

**SAVING OUR SPECIES** 

# Year in Review 2019-20







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# Message from the Executive Director

2019–20 was a turbulent year, with unprecedented bushfires, soaring temperatures, drought, flood and a pandemic all impacting the people of New South Wales.

Preserving our natural biodiversity is essential for thriving ecosystems and the more variety, growth and security of living organisms, the more biodiversity we have. But with recent tragic events taking a toll on our environment, our already vulnerable plants and animals have been put under even greater stress – creating a flow-on effect on our biodiversity and reinforcing the importance of our conservation work.

In New South Wales alone there are nearly 1000 animal and plant species at risk of extinction. Saving our Species (SoS) is the NSW Government's flagship threatened species conservation program and the biggest commitment to threatened species conservation ever undertaken in the state.

We believe that every native plant and animal has a role to play in creating a healthy natural environment and needs our protection, from microscopic algae to towering trees.

While natural disasters undoubtedly add challenges to the work we do, it hasn't stopped the SoS team from working tirelessly to achieve the program's objectives.

Following the bushfires in summer 2019–20, SoS assessed more than 360 species, working across 330 individual sites within New South Wales to adapt our projects and deliver intervention onthe-ground, where it was needed most. From food drops to supplementary water, weed and pest control, re-establishing fencing or re-planting impacted habitat, our on-ground actions have never mattered more. We're also commissioning research that assesses how we can adapt to accommodate the impact of drought and bushfires in the future.

The objectives of SoS are ambitious, and we cannot – and are not – doing it alone. SoS has built strong partnerships to achieve these goals, working with 225 external and NSW Government partners to create a greater force for conservation in 2019–20. We'd like to thank these organisations for their ongoing support in helping to achieve positive outcomes for our threatened species.

This year, more than ever, Saving our Species has shown it is a world-class, science-led program that is delivering real results on-ground for our threatened plants and animals. While conservation work is ongoing and constantly evolving, this program gives me hope that we can secure a future for our biodiversity in New South Wales.

Sharon Molloy
Executive Director,
Biodiversity and Conservation Division



Goals, measures and successes

We're working to secure a future for NSW threatened species. We protect, monitor and conserve threatened species in different ways, taking into account what we know about their ecology and threats.

The main objectives of SoS are simple:

- Increase the number of threatened species that are secure in the wild in New South Wales for 100 years.
- Control the key threats facing our threatened plants and animals.

Under SoS, every threatened species falls into a management stream that groups together species based on their ecology and management requirements. Each management stream has a specific objective, performance indicators and a monitoring approach to ensure achievement of outcomes.

Saving our Species management streams		
Site managed	Threatened species that can be secured by projects at specific sites	
Iconic	Threatened species that are socially, culturally and economically important	
Keep watch	Threatened species where no immediate action is needed to protect them	
Landscape managed	Threatened species that are highly mobile or dispersed, or affected by landscape-scale threats	
Partnership	Threatened species found mainly in other states and territories. We partner with others to protect them	
Data deficient	Threatened species that we need to know more about before we can secure them in the wild	
Populations	Groupings of native plants and animals likely to become extinct in NSW	
Threatened ecological communities (TECs)	Ecological communities at risk of extinction because of a significant reduction in their distribution across regions or a decline in ecological function	
Key threatening processes (KTPs)	The threats that adversely affect listed species or communities, responded to with on-ground management to protect threatened species and threatened ecological communities	

### What makes a species 'threatened'?

Native plants and animals are impacted by threats like invasive species, urbanisation and climate change, which can lead to population declines.

The independent <u>NSW Threatened Species</u> <u>Scientific Committee</u> decides what plants, animals and ecological communities are listed as threatened in New South Wales, based on scientific data. When determining whether to classify a species, population or ecological community as threatened in New South Wales, the committee considers factors like:

- decreases in population size
- changes in geographical distribution and habitat quality
- · sensitivity to human activities
- the number of mature individuals in the wild.

If a species' risk of extinction is high it is listed as threatened with extinction in legislation and an SoS strategy is developed for its protection.

#### How do we measure success?

SoS has a program-wide framework for monitoring and reporting on the outcomes of projects and actions for threatened species. The primary focus of monitoring for SoS is to evaluate the response of a species or ecological community and their threats to management at the invested sites.

The program-wide <u>SoS Monitoring</u>, <u>Evaluation</u> and <u>Reporting</u> (MER) <u>framework</u> for threatened

species and ecological communities was developed to evaluate the program against its overarching objective. The framework has a focus on linking investment to outcomes, scalability across projects, actions for monitoring projects and evaluation of program effectiveness and efficiency.

Importantly, the MER framework means outcomes of interventions applied in SoS projects can be measured and adapted where needed.

# What has Saving our Species achieved?

SoS is a global leader in threatened species conservation and all our decisions are guided by proven frameworks and strategies. We prioritise our work based on the cost effectiveness of recovery actions, enabling us to deliver the greatest number of outcomes for our plants and animals.

This method has enabled Saving our Species to place more than 400 threatened species, TECs and KTPs in New South Wales under active management, and develop conservation strategies for every threatened species in the state. Prior to the program, there were fewer than 100 conservation strategies in place for our threatened species.

SoS is different to other conservation recovery programs in Australia and around the world – its targeted and prioritised approach represents a major change from other comparable programs. This innovative model gives SoS a far greater likelihood of securing specific outcomes for our most vulnerable species and communities.





# In NSW:







ecological communities at risk



populations at risk

## What SoS is doing



threatened species and communities under management (369 species, 40 communities)



key threats under strategic research and management

### **Investments overview**

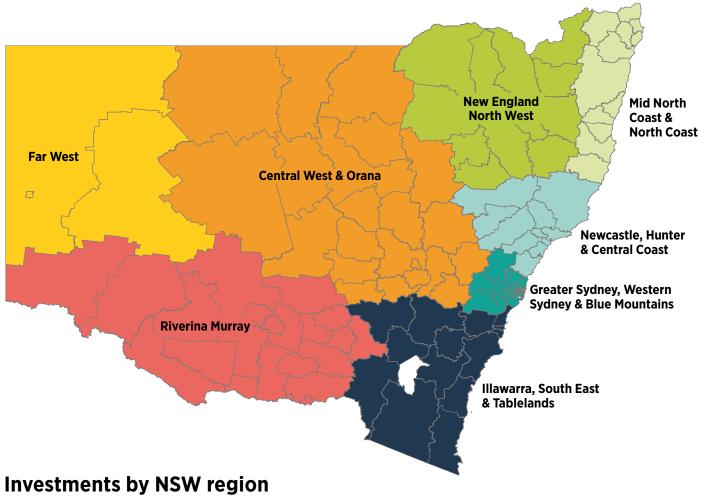
SoS operating	\$13,961,093
SoS labour	\$7,114,164
EES <sup>1</sup> cash	\$1,216,327
EES <sup>1</sup> in-kind	\$5,299,904
NSW Government cash	\$2,890,556
NSW Government in-kind	\$5,214,559
External cash (includes program partners)	\$1,981,837
External in-kind	\$5,907,655
Total	\$43,586,097

