the Immediate Response) to support wildlife and conservation recovery (DPIE 2020). The Immediate Response provided a preliminary assessment of the impact of the 2019–20 bushfires on wildlife and native vegetation in New South Wales. It also set out the immediate and short-term interventions being planned and undertaken by the NSW Government and its partners.

This supplement provides an update on the progress and achievements of those initial interventions.

## 2. Supplementary food, water and shelter

The NSW Government acted quickly to provide supplementary food and water to important populations of key threatened fauna. This intervention focused on supporting species at significant and imminent risk due to loss of food resources, including brush-tailed rock-wallabies and mountain pygmy-possums. Ongoing monitoring will assess the effectiveness of the supplementary feeding programs and inform similar actions in the future.

The NSW Government also acted quickly to repair fire-damaged shelters for some species; for example, fires in Kosciuszko National Park burnt through areas supporting specially built field enclosures housing soft release sites of the critically endangered southern corroboree frog. These enclosures help keep the frogs free from diseases such as the chytrid fungus. Only 30% of the captive frogs survived the fires.

Staff from the *Saving our Species* (SoS) program are repairing or replacing damaged enclosures and irrigation systems. Frogs bred in captivity at Taronga Zoo will be used to help re-establish populations within the enclosures.

## Operation rock-wallaby

Immediately after the 2019–20 bushfires, thousands of kilograms of carrots and sweet potatoes were dropped by helicopter into the fire-ravaged habitats of the endangered brush-tailed rock-wallaby.

Wallabies typically survive a fire but then have few food sources as the fire destroys the vegetation around their rocky habitat. Between January and March 2020 staff from the National Parks and Wildlife Service (NPWS) and SoS coordinated the delivery of over 14,500 kilograms of carrots and sweet potatoes to more than a dozen wallaby colonies across the state, including:

- Shannon Creeks Dam in the Clarence Valley
- Oxley Wild Rivers National Park
- Wollemi National Park
- Yengo National Park
- Jenolan Karst Conservation Reserve
- Mann River Nature Reserve
- Curracabundi National Park
- Watagans National Park
- Guy Fawkes National Park
- Kangaroo Valley.



**Photo: Brush-tailed rock-wallaby eating supplementary food provided by DPIE staff. NPWS/DPIE**

As well as helicopter drops, deliveries were made by foot, vehicle and boat. Food for the drops was supplied by conservation program partners including WWF, Woolworths and Foodbank.

Natural food resources are now regenerating in much of the rock-wallaby's habitat. Monitoring through SoS will help determine the overall effectiveness of the supplementary feeding program, to inform future events.

## **Bogong biscuits for hungry mountain pygmy-possums**

After the fires, staff from NPWS and SoS carried out weekly food and water drops to colonies of the endangered mountain pygmy-possum in Kosciuszko National Park.

Over 18 weeks from January to May 2020, staff delivered 210 kilograms of Bogong biscuits, created by Melbourne Zoo, and other food to 61 purpose-built food stations. Bogong biscuits are nutritionally suitable biscuits with the consistency of a bogong moth abdomen (the main food source for mountain pygmy-possums during their breeding season). Before rain fell in February, staff also provided 800 litres of water to 34 water stations.

Staff stopped providing food when the possums entered their winter hibernation period, but food drops will recommence in spring and are likely to continue in the medium term until natural food sources return.

While population numbers of this pygmy-possum have yet to be determined, cameras monitoring their colonies have captured images of possums at nearly every site.



**Photo: NPWS and SoS staff setting up watering stations and feeders in Kosciuszko NP.  
A Pike/DPIE**

## 3. Feral animal and weed control

Bushfires can compound the impacts of weeds and feral animals on native species and ecosystems, and the continuing presence of pests and weeds is likely to hinder the recovery of many species and ecosystems. The NSW Government is taking additional action to control feral animals and weeds in its bushfire recovery work.

