NSW Wildlife Rehabilitation

Annual Report 2018–19

Preface

Most of us at some time are likely to encounter native wildlife that are sick or injured and in need of care. Volunteers with the support of veterinary professionals provide an invaluable service rescuing these native animals and invest considerable time and resources trying to help them recover so they can be released back into the wild.

The *NSW Volunteer Wildlife Rehabilitation Sector Strategy* (DPIE 2020) was developed to help support and promote the efforts of the thousands of volunteers participating in wildlife rehabilitation. A key action in the strategy is for the NSW National Parks and Wildlife Service (NPWS), as part of the Department of Planning, Industry and Environment, to improve access to the data collected on the thousands of animals rescued each year. The knowledge generated from this data will inform research and conservation programs for hundreds of native animal species.

The Department is pleased to present its second annual wildlife rehabilitation report. We hope it sheds light on the important work of volunteers and increases understanding about the tens of thousands of sick and injured animals that are rescued and cared for by this sector each year.

We would like to thank all the wildlife rehabilitation organisations and individuals that have submitted data to this report and their ongoing contribution to animal welfare and environment protection outcomes.
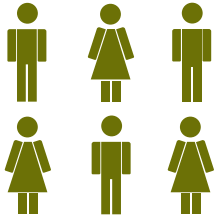
Contents

NSW wildlife rehabilitation 2018–19 snapshot

People power

5602
volunteers

4.2%
increase in
volunteers this year
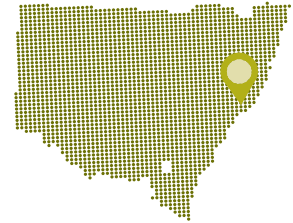
33%
of volunteers are
Sydney-based

Wildlife rescues

95,859
native animals and
440
species rescued

42%
of macropod rescues
due to collisions
with motor vehicles

4003
threatened
animals rescued

8158
Rainbow lorikeets
were the most
rescued species

A second chance

25,113
native animals released
back to the wild

4%
decrease from the
previous year

28%
of birds released
back to the wild

Introduction

This annual report is the collective story of the NSW wildlife rehabilitation sector. It is the second to be compiled by National Parks and Wildlife Service (NPWS), as part of the Department of Planning, Industry and Environment. 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 2018–19 there were 5602 volunteers who supported or were otherwise directly involved in wildlife rehabilitation. These volunteers represent about 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, fauna parks and correctional facilities.

All wildlife rehabilitation providers collect data about the large 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 it was rescued and additional information about its sex, age and 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's repository for wildlife data, to be used by species conservation officers, researchers and biodiversity assessors. Our intention in the coming year is to make the data more accessible by placing it into SEED (the NSW Government's Central Resource for Sharing and Enabling Environmental Data) and building a data visualisation tool.

This report gives an insight into the work of the wildlife rehabilitation sector. It provides a snapshot of key outcomes for 2018–19 in terms of volunteer numbers and animal rescues (rescues include all data except where the animal; was unable to be located or rescued, or when the record states it was referred to another organisation) undertaken by the sector. We focus on outcomes for native birds, mammals, and reptiles and amphibians, and provide case studies to highlight the work of individual volunteers and species of interest. We also look at trends across report years to get a sense of what has changed.

The data presented has limitations. Not all wildlife rehabilitation organisations and individuals had submitted information at the time of writing this report. Data quality is also being continually improved and may be subject to change (data providers are listed in Appendix 1). NPWS has collated the various data sets and made every effort to improve consistency without compromising the accuracy of the results.

This report focuses predominantly on native animals; introduced animals, fish and invertebrates have been omitted. Marine mammal rescues are treated separately and are not included within the data calculations.

People in the sector

4.2%

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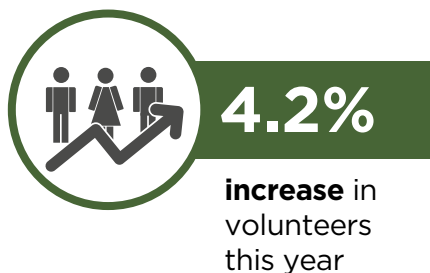
Volunteers are essential to wildlife rehabilitation. They are first responders to native animal emergencies, often working in challenging and confronting circumstances and bearing significant personal cost and stress. We could not do this work without their ongoing commitment and help.

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

Continued recruitment and retention of volunteers is essential for wildlife rehabilitation groups to meet ongoing community demands for services. NPWS has released a welcome video for new and prospective wildlife rehabilitation volunteers. The video can be used for volunteer induction training and provides important information about working together to meet standards of animal care in the sector.

In 2018–19 there were 5602 volunteers wildlife rehabilitators (n=25). Eleven groups reported an increase in membership and nine a decrease. The remainder stayed the same or did not report. The number of volunteers this year increased 4.2% from the previous year (Figure 1). The average number of volunteers over the four years from 2015–16 to 2018–19 is 5506.

NSW Wildlife Information, Rescue and Education Service (WIRES) is the largest group in New South Wales with about 2700 members (48% of all volunteers). An interesting insight into the work of two of their members is provided in the profiles, below.

2015–16	**5774**
2016–17	**5275**
2017–18	**5374**
2018–19	**5602**

Figure 1 Number of reported wildlife rehabilitation volunteers over the four years to 2018–19.

Wildlife rehabilitation volunteers live throughout most of New South Wales (Figure 2). The majority are concentrated in urban areas east of the Great Dividing Range with almost one-third based in Sydney. Six local government areas (LGAs) have 200 or more volunteers.
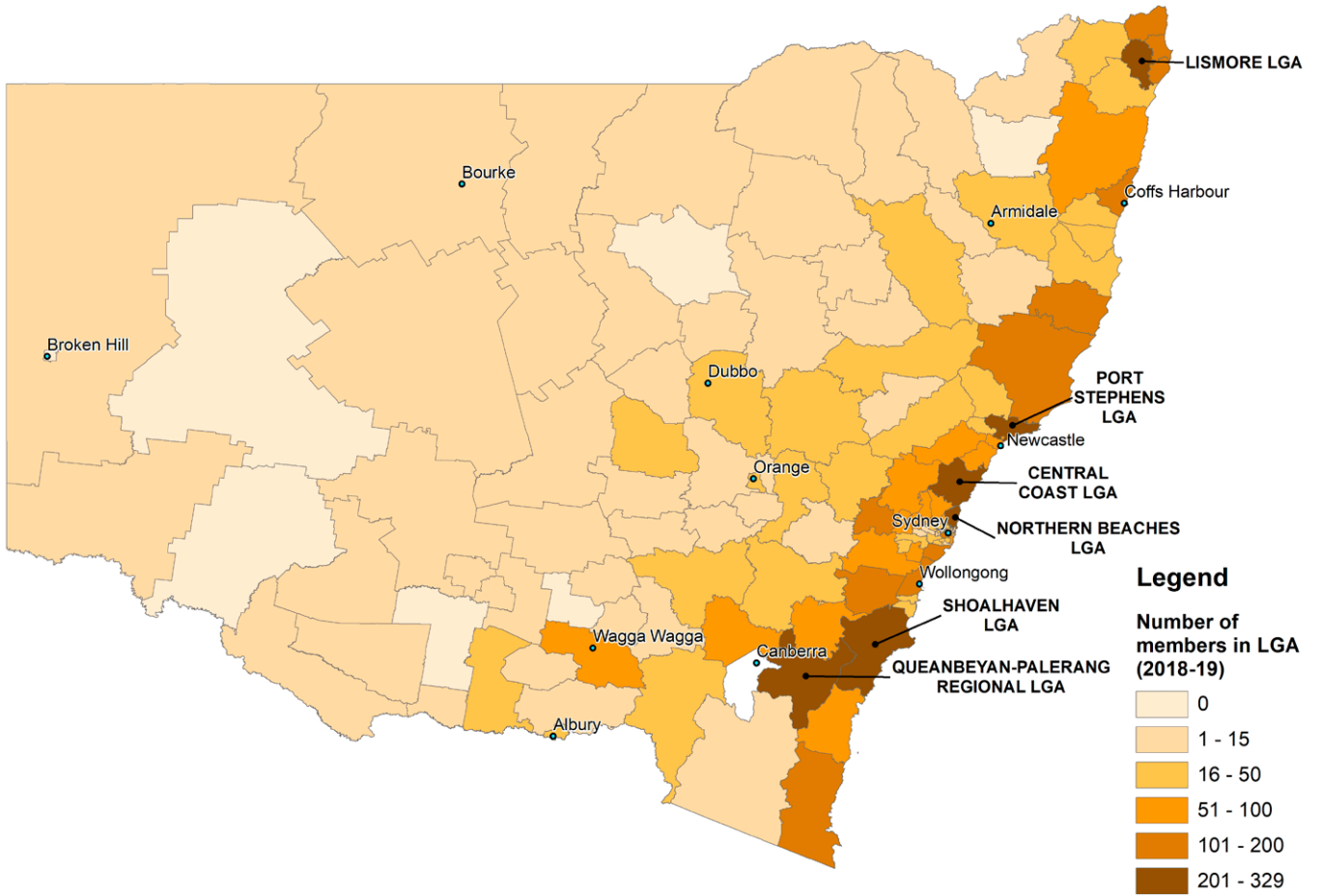
Figure 2 Distribution of volunteer wildlife rehabilitators by local government area (LGA).

