NSW Wildlife Rehabilitation

2021–22 Annual Report

Department of Planning and Environment

NSW GOVERNMENT

Preface

Wildlife rehabilitation is the process of assisting injured, sick or orphaned native animals in such a way as to reduce their distress and optimise their chances of returning to live in their natural habitats. It is a daunting task involving the rescue of tens of thousands of animals each year, mostly by wildlife rehabilitation organisations and their dedicated volunteers. Without their efforts and those of veterinary professionals many of these animals would not receive humane care or this second chance at life.

Volunteer numbers in New South Wales continue to grow off the back of the many wildlife emergencies that have occurred in the previous 2 years. In 2021–22 more than 128,000 animals were rescued involving 543 different species, including 109 threatened species. There were more different native species rescued this year than ever before.

We know this because you told us. New South Wales is the only state that can accurately report on its wildlife rehabilitation outcomes. It's a credit to wildlife rehabilitation organisations that they ensure their volunteers keep records and report them to us each year. Keeping accurate records is essential to ensuring your hard work makes a difference to the conservation of each species rescued.

So, thank you to all the wildlife rehabilitation organisations who have submitted their data on time so we can continue to tell government, industry and the community about the important work you all do. Finally, an enormous thank you to all the wildlife volunteers and veterinary professionals, members of the public, non-government groups and response agencies, and donors here and abroad who contributed to fundraising for wildlife. In the darkest hours, it was you who stood up to help our precious native wildlife.

We invite you now to read this NSW annual wildlife rehabilitation report for 2021–22.

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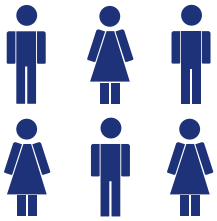
NSW wildlife rehabilitation sector 2021–22 snapshot

People power



8,621
volunteers

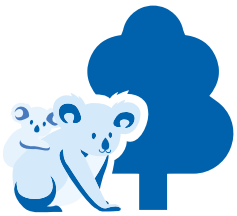
6%
increase from the previous year

60%
increase over the last 5 years

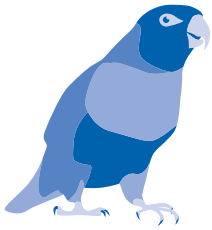
Wildlife rescues

128,262
native animals across
543
species rescued

16%
increase in rescues from the previous year



3,691
threatened animals rescued

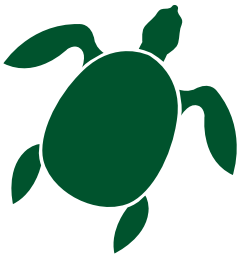


11,708
rainbow lorikeets were the most rescued species

A second chance

31,290 (24%)
native animals released back to the wild

4%
increase from the previous year



28%
of threatened animals released back into the wild
(6% increase from previous year)

Introduction

This annual report is the collective story of the NSW wildlife rehabilitation sector. It is the fifth to be compiled by the National Parks and Wildlife Service (NPWS), as part of the Department of Planning and Environment (the department). It communicates the significant efforts of volunteers in the sector and reports on trends in the rescue and rehabilitation of sick and injured wildlife.

In 2021–22 there were 8,621 volunteers who supported or were otherwise directly involved in wildlife rehabilitation in New South Wales. These volunteers represent more than a third of people involved in this activity across Australia and are dispersed across the state. Most of these volunteers belong to a wildlife rehabilitation group. They are augmented by a small number of independent individuals and other organisations such as zoos and fauna parks.

All wildlife rehabilitation providers collect data about the diversity and volume of rescued animals coming into care, including large numbers of threatened species. The data contains useful information on the type of animal, date of rescue, its sex, age, physical condition, reason for rescue and fate.

The data is collected and provided to NPWS for collation at the end of each financial year. Where possible, these records are then uploaded to NSW BioNet (the NSW Government repository for wildlife data) and SEED (the NSW Government central resource for Sharing and Enabling Environmental Data) to be used by species conservation officers, researchers and biodiversity assessors.

Apart from these annual reports, the department's 'NSW Wildlife Rehabilitation dashboard' shows over multiple years what this sector does and what is happening to wildlife in New South Wales. It provides a rich resource from which evidence-based analyses can be made, whether that is looking across the state or in your very own patch. With the help of the Foundation for National Parks and Wildlife's Wildlife Heroes program we are communicating the data's value to the community through social media outlets and podcasts.

This report gives an insight into the work of the wildlife rehabilitation sector. It provides a snapshot of key outcomes for 2021–22 in terms of volunteer numbers and animal rescues (see Appendix B for data assumptions and what constitutes a 'rescue'). We focus on outcomes for native birds, reptiles and amphibians, mammals (terrestrial) and marine mammals and provide case studies to highlight the work of individual volunteers, activities and species of interest. We also look at trends across reporting years to get a sense of what has changed.

The data presented has limitations. Data quality is being continually improved and may be subject to change. NPWS has collated the various datasets and made every effort to improve consistency without compromising the accuracy of the results.

This report includes only native animals. Introduced animals, fish and invertebrates have been omitted. Marine mammal rescues are treated separately and are not included within the larger data calculations throughout the report.

The 'Find out more' section at the end of the report details where to find further information about the wildlife rehabilitation sector, how to get involved, plus links to all programs and webpages mentioned in the report.

People in the sector

Volunteer participation grew by

6%

Volunteers are essential to wildlife rehabilitation. They are first responders to native animal emergencies, often working in challenging and confronting circumstances and bearing significant personal cost and stress. We could not do this work without their ongoing commitment and help.

This section reports on the number of volunteers in the sector calculated from membership lists provided by each wildlife rehabilitation group and includes independent licence holders.

In 2021–22 there were 8,621 wildlife rehabilitators in the sector. Fifteen groups reported an increase in membership and 9 reported a decrease. Overall, volunteer numbers increased by 5.8% on the previous year and 60% over the last 5 years. More than 50% of the rehabilitation groups have more than 100 members. The largest wildlife rehabilitation group is WIRES (Wildlife Information Rescue and Education Service Inc), with over 4,000 members.

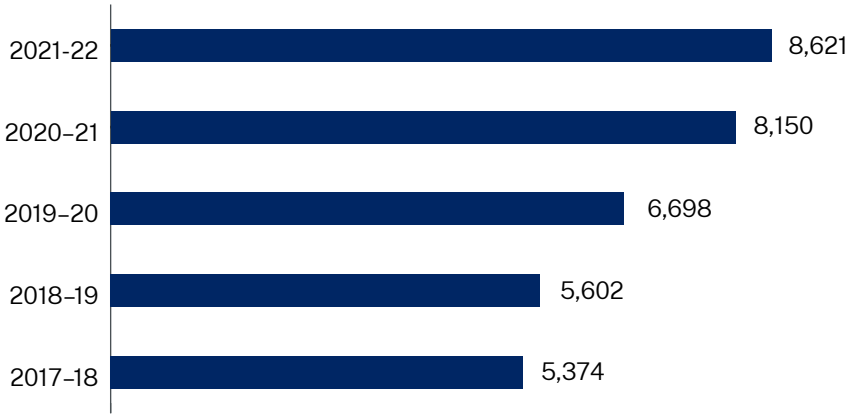


Figure 1 Number of reported wildlife rehabilitation volunteers over the 5 years to 2021–22

New volunteers are encouraged to watch the welcome video on the department's 'How to get involved in wildlife rehabilitation' webpage.

Wildlife rehabilitation groups and their volunteers are spread across most of New South Wales. Wildlife Carers Network Central West is a relatively small group that celebrated its 25th anniversary this year and continues to proudly service the region around Mudgee, Rylstone, Kandos and Lithgow (Figure 2). In this report, their highly experienced President John Marshall shares his amazing story.

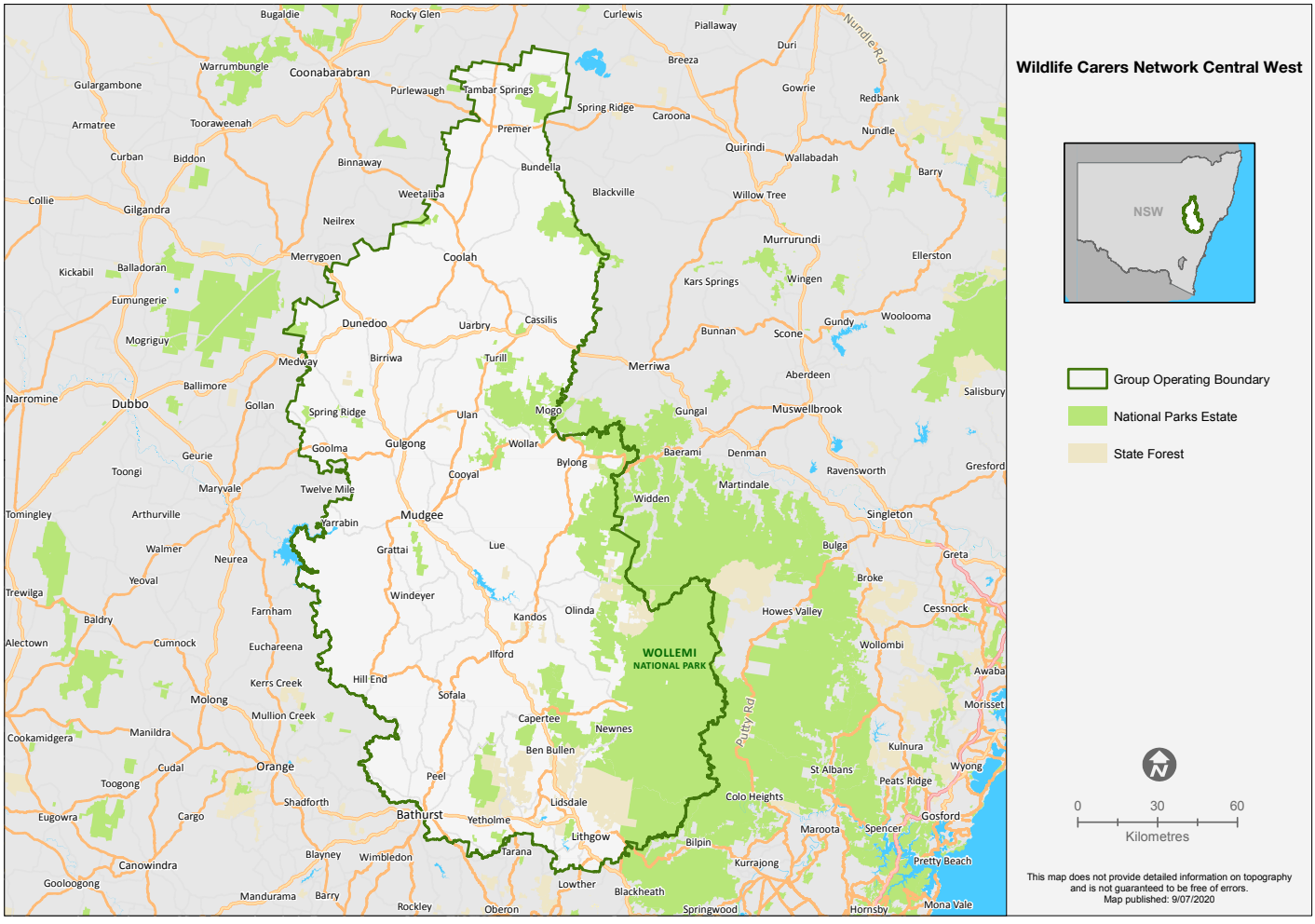


Figure 2 The geographic area serviced by the Wildlife Carers Network Central West

Case study: John Marshall — it began during World War Two

Story by John Marshall, President, Wildlife Carers Network Central West

The John Marshall story began during World War Two. My father went to war with the Australian Army 7th Division and spent from 1940 to 1944 in the Africa campaign. The original plan was for the 7th to leave Africa and go immediately to the islands and join the conflict with Japan. Fortunately, the then Prime Minister issued an instruction they were to return to Australia, to Atherton Queensland, arriving early 1944.

Mum visited dad in Queensland early 1944, after which the 7th Division then embarked for the Pacific theatre of war. I was born in January 1945, and it was a further 12 months before dad came home and saw his son.

I grew up, one of 4 siblings, on a sheep property that my father had purchased in the Northern Tablelands near a small town called Emmaville. There we learned the meaning of family, honesty and helping a mate, from caring parents. Dad was a typical Australian bushman, had a love of native flora and fauna, and educated his children in respect and caring for our native habitat. We saw many native animals, including koalas and spotted tailed quolls, in numbers on the property. Now unfortunately they are threatened, amongst other species.