<sup>&</sup>lt;sup>1</sup>Environment, Energy and Science group of the Department of Planning, Industry and Environment (DPIE)

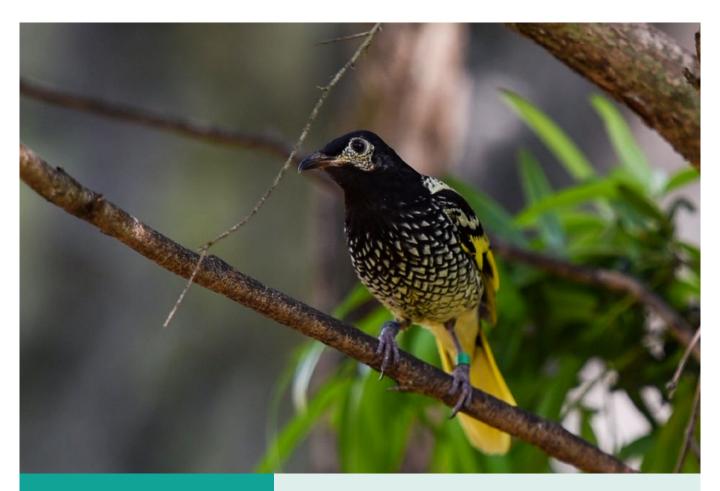
sites in NSW with active SoS projects

of species SoS are investing in are on track to survive the next 100 years (species from sitemanaged, iconic and population management streams only)

**NSW Government and** external partners, contributing \$16 million



	Total investment since 2016–17	Total investment in 2019–20
Newcastle, Hunter & Central Coast LGAs	\$11,087,836	\$3,292,575
Greater Sydney, Western Sydney & Blue Mountains LGAs	\$14,366,128	\$4,110,978
Central West and Orana LGAs	\$7,582,414	\$2,394,261
New England North West LGAs	\$5,952,144	\$2,006,390
Far West LGAs	\$1,687,788	\$497,649
Mid North Coast & North Coast LGAs	\$19,030,571	\$6,972,714
Riverina Murray LGAs	\$10,236,598	\$3,529,125
Illawarra, South East and Tablelands LGAs	\$23,139,667	\$6,006,648
Total across NSW	\$93,083,146	\$28,810,340



# **Case study**

# Sweet release - endangered regent honeyeaters soar

In June 2020, the population of one of Australia's most endangered species was bolstered, with 20 conservation-bred regent honeyeaters released into the wild.

This was the largest release of conservationbred regent honeyeaters ever undertaken in New South Wales as part of an Australia-wide recovery effort.

The NSW regent honeyeater conservation breeding and release project is led by the NSW Department of Planning, Industry and Environment in partnership with SoS, BirdLife Australia, Taronga Zoo, the NSW Environmental Trust, Biodiversity Conservation Trust and Hunter Local Land Services through the Australian Government's National Landcare Program.

Regent honeyeater numbers are at critical levels, with only about 350 birds remaining. The birds were released onto private property in the Lower Hunter, where they are mixing with the wild population and will hopefully breed.

The fires over summer further impacted the breeding and foraging habitat of regent honeyeaters, making this release and ongoing conservation breeding even more important.

This project aims to bolster the wild population with conservation-bred birds until it becomes self-sustaining.

The 20 birds were raised at specialised facilities at Taronga Zoo in Sydney where they have been successfully breeding the species for 20 years. The facilities were recently expanded to include purpose-built aviaries at Western Plains Zoo.

Beloved by bird watchers, regent honeyeaters are medium sized black and yellow birds that feed on nectar from eucalypts and mistletoe. Once widespread across south-eastern Australia, they now exist in small numbers across limited sites from south-eastern Queensland to northeastern Victoria.



# Responding to a changing climate: Impact of bushfires and drought on Saving our Species projects in 2019-20

The ongoing effects of prolonged drought and the 2019–20 summer bushfires are still being felt, particularly for our threatened species. Estimates indicate that 5.4 million hectares (7%) of New South Wales were impacted by the bushfires, including extensive damage in our national parks.

Following the fires, SoS staff undertook an assessment of all impacted threatened species and ecological communities through desktop mapping and on-ground assessments.

As of November 2020:

- over 360 species and ecological communities have been assessed as impacted by the fires
- almost 200 species and communities had on-ground or aerial assessments during the immediate response
- more than 170 fire response plans have been developed outlining the priorities for threatened species and communities post-fire

- over 200 species and communities were responded to during the immediate response at over 330 sites with over 470 post-fire conservation actions adapted or implemented
- 8 conservation strategies have had major changes approved
- 34 species and communities have had new projects or actions funded by the Commonwealth to support post-fire recovery.

SoS also led the largest post-fire koala field survey in north-east New South Wales, using detection dogs to find that despite severe fire impacts on the 450 sites surveyed across 24 national parks, koalas have persisted in all areas to varying degrees. This is largely due to refuge areas that were unimpacted by the fires.

SoS is continuing to assess the impact of the bushfires and drought on endangered species and adapting our actions to deliver intervention onthe-ground, as well as put in place strategies to protect threatened plants and animals now and into the future.



#### **Emergency recovery actions we** undertook

Supplementary food, water and shelter: Supplementary food was delivered to threatened species such as brush-tailed rock-wallabies; supplementary shelter such as artificial hollows was deployed for arboreal mammals and additional cover was utilised for ground dwelling mammals; while watering points were provided for species like koalas.

#### Seed banking and insurance populations:

Insurance populations of threatened animals have been established, including the Manning River helmeted turtle, southern corroboree frog, regent honeyeater, Bellinger River snapping turtle and plains-wanderer. More seeds from NSW plant species are being collected in partnership with the Royal Botanic Gardens, with 63% of the state's threatened flora now safely held at the Australian PlantBank.

Feral animal and weed control: Emergency feral animal control is underway, including targeted trapping and shooting of feral cats and intensive control measures for goats, pigs and other feral animals. Conservation fencing is also being used to protect sensitive habitat, and to exclude feral animals. An intensive weed control program is being deployed to protect sensitive habitats from invasive weeds such as bitou bush and orange hawkweed.

Support for wildlife carers: The NSW Government is providing resources to support wildlife rescue and rehabilitation. A total of \$6.5 million has been committed for this work, including \$1 million in emergency funding in response to the bushfires.

**Strategies for drought-affected areas:** Drought conservation strategies differ from species to species. Common approaches include regular

surveying and mapping, observational studies, cuttings, germination, collecting seeds and establishing an ex-situ seedbank, supplementary planting and recording and determining the species' habitat and resource requirements. Fortunately, many regions in New South Wales have now received decent rainfall, with several species showing signs of recovery.

### Longer-term actions to future-proof our projects against fire and drought

We are developing around 170 species fire response plans for projects impacted by fires. These will inform updates to our conservation strategies, as well as MER plans and priorities for on-ground conservation actions. The response plans outline the recommended management actions to support post-fire recovery including the sites, threats, actions, and costs for implementation.