LISMORE LGA

Coffs Harbour

PORT
STEPHENS
LGA

Newcastle

CENTRAL
COAST LGA

Sydney

NORTHERN BEACHES
LGA

Wollongong

SHOALHAVEN
LGA

QUEANBEYAN-PALERANG
REGIONAL LGA

Bourke

Armidale

Broken Hill

Dubbo

Orange

Wagga Wagga

Canberra

Albury

Legend

**Number of
members in LGA
(2018-19)**

0

1 - 15

16 - 50

51 - 100

101 - 200

201 - 329

Member profile:
Zoe Harrison — WIRES Rescue Office Manager

Tell us a bit about yourself. How long have you been working at WIRES?

My name is Zoe Harrison, I'm 27 years old. I have always had a passion for Australian wildlife and animal welfare. I grew up in rural NSW and was constantly curious about the native birds and lizards on my family's property. I moved to Sydney in 2010 and completed a Bachelor of Science at Macquarie University with a double major in biology as well as brain, behaviour and evolution. I then went on to focus on my interest in Australian wildlife by completing a master's degree in wildlife management. While completing this degree I joined the Wildlife Rescue Office (WRO) team with WIRES and have been working for the organisation now for over 5½ years.

What is your role at WIRES, what does this involve?

I started my role as a Rescue Office Coordinator and Van Rescue Driver. I moved into my current role as the WIRES WRO Manager at the end of May 2018. In this role I manage a team of people that are dedicated to coordinating wildlife rescues. The rescue team liaises with WIRES volunteers, veterinarians, and relevant stakeholders such as the Royal Society for the Prevention of Cruelty to Animals (RSCPA), NSW Police Force and Fire and Rescue NSW, to resolve rescues throughout New South Wales. The rescue office is also responsible for educating the public about wildlife and increasing the communities' interest in and compassion towards animals. It is a very rewarding position knowing you are assisting with the process to ensure wildlife throughout New South Wales are being rescued on a daily basis.

What is your favourite thing about working for WIRES?

My favourite thing about my work is the opportunity to learn something new every day. There are so many species with different behavioural characteristics, habitats and needs. The knowledge from WIRES volunteers is so extensive and interesting. I love hearing the happy stories about the success in rescue and rehabilitation.

I also love the opportunities I get to engage in emergency wildlife rescue situations throughout the Sydney Metropolitan Region. Actively helping wildlife really motivates me.

How does working at WIRES differ from other jobs you have had?

I love the organisation, and what we achieve. Working for WIRES is extremely fulfilling and makes me feel like I am making a difference.

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Member profile:
Arad Banafshi — WIRES volunteer, WIRES Illawarra Branch

How long have you been volunteering for WIRES?
This is my second year as a WIRES volunteer. I completed my initial training March 2019.

What are your roles within WIRES?
I have completed WIRES training programs for the rescue, rehabilitation and release of birds, small mammals, macropods, wombats, bats, reptiles, possums and gliders. My most common rescues have been birds (such as lorikeets and tawny frogmouths), possums and bats. I have had the privilege of raising orphaned baby birds, ringtail possums and grey-headed flying-foxes.

I have also supported the WIRES education team with community outreach projects. This has involved setting up information stalls and events (at markets and the local hardware store) to raise awareness about everyday things people can do to help wildlife. I have also participated in running wildlife education workshops with young children at various preschools and schools.

Next on my WIRES training to-do list is the snake course, followed by raptors and koalas.

What is your favourite thing about volunteering for WIRES?
The opportunity to learn more about Australia's unique and beautiful wildlife, the chance to share a love of animals with others and raise awareness about ways to help wildlife, and most importantly, minimising suffering, supporting rehabilitation and helping animals return to the wild.

I love all animals equally as they are each unique and special in their own way and I love how, just like humans, no two personalities (even within a particular species or family) are the same.

While rescues can be confronting and outcomes can often be very sad, I feel a sense of responsibility to do what I can to help, especially with knowledge of how we as humans too often have a negative impact. While it has its challenges, I believe it is all worth it to help minimise suffering and give animals a chance at survival. All the 2am bottle feeds are worth it to see two beautiful little eyes looking up at you, and to see little ones grow into healthy teenagers and learn how to be wild.

The best gift is the gift of a second chance and freedom. That is what it is all about at the end of the day and nothing beats the incredible and uplifting experience of seeing an animal return to the wild and reunite with its parent or family.

How did you get involved with WIRES?
Upon arriving in Australia, my wife and I began to research ways that we could volunteer to help animals in our local community. We have always loved animals and were especially inspired by a family member who was a wildlife carer and had rescued and cared for many birds and possums. When we found out about WIRES, we were immediately interested and reached out to the organisation to learn more.

Volunteering with WIRES gave me a sense of purpose as I transitioned to life in a new country. I was impressed by the kindness and passion of other members and it was rewarding to be able to make a positive contribution to helping wildlife in the community. My time spent volunteering with WIRES has motivated me to further my studies and training so as to make an even greater contribution to improving the lives, rehabilitation and protection of Australian wildlife in the future.

Do you have a particular rescue that stands out for you?
From rescuing an appropriately named boobook owl from a school library, to saving the life of a baby flying-fox found hanging underneath a car, I have certainly had many memorable rescues over the past year.

My favourite rescues however would have to be the ones that involve reuniting baby animals with their parents. One particular experience that stood out for me was the time I reunited a very cute and fluffy baby tawny frogmouth chick with its mother.

As the sun went down, I went to the tree the baby had fallen from. As I looked up, to my surprise mum was on a branch waiting. I made a special net connected to an extendable pole that helped me to reach high up into the branch where the mother was perched.

Annual trends over five years

418,943

native animal rescues over the five-year period to 2018–19

This section of the report looks at broad annual trends in wildlife rehabilitation data before looking more closely at the focus year 2018–19. The three key areas reported on are number of rescues, reasons for rescue (i.e. encounter type) and fate.

Number of rescues

There were 418,943 native animals rescued over the five-year period from 2014–15 to 2018–19, an annual average of 83,789. These rescues involved 626 different native species. Birds were the most frequently rescued class of animal, their number increasing over each reporting year (Figure 3). They represent about 52% of all animals rescued. The average number of bird rescues over these five years is 43,277, compared to 28,795 mammal rescues and 10,542 reptile and amphibian rescues. There are also a relatively small number of unidentified animals rescued each year (1.4% of all reported rescues).
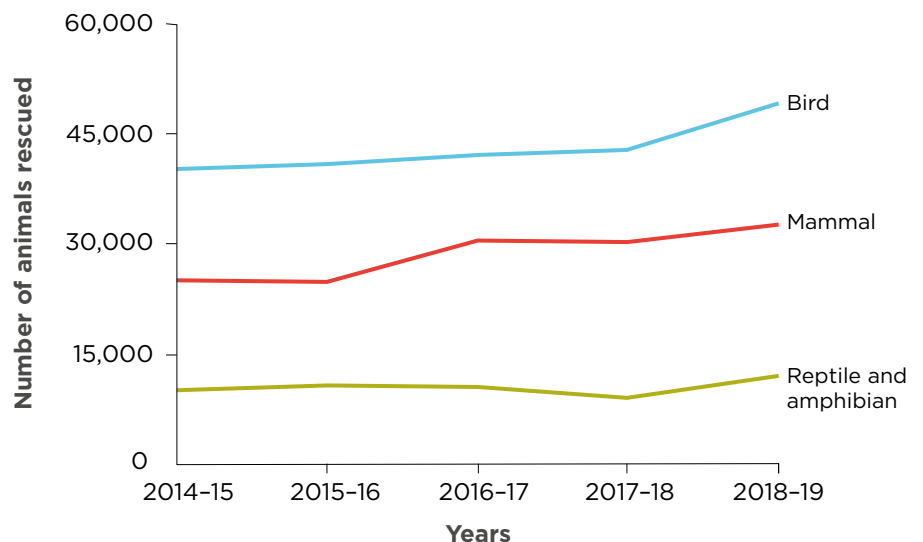

Figure 3   Number of rescues over the five-year period 2014–15 to 2018–19 by class of animal.