I first raised a fledgling kookaburra and juvenile magpie at the age of 7 years, and that experience has influenced my caring for native animals ever since.

In later years after joining the Bank of NSW aged 14, I joined the NSW Fire Brigades (NSW FB) in 1965 as a career firefighter and served with them for 40 years. It was with this service that I really became involved with native animals and was later to become a licensed wildlife carer.

Being at a rescue station (General Land Rescue and Vertical Rescue) on the outskirts of Metropolitan Sydney with the expanding interface between bushland and development there was ever increasing interaction between dangerously venomous snakes and the civilian population. We were approached by WIRES to be trained in reptile handling for catch and release operations as they were finding it difficult to cater to all calls to reptiles on a 24-hour basis. Subsequently we were trained by WIRES Reptile Training Team and responded to snake calls whenever we were not involved in firefighting or rescue.

I subsequently joined WIRES, as a licensed carer, Blue Mountains branch and later became the founding Chair for the new Hawkesbury branch. I spent a period of time as a member of the WIRES Reptile Training Team and spent most of that time training firefighters in reptile handling.

After retirement from the NSW FB, my wife and I moved to the Capertee Valley, as we always had the need to return to live in bushland settings. I joined the group, Wildlife Carers Network Central West Inc (WCNCW), and to this day am active in animal rescue and care, being experienced with most species of native animals. I am currently the president of WCNCW, and our group covers a very large area encompassing the central tablelands from Lithgow, Bathurst, Dunedoo, Rankin Springs and back around the escarpment of the national parks to Lithgow.

Our network celebrated 25 years of existence in 2021, and hopefully, this service will continue into the future. We share our licensed area with WIRES and work cooperatively for the betterment of out native animals. WIRES have been very supportive of us.

None of the before mentioned would have occurred without the support of my wife (a trained carer of native animals) and my family, without them my involvement would not have been possible.

In conclusion, it would be remiss of me not to make comment on the current needs of our native animals after the 2019–2020 disastrous bushfires. Having 32 years' service also, as a volunteer firefighter with the NSW Rural Fire Service, I spent 12 weeks involved in operations controlling the Gospers Mountain/Wollemi and Kerry Ridge fires. From a wildlife carer's perspective this was the most tragic and unsettling personal experience I have had in native animal care. The utter devastation of native animals either by direct thermal injuries, or those that died from the heat and smoke was heartbreaking personally. We lost so many and saved so very few.

I am currently involved with the NPWS working group to formulate training and setting up the Wildlife Emergency Response Teams, which I find most rewarding. And I feel the development of such teams can be of great benefit to all our animals that come under threat from all natural disasters.

Finally, I am always asked what my favourite animals are – wedge tailed eagles, all snakes and most of all the humble wombat.

Annual trends over 5 years

590,072

native animals rescued in the 5-year period to 2021–22

Before focusing on 2021–22, this section of the report investigates annual trends in wildlife rehabilitation data over the past 5 years. This enables us to compare results between years and see what is changing over time.

Number of rescues

There were 590,072 native animals rescued over the 5-year period from 2017–18 to 2021–22, an annual average of 118,014. The total number of rescues has been consistently rising over the last 5 years, until this year, when we saw a decline in total rescue numbers. Birds have been the most frequently rescued animal class every reporting year, accounting for more than half (53%) of all animal rescues (Figure 3). Mammals represent 34% of rescues and reptiles and amphibians account for 12%. There are also a relatively small number of unidentified animals rescued each year (1.6% of all reported rescues).

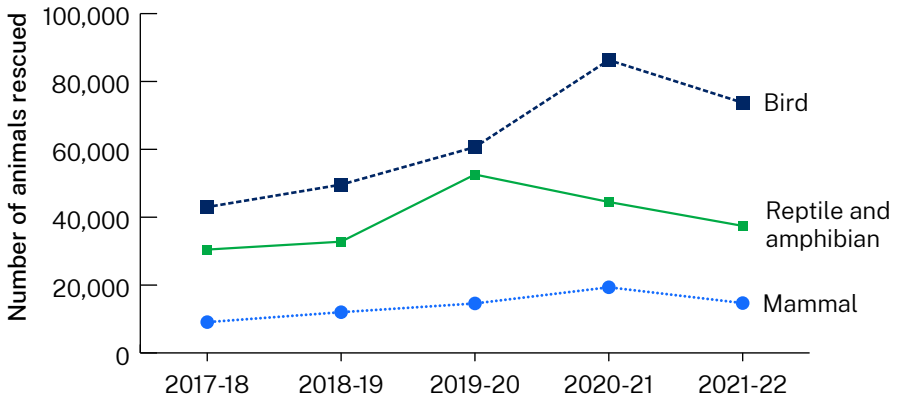


Figure 3 Number of rescues over the 5-year period 2017–18 to 2021–22 by class of animal

Rainbow lorikeets remain the most frequently rescued species, with 48,407 rescues in the last 5 years. They account for 8.2% of all animal rescues (Figure 4). The common ringtail possum, Australian magpie, Eastern grey kangaroo and common brushtail possum once again make up the top 5 most rescued species. Combined, these 5 species account for 29% of all native animal rescues in the past 5 years.

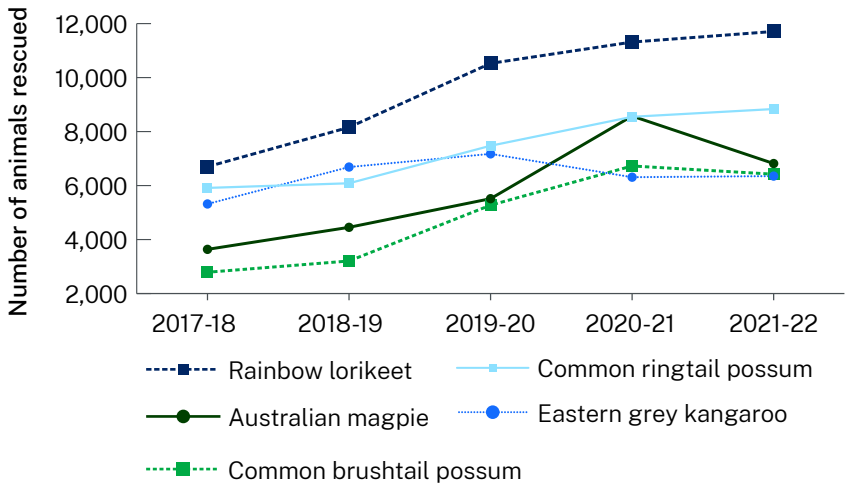


Figure 4 Top 5 most frequently rescued species over the 5-year period 2017–18 to 2021–22

Case study: Grey-headed flying-fox rescues — the 2019–20 anomaly

Just 2 years ago, during the 2019–20 reporting period, the threatened grey-headed flying-fox had an unprecedented increase in rescues and became the most rescued species that year. The reported causes were drought, fire and abandonment of pups, which coincided with the historic fires, drought and mass mortalities of the 2019–20 summer. Since then, the data is indicating that the disastrous 2019–20 season was likely an anomaly for grey-headed flying-foxes. The following year, only 2,746 animals were rescued. In 2021–22, this dropped further to 1,217 animals, which is 90% less than in 2019–20. This year grey-headed flying-foxes are only the 21st most commonly rescued native animal species in New South Wales.

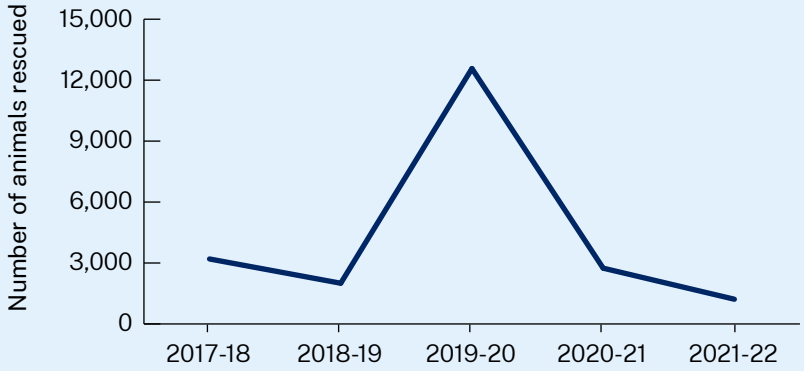


Figure 5 Grey-headed flying-fox rescues over the 5-year period 2017–18 to 2021–22

Reasons for rescue

It can be difficult to determine the reason why an animal needs rescuing. The danger may have passed by the time rescuers arrive and the cause of injury or illness may not be obvious. Consequently, more than half of all rescues are allocated an 'unknown' rescue reason every year.

In the last 5 years, more than 240,000 rescues have had a known cause. Motor vehicle collision accounts for almost 25% of these, and unfortunately, the number of rescues reported from vehicle collisions is increasing every year (Figure 6). Other types of collision (e.g. into buildings) are also common. When combined, 'collisions' account for 30% of all rescues with a known cause. The other most common reasons for rescue are 'unsuitable environment', 'abandoned/orphaned' and 'dependent on parent taken into care'. These 5 most common reasons account for 59% of all rescues where the cause is known (Figure 6).

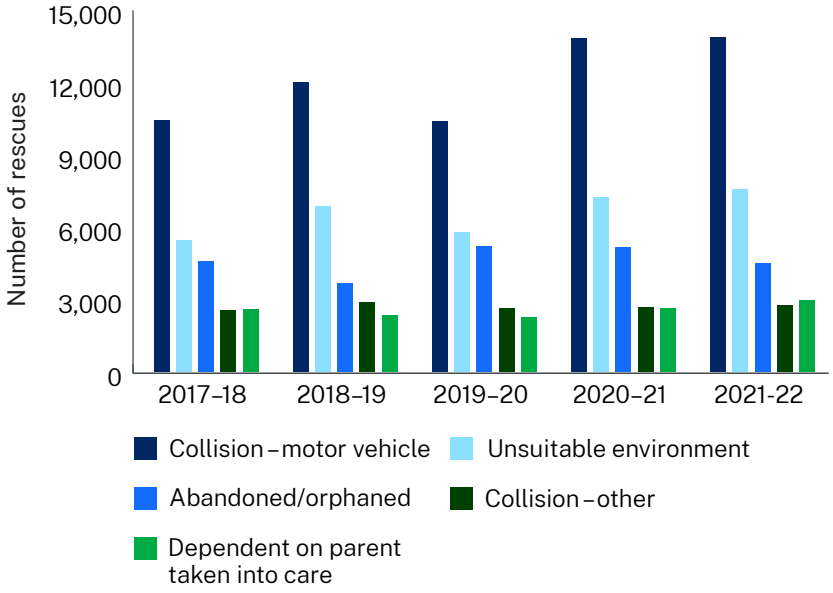


Figure 6 Most frequent reasons for rescue over the 5-year period 2017–18 to 2021–22

Fate of rescued animals

In the last 5 years 138,008 rescued native animals were released, relocated or reunited with their parents. This is an average of 27,602 animals every year and represents 23% of the total animals rescued. Each year an average of 50,096 reported animals die before rescuers arrive, die in care or require euthanasia due to their injuries or illness. Some animals neither die nor are released, but have alternative fates, such as simply being left in the wild and observed (never captured), being transferred to vets or remaining in care with a wildlife rehabilitation group. This year saw a decline in this 'other' category for fate, to only 29%. This is the lowest proportion for the last 5 years (Figure 7).