SoS is planning to incorporate learnings from response plans into the adaptive management cycle of the framework (including conservation strategies and MER plans) and is developing standard approaches for effective post-fire and drought monitoring for projects.

We implemented or modified 479 actions:

- 240 management actions
- 113 species or ecological community monitoring actions
- 79 threat monitoring actions
- 9 threat assessment actions
- 21 survey actions
- 17 research actions.



# **Case study**

### Feeding stations for the mountain pygmy-possum

In January 2020, SoS took the unprecedented measure of providing supplementary food and water for the endangered mountain pygmypossum, after bushfires tore through the area and put the possum's survival at even greater risk.

SoS and National Parks and Wildlife Service (NPWS) experts and volunteers made regular field trips to boulder fields in Kosciuszko National Park to build and then replenish water stations and 61 feeding stations.

The possums were given nuts and Bogong biscuits – <u>special food</u> developed by Zoos Victoria using a veterinary-verified powder of natural ingredients, designed to replicate the nutritional value of Bogong moths. The biscuits' ingredients included mealworms, macadamia nuts and vitamin powders.

Cameras – triggered by movement and body heat – showed many pygmy-possums and other species, including the dusty antechinus, mountain brush-tailed possum and native bush rats visiting the feeding stations.



These efforts continued well into autumn, and trapping and monitoring by SoS before the possums' usual hibernation period showed they were at healthy weights, putting the animals in a good position to safely see through the winter months.

# Species/project-specific achievements and highlights

# Green and golden bell frog survives bushfires

Ninety green and golden bell frogs were found alive and well by SoS officers in wetlands south of Nowra and around Bawley Point, following the summer's bushfires in the Shoalhaven region, which burnt a large area of known frog habitat.

Green and golden bell frog breeding was also recorded, with tadpoles found at wetlands around Bawley Point following the large rainfall events in February, giving us hope that frog populations will continue to persist in this region.

For the first time, green and golden bell frogs were also located in a constructed wetland built especially for the frog in Worrigee Nature Reserve by the NSW National Parks and Wildlife Service in 2018.



#### Drones discover new population of lily

A new population of 200 silver sword lilies was found in New England National Park in October 2019, increasing the known population of this plant species in New South Wales by 30%. The plants were discovered using drones and abseiling surveys. The new method of surveying was not only successful in finding new plants but will also help us monitor them.





### **Smoky mouse survives fires**

The critically endangered smoky mouse survived the massive Dunns Road fire early in 2020. Fifty-eight motion-sensing cameras set up in burnt, semi burnt and unburnt areas of Kosciuszko National Park recorded more than 40,000 images – including smoky mouse survivors – in just five weeks. Threatened species experts analysing the images spotted smoky mice at seven burnt sites.

# Securing curly-bark wattle plants in Gundabooka

Following intervention from SoS and NPWS, the very rare and vulnerable curly-barked wattle at Gundabooka National Park near Bourke is now better protected. NPWS staff from across areas of the northern inland converged on Gundabooka to construct a 57-hectare goat-proof fenced area within the park and monitoring now shows that the area has good groundcover and there is a diversity of plant species within the enclosed area.

The wattle only exists in three locations in New South Wales.



#### Baby sea turtle hatching success

More than 200 baby sea turtles safely found their way to the ocean as the year's NSW sea turtle nesting season ended in 2020. Seven nests were found on NSW beaches from Tweed to Sydney's Northern Beaches between November 2019 and May 2020, a significant increase on last year's numbers. The monitoring was completed as part of NSW TurtleWatch, a program developed by Australian Seabird Rescue and supported by SoS and the Marine Estate Management Strategy.



# Wallaby colony survives bushfires in Kangaroo Valley

Monitoring cameras and GPS collars confirmed the entire colony of brush-tailed rock-wallabies in Kangaroo Valley survived the 2019–20 bushfires which devastated the region, with the support of emergency food drops.

The life-saving food included carrots and sweet potatoes, dropped as part of SoS to help this significant colony survive. Expert assessment showed the wallabies were in good health, with one wallaby identified as a joey that was not previously known.





# South Coast beach-nesting bird hatching boom despite bushfires

Critically endangered little terns, hooded plovers and pied oystercatchers fledged chicks in February 2020 at nesting sites along the NSW South Coast, despite bushfires and beach visitors. These results show the shorebirds' resilience, with the help of the determined efforts of the SoS South Coast Shorebird Recovery Program, which is a collaboration between SoS, NPWS, local community groups and over 100 volunteers.



### Detection dogs track down rare orchid

Two English Springer Spaniels helped find a very rare underground orchid called Rhizanthella, first discovered in 2016. The dogs were brought in by SoS and NPWS, after staff spent fruitless days searching for new orchid populations.

This was the first time detection dogs were used to find underground orchids, and it was a resounding success. On top of both dogs locating the orchids in the known location, they may have also found the orchids growing in a new location.



# Firefighters save prehistoric nightcap oak

Another rare prehistoric tree species unique to Australia was saved after a dedicated team of firefighters and specialists from NPWS and SoS rapidly responded to the threat posed by a bushfire in north-east New South Wales in December 2019.

Experts from SoS were able to take emergency cuttings, which were transported to a specialist nursery to be propagated, from this and other endangered trees as 'insurance' measures.



# Firefighting mission saves prehistoric Wollemi pines

A specialist team of remote area firefighters and SoS helped to save the prehistoric Wollemi pines from the summer bushfires. Wollemi National Park is the only place in the world where these trees are found in the wild and, with fewer than 200 left, there was a lot on the line. The team completed a detailed scientific assessment and, while some trees were charred, the species was confirmed to have survived.

# More Bellinger River snapping turtles released

Ten new juveniles of one of Australia's most critically endangered freshwater turtle species were released into the wild in November 2019 near Bellingen. The release was part of a very successful captive breeding program between SoS and Taronga Zoo.

Over three successful breeding seasons, Taronga Conservation Society Australia has been able to increase its zoo population to 80 turtles.



# Endangered bridled nail-tail wallabies' population to triple

The critically endangered bridled nail-tail wallaby was successfully reintroduced into a large feral predator-proof fenced area within Pilliga State Conservation Area in September 2019. The releases are part of the SoS investment into the Reintroduction of Locally Extinct Mammals project, which expects to see the global population of bridled nail-tail wallabies triple.

The reintroduction of the wallaby – which until recently was believed to be extinct – was made possible through the collaboration of NPWS, Queensland Department of Environment and Science, the Bridled Nail-tail Wallaby Recovery Group and the Australian Wildlife Conservancy.



### Supporting the critically endangered Bossiaea fragrans

Bossiaea fragrans, a small shrub, is only found in the Abercrombie Karst Conservation Reserve in the Bathurst region. With a small population of approximately 400, an exclusion fence built inside the Abercrombie Karst Conservation Reserve has proven to be successful in stopping feral goat browsing and promoting new plants. In addition, 616 goats have been removed from the reserve by NPWS over the past four years.