### 3.1 Feral animal control

The NSW Government is implementing the most extensive pest animal control program ever undertaken on the national park estate in New South Wales. The new program, supported with funding from the Commonwealth Government, will extend into the medium term, integrating core NPWS feral animal control programs, and targeted SoS funded programs. The NPWS feral animal control program will complement research and pest control undertaken by Local Land Services.

The NPWS feral animal control program is targeting feral predators that prey on native mammals and birds, such as foxes, as well as feral herbivores such as deer, pigs and goats, that compete with native herbivores for food and browse on regenerating native plants. The program covers both burnt and unburnt areas, with NPWS aiming to carry out:

- 1500 to 2000 hours of aerial shooting from January 2020 to January 2021, with localised follow-up and ground shooting
- up to 30,000 kilometres of aerial baiting from May 2020 to May 2021.

As of 15 September 2020, NPWS has conducted 1050 hours of aerial shooting over 83 national parks and reserves and has removed more than 16,000 feral animals, including 2793 deer, 7271 pigs and 6022 goats. NPWS has also conducted 16,131 kilometres of baiting.

Monitoring and reporting on the program is undertaken to ensure intended outcomes are achieved and to inform future actions. As of 15 September 2020, 1030 passive infrared cameras have been deployed in 19 locations in burnt and unburnt national parks and reserves to monitor the effectiveness of the enhanced management program.

### 3.2 Weed control

To limit the impact of weeds on post-fire recovery, NPWS has been undertaking strategic weed control in areas where it will benefit threatened species and in areas that have previously been inaccessible due to dense vegetation. In southern New South Wales, weed control has focused on species such as orange hawkweed, scotch broom and tobacco bush. The focus in northern New South Wales has been on bitou bush, tropical soda apple, lantana and blackberry.

In addition, part of the grant funding allocated under the Bushfire affected coastal waterways grants program (see Strategy 3.2 in the medium-term response plan) will be used to help control weeds within bushfire affected riparian areas, primarily on council-managed lands. For example, south coast councils will be using some grant funding for weed control and encouraging regeneration of native vegetation.

The NSW Government has been supporting weed control for conservation benefit on private land. Many of the 290 landholders who have private land conservation agreements with the Biodiversity Conservation Trust (BCT) were impacted by fires. These landholders have received BCT grants to assist them with fencing, weed control or revegetation as part of their overall fire recovery. To date, \$356,000 has been provided to 25 landholders for works on bushfire impacted sites.

## Bitou bush control at Crowdy Bay National Park

Approximately 84% of Crowdy Bay National Park burned in November 2019. Some areas experienced very high intensity fire, with entire areas of canopy lost and minimal canopy recovery eight months later. Most sections of the coastline burnt down to the waterline on headlands and to the toe of the foredune on beaches.

In places where the invasive bitou bush had been fire-killed or significantly reduced, this was an ideal opportunity for follow-up weed control. Native to South Africa, bitou bush invades sand dunes and heathlands, out-competing and in many cases totally replacing native flora and drastically changing the environment for many native birds and animals. Fire stimulates the germination of bitou bush seeds from lower in the soil profile, so an intensive control program to deplete the existing seedbank was a priority.

NPWS has delivered an integrated weed control program targeting bitou bush across the entire 21-kilometre coastline of Crowdy Bay National Park. The program consisted of on-ground spraying and hand pulling, carried out over four weeks in April and May 2020, covering 18 kilometres of foredune.

The Diamond Head/Indian Head escarpment was treated using drone technology with spot spray techniques to treat heavy infestations – the first time this technology has been used to target bitou bush in coastal environments. This combination of on-ground control and drone spot spraying ensures very targeted chemical application, which was particularly important in this environment due to the significant impacts of the prolonged drought and high intensity bushfire.