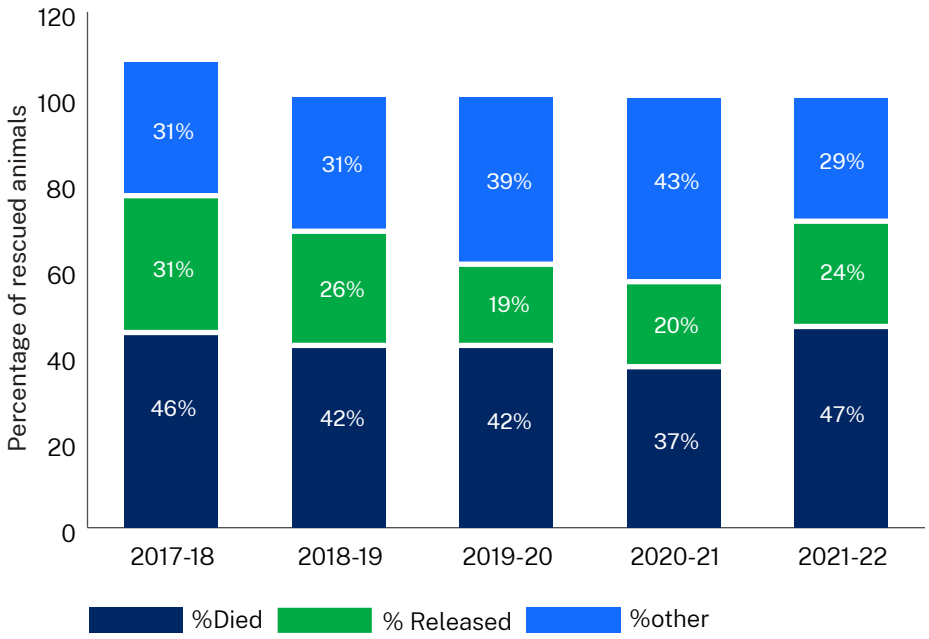


Figure 7 Comparison of fate of animals over the 5-year period 2017–18 to 2021–22

Case study: The critical role of euthanasia

For most people, there is nothing more confronting than being faced with a mortally wounded animal and knowing the only way to help end its pain is to end its life yourself. Yet wildlife rehabilitators faced this situation over 26,000 times last year alone. That's more than 70 native animals euthanased by rehabilitation groups across New South Wales, every single day. What is even more astounding is that the members of these groups are volunteers. They do not get paid but spend their own time and money to do this work. Their contribution to native animal welfare is enormous.

Rescuers and rehabilitators cannot access euthanasia drugs like pentobarbital, commonly called the 'green dream', as it is restricted for use by licensed veterinarians. Out in the field, shooting by firearm is a necessary and very common form of euthanasia. It is a humane means to end suffering quickly, particularly when time is short and transporting the animal would prolong or increase its pain.

Neil James joined Wildcare as a shooter about 8 years ago and soon after, volunteered to be their Firearms Coordinator. In 2021 he was elected president of the group. We are very thankful to Neil for telling us about life as a shooter.

Volunteer shooters like Neil make a huge contribution to animal welfare. Like rehabilitators, they pay their own ongoing costs. Shooters need to obtain and maintain their own firearms, including ammunition, which can be very expensive. They require a current firearms licence, at a cost of $200 every 5 years. Their firearms licence requires the extra endorsement of 'Animal Welfare' as a genuine reason for using it, at a cost of $40. They also need specific training to euthanase protected animals safely, often in a public place, which would otherwise be a criminal offence. The entire process often takes several months and requires substantial paperwork and police background checks.

Unlike some other wildlife courses, Wildcare offers their euthanasia course for free. The reason for this is as Neil says, 'It's generally a buyer's market'. Few people would offer their services unprompted. Euthanasia is not why most people sign up and while most rehabilitators experience both the joys and sorrows of rescue, rehabilitation and release, for those who are just shooters, their role involves far more of the sorrows. And so, recruiting shooters often involves actively finding existing firearms holders from the community to join the group.

The turnover for shooters tends to be much higher than rescuers and rehabilitators and Wildcare shooters retire as fast as they are recruited. The group may have dozens of shooters registered at any one time, but the 24/7 euthanasia burden tends to fall heavily on a minority of shooters.

Being a shooter presents numerous challenges. While most tasks do not present a technical shooting challenge, the mental and emotional load can be huge. At more than 10% of roadside car strike callouts, the responder is unable to find the injured animal. When asked if it is emotionally better to find the animal or not find it, Neil explains that being unable to find an injured animal can be distressing for shooters. They know a seriously injured animal may still be nearby, but they are unable to help it.

For Neil, it is the ethical and moral decisions that are the most difficult of all. When faced with a mortally wounded animal, the universally agreed noble action is to humanely euthanase it. Despite the situation, there is a sense of solace in knowing that you did the right thing; however, shooters often face situations that are not clear cut. In some cases, the codes of practice allow or require the euthanasia of animals that might otherwise survive. For example, if an animal can't be returned to its rescue location or if there are no rehabilitators or resources available an animal may need to be euthanased as the only viable option.

Wildcare has recently added a wellbeing presentation by a psychologist to their orientation and basic rescue course. The aim is to balance the hopeful expectations of new rescuers and shooters with an introduction to the fundamentals of coping with frequently challenging situations. Neil explains, 'If you know from the start that not every animal can be saved, you can cope better when they can't.'

Mental preparedness and support will help maintain an active and healthy volunteer sector. Wildlife euthanasia can be very distressing. If this raises any issues for you, there are services and resources that can help. Speak to your local general practitioner or contact a service such as Beyond Blue or Lifeline.

We thank Neil James for sharing this important story.

The year in focus 2021–22

128,262

animals rescued in 2021-22

In 2021–22, a total of 128,262 native animals were rescued across New South Wales. This is 16% less than the previous reporting year, but more closely aligns with the number of rescues in 2019–20, which was 129,024.

The 2021–22 reporting year saw 543 different native species rescued. This is 30 more species than were rescued in 2020–21, and is the highest number of species ever reported.

Top 10 species rescued

The 10 most rescued species in 2021–22 are shown in Figure 8. Once again, rainbow lorikeets were the most rescued species. They represented 9% of all rescues. The rates of the most frequently rescued species remained reasonably consistent when compared to last year. The large birds saw the greatest fluctuations in rescue rates: Australian magpie rescues declined by 21%, laughing kookaburras by 19% and tawny frogmouths by 14%. Sulphur-crested cockatoos were rescued 3,468 times this year, making them the seventh most common animal. This is the first time sulphur-crested cockatoos have been in the top 10 most rescued species. For a more detailed look at sulphur-crested cockatoo rescues this year, see the case study ‘Sulphur-crested cockatoo release rates crash’.

It is often difficult to determine the sex of animals that are rescued. When sex was known, the proportion of rescued males and females was equal (9%). Sex ratios have remained approximately equal over the last 5 years. This year around the same number of adults and young animals were rescued, with each age group accounting for 29% of all rescues. This year 96 eggs were rescued, representing less than 1% of all rescues. The remaining 41% of animals did not have their age or life stage determined.

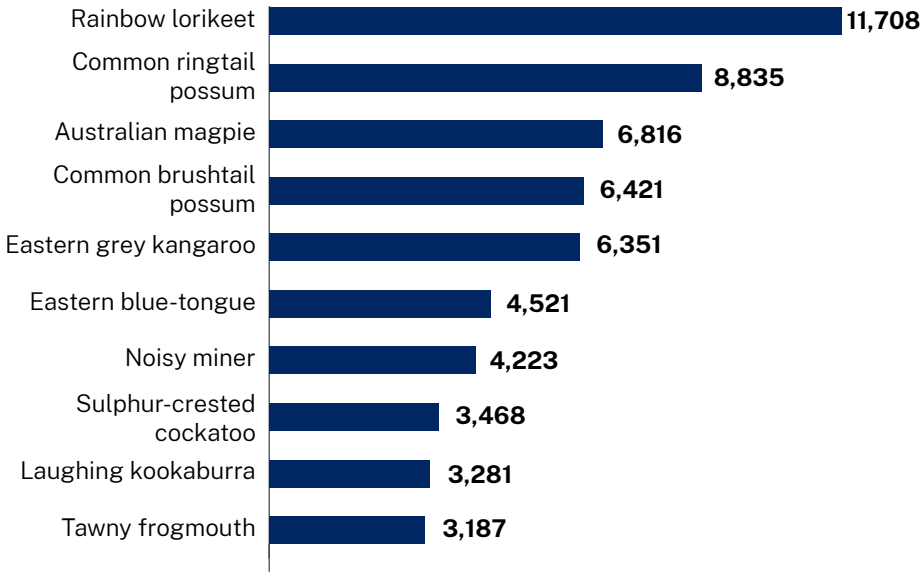


Figure 8 Top 10 species rescued in 2021–22

Spring and summer remained the busiest seasons for wildlife rescues, with 34% of rescues in spring and 28% in summer. The peak months for rescues were October (16,090) and November (15,441), which is slightly earlier than the previous year (Figure 9). Of the 37,837 rescues during spring, birds accounted for 65%, mammals for 25% and reptiles and amphibians just 10%. May (6,546) and June (6,037) were the months with the fewest rescues, which is also earlier than the year before, which was June and July.

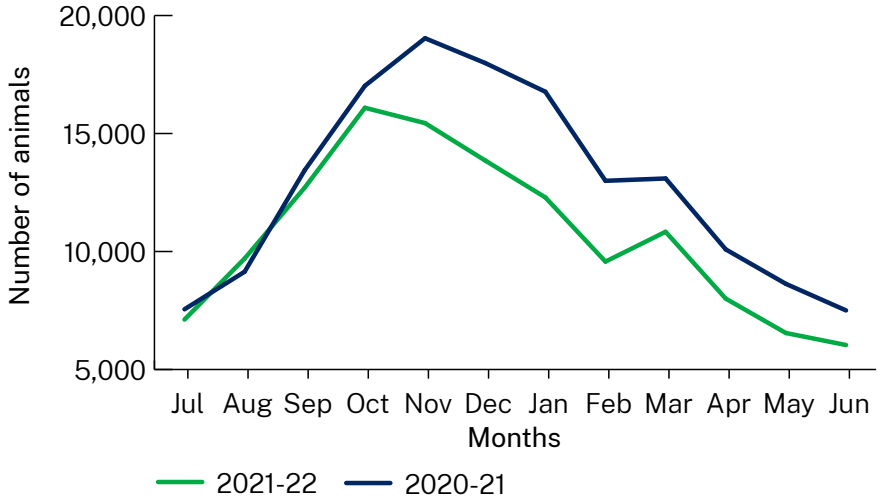


Figure 9 Rescues reported each month in 2020–21 and 2021–22

Motor vehicle collisions caused

26%

of all rescues

Why is wildlife coming into care?

It can be difficult or impossible to determine why an animal is ill or injured. Consequently, most rescues are reported with their cause 'unknown'. In 2021–22, this was 58% of rescues, down from 65% the previous year. Of the rescues with a known cause, motor vehicle collision consistently accounts for the highest number. This year car strike was responsible for 13,898 rescues, which is 26% of all rescues with a known cause. The vast majority (90%) of animals hit were birds and mammals. Unfortunately, 75% of animals that were hit by a car died. For reptiles, 'unsuitable environment' was the most common cause and accounted for 14% of all rescues.

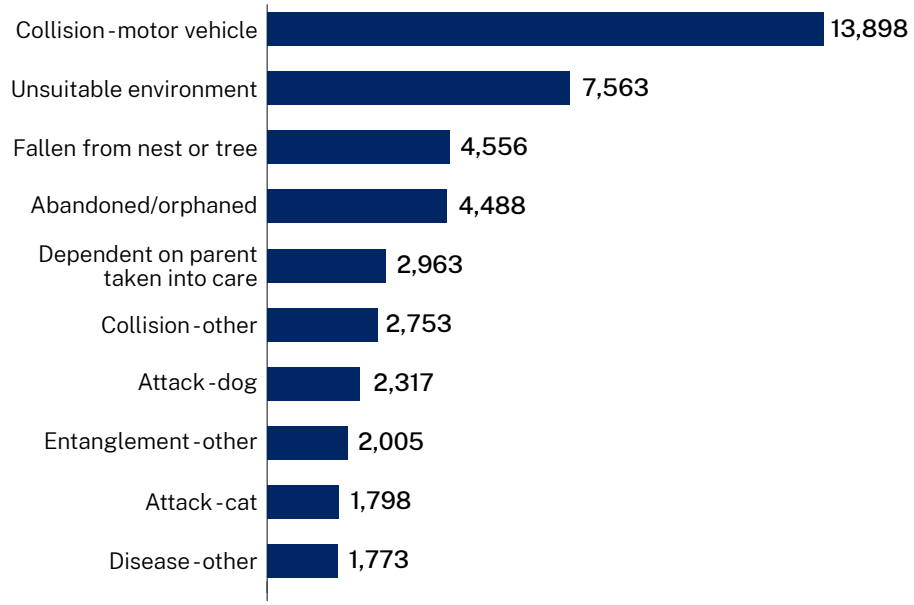


Figure 10 Most common reasons for rescue in 2021–22, excluding 'unknown'

Release rates improved by

4%

Fate of rescued animals

Rescued animals are usually found in a severely compromised state, limiting their chances of survival. Unfortunately, this means that many cannot be rehabilitated and returned to the wild. This year 31,290 animals were released, relocated or reunited with their parents. This represents a successful release rate of 24%, which is a 4% improvement on the previous year. Release rates were consistently improved across birds, mammals, reptiles and amphibians (Figure 11).