Rainbow lorikeets remain the most common species with 33,255 of these birds rescued, an annual average of 6651 (Figure 4). This species represents nearly 8% of all animals rescued over the five-year period. The eastern grey kangaroo, Australian magpie, common ringtail possum and common brushtail possum have been consistently the five most-rescued species over the five-year period. Their number of rescues is likely higher because some were reported as 'unidentified possum' or 'unidentified macropod'. There has been a 63% increase in eastern grey kangaroo rescues since 2016–17 which is possibly a result of the drought. The tawny frogmouth rounds out the top six, replacing grey-headed flying-foxes from the previous year. Together these species represent 32% of all species rescues (Figure 4).
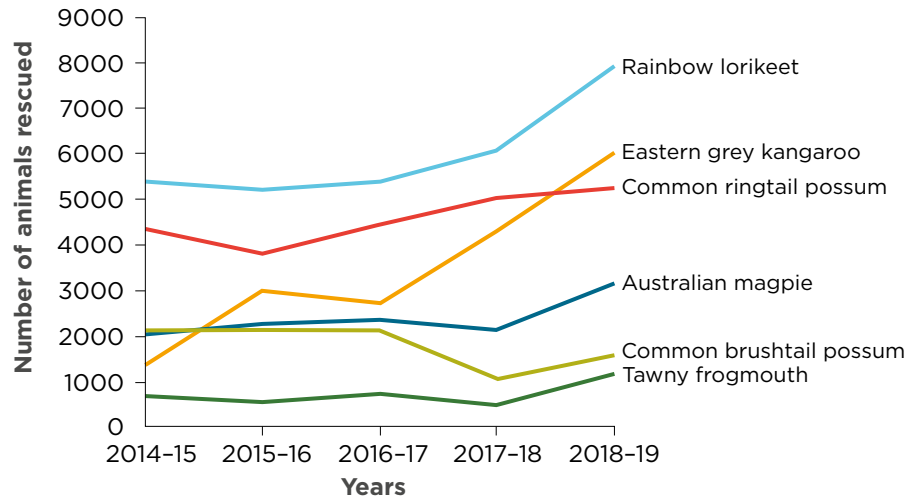
Figure 4 Most frequently rescued species over the five-year period 2014–15 to 2018–19.

Reasons for rescue

It is often difficult to determine why animals have come into care. Each year over half of all rescues are assigned an 'unknown' reason for rescue. When a reason is given, 41% are for human-related reasons (Appendix 2). The top five encounter types represent nearly 62% of all animal rescues (Figure 5). The most frequent remains 'collision with a motor vehicle' with 48,201 rescues over the five-year period. They comprise 11.6% of all rescues or 24% when unknowns are removed from the analysis. 'Collisions – other' accounts for an additional 11,933 rescues and these are also steadily increasing. 'Unsuitable environment' increased nearly 25% from 2017–18 but has been relatively stable over the previous five years. Both 'abandoned/orphaned' and 'dependent on parent taken into care' rescues appear to be decreasing. Of the other encounter types, 'dog attacks' has continued to increase slightly each year.
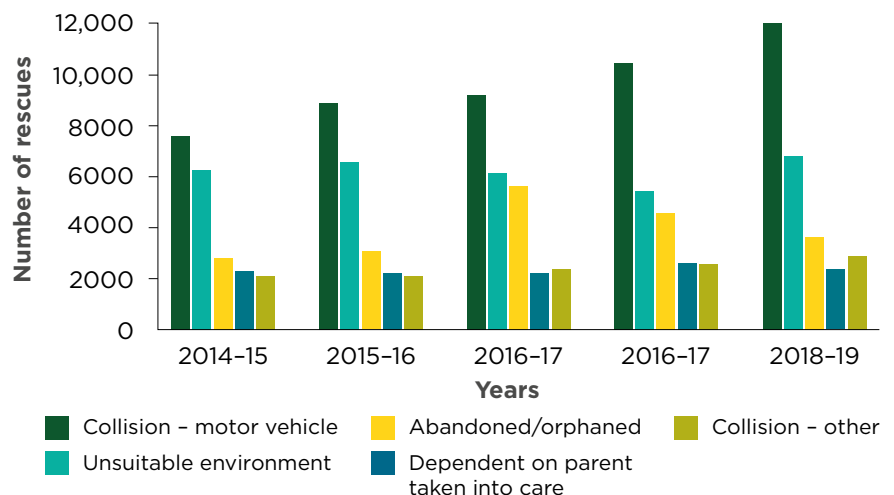

Figure 5 Most frequent reasons for rescue over the five-year period 2014–15 to 2018–19.

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Fate of rescued animals

The fate of rescued animals remains relatively consistent over the five-year period (Figure 6). Overall 119,277 rehabilitated animals have been released back into the wild, about 28% of all rescues, although the number varies depending on species. Unfortunately, more animals usually die than are released. The average number of deaths per year is about 35,042 compared to 23,855 releases. Some animals remain in care or are surrendered as pets with a new owner.
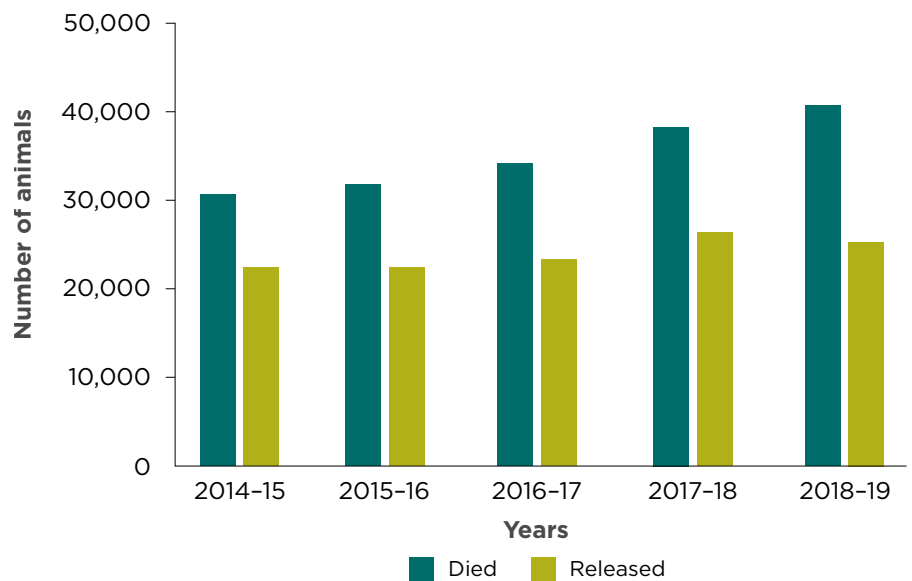

Figure 6 Comparison of died and released animals over the five-year period 2014–15 to 2018–19.

The year in focus: 2018–19

95,859

native animals and

440

species were rescued in 2018–19

In 2018–19, a total of 95,859 native animals were reported rescued across 440 species (n=28 groups and 13 licensed individuals, 2148 introduced animals were also rescued). The number of rescues was 14.8% higher than the previous year (2017–18). Interestingly, there were fewer species rescued than the previous year.

Top 10 species rescued

The 10 most rescued species in 2018–19 are shown in Figure 7. Like the previous year, these species represent about 43% of all animals rescued. The most common species was again the rainbow lorikeet with 8158 birds rescued (see case study in the birds section). Common ringtail and brushtail possums combined to make up 9.7% of all rescues. Overall, all species in the top 10 experienced an increase in the number of rescues compared to the previous year, except the grey-headed flying-fox which decreased by 37.3%.

Males and females each accounted for about 10% of rescues where sex was recorded. Adults were the most frequently encountered age class (26.5%), followed by juveniles (25.4%) and subadult animals (about 2%). The rest were unknown. The previous year there was a higher percentage of juveniles to adults rescued.
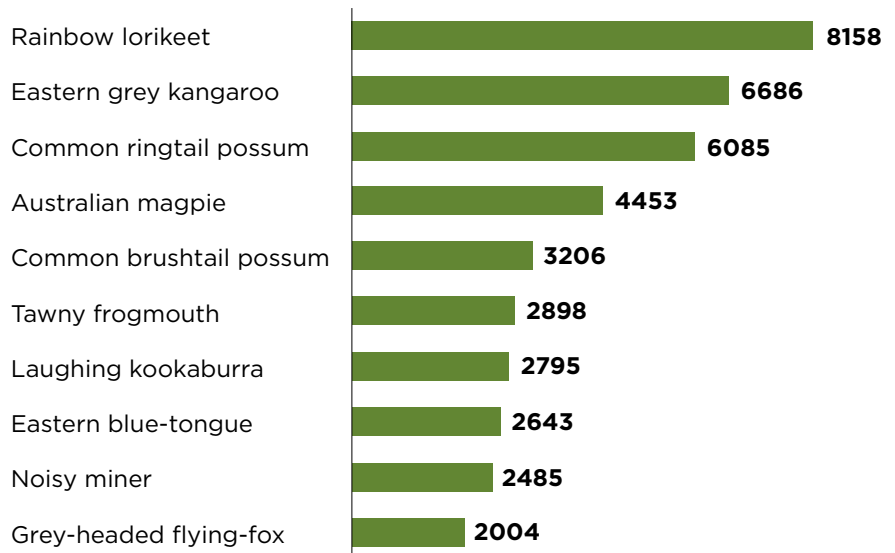
Species	Number rescued
Rainbow lorikeet	8158
Eastern grey kangaroo	6686
Common ringtail possum	6085
Australian magpie	4453
Common brushtail possum	3206
Tawny frogmouth	2898
Laughing kookaburra	2795
Eastern blue-tongue	2643
Noisy miner	2485
Grey-headed flying-fox	2004

Figure 7 Ten most rescued species in 2018–19.