Photo: Bitou bush. B Collier/DPIE

## 4. Seed banking and insurance populations

Staff from NPWS and SoS have been working with Taronga Conservation Society, the Royal Botanic Gardens Sydney and non-government partners to collect seeds and individual animals from species with habitats impacted by fire. Further seed collection may be required over the medium term for priority species where there is strong evidence of barriers to, or failure of, natural recovery mechanisms. These will be banked and also used to propagate insurance populations. Collected animals, if not already released back into the wild, will be used to establish insurance populations in captivity.

### 4.1 Insurance populations for plants

The Royal Botanic Gardens Sydney continues to create a seed bank for threatened species as part of SoS. In the 2019–20 season, they collected 191 seed samples for 68 threatened species. The collected seeds are propagated for translocation or stored for insurance and future research. Both uses contribute to establishing insurance populations and ensuring the long-term persistence of plant species with at-risk wild populations. These programs may need to be accelerated over the coming years in response to the bushfires and to ensure genetic diversity in the collections.

Especially significant seed collections made by the Royal Botanic Gardens Sydney after the bushfires include the first ever collection of seeds from:

- critically endangered leek orchids *Prasophyllum bagoense* and *P. keltonii* from the Bago Plateau
- critically endangered leek orchid *Genoplesium plumosum* from a newly discovered site in Morton National Park
- the superb midge orchid *Genoplesium superbum*, from Morton National Park
- the fire ephemeral scrambling climber *Muehlenbeckia* sp. Mt Norman (previously *M. costata*) from Bald Rock National Park
- the wetland ephemeral herb *Rotala tripartita* from completely burnt forest affected by the Busbys Flat Road Fire in October 2019.

Many species of native plants need fire to complete their lifecycles, and some of these seed collections were only made possible because the species had germinated and flowered in response to the bushfires.

During the immediate response to the 2019–20 bushfires in the Northern Rivers region, firefighters from NPWS and the RFS planned and implemented containment strategies to protect core areas of the endangered Nightcap Oak from fire, while staff from SoS took emergency cuttings from the trees ahead of the fire front. Emergency cuttings were also taken for the endangered Minyon quandong and peach myrtle. The cuttings were taken to a specialist nursery for propagation so an insurance population can be grown to support future translocations and reintroductions if needed. NPWS is now undertaking a post-fire assessment to further understand the impact of the fires on these species.

### **Seed banking for endangered superb midge orchid *Genoplesium superbum***

The superb midge orchid (*Genoplesium superbum*) is an endangered orchid species known from only two localities in New South Wales, one in the southern tablelands near Nerriga and Braidwood and another in the central tablelands near Lithgow. Much of the known range of both populations was burnt during the 2019–20 bushfires.

Staff from the Royal Botanic Gardens Sydney and DPIE surveyed the species' range in the months following the fires and found that *G. superbum* not only survived the fires but was flowering prolifically. This allowed for the first ever collections of seed, soil and mycorrhizal fungi for this species. Staff also found flowering individuals in the northern population, confirming its ongoing presence there 15 years after it was last sighted.

While the risks to *G. superbum* are still high, its prospects of survival in the wild are now much improved after post-fire regeneration. The seeds, soil and fungi collected will allow scientists to study and better understand these rare orchids and may allow them to grow insurance populations that could be used to support wild populations if needed.



Photo: *Genoplesium superbum* flower-spike. K McDougall/DPIE

## 4.2 Insurance populations for animals

Insurance populations are being established for several threatened animals impacted by the 2019–20 bushfires; for example:

- *Northern corroboree frog*: SoS staff and the Taronga Conservation Society have started establishing a captive insurance colony for the Fiery Range population of this species. Taronga has received funding to construct and maintain a dedicated facility for this project. An initial egg collection has been undertaken from fire affected areas in the Bogong Peaks Wilderness Area.
- *Spotted tree frog*: The only known population of this species in New South Wales was impacted by the 2019–20 fires. Funding has been received from the Commonwealth Government to continue the SoS program for this species, which is aimed at establishing additional populations in Kosciuszko National Park.
- *Eastern bristlebird*: A captive breeding program for the northern critically endangered population (~40 wild birds) has been established through partnerships between SoS and Currumbin Wildlife Sanctuary, with support from the Australian Government and North Coast Local Land Services. A new partnership is in development between the Victorian Government and SoS to extend the distribution of the southernmost population as protection against further extreme fire events.