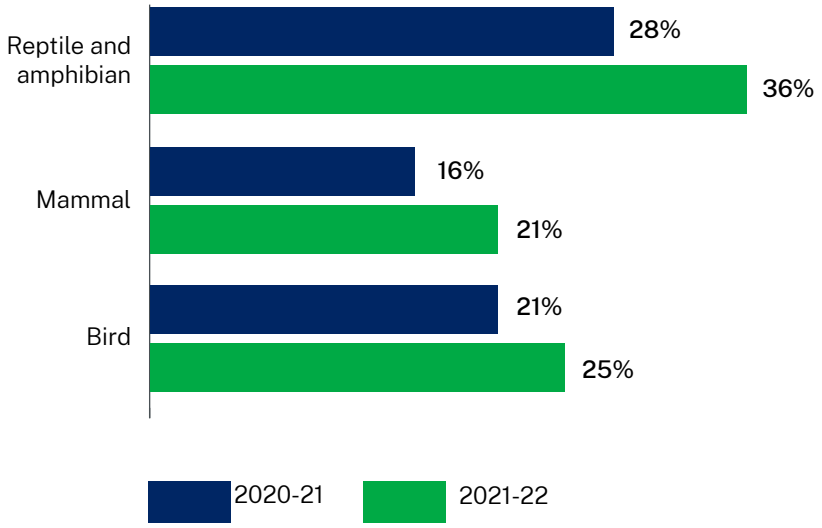
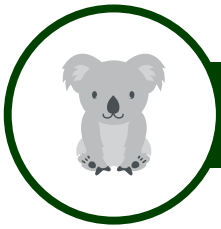


Figure 11 Percentage of animals released, relocated or reunited with parents 2021–22



3,691

threatened animals rescued

Threatened species

The 2021–22 reporting year saw 3,691 threatened animals rescued, which is a decline of 35% from the previous year. Although fewer threatened animals were rescued this year, more species were represented (109), compared to 2020–21 (101). Grey-headed flying-foxes were the most rescued threatened species once again, though their numbers declined by 56% compared to last year. Koala and green turtle rescues also declined this year, by 26% and 10%, respectively.

Ninety-six powerful owls were rescued, making them one of the top 5 threatened species rescued for the first time. The 5 most rescued threatened species account for 76% of all threatened species rescues. The release rate for the top 5 threatened species was 28%, which is 4% higher than for non-threatened species.

Top 5 rescued threatened species	Number rescued 2021–22
Grey-headed flying-fox	1,217
Koala	1,072
Green turtle	328
Powerful owl	96
Bush stone-curlew	93

Only 20 critically endangered animals were rescued this year, which is a 64% decline compared to the year before. Last year there were 22 red-tailed black cockatoos rescued; this year, there were none. Instead, hooded plovers were the most commonly rescued critically endangered species, with 7 rescues. Bellinger River turtles and regent honeyeaters were second and third, with 5 and 4 rescues, respectively.

Case study: Floods in northern New South Wales

Story by Anna Dicker, President Australian Seabird and Turtle Rescue

Australian Seabird and Turtle Rescue (ASTR) is a small successful charity, looking after the rescue and rehabilitation of seabirds, shorebirds, sea turtles and sea snakes. Plans were in place to replace our rusting turtle hospital and our future looked bright.

On 28 February 2022, we were hit by catastrophic flooding that affected most of the Northern Rivers region. We had to evacuate our many turtles and birds and transport them to safer facilities. Our aviary and storage sheds went under, our filtration equipment was destroyed and for a time we lost access to our property.

Help came from many areas, for which we will ever be grateful. But we had only just cleaned up when we were hit again by stormwater 3 weeks later. The aviary and storage areas went under again and the cleaning process had to be repeated. The creek lost salinity for over 4 months, so we had to change our systems to manufacture our own salt water. Ironically, although there was water as far as the eye could see, as we are not on town supply, we ran out of fresh water.

Offshore water quality was bad, currents changed and ocean patterns didn't make sense any more.

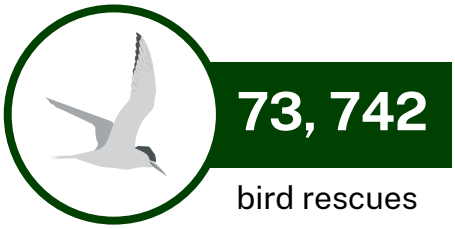
But we persevered, applied for grants, rebuilt our systems and mitigated as best we could for future climate events. Many people and organisations gave us so much support.

But one year on, the reality of functioning in a flood zone is becoming evident. Long delays on getting development approvals, new rules for flood prone land, builders as scarce as hens' teeth, lack of housing for tradespeople, building material shortages and facing the practical difficulties of meeting the many challenges are testing us to the maximum. Rising costs and falling donations, in light of all the need around us are things we are now having to face.

Anna Dicker would like to sincerely thank the businesses and organisations that supported ASTR through the floods and into the future 'We would not have been able to rebuild on our own. These grants have now guaranteed our future.'

Business Council of Australia, Cannon, Commonwealth Bank, Northern Rivers Community Foundation, NSW Wildlife Council, Service NSW, Westpac Bank, Wildlife Heroes, WIRES.

Birds



This year 73,742 birds were rescued, 15% less than the previous year. Despite fewer bird rescues overall, the species diversity was higher than ever. There were 339 different avian species rescued, including 73 threatened species. The wildlife rehabilitation sector also provided advice to the community about 6,422 birds. The most common species requiring advice were Australian magpies and rainbow lorikeets.

Rainbow lorikeets were the most rescued bird and the most frequently rescued native animal in 2021–22. They were rescued 11,708 times and accounted for 16% of all bird rescues in New South Wales. Australian magpies were again the second most rescued species and accounted for 9% of all bird rescues. The other top 10 most rescued birds are shown in Figure 12.

Most species in the top 10 declined in rescue number this year, compared to 2020–21. The masked lapwing and Australian magpie saw the largest declines, with 24% and 21% fewer rescues than the previous year, respectively. Rainbow lorikeets and sulphur-crested cockatoos were the only top 10 birds that were rescued more frequently, with an increase of 3% and 7%, respectively. Combined, the top 10 birds were responsible for 55% of all bird rescues across New South Wales.

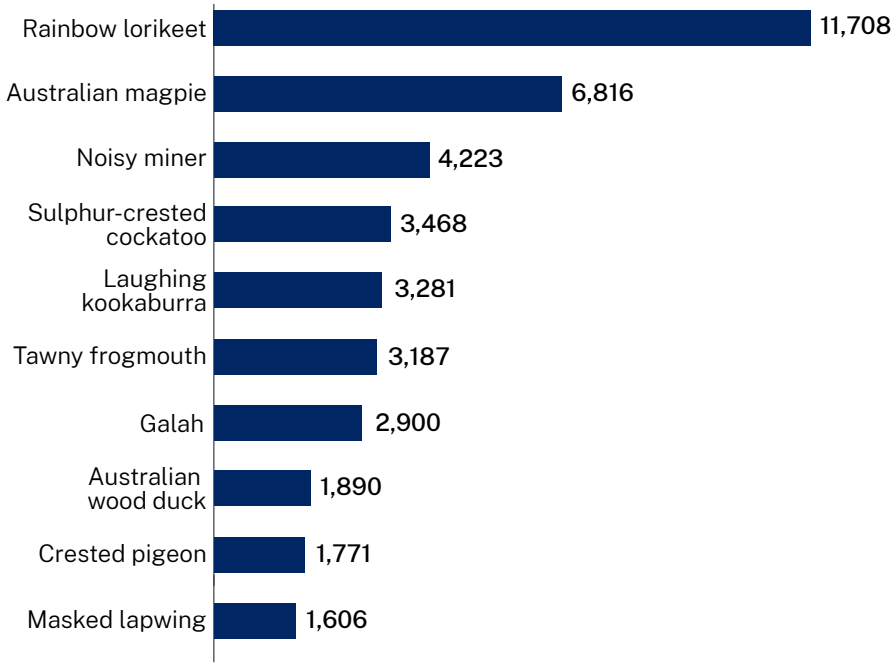


Figure 12 Top 10 bird species rescued in 2021–22

68%

of bird rescues occurred during spring or summer

The reporting of age or life stage for animals allows us to identify possible trends in wild populations. Unfortunately, for 42% of rescued birds, the life stage was unknown. Adult birds accounted for 26% of rescues, and young or juvenile birds, 32%. Sex can be difficult to determine and was only reported in 4% of bird rescues. Males and females were represented equally.

Spring and summer are always the busiest seasons for bird rescues, and this year was no different. Spring accounted for 38% of birds rescued, and summer for 30%. The peak rescue months were November (10,683 rescues) and October (10,554 rescues), which is slightly earlier than last year (Figure 13). Winter is consistently the quietest season for bird rescues.

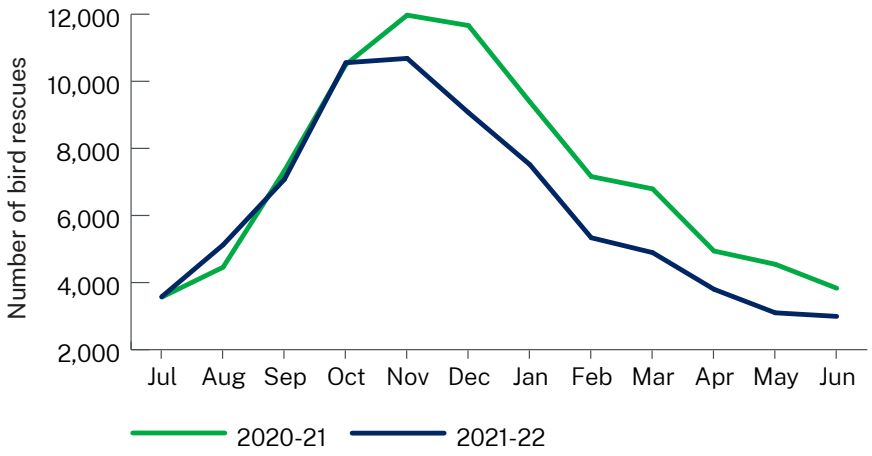


Figure 13 Bird rescues each month in 2020–21 and 2021–22

Case study: Caring for carers

The Caring for Carers program was developed by Wildlife Heroes in response to the 2019–2020 summer wildlife emergencies. The program aimed to curb the increasing incidence of compassion fatigue and trauma seen in wildlife rehabilitators. It began with a series of podcasts to initiate a mental health conversation and support volunteers to look after themselves and each other. The program then expanded its focus from mental and emotional wellbeing to include physical health and safety.

Vaccination grants were offered for lyssavirus and Q fever; both diseases that wildlife rehabilitators may be exposed to through their work. Thanks to the program, 101 rehabilitators received a free lyssavirus vaccination course or booster and 134 rehabilitators received Q fever vaccination. The work was supported by a Q fever communications campaign, including a webinar and Q&A session to increase disease awareness and understanding within the wildlife rehabilitation community. More recently, Wildlife Heroes has published a brochure and pocket guide about the safety hazards associated with wildlife rehabilitation and how to minimise the risks (see the 'Wildlife Heroes Resources' webpage). It is also offering grants to cover the costs of personal protective equipment for wildlife rehabilitators.

Wildlife Heroes | Foundation for National Parks & Wildlife

25%

of rescued birds were released back to the wild

The top 10 reasons for bird rescues are shown in Figure 14. This year 60% of all bird rescues had an 'unknown' cause. When the reason was known, collision with a motor vehicle was the most common cause. This year car strike was responsible for 6,453 bird rescues and unfortunately this number is increasing every year. Car strike was responsible for 22% of rescues with known cause. Laughing kookaburras were the most common bird rescued due to motor vehicle collision (722 birds), followed by rainbow lorikeets (704) and tawny frogmouths (579).

After car strike, falling from a nest or tree is the most common rescue reason for birds. This year 3,977 birds were rescued for this reason, which is 14% of rescues with a known cause.

Psittacine beak and feather disease (PBFD) is listed as a key threatening process in New South Wales due to its impacts on threatened species. This year, 1,075 birds were rescued due to suspected PBFD. Fortunately, the only threatened species rescued due to suspected PBFD was a single little lorikeet (*Glossopsitta pusilla)*, which was euthanased by a vet. All other rescues were common species, predominantly rainbow lorikeets (695).