The spring months were again the busiest season for volunteers, with 31.5% of all rescues, closely followed by summer with 29%. The peak month was November with 10,721 rescues, closely followed by October 10,676. June recorded the lowest number of rescues 4838 (Figure 8). This year there was a change in the number of mammal rescues particularly in the winter months (see 'Mammals' below for more information).
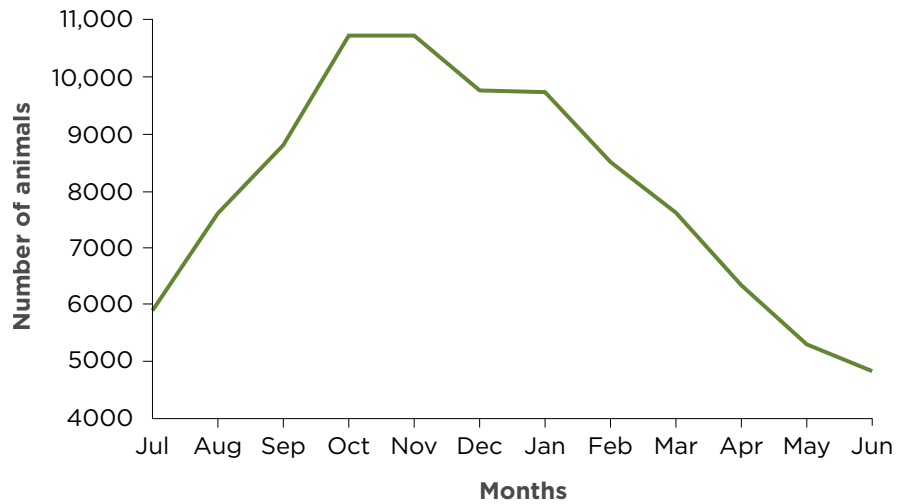
Figure 8   Rescues reported each month for 2018–19.

Why is wildlife coming into care?

The top 10 reasons for rescue in 2018–19 are shown in Figure 9. As expected, 'collision with motor vehicle' was again the largest known cause for rescue, particularly for mammals and birds. It accounted for 12,036 rescues, a 15% increase on the previous year. Most collisions with vehicles were reported in Queanbeyan–Palerang Regional, Shoalhaven and Lismore LGAs. 'Unsuitable environment' was the second most reported cause for rescue, with reptiles and amphibians most affected.

'Abandoned/orphaned' and 'dependent on parent taken into care' together account for nearly 13.5% of rescues (when unknowns are removed from the analysis). There were also 3203 dog and cat attacks, of which the latter were slightly down on the previous year. The collective impact of entanglements on native animals, including those caught in fishing line, netting, wire and other things, is described in the case study below. Further detail on the cause of rescue for individual mammals, birds, and reptiles and amphibians is provided in the following sections.

6827

animals were rescued from an unsuitable environment, nearly
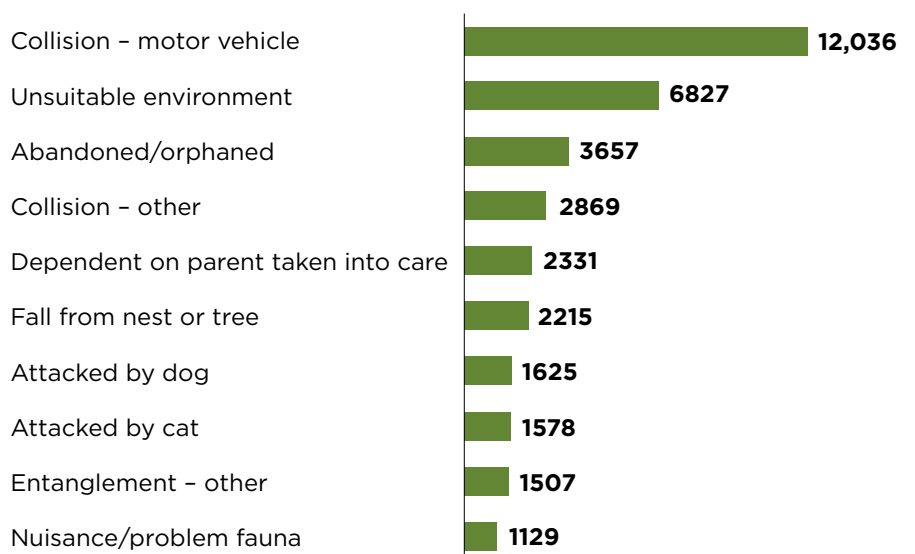
42%

were reptiles

Figure 9   Top ten reasons for rescue in 2018–19.

Case Study: Entanglements

Animals become entangled in all sorts of things, including fencing, netting and wire, and fishing tackle. In 2018–19, 2687 entangled animals were rescued across 139 species, a 10% increase on the previous year. About 56% of all entanglement rescues were from miscellaneous or undetermined items: 'Entanglements – other', while 33% were from netting and wire and 10% from fishing tackle.

The top five species represent over half of all entanglement rescues. Terrestrial mammals account for 54% with the grey-headed flying-fox, black flying-fox and eastern grey kangaroo most affected. In 2018–19, 368 grey-headed flying-foxes were allocated to 'entanglement – other' and 250 to 'entanglement – netting/wire'. About 65% of eastern grey kangaroo entanglements were also in netting and wire. Birds become entangled for a variety of reasons. For magpies it's often in netting and wire and for aquatic birds such as pelicans it's in fishing tackle. Marine mammals also get entangled. In 2018–19 there were 27 reports of entangled whales and dolphins; 92% were humpback whales.

Entangled animals are most likely adults. They sustain injuries to their limbs with the forelimb or wing most commonly being injured followed by the hindlimb. In 2018–19 entanglements were most commonly reported in the Queanbeyan–Palerang Regional, Tweed and Shoalhaven LGAs.

About 36% of entangled animals were rehabilitated and released.

Top five species entangled	Number reported 2018–19
Grey-headed flying-fox	623
Eastern grey kangaroo	309
Black flying-fox	236
Australian magpie	151
Australian pelican	98

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Fate of rescued animals

Rescued animals are usually found in a severely vulnerable state compromising their chances of survival; unfortunately many cannot be rehabilitated and returned to the wild. A humane end to their suffering can often be the best outcome for injured and sick wildlife. Overall, 26% of all rescued animals (25,113) were rehabilitated and released in 2018–19. This was about a 4% decrease on the previous year, most likely due to the lower percentage of released mammals during the year (Figure 10). About 41% of reptiles were released and 28% of birds.

Figure 10 Percentage of animals rehabilitated and released in 2018–19 by class.

Threatened species

4003 threatened animals were rescued

Volunteers rescued 75 different NSW threatened species this year totalling 4003 animals, a decrease on the previous year. Two species, the regent honeyeater and beach stone-curlew are critically endangered. The most frequently rescued threatened species was again the grey-headed flying-fox (66% of rescues) followed by the koala. Together these two species represent about 81% of all threatened animal rescues.

Top five rescued threatened species	Number rescued 2018–19
Grey-headed flying-fox	2004
Koala	1254
Green turtle	126
Squirrel glider	65
Eastern free-tailedbat	51

The eastern free-tailed bat was among the top five threatened species rescued, an 8% increase on the previous year. There were also 65 squirrel gliders rescued. The story of one of these animals, Jay-Cee, is told by Robyn Gommers from Tweed Valley Wildlife Carers in northern NSW.

Case study: A squirrel glider with a will to live

Jay-Cee, a baby squirrel glider, came into care on Good Friday 2019. She was found by a couple who for some reason had decided that, although it had been drizzling rain for days, their work in the garden could not wait any longer.

As they finished their rain-drenched work, they saw what appeared to be a mouse curled up and soaking wet in the vegetable patch. Seeing this little creature was in need of help, this kind-hearted couple picked up the animal in their warm hands to help it dry off.

It didn't take them long to realise this tiny, limp body was not a rodent but was a beloved member of the squirrel glider family, a species they had often seen gliding from tree to tree in their backyard during the warmer months. They telephoned Tweed Valley Wildlife Carers for help and met with an experienced carer within 20 minutes of finding the animal.

Jay-Cee weighed 18 grams, but her body size indicated she should have weighed as much as 40 grams. She had survived not only the awful circumstances that left her orphaned, away from the warmth and protection of her mother and glider clan, perhaps a cat attack or worse, but had also endured cold, wet weather and days of starvation that had cost her over half her body weight and all her strength.

Jay-Cee had a will to live. Her first days consisted of one-hourly feeds both day and night, as her stomach was too shrunken by starvation to hold more than a few drops of specialised glider milk at a time. She slowly regained her strength and started to gain the lost weight.

Her story from there goes from strength to strength. As she grew, she was grouped with other squirrel gliders of a similar age and began to form new family bonds that would help her stay safe when she was eventually released.

Her release, four months and eight days after her arrival, was a tearful but joyous event as she joined her fellow squirrel gliders in their natural environment.

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Where do rescues occur?