# **Case study**

### **Bilby breeding success**

Bilbies are breeding at Mallee Cliffs National Park and Pilliga State Conservation Area in New South Wales for the first time in a century, as part of a ground-breaking program, bringing back locally extinct species.

As the first generation of bilby babies conceived and born on site at these parks in more than a century, they represent a major milestone in this scheme. Despite the drought, the bilby colonies have successfully established and are beginning to grow, with one of the checked females even carrying triplets.

SoS is contributing to a partnership between NPWS, the Australian Wildlife Conservancy (AWC) and the University of NSW (UNSW) reintroducing threatened species into three national parks. The AWC is managing the reintroduction at Mallee Cliffs and the Pilliga, and UNSW oversees the project at Sturt National Park.

The two feral predator-free areas at Pilliga and Mallee Cliffs are eventually expected to be home to an estimated 1950 bilbies, representing over 15% of the population.

Feral cats, which have been a key driver of mammal extinctions, kill an estimated 457 million native mammals, 596 million reptiles and 312 million birds every year in Australia, highlighting the critical importance of establishing large feral cat-free areas.

Without the threat of feral predators, we expect all of the locally-extinct species that AWC and NPWS are returning to Mallee Cliffs and the Pilliga will be able to establish footholds in New South Wales once again.



### **Saving our Species database**

The SoS database is the register of SoS strategies under the *Biodiversity Conservation Act 2016* for all NSW threatened species and ecological communities, and priority key threatening processes.

SoS has high standards for maintaining the technology that enables transparent insight into the program's strategic investment in NSW threatened species management. In 2019–20, capital works of \$236,824 supported the database's developments. An additional \$20,460 in capital supported scoping for upgrading map services on the register's public website.

### **Public exhibition**

SoS continued program development and evaluation throughout the year, including SoS public exhibition and consultation with experts. In the 2019–20 period, a total of 238 new SoS strategies were developed to identify critical threats and to guide the critical actions for future SoS conservation projects. These strategies were put on public exhibition during 2019 and were endorsed in December 2019.

The strategies developed describe the actions that will benefit 58 animals, 99 plants and 81 TECs across SoS management streams. With over 400 site-managed strategies completed in previous years, there was a focus in 2019–20 on developing partnership species strategies and working on TECs.

Essential research actions were also identified for several currently data-deficient species, to build the knowledge base required for their conservation. Species experts were consulted to compile strategies that include the most up to date knowledge of species ecology and threats, to deliver achievable and effective action toolboxes for future implementation.

### Saving our Species Technical Group

The SoS Technical Group (STG) provides advice on SoS strategies. The STG comprises experts whose specialties cross different taxonomic groups, ecological communities and threats. The STG assesses proposals to allocate newly listed threatened species and ecological communities to SoS management streams and proposals for major changes to existing strategies.

There are four major change categories that require review by the STG: the change of management stream; addition or removal of priority site(s); addition or removal of specific actions, like translocation or major research; and the addition or removal of an assigned critical threat from a site.

In 2019–20 the STG assessed 28 proposals to adjust an existing conservation strategy or allocate a newly listed entity to an SoS management stream. Eight adjustments were made to conservation strategies in response to the 2019–20 bushfires.



SoS research answers key questions related to threatened species conservation, such as 'how do rising temperatures impact our sea turtles?' and 'how can we improve the measurement, monitoring and management of feral cats?'.

Research is incorporated into almost every aspect of SoS - data are gathered throughout the implementation of SoS strategies and major program decisions are guided by strategic research, applying the best evidence available.

### **Funding/investment overview**

In 2019-20, we invested a total of \$2.8 million in 21 science and research projects, including \$2.2 million of in-kind investment.

Our projects directly benefited 196 threatened entities, including:

- 113 plants
- 18 birds
- 9 amphibians
- 2 mammals
- · 2 reptiles
- 50 TECs.

As well as the direct benefits to these species and communities, the techniques developed by these projects have potential benefits for other threatened species exposed to the same risks.

For instance, the citizen scientists monitoring green sea turtle nests also plan to capture opportunistic sightings of the threatened pied oyster catcher. little tern and beach stone-curlew.

Our projects directly addressed three key threatening processes: ecological consequences of high frequency fires, invasion by exotic vines and scramblers, and herbivory and environmental degradation caused by feral deer.



Some projects in 2019-20 included:

- \$105,000 (\$120,000 over the two-year project) for the Rapid Estimation of Metapopulation Persistence project (more information in the case study below)
- \$66,582 (\$101,697 over the two-year project) for the Evolutionary Diversity Project, which will identify and help us protect the most unique NSW threatened species using measures of evolutionary diversity. This project commenced in 2020
- \$15,050 (\$54,450 over the three-year project) for 'Heating up: Planning for climate impacts on sea turtle nests in New South Wales'. This project will quantify the effect of rising temperatures on marine turtle reproductive output at NSW nesting beaches and identify beaches that may represent a temperature refuge under future climate change scenarios
- \$16,700 (\$30,000 total) for the 'Establishing population status and identifying priority management sites for the stuttering frog' project, which concluded this year.



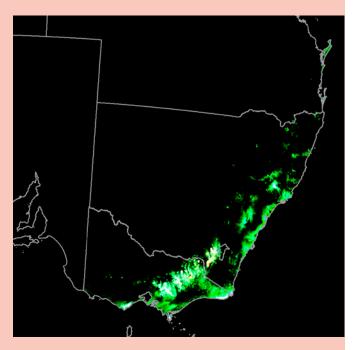
# Landscape species modelling using **Rapid Estimation of Metapopulation Persistence**

One of the biggest challenges in SoS is conserving our landscape species - widespread species that need large areas of intact habitat. How do we decide which areas across the state are critical for securing the species, out of hundreds - or even thousands - of hectares? And, in a changing climate, how can we make sure we target the habitat that will be needed in the future?

The Rapid Estimation of Metapopulation Persistence project helps us answer these big questions.

This project – led by Dr Michael Drielsma of the Department's Science, Economics and Insights division - developed a new way to look at how threatened species occupy their landscape, essentially producing a 'heat map' of the areas where the state can support smaller or larger populations of a species.

Dr Drielsma and colleagues pioneered this modelling approach in 2017–18, and in 2019-20, SoS engaged their team to scale up the approach from proof-of-concept to covering most of our landscape species. Over the course of this multi-year project, they'll be delivering future-ready maps of the areas most likely to support threatened species across the state.



Above: Results of multi-population modelling across past, current and future climates for the threatened eastern pygmy-possum. Green: Areas that will no longer be suitable and are likely to be vacated. Red: Areas which may become suitable for the species in the future. White: Habitat that is likely to be stable for the species through time, providing a possible refuge from climate change.

#### **Partners**

Our science and research projects involved collaboration with 23 partners in 2019–20 including:

- 14 universities
- · four local councils
- · two botanic gardens
- a community group, a local aboriginal land council and a business.