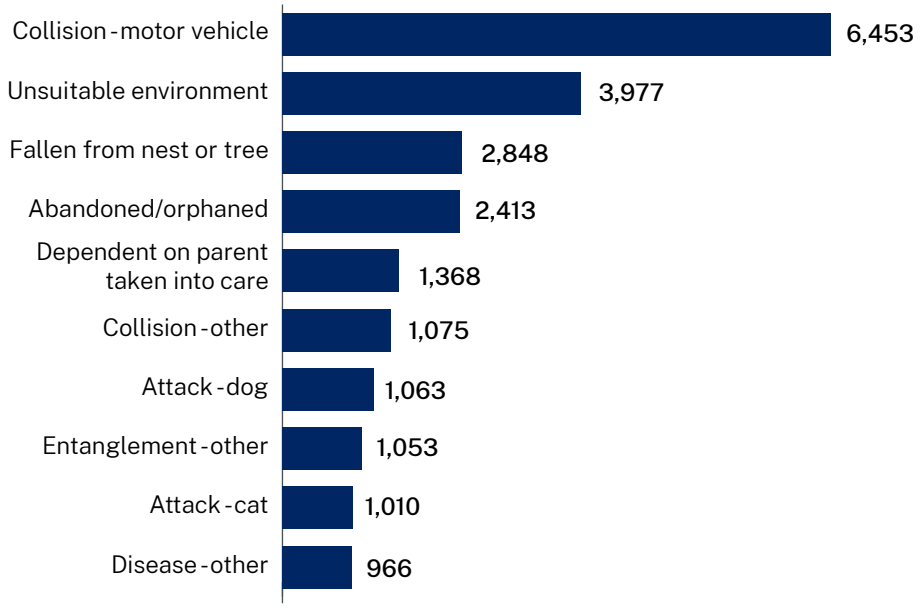


Figure 14 Top 10 reasons for bird rescues in 2021–22

The release rate for birds was 25% this year, which is a 4% improvement on last year. Figure 15 shows the release rates of the most rescued birds in 2021–22. Of the top 10, the 2 duck species, Pacific black duck (49%) and Australian wood duck (41%), had the best release rates and were also the only species to have better release rates than mortality rates. Sulphur-crested cockatoos had the lowest release rate at just 7%, which is 18% lower than last year (see the sulphur-crested cockatoo case study below).

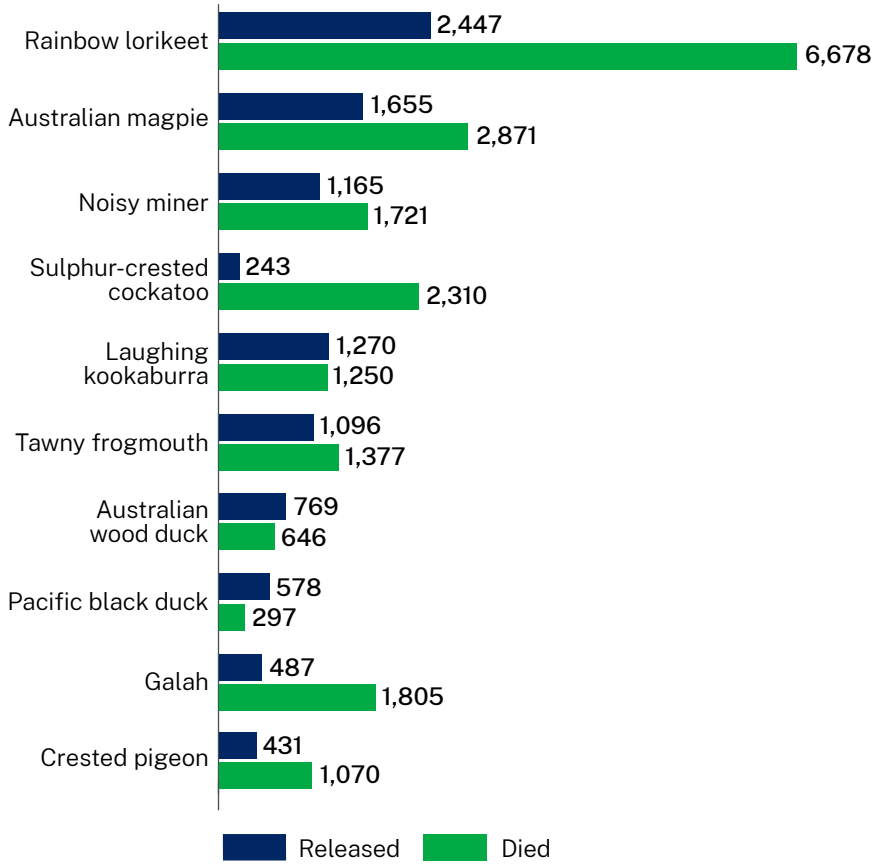
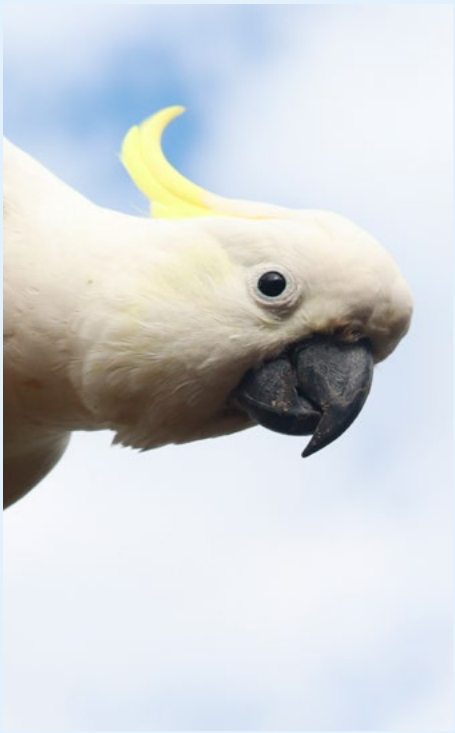


Figure 15 Fate of commonly rescued birds in 2021–22



Case study: Sulphur-crested cockatoo release rates crash

Sulphur-crested cockatoos entered the top 10 most frequently rescued birds for the first time in 2021–22. They were rescued 3,468 times, which is 7% more than the previous year. This year sulphur-crested cockatoos accounted for 5% of all bird rescues. Concerningly, only 7% of rescued sulphur-crested cockatoos were able to be released to the wild this year. This is a significant decline from the 38% release rate of 2020–21. Corresponding to the decreased release rate, the mortality rate for sulphur-crested cockatoos increased significantly this year, up to 67%, from 25% the year before (Figure 16). Sulphur-crested cockatoos had the lowest release rate and highest death rate of all the most rescued birds (Figure 15).

It is difficult to determine why there was such a significant change in release and mortality rates for sulphur-crested cockatoos, particularly because the reason for rescue was reported as 'unknown' in 68% of cases. Using the data where rescue reason was known, it is evident that the proportion of diseased sulphur-crested cockatoos was higher this year (43%) than last (35%). Diseased sulphur-crested cockatoos were never released to the wild, meaning the increase in disease contributed to the increased mortality rate. However, disease isn't solely responsible for the variation. Motor vehicle collision was responsible for 35% of sulphur-crested cockatoo rescues, both this year and last year. This year however, 75% of car strike victims died, compared to 65% in 2020–21. Once again, this doesn't account for all the reported variations in release and mortality rates. It does indicate there may be several compounding or interacting reasons, but unfortunately without improved data reporting we are unable to paint a complete picture.

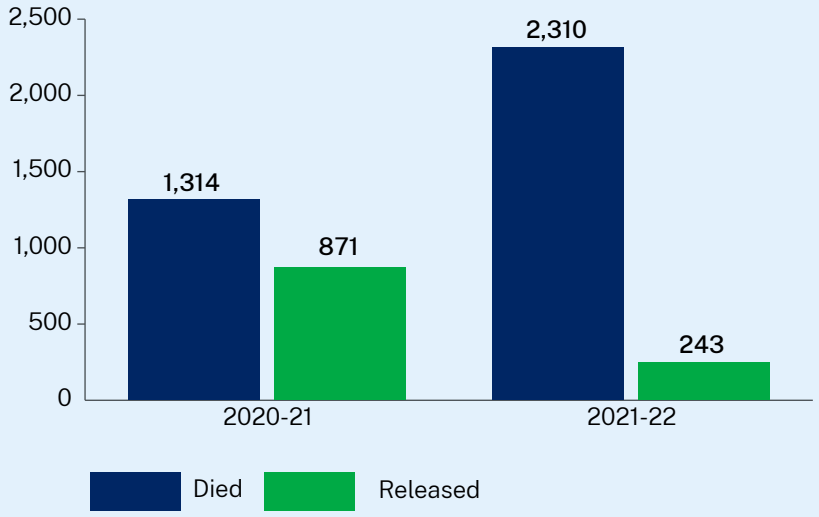


Figure 16 Fate of sulphur-crested cockatoos rescued in 2020–21 and 2021–22

Case study: Enid Latham

Enid Latham's earliest memory is of collecting leaves to feed the wild native animals her parents were rehabilitating in her childhood home. Another early memory is of a local hand-raised pet kangaroo that would bound up and down her street as a child. Enid loved this animal and desperately wanted a pet kangaroo of her own, but her parents always said no. Enid started collecting kangaroo toys and ornaments instead.

Her love and familiarity with animals led her to a career as a zookeeper at Western Plains Zoo. Her job involved hand-raising all sorts of exotic animals, for exhibition at the zoo. So when members of the public brought in sick and injured wild native animals, Enid raised those too.

In 1991, Enid became a founding member of WIRES Dubbo branch. She worked under their umbrella before becoming an independent rehabilitator in 1997. At her peak, it was not unusual for Enid to have 25 macropods in her care at any one time. She estimates she has personally rehabilitated between 800 and 1,000 native animals and released them back to the wild.

Of all the species she has rehabilitated, the eastern grey kangaroo is her favourite. Enid says they are 'the most beautiful and affectionate of all the animals'. She is particularly proud of her work in raising tiny furless joeys, so small that many rehabilitators said they couldn't be saved. 'People say that if a joey is under 500 g, it hasn't got a hope – but that's a load of garbage'. Enid estimates she has hand-reared between 100 and 150 macropods that weighed less than 300 g at rescue. She believes the little ones deserve a chance at life, just as much as the bigger ones do.

For Enid, raising and releasing is bittersweet. Successfully raising a tiny joey is the most rewarding thing you can do, but the hardest part of the job is saying goodbye to an animal you have hand-raised, particularly when the release site is far away and you know you won't see the animal again.

When asked if she has any advice for new rehabilitators, she quickly says yes, 'If you lose an animal, don't give up. If you get upset when you lose an animal, that means you care about it. And we need people who care about animals to look after them'.

After 34 years as a rehabilitator, it's time for Enid to hand the responsibility on to the next generation of passionate rehabilitators. Thanks Enid!

Reptiles and amphibians

14,689

reptile and amphibian rescues

This year 14,689 reptiles and amphibians were rescued, which is 24% fewer animals than in 2020–21. These rescues represented 113 different species, of which 20 are listed as threatened species in New South Wales.

Wildlife rehabilitators also provided advice about reptiles and amphibians 1,656 times. Often, the advice was regarding a snake of unidentified species (313 times). When species was known, eastern blue-tongue lizards (311), red-bellied black snakes (202) and eastern brown snakes (139) were the most common.

The most frequently rescued reptile and amphibian species are represented in Figure 17. Eastern blue-tongue lizards have been the most rescued reptile or amphibian species for the last 5 years. They were easily the most rescued species once again this year and represented more than a third of all reptile and amphibian rescues, which is a greater proportion than ever before. All top 10 species saw a decline in total rescue numbers, except the green tree frog. Green tree frogs are the most rescued amphibian species and entered the top 10 rescued reptiles or amphibian species for the first time this year. The top 10 species account for 70% of all reptile and amphibian rescues.