Volunteers rescue animals from anywhere and sometimes must travel very long distances especially in western NSW (Figure 11). Most rescues though occur near population centres east of the divide, with about 39% in Sydney local government areas, particularly in the north and west of the city (Figure 12).
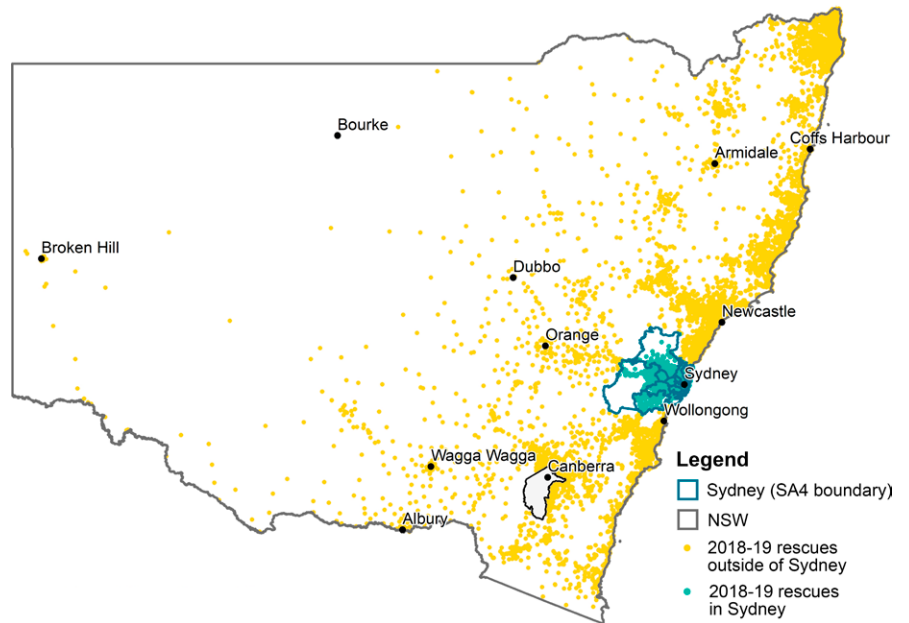

Figure 11 Location of rescues in New South Wales in 2018–19.
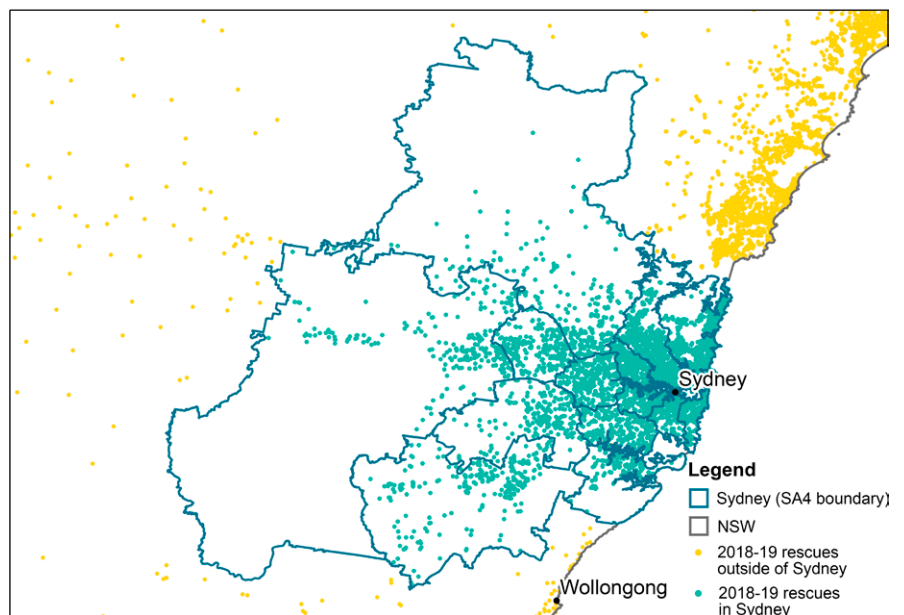

Figure 12 Distribution of rescues within Sydney in LGAs in 2018–19 (The Sydney area is defined by the ABS statistical area 4 (SA4) boundaries for Sydney).

Birds

49,593

bird
rescues

In 2018–19, 49,593 birds were rescued across 281 species, including 40 threatened bird species. Advice to the community was given about a further 3020 birds – mostly about Australian magpies, rainbow lorikeets and masked lapwings. The number of bird rescues increased by about 15% on the previous year.

The 10 bird species most rescued in 2018–19 are shown in Figure 13. These species comprise 52% of all birds rescued. Rainbow lorikeets were the most common species having over 83% more rescues than Australian magpies. A short case study on rainbow lorikeets is presented below. All bird species experienced an increase in rescues this year, although their relative percentage is about the same. Nearly 10% of all bird rescues were in the Tweed, Lismore and Coffs Harbour LGAs and another 10% on the Central Coast and Northern Beaches LGAs.
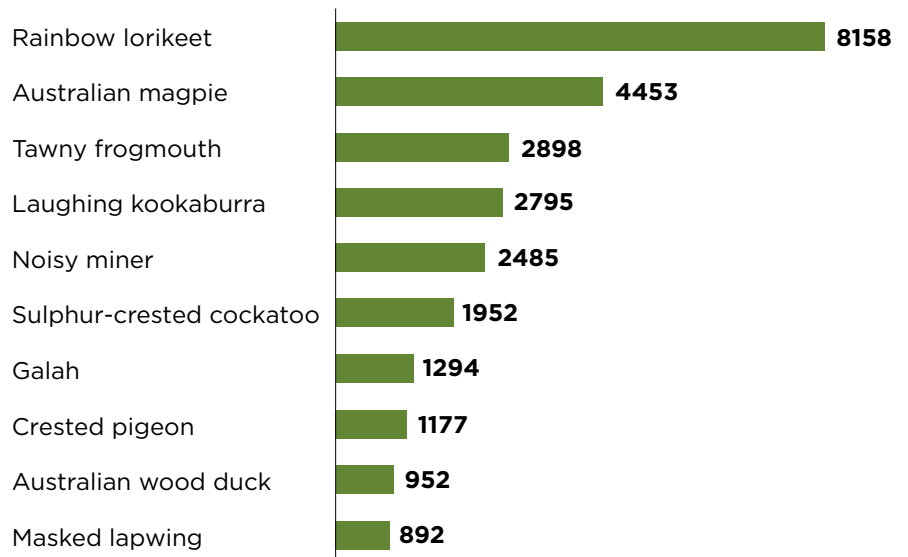
Species	Rescues
Rainbow lorikeet	8158
Australian magpie	4453
Tawny frogmouth	2898
Laughing kookaburra	2795
Noisy miner	2485
Sulphur-crested cockatoo	1952
Galah	1294
Crested pigeon	1177
Australian wood duck	952
Masked lapwing	892

Figure 13 Top ten bird species rescued in 2018–19.

The age of almost half of the birds rescued was not recorded. Of the remainder, about 22% were adults and 25% juveniles. Sex was rarely given. As expected, spring was again the busiest season for rescues (34%), closely followed by summer (31%). The month with the lowest number of rescues this year was June (2241 rescues) and with the highest was November (6663 rescues) (Figure 14).
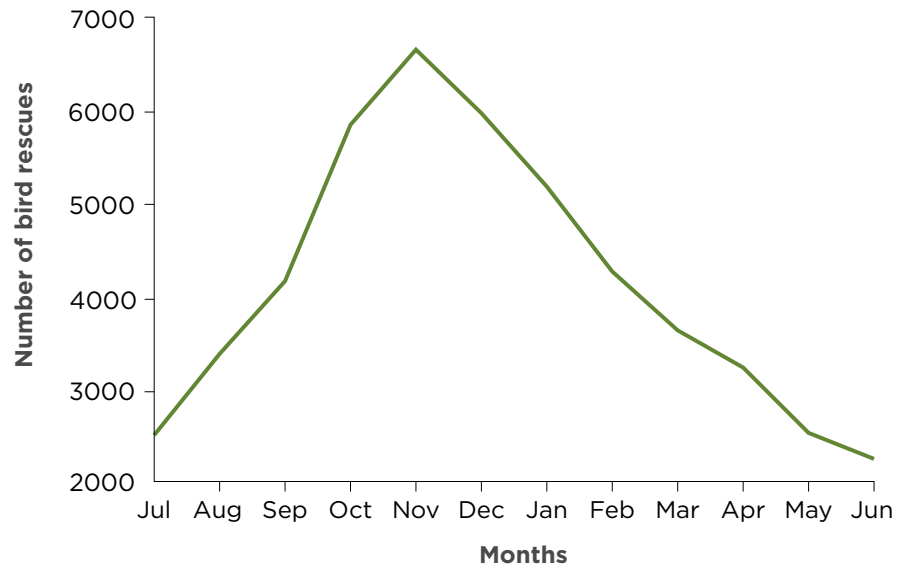
Figure 14 Bird rescues each month in 2018–19.

The cause of nearly 59% of bird rescues was 'unknown'. 'Collision – motor vehicle' and 'collision – other' account for over a third of all known encounters (Figure 15). The species most impacted by motor vehicles was the laughing kookaburra (707 rescues) with an additional 170 kookaburras rescued after colliding with other objects such as buildings and windows. 'Unsuitable environment' was the third most common reason for rescue. Nearly 500 wedge-tailed shearwaters were rescued for this reason. Sometimes fledgling shearwaters get lost on their animal migration and an interesting story about the rescue of birds found wandering the streets of Coffs Harbour was reported by ABC News Coffs Coast in May 2019. Masked lapwings, which were among the top 10 this year, were also rescued from 'unsuitable environments' or were found 'abandoned/orphaned'.