### **Highlights**

- Scientific papers on threatened species management published in two influential journals:
  - Nicol S et al. 2019, Quantifying the impact of uncertainty on threat management for biodiversity, *Nature communications*, vol.10, no.1, pp.1-14 and Ringma J et al. 2019, Systematic planning can rapidly close the protection gap in Australian mammal havens, *Conservation Letters*, vol.12, no.1, e12611
  - Discovery of new orchid species Rhizanthella speciosa (Clements MA and Jones DL 2020, Notes on Australasian Orchids 6: A new species of Rhizanthella (Diurideae, subtribe Prasophyllinae) from Eastern Australia, Lankesteriana, pp.221–227)
- Wollemi Pine Protection Operation Premier's Award Recipients (2020)

### **Scientific publications**

To date, there have been 88 publications based on science and research within SoS, including:

- 64 peer reviewed journal articles
- 11 reports
- 5 book chapters
- · 6 theses.

# Conservation translocation – an increasingly viable option for managing threatened plant species

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#### Abstract

Translocation is the establishment and augmentation of plant populations using ex situ m can reduce extinction risk. Historically, translocation has been considered to be high cost and high risk, but today, translocation is increasingly recognised as a necessary option for m threatened plant species. To examine the viability of translocation as a management action, we analysed the frequency of it being a recommended management action, its estimated cost over tin and its perceived likelihood of success as compared with other management actions. We did this using the 368 threatened plant species in the New South Wales state register of threatened species management strategies (the Saving our Species (SOS) database). Translocation was recomme a management action for 30% of threatened plants (112 species), mostly in response to demographic threats (i.e. threats affecting species with small population sizes/restricted distributions, for example, environmental and demographic stochasticity or low genetic diversity). The estimated cost of translocation per species was similar to other common management actions. However, expert elicitation data (in the SoS database) indicated that translocation was less certain of a beneficial outcome, compared with almost all other management actions. Based on these findings, we create decision framework, which uses the principles of extinction risk assessment to assist conservatio managers in determining when translocation is most likely to be beneficial. We suggest that the use of translocation to mitigate the risk of extinction associated with small population sizes/restricted ranges is supported by the principles of extinction risk assessment. With a growing knowledge base, and costs comparable to other management actions, translocation is becoming an increasingly viable option for the conservation management of threatened plants, provided best practice guidelines are





### Techniques to maximise ecosystem function and adaptive capacity in threatened ecological community restoration

This project is evaluating the success of past restoration of White Box Woodland, a critically endangered ecological community, and seeks to improve the biodiversity benefits of tree planting.

We began by testing if the density of native trees planted 30-40 years ago in abandoned agricultural land affects understorey plant species composition, and found that:

- Dense tree plantings have fewer understorey weeds and reasonable numbers of native plants.
- Treeless areas have many more weeds and fewer native species.
- Sparse tree plantings have an understorey intermediate between dense plantings and treeless areas.
- Old, relictual eucalypts retained when the land was cleared have a high diversity of both weeds and native species under them.

In 2019, we started an experiment to enhance habitat quality of planted trees for hollowdependent animals. Eucalypts take decades to centuries to form visible entrances to hollows. yet internal decay starts much earlier. With experimental drilling, we have detected internal decay in trees planted 30-40 years ago, and then created external openings to decayed interiors, giving animals access.

Sensor cameras have photographed birds, reptiles, and mammals using these drilled hollows, sometimes within hours of creation, including rare squirrel gliders and a pale-headed snake.

This year we established an experiment to test if fencing planted areas to exclude grazing animals, and adding coarse woody debris, will increase native plant and animal diversity.

Our project so far has shown that even planting trees alone can improve diversity of native understorey plants, and that the rate of hollow 'formation' can be accelerated by 40 or more years by creation of external openings to inaccessible internal decay in eucalypts. The final report will be delivered in 2021.

#### Citizen science

In 2019–20, SoS worked with 24 partners to deliver its citizen science projects, including CSIRO, the Australian Museum, Atlas of Living Australia, Taronga Zoo and Bellingen Landcare.

A total of 2378 citizen scientists donated nearly 8000 hours of their time to SoS projects and provided an estimated labour cost of \$331,099.

#### Improving citizen science data output

Following upgrades to the DigiVol website in 2018–19, the Citizen Science team analysed citizen data from the Malleefowl Project to investigate the accuracy of participants identifying animals in images captured by camera traps.

The new system analysed 1900 auto-validated images from the Malleefowl Project and found that citizen scientists were transcribing images accurately 99.47% of the time. This is a great result and demonstrates the valuable input our citizen scientists provide.

### **How DigiVol made** conservation volunteering possible in 2020

With social distancing restrictions coming into place in New South Wales from March 2020, traditional volunteering projects and opportunities within SoS were no longer available for the safety of the public and our staff members. This followed a summer of bushfires and then floods - making many of our volunteering sites inaccessible.

Thankfully, DigiVol - a crowdsourcing website created by the Australian Museum in collaboration with the Atlas of Living Australia – made it possible for our citizen scientists to do their part for conservation from the safety and comfort of their couches.

Along with the ongoing Malleefowl Project, three new DigiVol projects launched in 2019–20 – Koala Drinkers, mountain pygmypossums, and Bossiaea fragrans - provided SoS volunteers with plenty of images to review and transcribe.

Over the course of the year, 2206 people spent 6076 hours transcribing 1,703,545 images via the DigiVol platform. This equates to \$253,487 in labour costs and provided SoS scientists with invaluable assistance for their projects.

This represents a significant increase from 2018–19, when 351 volunteers spent over 570 hours transcribing 85,480 images, equating to \$23,775 of labour costs.





Collaborating with partners enables SoS to deliver tangible and long-term results for NSW threatened species.

Partnerships between SoS and other organisations enable both parties to align their values, capabilities and resources, creating a greater force for conservation and achieving positive outcomes for our threatened species.

This financial year, we partnered with 225 NSW Government and external partners, including 22 commercial enterprises, 48 local governments, 20 educational institutions and 53 volunteer and community groups.

### **Partnerships for investment**

In 2019–20, \$121,400 was invested by corporate partners through direct funding and providing in-kind resources, including ANZ, AGL and Woolworths, and \$165,000 invested by NGOs including WWF, Aussie Ark, icare NSW and Foodbank ACT/NSW.

These funds were largely invested into funding bushfire recovery efforts for our wildlife, including care for injured koalas, coordinating aerial food drops for brush-tailed rock-wallabies, and supplementary food for mountain pygmy-possums and flying-foxes.





# Growing businesses that align with Saving our Species objectives: Wild Idea 2020

In 2019, a co-design partnership with SoS, NAB Foundation and Odonata saw the launch of an Australian-first, environmentally-focused business incubator – Wild Idea. Following its inaugural success, the program continued in 2020 and received a 300% increase in entries. The NAB Foundation invested \$75,000 to support the program.

This year, not even a global pandemic could stop 71 entrepreneurs developing their innovative ideas to make their mark in the biodiversity, conservation and regeneration movement. The six-month program was conducted as a webinar and took the participants' early-stage ideas through to commercial launch.