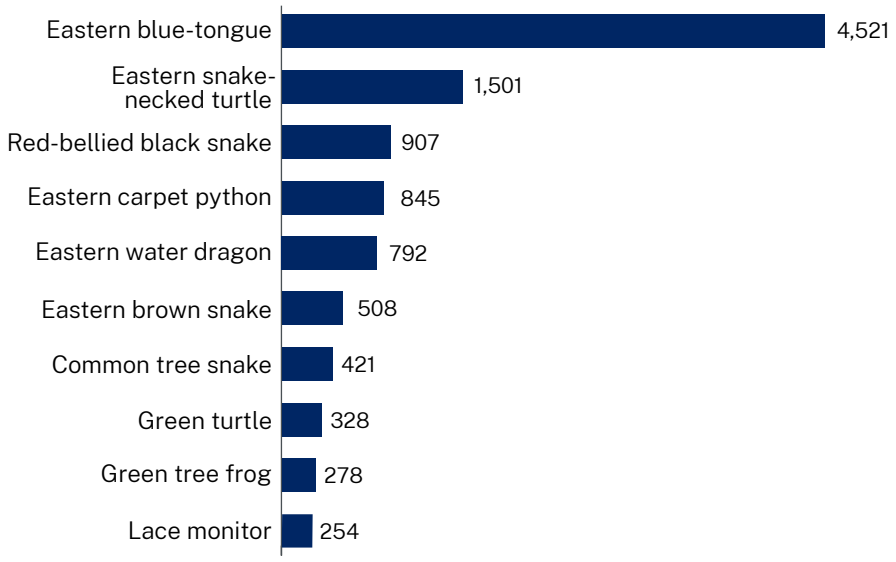


Figure 17 Top 10 reptile species rescued in 2021–22

Age or life stage was reported as ‘unknown’ for 56% of all reptiles and amphibians rescued. Adults (32%) comprised the majority of those with known life stage and young or juvenile animals were just 10%. Sex can be very difficult to determine in reptiles and amphibians, which is likely why 95% of rescued reptiles were of unknown sex.

Case study: Pet reptiles in rehabilitation

Reptiles are becoming an increasingly popular pet. There are now more than 28,000 people licensed to keep reptiles in New South Wales. With their increasing popularity, there has been a corresponding increase in the number of displaced reptiles that require care and rehoming. Reptile pets may be surrendered or abandoned by their owners, they escape their enclosures or are seized by authorities due to being held illegally. Unlike for dogs and cats, in New South Wales there are no shelters or services to manage and care for these displaced reptiles. Currently, the care of displaced native animal pets currently falls predominantly to the wildlife rehabilitation sector.

Displaced reptile pets were taken into rehabilitation 138 times this year, making it the 11th most common rescue type for reptiles. Eastern blue-tongue lizards were the most common species, followed by eastern water dragons, eastern carpet pythons and eastern snake-necked turtles.

It is difficult to quantify the burden displaced pets place on the rehabilitation sector. Displaced reptiles can be in care for many months while a new permanent home is found. Each reptile generally requires its own enclosure, ongoing supplementary heat, food, cleaning and sometimes substantial veterinary bills, all at the expense of the rehabilitator or their group. These reptile pets divert valuable resources that would otherwise be used to rescue sick and injured wild animals.

Pet owners are responsible for their own pets. If a reptile keeper can no longer look after their animal, it is still the owner's responsibility to find a suitable place for it. If purchased from a pet shop, you can return the animal to where you bought it. All pet shops in New South Wales are obligated to provide a lifetime take-back guarantee for the reptiles they sell. Reptiles purchased by other means should be sold or rehomed for free to another licensed reptile keeper. Under no circumstances should pets be released to the wild.

Reptile and amphibian rescue rates are heavily influenced by season. Summer (34%) and spring (32%) consistently see the most rescues (Figure 18). This year's peak months were January (1,885) and March (1,861). A significant decline in rescues regularly occurs during winter, when just 9% of reptiles and amphibians were rescued this year.

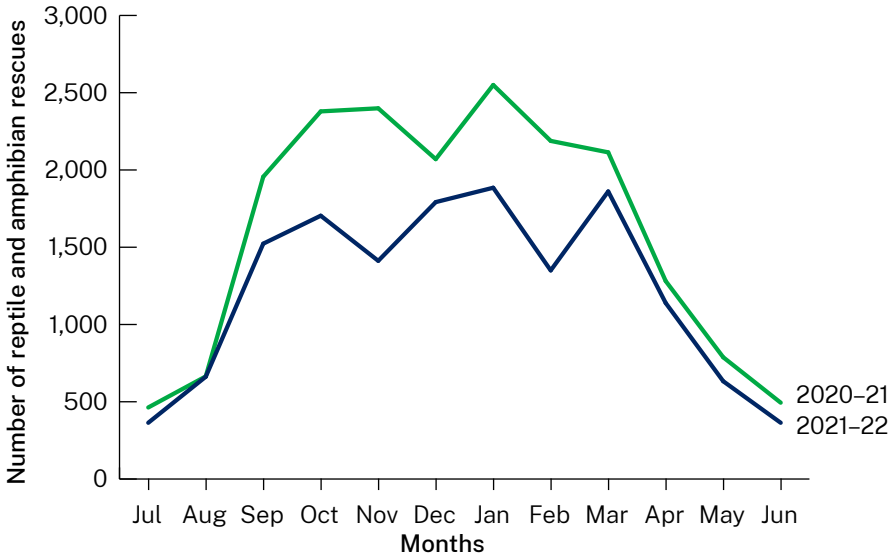


Figure 18 Reptile and amphibian rescues each month in 2020–21 and 2021–22

Most reptile and amphibian rescues have an unknown cause (59%). Figure 19 shows the most common reasons for rescue, when it was known. Of these, being in an unsuitable environment is by far the most common reason for reptile and amphibian rescue (2,084 rescues, 34%). This is consistently the most common rescue type for reptiles and amphibians (see the case study below). This differs from birds and mammals, where collision with a motor vehicle is by far the most common cause.

For reptiles and amphibians, motor vehicle collision is consistently the second most common encounter type, with 1,063 (18%) rescues in 2021–22. The most common species impacted by car strike was the eastern snake-necked turtle (40%). Suspected or confirmed attacks from dogs, cats, birds or other animals accounted for 23% of reptile rescues, with dogs contributing the majority of this (15% of all rescues). Most dog attacks were on eastern blue-tongue lizards (72%), which are commonly seen in suburban backyards.

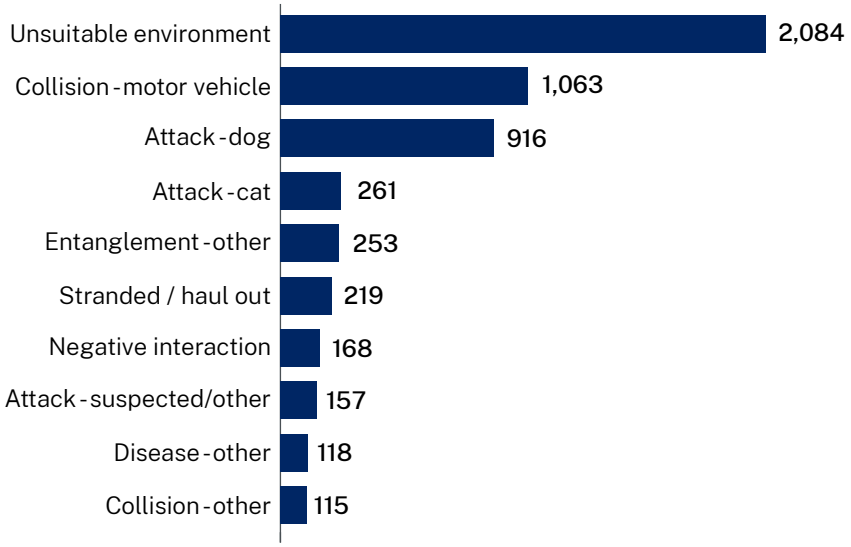


Figure 19 Top 10 reasons for reptile and amphibian rescues in 2021–22

Reptiles and amphibians generally have a higher release rate than birds (25%) or mammals (21%). This year 36% of all reptiles and amphibians were released, which is an 8% improvement on the previous year. Of the top 10 most rescued reptiles and amphibians, eastern snake-necked turtles (64%), common tree snakes (60%) and eastern carpet pythons (46%) had the highest release rate. All 3 of these species saw increased release rates compared to the previous year. Bearded dragons had the highest mortality rate at 49%.

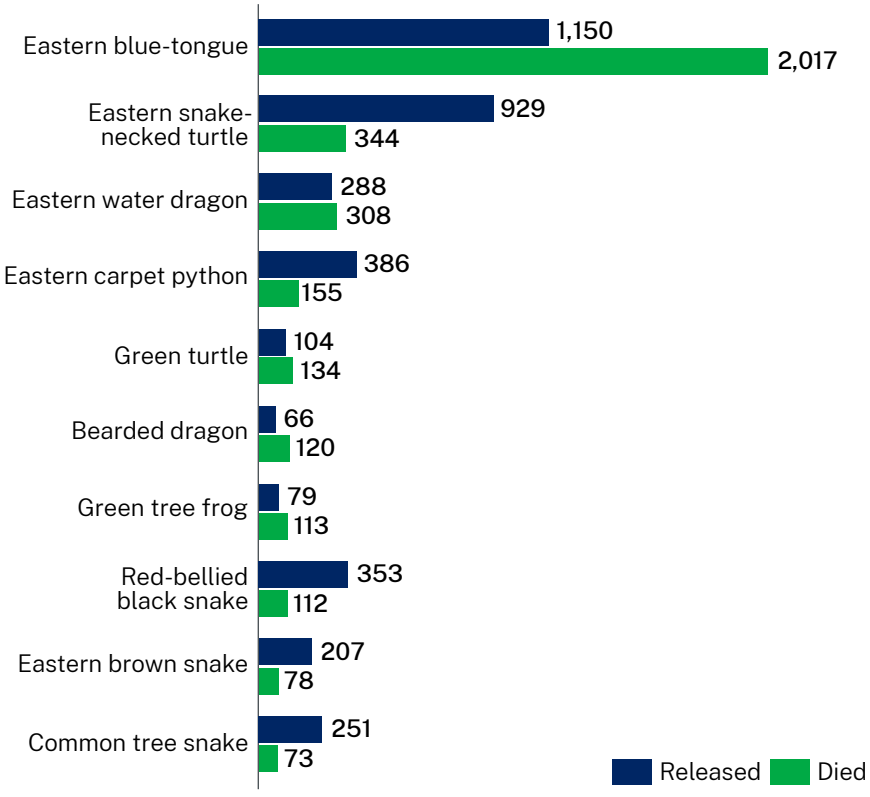


Figure 20 Fate of commonly rescued reptiles and amphibians in 2021–22

Case study: Reptiles in the wrong place at the wrong time

The primary aim of wildlife rehabilitation is to help sick, injured and orphaned animals. Yet every year, rehabilitators field thousands of calls about healthy reptiles that are just in the wrong place at the wrong time. The primary reason for reptile rescues was being in an 'unsuitable environment' (2,084 rescues), which accounted for more than a third of all reptile rescues with known cause. Reptiles were usually found in an unsuitable environment in summer (39%) and rarely in winter (9%).

Of those rescued from an unsuitable environment, eastern carpet pythons were the most common (15%), followed by red-bellied black snakes (11%), eastern blue-tongues (11%), eastern snake-necked turtles (10%) and eastern brown snakes (8%). Surprisingly, 3 of these top 5 reptiles reported as being in an unsuitable environment are harmless to humans. Of all reptiles rescued for being in such places, 40% were relocated, 26% were rescued and released, and 23% were left and observed.

Mammals

37,437

mammal rescues

There was a notable decrease in mammal rescues in 2021–22. Across New South Wales 37,437 mammals were rescued, which is 16% fewer than in 2020–21 and a 29% decline since 2019–20. Rescued mammals represented 91 different mammal species. The sector also provided advice regarding a further 1,776 mammals. Most frequently, this was about common brushtail possums (348) and ringtail possums (271).

The top 10 most rescued mammal species are shown in Figure 21. These top 10 species accounted for 80% of all mammals rescued. Sugar gliders were the only mammal species with a significant increase in rescues compared to the previous year, with a 23% increase. Modest increases were seen in other mammal species, including common ringtail possums (3% increase), eastern grey kangaroos (1% increase) and swamp wallabies (2% increase). The only threatened species in the top 10 saw the greatest declines in rescue numbers. Grey-headed flying-foxes decreased by 56% and koalas by 26%. Bare-nosed wombat rescues also decreased significantly (19%) compared to 2020–21.