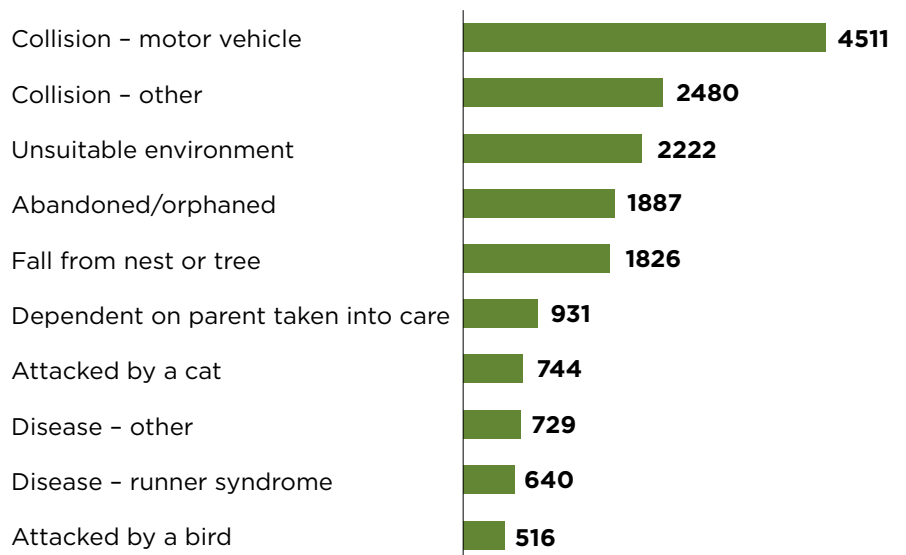| Reason	Number
Collision – motor vehicle	4511
Collision – other	2480
Unsuitable environment	2222
Abandoned/orphaned	1887
Fall from nest or tree	1826
Dependent on parent taken into care	931
Attacked by a cat	744
Disease – other	729
Disease – runner syndrome	640
Attacked by a bird	516

Figure 15 Ten most common reasons for bird rescues in 2018–19.

Nearly

28%

of **birds** were rehabilitated and released

Overall, 28% of birds rescued in 2018–19 were able to be rehabilitated and released. A breakdown of the survival of the top 10 commonly rescued species is provided in Figure 16.

Wood ducks (43%) and laughing kookaburras (41%) had the highest release rates, and close to a third of tawny frogmouths were released. Unfortunately, only 11% of sulphur-crested cockatoos were successfully rehabilitated, probably due to the impact of beak and feather disease.
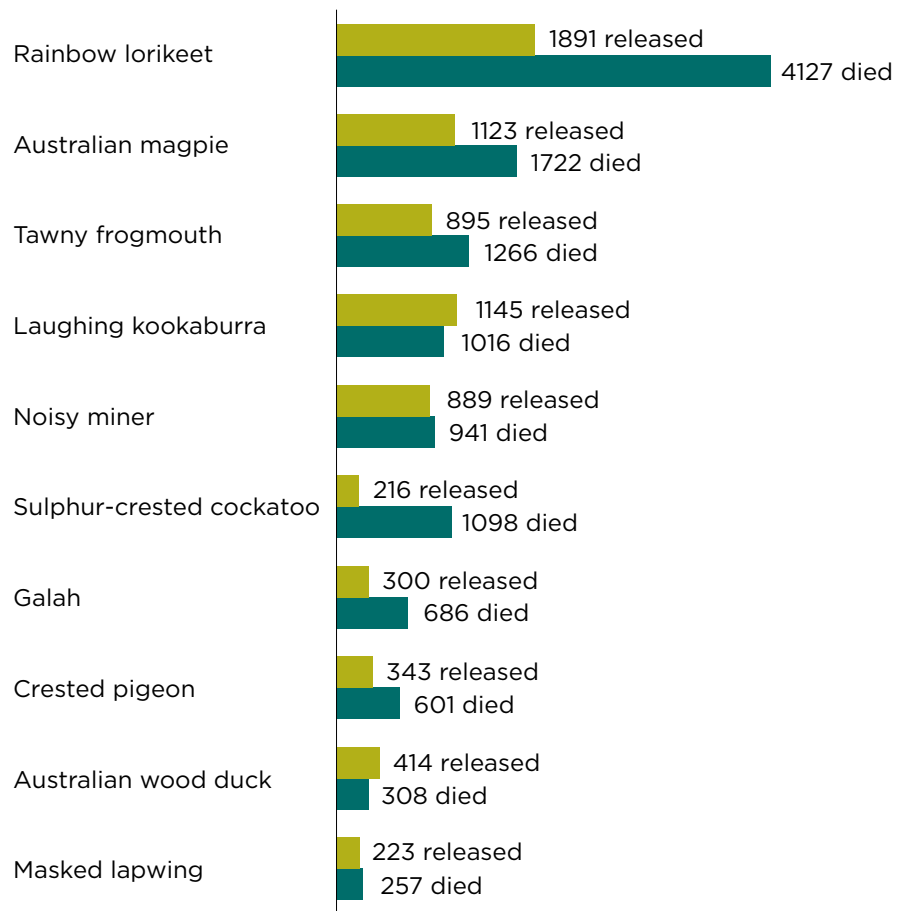
Species	Released	Died
Rainbow lorikeet	1891 released	4127 died
Australian magpie	1123 released	1722 died
Tawny frogmouth	895 released	1266 died
Laughing kookaburra	1145 released	1016 died
Noisy miner	889 released	941 died
Sulphur-crested cockatoo	216 released	1098 died
Galah	300 released	686 died
Crested pigeon	343 released	601 died
Australian wood duck	414 released	308 died
Masked lapwing	223 released	257 died

Figure 16 Fate of commonly rescued birds in 2018–19.

Case Study: Rainbow lorikeets

Rainbow lorikeets (*Trichoglossus haematodus*) live in a variety of habitats in northern and eastern Australia. This has been the most rescued species in New South Wales for over five years. In 2018–19 about 16.5% of all birds rescued were rainbow lorikeets and the number (8158) increased 22% on 2017–18. Slightly more juveniles were rescued than adults, with both comprising about 44% of all rescues where age was recorded.

Why do these birds come into care? Unfortunately, for half the birds the reason for rescue was 'unknown'. Where it was known, 'collision – other' was the most common reason, accounting for 554 rescues. This category encompasses any kind of non-motor vehicle collision, and typically includes collisions with buildings and windows. 'Collision – motor vehicle' was responsible for another 526 rescues. Disease also affects rainbow lorikeets.

This year 494 birds were rescued for 'disease – runner syndrome'. Also known as Psittacine beak and feather disease (PBFD) or Psittacine circoviral disease (PCD), this is a common and highly infectious viral disease among parrots. It is identified as a key threatening process under both Commonwealth and NSW legislation. Another 217 birds were rescued for 'disease – other'. In 2018–19 these four reasons accounted for 22% of all rescues.

Rainbow lorikeets were most commonly reported in the Central Coast LGA and a number of Sydney LGAs including Northern Beaches, Sutherland Shire and Randwick.

Rainbow lorikeets most frequently experienced concussions and wing injuries as a result of their encounters. Over half of concussed animals recovered and were released. Overall, most birds do not survive and only 23% in total were released back into the wild.

Reptiles and amphibians

12,003

reptile and **amphibian** rescues

This year 12,003 reptiles and amphibians were rescued across 88 species including 12 threatened species – an increase of almost 33% on 2017–18.

Snakes (particularly elapids and pythons) account for over half of all rescues (6442 rescues) followed by lizards with about a third of rescues and turtles 12%. Very few frogs were rescued (94) across seven species, mostly green tree frogs (52) and unidentified frog species (22). Advice was provided on another 1825 animals.

Reptiles are a unique class of animal and their rescue and rehabilitation require specialist skills. Julia McConnell is an independent licence holder who has been working with reptiles for over 30 years. Some insight into her unique skills and passion for reptiles is provided on the next page.

The top 10 species accounted for 70% of all reptile and amphibian rescues (Figure 17). Eastern blue-tongue lizards were again the most common animal rescued, comprising over a fifth of all rescues. There were nearly 500 more rescues of both this species and eastern carpet pythons than the previous year (see case study below). Other common species included the eastern brown snake, eastern water dragon and lace monitor, the latter a new species to the top 10. About a third of all rescues were adults and less than 10% juveniles.
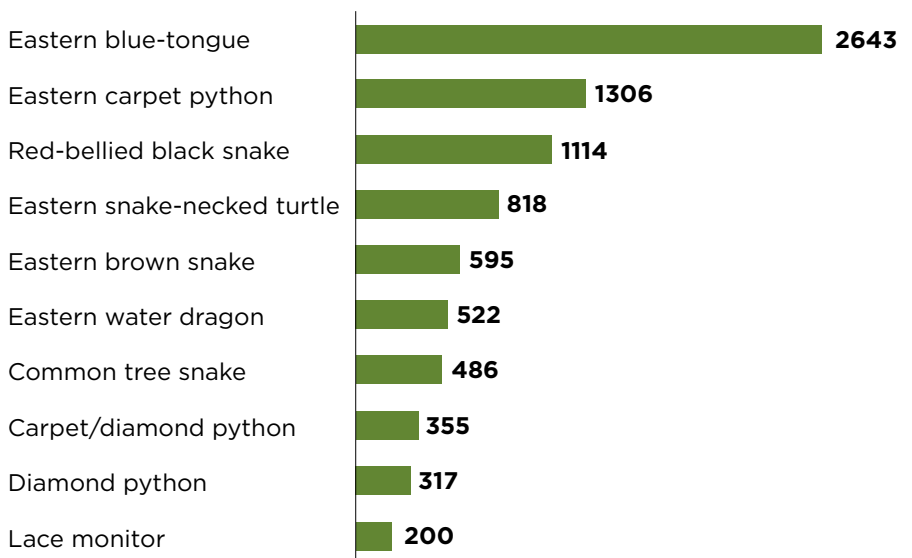
Species	Rescues
Eastern blue-tongue	2643
Eastern carpet python	1306
Red-bellied black snake	1114
Eastern snake-necked turtle	818
Eastern brown snake	595
Eastern water dragon	522
Common tree snake	486
Carpet/diamond python	355
Diamond python	317
Lace monitor	200

Figure 17 Top ten reptile species rescued in 2018–19.