The top six finalists continued through an intensive four-month coaching program with the intent to turn their idea into a business.

Wild Idea 2019 finalists thrived in 2020, with <u>Wildbnb</u> now a major provider of recovery habitat for species, having garnered the support of WWF and SoS. The <u>Grow Love Project</u> has also become an entrepreneurial success story, co-creating the SoS 'Business of Biodiversity' podcast and producing the Local Land Services 'Big Shift' podcast.

#### **Australian Geographic**

Our marketing partnership with Australian Geographic continued throughout 2019–20, helping to drive awareness of the SoS program and the importance of threatened species conservation through fundraising, media coverage and the annual Australian Geographic awards.

Fundraising efforts by Australian Geographic raised \$7000 for the brush-tailed rock-wallaby, glossy black-cockatoo, mountain pygmy-possum and powerful owl.

SoS sponsorship of the Conservationist of the Year category at the Australian Geographic annual awards, for the second year running, raised awareness of the program and offered the Minister an opportunity to connect with an engaged and influential audience.

SoS was featured in Australian Geographic marketing and communications collateral promoting the awards – including four digital content advertorials, three features in a solus e-newsletter and five Facebook posts.

### Smoky mouse miraculously survives bushfires, found in Kosciuszko National Park

Good news for the smoky mouse.

By Australian Geographic • June 22, 2020 • ① Reading Time: 2 Minutes • 🖨 Print this page



#### Help save the glossy-black cockatoo

Glossy black-cockatoos face a tough future. Listed as vulnerable in NSW, the species has specialist dietary and nesting needs, eating only the cones of a few species of she-oak and nesting exclusively in the hollows of old-growth gums. Habitat loss has reduced both resources.

By AG STAFF • November 7, 2019 • ⊙ Reading Time: < 1 • ⊜ Print this page



#### **Industry recognition**

SoS and Fujitsu's innovative Digital Owl project has won awards in both technology and sustainability domains:

- WINNER 2019 Banksia Award, Large Business
- WINNER 2019 NSW Green Globe, Natural Environment
- WINNER 2019 CRN Impact Awards, Digital Transformation
- FINALIST 2019 Paragon Awards, Imagination
- FINALIST 2020 ITnews Benchmark Awards, Sustainability Category.

The SoS Saving our Superb Parrot project also won the Australian Government Partnerships for Landcare Award at the NSW Landcare Conference in 2019.







### **Volunteering**

Thousands of volunteers contributed to SoS programs in 2019-20. SoS has over 200 dedicated volunteers from over 50 programs focused on specific threatened plants and animals.

In partnership with NPWS, volunteers address threats to species, key threatening processes, and work to restore plant and animal habitat, as part of SoS conservation strategies. Some projects in 2019-20 included:

- shorebird recovery monitoring and protecting beach-nesting birds along the NSW coastline
- koala programs planting trees, surveying and monitoring
- pest eradication invasive weeds, feral animals, habitat restoration
- bushfire recovery monitoring, planting, pest and weed programs.



# **Case study**

### **Operation food drop**

Immediately following the summer 2019–20 bushfires, thousands of sweet potatoes and carrots were flown by helicopter into NSW national parks, with our partners Woolworths, Foodbank and WWF-Australia banding together to support the SoS aerial food drop program.

WWF-Australia provided \$50,000 for more helicopter flights to deliver emergency food to the endangered brush-tailed rock-wallaby, offering an innovative short-term solution to the food shortages, while we waited for other food sources to become available.

Woolworths and Foodbank donated more than \$50,000 of in-kind fruit and vegetables through this partnership, including a delivery of much-needed fruit to 26 wildlife carers dealing with the inundation of flying-foxes affected by heatstroke.

Woolworths also supplied nuts, which were delivered to the NSW boulder fields where mountain pygmy-possums are found.

This partnership is an excellent example of different organisations pooling resources and expertise to deliver urgent actions for our threatened species.







### **Aboriginal engagement strategy**

SoS Aboriginal engagement and partnerships acknowledge that Aboriginal people continue to care for and manage their Country. We also recognise that the knowledge about Country, including about species and their place in broader ecology, has been handed down through generations, embedded in culture, language and land management practices.

SoS has a responsibility to Aboriginal people and communities to engage meaningfully about threatened species management and in 2019–20 we initiated a dedicated project to further embed Aboriginal engagement into SoS.

The project seeks to outline principles and practices that can guide SoS to ensure engagement and collaboration with Aboriginal people and communities is conducted in a way that is respectful and mutually beneficial. It also provides a framework for the development of strategic local relationships and partnerships that may contribute to environmental health and species conservation into the future.

We now have various projects with Aboriginal groups and several established relationships for future engagement. SoS will continue to seek wider and deeper engagement of Aboriginal communities in threatened species conservation.

### Gumbaynggirr Koala project learning from Aboriginal culture

Working with the Gumbaynggirr community, this project applies cultural lessons from Aboriginal stakeholders to the management of threatened species and their habitat. A series of workshops with Aboriginal elders, rangers and community members identified the significance of using storylines and traditional knowledge in threatened species management.

The first workshop, led by elder Aunty Shaa Smith, discussed the creation story of the Dunggirr Gagu (Koala Brothers). Woven within this story are cultural protocols and lore that guide Gumbaynggirr engagement in threatened species conservation, forming the framework for the management plan and monitoring. This project will be used to explore similar culture-inspired initiatives in other regions.

### **Cultural burning to protect** threatened species

Many Aboriginal people are skilled in the use of fire to manage the land. SoS is supporting several Aboriginalled cultural burning projects to care for Country.

These include the Gumbaynggirr community and rangers, Ngulingah rangers and Minyumai rangers, in partnership with the Rural Fire Service Hotspots program. These projects focus on capturing traditional knowledge around cultural burning for koalas and other key bio-cultural threatened species. They also incorporate capacity building and training of Aboriginal teams and support intergenerational transfer of fire knowledge within their communities.



### Conservation co-investment projects: Co-investing to benefit threatened species and ecological communities

SoS is working with groups that can deliver large-scale conservation projects for landscape species or threatened ecological communities. Each organisation brings their expertise, a cash contribution and networks of volunteers, with SoS contributing further funds.

Following the projects' commencement in 2018–19, our six co-investment partners are all implementing on-ground strategies to support the objectives of SoS, with great progress made this year.

#### **Big Scrub Landcare**

The Re-establishing Rainforest Program is engaging professional bush regenerators to restore 58 rainforest remnants across New South Wales. including World Heritage Gondwanan Rainforest listed sites.

The combined restoration of rainforest TECs across the Big Scrub landscape will contribute to longterm viability.

#### **Bush Heritage Australia**

The Naree Station Project is helping us to better understand, manage and improve the condition of the Coolibah-Black Box Woodlands TEC in northern New South Wales. The project is also undertaking monitoring and threat mitigation works, including feral animal control, weed control and an appropriate fire regime.

The Tarcutta Hills Project is improving and extending the White Box Woodland and threatened bird habitat that occurs at Tarcutta Hills Reserve, by managing threats to the ecological community.