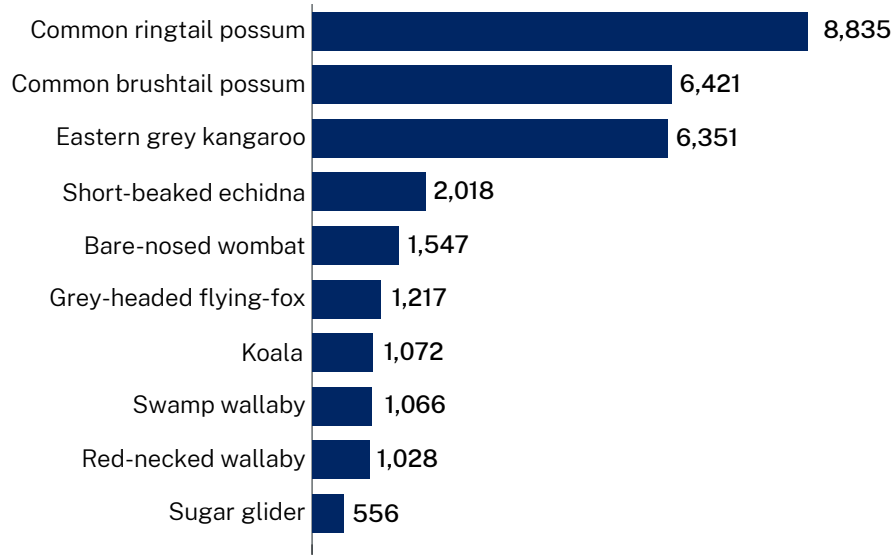


Figure 21 Top 10 mammal species rescued in 2021–22

Sex was unknown for nearly half of all mammals rescued. When sex was known, males and females were almost equally represented (27% and 25% respectively). Adults (38%) were more frequently rescued than juveniles (32%) when life stage was identified.

Figure 22 shows the number of mammal rescues across New South Wales each month in 2021–22 and 2020–21. This year most mammal rescues were in spring (28%), and there was a notable decline in summer (22%). This differs to last year when mammal rescue numbers were more consistent. There were 2 rescue peaks this year, one in late winter/early spring and another, sharper peak in March. If we look at the rescue rates for the 5 most rescued species (Figure 23), it appears that ringtail possum rescues were primarily responsible for the March peak.

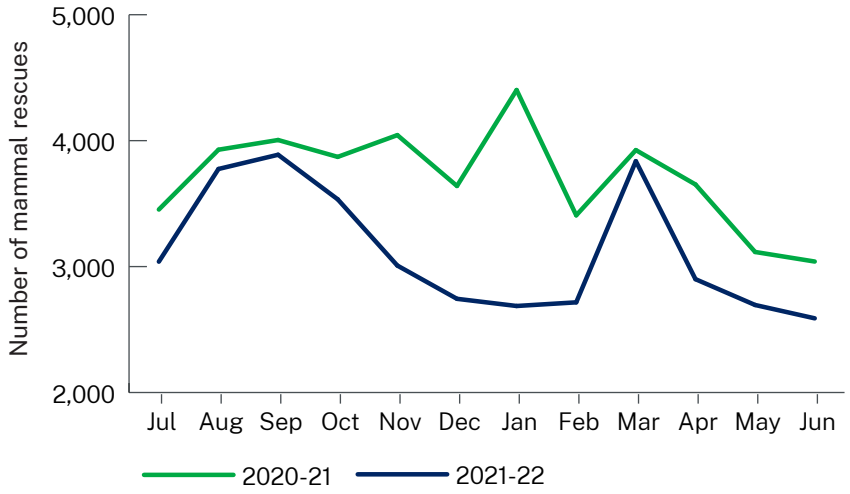


Figure 22 Mammal rescues each month in 2020–21 and 2021–22

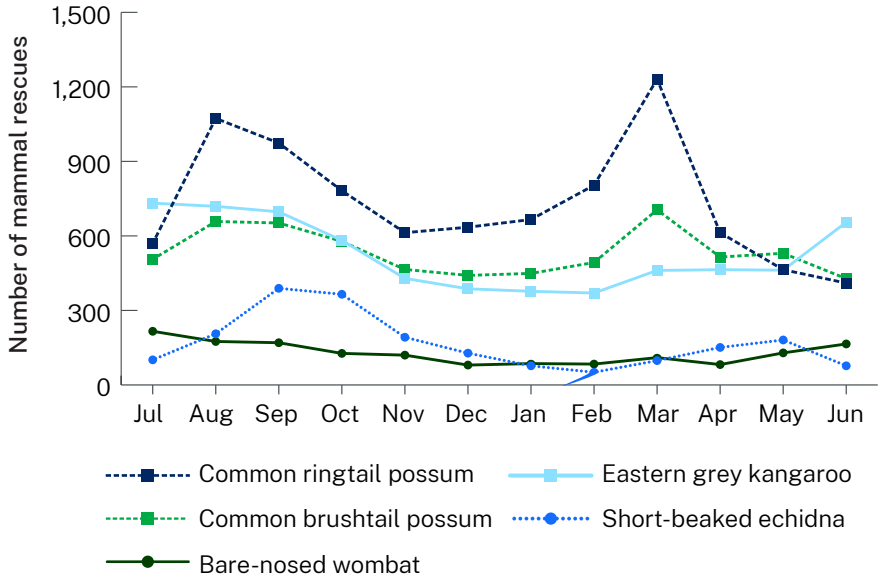


Figure 23 Rescues of the 5 most rescued mammals each month in 2021–22

Case study: Training in eucalyptus identification

The NSW National Parks and Wildlife Service held 2 eucalypt identification training courses in Campbelltown and Port Macquarie. Nearly 50 participants from 4 wildlife rehabilitation groups attended koala feed tree training by Mr Peter Mobbs, an expert in bushland ecology and conservation.

The training gave participants the basic skills needed to identify local eucalypt feed species. This will ensure the eucalypt species fed to koalas in rehabilitation are the same as those they browse on in the wild.

Our thanks go to Campbelltown City Council and Koala Conservation Australia at Port Macquarie for hosting the training; also, to trainer Mr Peter Mobbs and Van Klaphake, the author of the eucalypt identification guide.

Half of all mammal rescues did not have a known rescue reason. Of the 18,812 rescues where cause was known, motor vehicle collision was the most common (34%). Almost half of all car strike victims were eastern grey kangaroos (46%). Being in an 'unsuitable environment' was the second most common cause and led to 2,610 mammal rescues. Most commonly, this was possums (common brushtail and ringtail) and short-beaked echidnas. The third and fourth most common rescue reasons were being 'abandoned/orphaned' or 'dependent on a parent taken into care'. When combined, these categories account for 19% of all rescues with known cause. The other common reasons for rescue are shown in Figure 24.

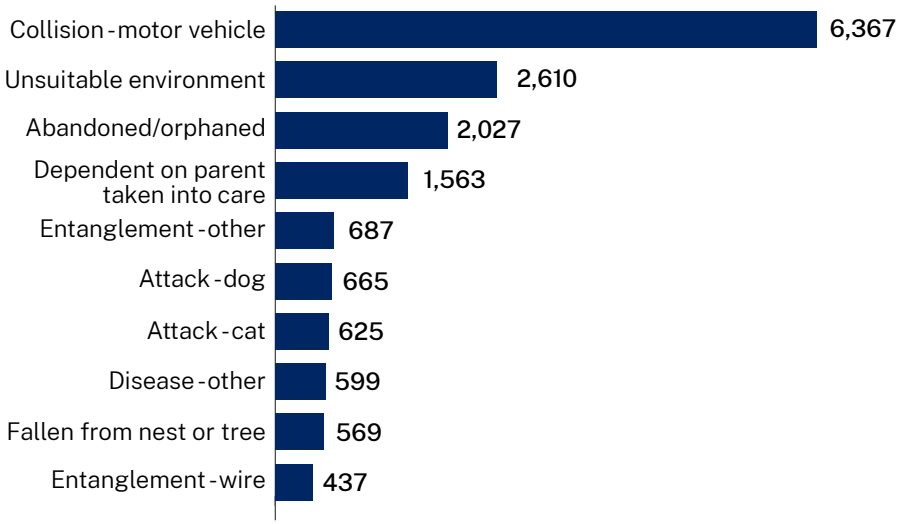


Figure 24 Top 10 reasons for mammal rescues 2021–22

21%

release rate for mammals

Of all the mammals rescued this year, 21% were released back to the wild. This is a 5% increase when compared to the year before. There is great disparity in release rate across the most rescued mammals (Figure 25). This year sugar gliders had the best release rate (35%), followed by koalas (33%). The koala release rate was 10% higher this year than in 2020–21. Macropods and wombats had the lowest release rates at just 7% for eastern grey kangaroos, swamp wallabies and bare-nosed wombats. The release rate for red-necked wallabies was 9%.

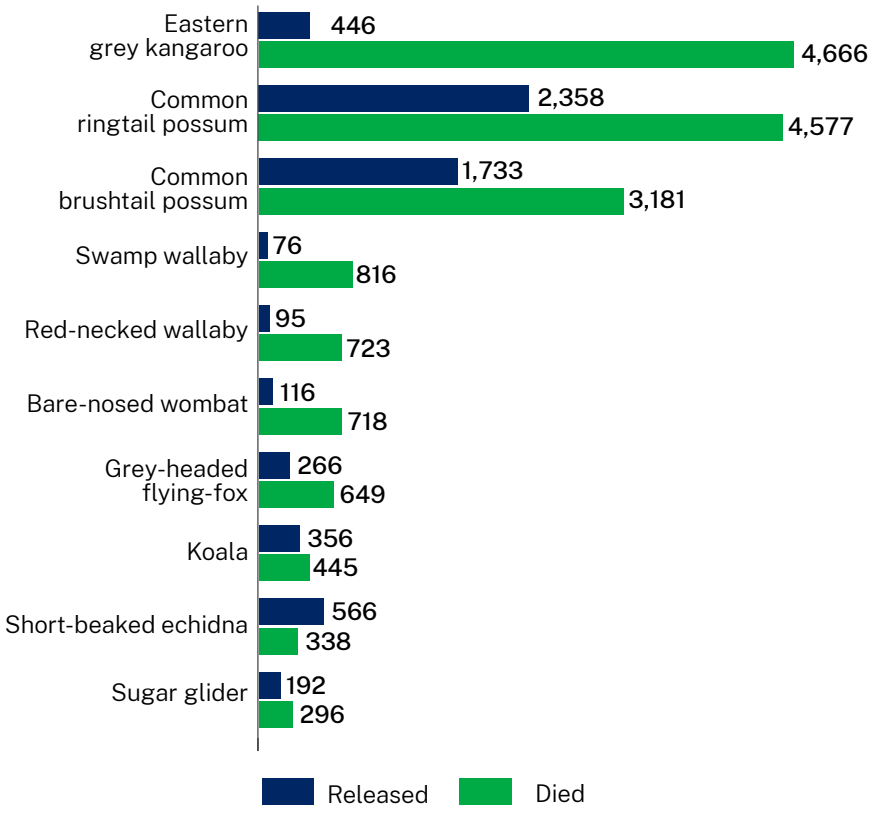
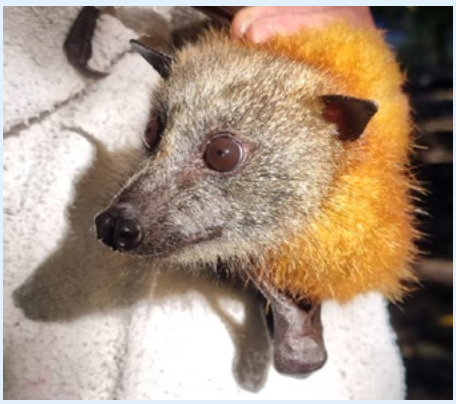


Figure 25 Fate of commonly rescued mammals in 2021–22



Case study: A rehabilitation success story

Every day, wildlife rehabilitators across New South Wales are hand-raising young native animals and releasing them to the wild. Despite the enormous financial, emotional and physical efforts required to hand-raise these animals, rehabilitators release them to the wild, expecting to never know if they survive. Imagine the joy in learning that not only did a pup you raised survive, but it survived another 18 years.

'Belgarion' is a grey-headed flying-fox that came into care as an 86g pup, back in November 2003. He became orphaned after his mother was electrocuted on powerlines in Coffs Harbour. The pup was given to Stephen Cross, then a member of WIRES Mid-North Coast, to raise as his first ever flying-fox pup. Like many other flying-foxes, Belgarion was banded under the Australian Bird and Bat Banding Scheme (ABBBS). The banding details were registered, and Belgarion was released 15 weeks after he entered care, at a release site near Bellingen in early 2004.

It was 18 years later, in May 2022, when Keely Boyd of Hunter Wildlife Rescue was called to attend an adult male flying-fox stuck in a quadrangle at Adamstown Public School. The grey-headed flying-fox had become trapped in the restricted space of the quadrangle and couldn't get enough lift to fly out. The band on its toe was checked with the ABBBS and Belgarion's identity was revealed. The now 19-year-old flying-fox had no major injuries and was a good weight. However, he had collected a few bruises from his entrapment, his flight was not strong and he was cautious in his movements. Belgarion was transferred to Wildlife ARC (Animal Rescue and Care Society) on the Central Coast and is recovering in the company of some other elderly flying-foxes. He is under the care of Kerryn Parry-Jones, who is hopeful he will be releasable in the future.