Member profile:
Julia McConnell — independent licence holder

How long have you been a wildlife rehabilitator?

I have been very fortunate to have the opportunity to carry out rehabilitation on sick and injured reptiles since the late 1980s. At that time there seemed to be no knowledge available relating to this subject. I found no books and there were no reptile-specific veterinarians. Initially I took advice from experienced herpetologists, however herpetologists of the day didn't focus on rehabilitation but were engrossed with working in the field. These two pursuits were not specifically aligned. My journey was one of discovery, and much of what I learned came from the animals themselves, by observation and coming to understand the difference between normal and abnormal behaviour for each of the various species. This was combined with examining the animal to find physical abnormalities, injury or signs of infection or burns, etc.

How did you get involved in wildlife rehabilitation?

Initially I joined a group, but very early on NPWS granted my husband a licence to rehabilitate. In 1993 we joined with others to found the Hawkesbury Herpetological Society. This focused my interest in reptiles specifically as most of the founding members of the Society were all herpetologists of note. We made a concerted effort to learn the scientific names of the various species, particularly any species that came into our hands. This was a challenge and great fun.

What is your favourite thing about wildlife rehabilitation?

Probably the challenge, and never knowing what the next rescue will bring. The excitement of the possibility of coming across a different situation is always in the forefront – such as finding a

snake caught in a spider's web. That was a particular highlight for me. You never know what you might come across.

Of course the reward of eventual release is always the ultimate highlight.

Do you have a particular rescue or animal that stands out for you?
In October of 2018 a diamond python was given to me that presented with obvious physical trauma affecting the soft tissue of the body. I immediately recognised the effects of rodent activity having seen it previously. The wounds were numerous, reasonably fresh and deep.

Antibiotics and pain relief were immediately administered in consultation with my reptile vet. The wounds were dressed regularly and after approximately four weeks I noticed an infection in the mouth underneath the glottis, resulting in the tongue being destroyed. I flushed this out and cleansed it daily until I was able to return to the vet. The vet was shocked that it was not picked up initially and so was I. For some reason the visible wounds were so engaging it caused the mouth infection to be overlooked. Normally, looking in the mouth is the first thing you would do, but inexplicably, I did not. And neither did my very experienced reptile vet. At this point we agreed that euthanasia was the best option.

Because I have seen these injuries before, I can accurately guess what had happened to this animal. My assessment is that a member of the public took it from the wild and contained it on an inappropriate substrate such as wood chips or similar. When feeding the animal in this environment, substrate became lodged in the soft tissue inside the mouth. This caused an infection. Due to the infection the animal stopped eating. Eventually, in frustration, the person decided to entice it to eat by introducing live prey. While still unable to eat and unable to escape, the rat began to eat the snake. The person then took the snake to a vet saying they found it on the side of the road.

While I was disappointed with the outcome for this animal, and also in my failure to pick up on the complexity of its injuries earlier, the experience was one of ongoing learning. For this animal, the eventual outcome would not have been any different, however had I been more vigilant it could have been euthanased sooner and therefore suffered less.

As a rehabilitator, sometimes you're successful and sometimes you're not. When successful there is the reward of release, when not, generally there are lessons to be learned. Either way you need to move on without beating yourself up.

Department of Planning, Industry and Environment

Nearly 72% of rescues were reported during the warmer months of spring and summer, with only 8% of animals rescued in winter (Figure 18). Like the previous year, most rescues occurred in January (1717) and the fewest rescues were in July (299).
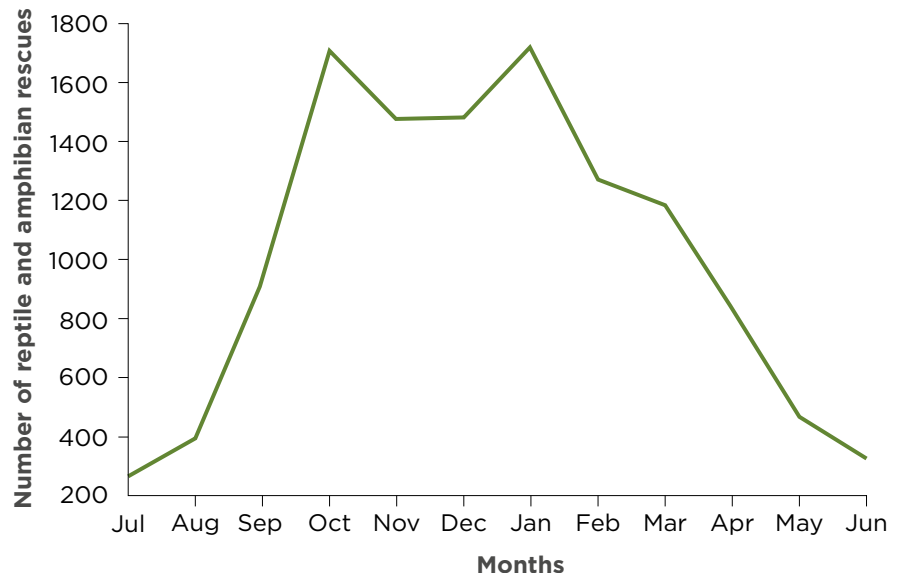

Figure 18 Reptile rescues each month in 2018–19.

Reptiles often need to be captured from unsuitable locations such as people's homes and living areas, and relocated nearby. It is by far the most frequent reason for rescue (Figure 19). Species often found in an 'unsuitable environment' this year were the eastern carpet python (996 rescues), followed by red-bellied black-snake (580 rescues) and 'unidentified snakes'. Common 'nuisance/problem fauna' reptiles were the eastern brown snake (224 rescues), red-bellied black snake (112 rescues) and diamond python (72 rescues).

Hundreds of reptiles are also impacted by collisions with motor vehicles or are attacked by dogs and cats, although there were fewer attacks this year than reported in 2017–18. Nearly 37% of all reptile 'collisions with motor vehicles' involved eastern snake-necked turtles, and 64% of dog attacks to reptiles involved eastern blue-tongues.
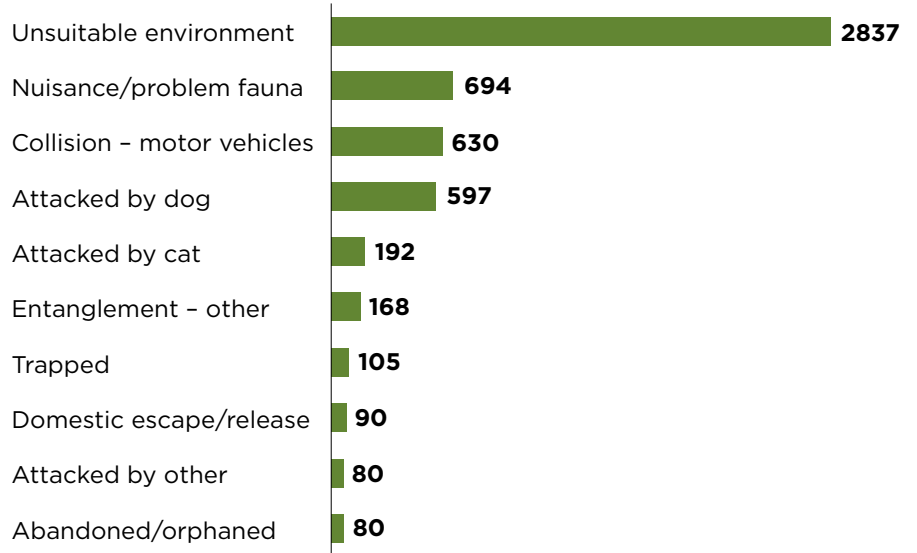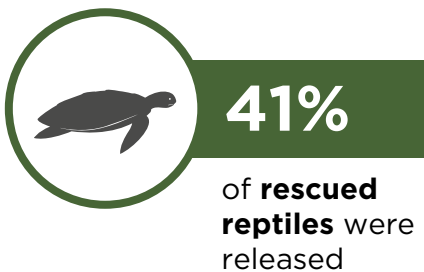
Figure 19 Top ten most common reasons for reptile and amphibian rescues in 2018–19.