The NSW Government is also working with partners to ensure the long-term survival of other priority animal species; for example, a team of government, industry, academic and community partners, including Taronga Conservation Society, is developing strategies for the long-term conservation of the platypus. While not currently listed as threatened under state or Commonwealth legislation, experts believe the long-term survival of the platypus is at risk due to prolonged drought, changes in hydrological cycles and the impacts of bushfires, particularly west of the Great Dividing Range.

Actions will focus on understanding platypus distribution across New South Wales, building ex situ refuges and rehabilitation centres to mitigate impacts of drought, and promoting research to address key knowledge gaps vital for platypus conservation. These actions will build the knowledge needed to successfully conduct translocations, ex situ breeding and reintroduction in response to future emergency situations. Other fauna species may be identified as priorities for insurance populations through further on-ground survey work.

## 5. Supporting wildlife carers

Volunteer wildlife carers have played a valuable role in responding to the impacts of the bushfires on our native wildlife. The NSW Government supported the work of these dedicated and often under-resourced volunteers by committing \$1 million to support wildlife rescue and rehabilitation as part of the immediate bushfire response. This funding includes:

- \$500,000 in emergency funding, for grants to licensed wildlife rehabilitators, to support veterinary care and build capacity in the wildlife rehabilitation sector to respond to bushfire emergencies
- \$500,000 for other support actions:
  - the appointment of two Bushfire Recovery Wildlife Coordinators within the National Parks and Wildlife Service, who will work to incorporate wildlife rescue into the operational response to emergency events and increase the rehabilitation sector's capacity to respond to emergencies. These coordinators will:
    - develop new procedures with emergency response agencies to improve access to fire grounds for wildlife rehabilitators
    - work with vets to support rescue and rehabilitation efforts, including assessing the feasibility of a veterinary telemedicine service and deploying triage teams to emergency fire grounds
    - develop training for rehabilitators and fire-fighting personnel so they can assist wildlife quickly and safely on fire grounds
    - deliver information about how community members can assist wildlife affected by fires or other disasters
  - mapping of koala habitat
  - 20 places in Taronga Conservation Society's professional development training course, training vets and vet nurses in wildlife triage, first aid, treatment and care.

As at December 2020, \$200,000 in emergency funds have been delivered through grants to licensed wildlife rehabilitators to support costs incurred in responding to the impacts of the bushfires on native wildlife. Another \$300,000 is now available through grants to licensed wildlife rehabilitators and not-for-profit veterinary practices for the repair or purchase of equipment and infrastructure. Bushfire Recovery Wildlife Coordinators have been appointed and work has commenced with licensed rehabilitators, vets, the Department of Primary Industries, the RFS and other fire combat agencies to progress identified support initiatives.

These funds are in addition to \$4.05 million already committed under the NSW Koala Strategy to support wildlife rehabilitation and veterinary care and the \$1.47 million Wildlife Heroes program administered by the Foundation for National Parks and Wildlife, which is a key delivery partner with the Government in the NSW Volunteer Wildlife Rehabilitation Sector Strategy 2020–2023 (NSW Government 2019). The strategy will strengthen the ability of the sector to support its volunteers and deliver services into the future. It will also help improve the sector's capacity to work with NSW Government agencies to respond to emergency events.

## 6. References

DPIE 2020, *Wildlife and Conservation Bushfire Recovery: Immediate Response January 2020*, Department of Planning, Industry and Environment, Sydney, Australia, [www.environment.nsw.gov.au/research-and-publications/publications-search/wildlife-and-conservation-bushfire-recovery-immediate-response](http://www.environment.nsw.gov.au/research-and-publications/publications-search/wildlife-and-conservation-bushfire-recovery-immediate-response)

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