#### **Foundation for National Parks** and Wildlife

The Nectar Sippers project was created to improve the nectar resources that once sustained populations of black-chinned honeyeaters, dusky woodswallows and little lorikeets. This project is progressing on habitat enhancement and restoration of nectar resources.

The Petaurus connection project (Petaurus is the genus containing flying phalangers or wrist-winged gliders, including the squirrel glider) is restoring natural habitat connections across the Abercrombie catchment to help conserve the squirrel glider, spotted-tailed quoll and scarlet robin.

The Trails for Tails project targets the Albert's lyrebird and marbled frogmouth, which inhabit subtropical rainforest. This project is improving knowledge of where these species occur on private land to understand threat management activities.

### **Greening Australia**

The Great Southern Landscapes Program aims to restore and increase foraging habitat of the superb parrot on approximately 700 hectares of land on private and public tenures.

In 2019–20 this project has progressed by protecting and enhancing known and potential remnant habitat.

#### **Molonglo Conservation Group**

The Pink-tailed Worm Lizard Project aims to improve and maintain remnant habitat of *Aprasia* parapulchella - the pink-tailed worm lizard - by managing threats to the species and its habitat across the Googong-Burra locality of New South Wales over six years.

The project is in its early stages, with a focus on building community support for habitat conservation and work with landholders with remnant habitat of this species. Molonglo Conservation Group has signed nine agreements for pink-tailed worm lizard habitat conservation in the last 12 months.

#### **Nature Conservation Council**

The Large Forest Owls Project protects and enhances important nesting habitat and food resources for the barking owl, the powerful owl and masked owl (or large forest owls) in the Richmond-Clarence Lowlands, which is under increasing threat.

The project is engaging at a property level and facilitating the mitigation of actions through a series of online workshop events and direct landholder support to develop and improve property management plans.



# Case study

### **Protecting large forest owls in the Northern Rivers**

The vulnerable barking owl has become extinct across much of its historic range in New South Wales, with only two remaining strongholds in the Pilliga Forest and across the Richmond-Clarence Lowlands in the Northern Rivers region of the state.

In partnership with SoS, Nature Conservation Council (NCC) is contributing more than \$400,000 of investment over four years to protect and enhance key nesting habitat and food resources for the barking owl, primarily in the Richmond-Clarence Lowlands.

Wildlife Acoustics Song Meter Recorders (SM4s) have been installed on priority properties to monitor population data during, and potentially beyond, the term of the project. A pilot study is utilising this data to identify core barking owl territories and guide on-ground nest searches.

Despite impacts from the 2019-20 bushfires, flooding and COVID-19, NCC was able to adapt and make progress:

- NCC campaign raised funding in response to the 2019–20 bushfires to purchase nest boxes to increase populations of prey species.
- Owl conservation education, the Hotspots fire program and landholder engagement and community education events were modified due to the 2019-20 bushfires and COVID-19. An online workshop was held instead, and a Hotspots workshop postponed until 2020-21. Videos were produced and made available online to guide landholders and organisations in owl recovery actions.
- Species monitoring: Approximately four weeks of nocturnal and diurnal field surveys were undertaken by the project team and/ or a wildlife consultant, generating accurate baseline data of large forest owl populations, 20 sites where barking owls were detected, two barking owls detected on multiple nights which constituted a high use area for onground assessment, and a trial nest tree search.



### Saving our Species and the Environmental Trust: Working together to deliver more projects

The Trust spent more than \$1.1 million to support SoS Partnership Grants projects in 2019–20, including actions for 26 site-managed species, 12 landscape-managed species and 67 co-occurring threatened species.

Highlights from projects in 2019–20 include:

- The first NSW release of 20 captive-bred regent honeyeaters into the wild and the sighting of the first known captive-bred and released bird to survive in the wild for over five years, as part of a larger partnership.
- The preparation of two more sites for the translocation of crimson spider orchid and the ongoing propagation of over 6000 crimson spider, sandhill spider and Oaklands diuris orchids for staged translocation from 2020–21.
- The implementation of seven ecological burns for eastern bristlebird, native jute and threatened macropod species in the northern NSW ranges area.
- The release of 50 12-month-old laboratoryreared hatchlings of Bell's turtle in addition to the protection of 27 Bell's turtle nests from fox predation.
- The successful partnership with the Australian National Botanic Gardens, which involved the propagation and planting of four threatened plant species (Bossiaea bombayensis, Dodonaea procumbens, Eucalyptus aggregata and Eucalyptus pulverulenta) that help form habitat for threatened woodland birds, including the scarlet robin.

# Biodiversity Conservation Trust and Saving our Species: Working together to secure threatened species on private land

For many of our threatened species, securing habitat on private land is essential to their recovery. As the leading private land conservation agency in New South Wales, the Biodiversity Conservation Trust (BCT) uses SoS recovery actions, SoS expertise and SoS data in planning and designing targeted programs.

In 2019–20, the BCT launched a koala habitat conservation tender in the southern highlands and began the planning phase for the plains-wanderer conservation tender in the Riverina. Both these tenders have benefitted from SoS input, to ensure best conservation outcomes for the target species.

### Southern Highlands koala tender

The Southern Highlands is home to 10% of the state's koala population; one of the most significant koala populations in southern New South Wales. In November 2019, the BCT began engaging landholders to protect priority koala habitat on private land to ensure ongoing koala movement and dispersal.

By working closely with Wingecarribee Shire Council and SoS, the BCT's conservation tender will contribute to a comprehensive conservation package for the southern highland koalas.

# Riverina plains-wanderer conservation tender

The plains-wanderer is a very fussy grassland bird whose key population is on the NSW Riverina plains. The BCT spent 2019–20 working closely with SoS and Local Land Services staff to design a tender that builds on work with landholders in the Paddocks for plains-wanderer program.

The BCT tender will result in long-term appropriate management of grassland habitat for the plains-wanderer. The tender will roll out in 2020–21, engaging landholders who wish to receive annual payments for managing their plains-wanderer habitat.





# Case study

### **Endangered orchid introduction into Woomargama National Park**

Endangered crimson spider orchids will soon be introduced by Local Land Services into Woomargama National Park, as part of the NSW **Environmental Trust and Saving our Species** Partnership Grants-funded Wild Orchids project.

The project aims to improve the long-term viability of three endangered orchid species: the crimson spider orchid (Caladenia concolor), sandhill spider orchid (Caladenia arenaria), and Oaklands donkey orchid (Diuris callitrophilla).

These species now only occur in tiny numbers in the wild and are at considerable risk of extinction, with monitoring in 2014 indicating there were fewer than 75 crimson spider orchids. fewer than 2000 sandhill spider orchids and fewer than 1000 plants of the Oaklands donkey orchid left in the wild in New South Wales.

To safeguard these orchid species from becoming extinct, we need to boost the population sizes to at least 3000 plants for each of the three species. To do this, we not only need to increase the abundance of plants within the existing population sites, but we also need to establish new populations.