Stephen, Belgarion's original rehabilitator, contacted Hunter Wildlife Rescue to express his delight in discovering that Belgarion had survived so long in the wild.

'I can't do justice to the joy I am feeling right now. Thank you for all your members' great work and continued support of our wonderful native wildlife, (especially Keely for rescuing my beautiful big boy) you all do brilliant work and are heroes.'

Thanks to the ABBBS, there have been numerous accounts of rehabilitated flying-foxes surviving many years, just like Belgarion. These animals demonstrate that hand-reared flying-foxes can and do survive in the wild. In saving the individual's life, wildlife rehabilitators are bolstering numbers in the wild population and helping to conserve this threatened species.

Belgarion's story was published as an article in *Australian Mammalogy* with Matthew Mo, and wildlife rehabilitators Stephen Cross and Keely Boyd as authors (see 'Other useful links'). We thank Stephen, Keely, Matthew, Kerryn Parry-Jones, Jenny Beatson and Judi Wood for this story. We also recognise the long-running ABBBS.

Marine mammals

In 2021–22 there were 305 marine mammal incidents reported, involving 15 cetacean species, 4 seal species and one dugong.

While the number of cetacean incidents in 2021–22 was much lower than the previous year, with only 74, the number of cetacean species reported remained similar (15 species). Humpback whales and Indo-Pacific bottlenose dolphins were the most frequently reported species, accounting for 68% of all cetacean incidents (Figure 26). Most humpback whale events were entanglements (83%). There were also 2 reports of humpback whales with vessel strike injuries, 2 carcasses and a small calf with a malformed jaw reported during the southbound migration to Antarctica.

Cetacean carcass numbers decreased by 42% from the previous year. Most carcasses (62%) were small oceanic dolphin species, comprising Indo-Pacific bottlenose dolphins (35%) and common dolphins (15%). Three species of beaked whale were also reported. In all cases the whales stranded and died soon after or were washed ashore dead. Responders assisted with sample collection as these deep diving oceanic whales are of huge scientific interest.

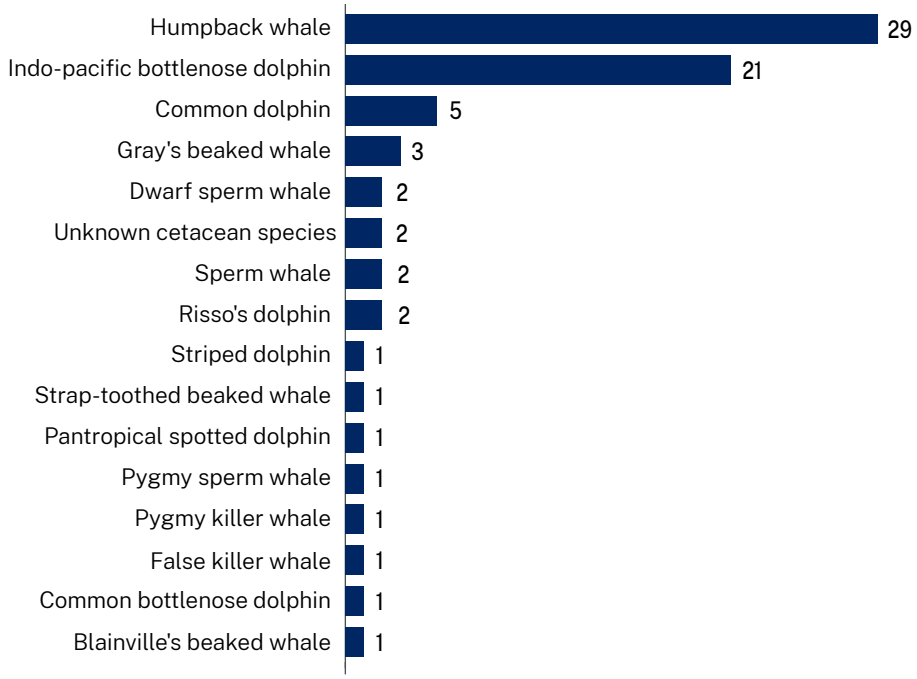


Figure 26 Cetacean species incidents in 2021–22

Four species of seals were reported in 2021–22. They included both New Zealand fur seals and Australian fur seals, which are listed as threatened in New South Wales. Another 64 unknown seals were also reported by responding organisations. Two leopard seals were reported (one on Lord Howe Island) as well as 3 Subantarctic fur seals; the latter species is listed nationally as endangered.

Overall, seal reports increased 142% from 2020–21. ‘Seal haul-out’ is the most common reason seals are reported to NPWS and they accounted for 183 seal reports this year. Some of these reports are of the same seal that hauls out in different locations over an extended time. Volunteers play an important role in monitoring and evaluating the health of hauled out seals and engaging with the local community. There were 24 seal carcasses reported. Nine of these were New Zealand fur seals, 5 were Australian fur seals and 10 were unknown seal species.

Appendix: Data providers 2021–22 and data assumptions

NPWS is grateful to the following organisations (groups) and independent licence holders who provided their records for 2021–22.

Wildlife rehabilitation organisations including facilities
Australian Seabird and Turtle Rescue
Dolphin Marine Conservation Park
For Australian Wildlife Needing Aid
Friends of the Koala
Geoffrey Pearce
Hunter Wildlife Rescue
Koala Conservation Australia
Koalas In Care
Looking After Our Kosciuszko Orphans
Native Animal Rescue Group
Northern Rivers Wildlife Carers
Northern Tablelands Wildlife Carers
ORRCA
Port Macquarie Koalas
Port Stephens Koalas
Raptor Recovery Australia
Rescue and Rehabilitation of Australian Native Animals
Save our Native Animals
Sea Life Sydney Aquarium
Sea World
Sunraysia Wildlife Carers Group
Sydney Metropolitan Wildlife Services
Taronga Zoo
Taronga Zoo (Western Plains)
Tweed Valley Wildlife Carers
Waterfall Springs
Wildcare
Wildlife Aid
Wildlife ARC
Wildlife Carers Network Central West Inc
Wildlife In Need of Care
Wildlife Information and Rescue Service
Wildlife Rescue South Coast
Zambi

Independent licence holders
S Brookhouse
L Hayes
K Holdsworth
P Hughes
E Latham
R Molony

*WIRES contributed approximately 70% of the wildlife rescue data for 2021–22.

Data was excluded from this report when the encounter was not considered a ‘rescue’. Here, this refers to all animals with fate reported as ‘Advice provided’, ‘Could not locate for rescue’, ‘Evaded capture’ or ‘Resolved by other animal organisation’.

Rescues of all non-native species, fish and invertebrates were also excluded from analysis.

Elements records for penguins and sea snakes were also excluded.

Acknowledgments

NPWS, as part of the Department of Planning and Environment, thanks the wildlife rehabilitation sector for all the important work they do rehabilitating our sick and injured wildlife. We are grateful to John Marshall, Neil James, Anna Dicker, Enid Latham, Kerryn Parry-Jones, Judi Wood, Stephen Cross and Keely Boyd for sharing their personal stories. We look forward to sharing many more stories on the work of other volunteers in the future.

This report has been prepared by Louise Hatton, Ron Haering and Shona Lorigan. Alan Kwok collated the data for analysis.

Memorial

Troy O'Keefe

WIRES wildlife rehabilitator in northern New South Wales for almost 10 years

Tammy Marcelle Lawler

Joined Illawarra WIRES in 1993 and became their longest serving member

Walter Meredith

Worked with Hawkesbury WIRES for more than a decade

Pamela Nelson

WIRES member for more than 25 years

Jillian Snell

Joined WIRES and Ku-ring-gai Bat Colony Committee in 1987

Find out more

If you would like to learn about becoming a wildlife rehabilitation volunteer and want to contact your local wildlife rehabilitation organisation, see How to get involved in wildlife rehabilitation or use the IFAW Wildlife Rescue App.

To learn more about Australia's unique wildlife, and things you can do to live in harmony with wildlife, go to the Foundation for National Parks and Wildlife Backyard Buddies website.

NPWS has published several new Codes of Practice and other wildlife rehabilitation resources. They can be found on our Standards of care webpage.

Other useful links

- Belgarion the grey-headed flying-fox's story in Australian Mammalogy
- Beyond Blue
- Lifeline
- NSW BioNet – NSW Government repository for wildlife data
- NSW Wildlife Rehabilitation dashboard – NSW wildlife rehabilitation data
- SEED – NSW Government central resource for sharing and enabling environmental data
- Wildlife Heroes program – Foundation for National Parks and Wildlife
- Wildlife Heroes Resources – Foundation for National Parks and Wildlife

Photo credits:

Cover photo: Green sea turtle *Chelonia mydas* (Shona Lorigan/DPE); **Page 2:** Black browed albatross *Thalassarche melanophris* (Penny Beaver/DPE); **Page 3:** Eastern blue-tongue *Tiliqua scincoides* (Casey Hill/Hunter Wildlife Rescue); **Page 6:** Galah flock (Danielle Dendrinos); **Page 8:** Australian Seabird and Turtle Rescue volunteers on Lennox Beach (Penny Beaver/DPE); **Page 9:** Australian Seabird and Turtle Rescue volunteers releasing green turtles Chelonia mydas on Lennox Beach (Penny Beaver/DPE);**Page 10:** John Marshall holding a kookaburra *Dacelo novaeguineae* in 1955; **Page 11:** John Marshall holding a bare-nosed wombat *Vombatus ursinus*; **Page 12:** Rainbow lorikeets *Trichoglossus haematodus* (Hannah Ryan/WIRES); **Page 14:** Grey-headed flying-fox *Pteropus poliocephalus* (Shane Ruming/DPE); **Page 15:** Bare-nosed wombats *Vombatus ursinus* (Grant Moloney); **Page 16:** Eastern water dragon *Physignathus lesueurii* (Casey Hill/Hunter Wildlife); **Page 17:** Red-necked wallabies (Tim Johnston); **Page 18:** Eastern grey kangaroo *Macropus giganteus* (Louise Hatton/DPE); **Page 19:** Common brushtail possum *Trichosurus vulpecula* (Penny Beaver/DPE); **Page 20:** Emus (Danielle Dendrinos); **Page 21:** Australian pelicans *Pelecanus conspicillatus* (Penny Beaver/DPE); **Page 22:** Short-beaked echidna *Tachyglossus aculeatus* (Llyris Wood); **Page 23:** Powerful owl *Ninox strenua* (Shona Lorigan/DPE); **Page 24:** Anna Dicker with green sea turtle *Chelonia mydas* (Anna Dicker); **Page 25:** Welcome swallow *Hirundo neoxena* (Meredith Ryan/FAWNA); **Page 26:** Tawny frogmouths *Podargus strigoides* (Penny Beaver/DPE); **Page 27:** Wombat (Lisa Ford/DPE); **Page 29:** Plumed whistling ducks *Dendrocygna eytoni* (Meredith Ryan/FAWNA); **Page 30:** Sulphur-crested cockatoo *Cacatua galerita* (Hannah Ryan/WIRES); **Page 31:** Enid Latham; **Page 32:** Eastern water dragon *Physignathus lesueurii* (Joan Reid/Sydney Wildlife); **Page 33:** Casey Hill with eastern blue-tongues *Tiliqua scincoides* (Casey Hill/Hunter Wildlife); **Page 34:** Lace monitor *Varanus varius* (Casey Hill/Hunter Wildlife); **Page 35:** Eastern water dragon *Intellagama lesueurii* (Casey Hill/Hunter Wildlife) **Page 36:** Diamond python *Morelia spilota spilota* on balcony (Casey Hill/Hunter Wildlife); **Page 37:** Sugar glider *Petaurus breviceps* (Tim Johnson/DPE); **Page 38**: Ringtail possum *Pseudocheirus peregrinus* (Tim Johnson/DPE); **Page 39:** Koala *Phascolarctos cinereus* (Tim Johnson/DPE); **Page 40:** Platypus *Ornithorhynchus anatinus* (WIRES); **Page 41:** Grey-headed flying-fox *Pteropus poliocephalus* 'Belgarion' (Janine Davies); **Page 42:** New Zealand fur seal *Arctocephalus forsteri* (Shona Lorigan/DPE); **Page 43:** Blainville's beaked whale *Mesoplodon densirostris* (Shona Lorigan/DPE); **Page 45:** Lesser long eared microbat *Nyctophilus geoffroyi* (Joan Reid/Sydney Wildlife); **Page 46:** Rainbow Lorikeet (Shona Lorigan/DPE)

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