Work is currently underway to set up two areas within Woomargama National Park as translocation sites to establish new populations of the crimson spider orchid. Parklands Albury Wodonga, in partnership with Murray Local Land Services, the Department's Biodiversity, Conservation and Science Directorate, NPWS and Woomargama National Park Volunteers, have started fencing out two 50 metre x 20 metre areas.

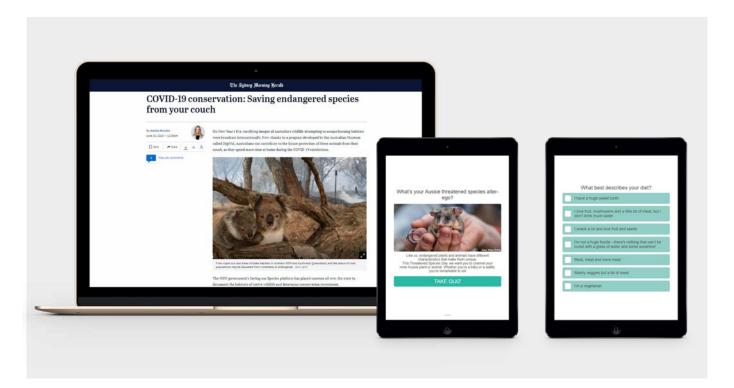
The two Woomargama sites will be planted out with laboratory-grown orchids propagated by experts from the Royal Botanic Gardens Victoria within the next two years. The planting out of the orchids will be a momentous step in the conservation and survival of the endangered crimson spider orchid.

### **Saving our Species**

# Raising awareness in the community

### Telling stories that inspire the people of NSW

To achieve the program's objective of getting more people to know and feel positive about SoS, our communications efforts ramped up in 2019–20, with more stories and engaging content produced and shared than ever with the NSW public.



#### Media coverage

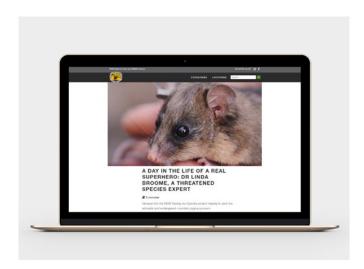
SoS achieved over 1000 pieces of media coverage (including online publications, print, radio and TV media) during 2019–20 – an average of 83 articles a month. The majority of this coverage was positive in its sentiment towards the SoS program.

In January, following our prompt on-the-ground response to the summer bushfires, and in June, when we promoted our COVID-safe volunteering opportunities, 200 media articles were published.

#### Saving our Species digital channels

Since December 2019, SoS increased its newsletter distribution from quarterly to monthly and tested new content, including guizzes, listicles and more videos. The number of newsletter subscribers increased by 35% in the last 12 months while retaining our high average open rate of 35% and click-through rate of 10%.

SoS invested in videos to help bring more stories to life in 2019-20. A total of 22 videos were published to the website and many more used in social media posts. We also used articles on the SoS updates page to profile the people, plants and animals of the program, publishing 22 long-form articles over the year.



#### Partnering with stakeholders to expand our reach

SoS worked closely with the NSW Government, NPWS and the Department to distribute our content on their social media platforms, developing bespoke content for their audiences. An average of one post per day was published on Departmental and Government social media platforms in 2019-20.

Through an ongoing content collaboration with NPWS, SoS is also creating content for the National Parks blog, reaching a new and broader audience than it can through its own channels alone. Three SoS blogs have been published since March, receiving nearly 5000 unique page views.

### 'Business of Biodiversity' podcast

In June 2020, SoS launched the first episode in its <u>new podcast series</u>, all about why investing in threatened species conservation is simply good for business. The Business of Biodiversity podcasts explore threatened species and the actions farmers, businesses, NGOs and everyday people are taking to protect them.



Each 30-minute episode features a mix of SoS partners, including landholders, threatened species experts and businesses, discussing the positive outcomes they have experienced through adopting biodiversity-friendly land practices in different settings.

The first episode was well-received by partners and the public, and more episodes will be released throughout 2020-21.

#### **Community engagement**

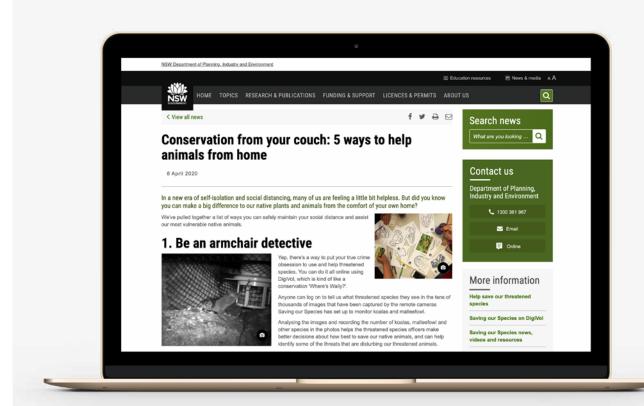
SoS regional staff made extra efforts to connect with their community and achieve outcomes for threatened species this year, despite COVID-19 restrictions and emergency responses to bushfires.

Staff hosted nearly 300 events across New South Wales, including events commemorating Threatened Species Day, which takes place annually on 7 September.

These events saw a total attendance of more than 15,000 people. Events included a NAIDOC celebration and Poetry in First Languages event focused on the glossy black cockatoo in Moss Vale and a Birdhaven Festival at Shoalhaven Heads, attracting 1000 attendees.

Three new webpages were created, including the 'Keeping up with the superb parrot' resource, and 36 fact sheets, posters, guides and brochures produced.





# Case study

### Conservation in the time of COVID-19 - how we engaged with the community despite restrictions

When COVID-19 restrictions came into place and with New South Wales under lockdown for several weeks - the SoS team responded quickly, creating content to help make conservation possible and - more importantly - safe.

These unprecedented lockdowns coincided with Citizen Science Month, offering SoS the perfect opportunity to engage our audience in a new and exciting way.

An article titled Conservation from your couch: 5 ways to help animals from home outlined some of the ways people could safely maintain their social distance and assist our most vulnerable native animals, and was extraordinarily well-received, being published on the NSW Government's Facebook page, and in the NPWS Naturescapes monthly newsletter (with a subscriber database of 100,000+ people). The article was the 4th most viewed article on the EES News section between April and June 2020, with 2000 pageviews.

More than 700 people completed the first SoS personality quiz during the lockdown period, taking the tongue-in-cheek quiz to discover 'What iconic threatened species are you?'.



It's been nearly five years since the NSW Government made its \$100 million investment to the SoS program - but real, tangible results for our species will take time.

We're on track to secure a future for our threatened plants and animals, but the hard work of SoS and its partners must continue.

To continue achieving outcomes, SoS will prioritise:

- our capacity to respond to emergencies, like bushfires, floods and drought
- maintaining existing partnerships and establishing new ones, with partners integral to the success of our program
- · deepening our active engagement with Aboriginal communities on conservation actions
- continuing and expanding our investment in science and research
- improving reporting to provide better transparency for the public.



#### **Photos:**

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