41%

of **rescued reptiles** were released

Across all species about 41% of rescued reptiles were released back into the wild. Some species had much higher release rates (Figure 20). For example, over 60% of eastern carpet pythons, common tree snakes and eastern snake-necked turtles were released, compared to only about 28% of eastern blue-tongues and lace monitors. Of the top 10 commonly rescued species, only eastern blue-tongues had fewer animals released than died.
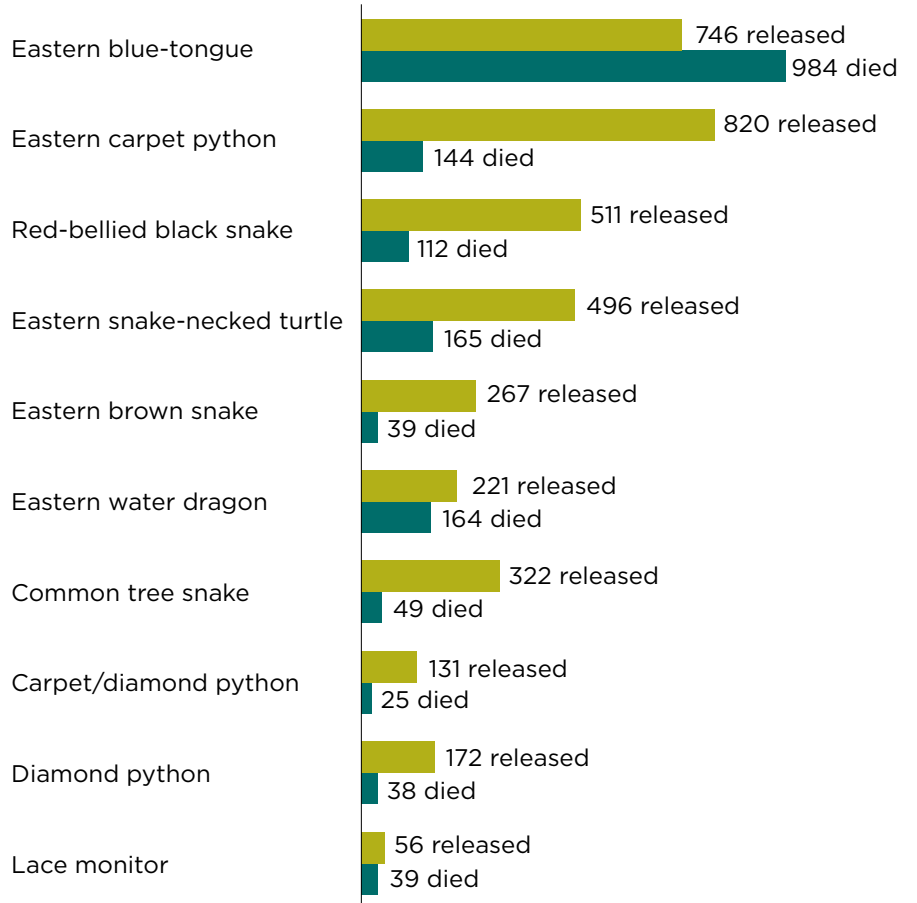

Figure 20 Fate of commonly rescued reptiles in 2018–19.

Case Study: Eastern carpet python

Eastern carpet pythons (*Morelia spilota mcdowelli*) are a subspecies of diamond python that is widespread in Australia, eastern Queensland and north-east NSW. They were the second most rescued reptile in 2018–19, an increase of 58% compared with the previous year.

Nearly 83% of all rescues of this species were from an 'unsuitable environment'. Less common reasons include 'collisions – motor vehicle (6% of rescues) and 'entanglement – other' (2%). Nearly

all eastern carpet python rescues were from northern NSW in the Coffs Harbour, Lismore and Byron local government areas.

Most pythons were found uninjured and required relocation. When a condition was reported it was most likely to be that the python was immobile or had an injury to the body.

More than 62% of the eastern carpet pythons that were rescued were able to be returned to the wild in 2018–19.

Mammals

32,788

mammal rescues

There were 32,788 mammal rescues this year across 71 different species including 23 threatened species – a 7.6% increase on the previous year. Advice was provided for an additional 1839 animals.

The top 10 mammal species rescued are shown in Figure 21. They account for nearly 74% of all mammal rescues this year. One in five mammal rescues were eastern grey kangaroos. There were a few more common ringtail possum rescues compared to the previous year, and over 400 fewer common brushtail possum rescues. Together they comprised at least 28% of all rescues, probably more when unidentified possums are taken into consideration. There were 1254 koala rescues, a 30% increase on 2017–18. Short-beaked echidna rescues also increased 93% from 616 the previous year to 1191; this species' five-year average is 877. A short case study on another commonly rescued species, the red-necked wallaby, is provided below.
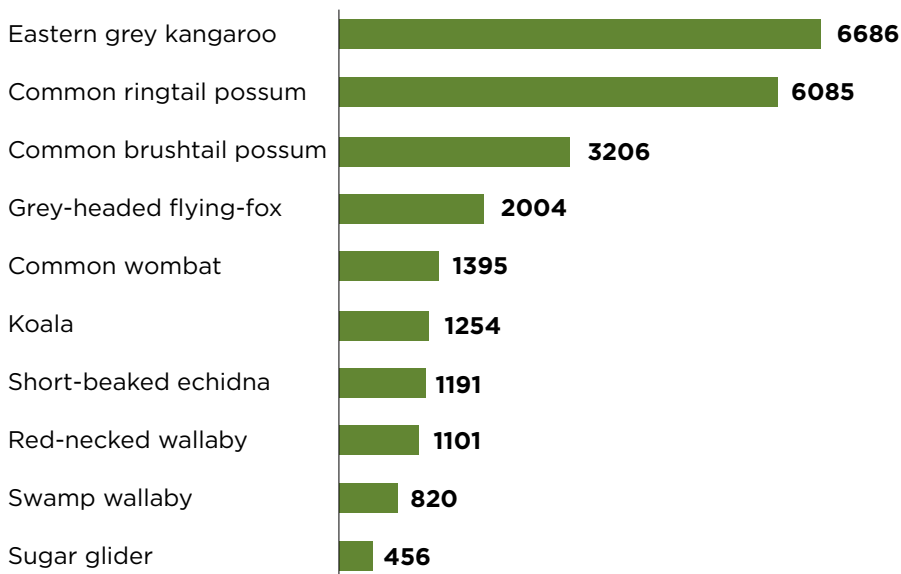
Species	Count
Eastern grey kangaroo	6686
Common ringtail possum	6085
Common brushtail possum	3206
Grey-headed flying-fox	2004
Common wombat	1395
Koala	1254
Short-beaked echidna	1191
Red-necked wallaby	1101
Swamp wallaby	820
Sugar glider	456

Figure 21 Top ten mammal species rescued in 2018–19.

Males and females each comprised 26% of rescues. Nearly a third of rescues were adults and juveniles, like the previous year.

There was something different about the timing of mammal rescues in 2018–19 (Figure 22). There was a higher percentage of rescues in the winter months (27%) and a reduction in summer rescues (23%), the opposite of the previous year. August 2018 recorded the highest number of rescues (3731) while in the previous reporting year (2017–18) January 2018 had the highest number. December 2018 had the lowest number of rescues (2140). In May 2019, AAMI the car insurer published an interesting story on motor vehicle collisions with wildlife, highlighting the increased risk in winter.
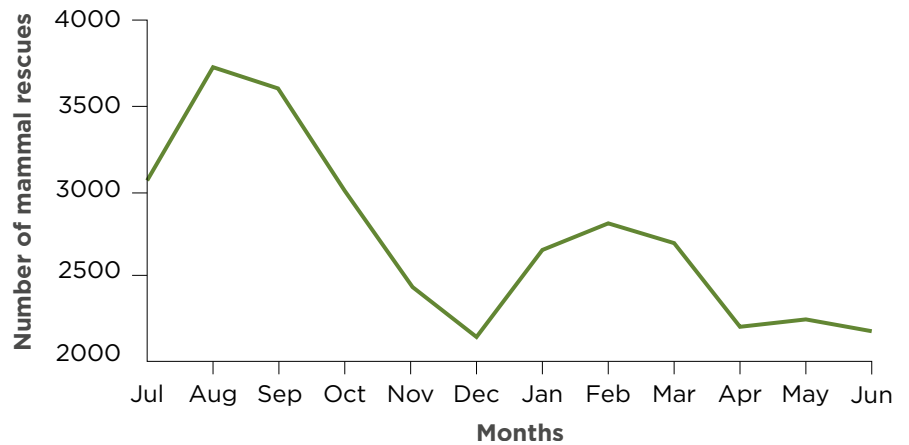
Figure 22   Mammal rescues each month in 2018–19.

'Collision with a motor vehicle' remains the most commonly known reason mammals require rescue (Figure 23). It accounted for 6872 rescues (38% when unknowns are removed from the analysis), a 17.5% increase on the previous year. Nearly 50% of all motor vehicle collision rescues were for eastern grey kangaroos; this increases to 73% when all macropod species are taken into consideration. The common wombat (423 rescues) is also affected by motor vehicle collisions. About 10% of known rescues were animals in an 'unsuitable environment'. Common ringtail possums and common brushtail possum records make up 28% of rescues. Where a reason was provided, koalas were rescued due to 'disease – chlamydia' (256 rescues), 'collision – motor vehicle' (208 rescues) and 'unsuitable environment' (163 rescues). Dog attacks were reported for 57 koala rescues; another 18 were 'attack – suspected'.
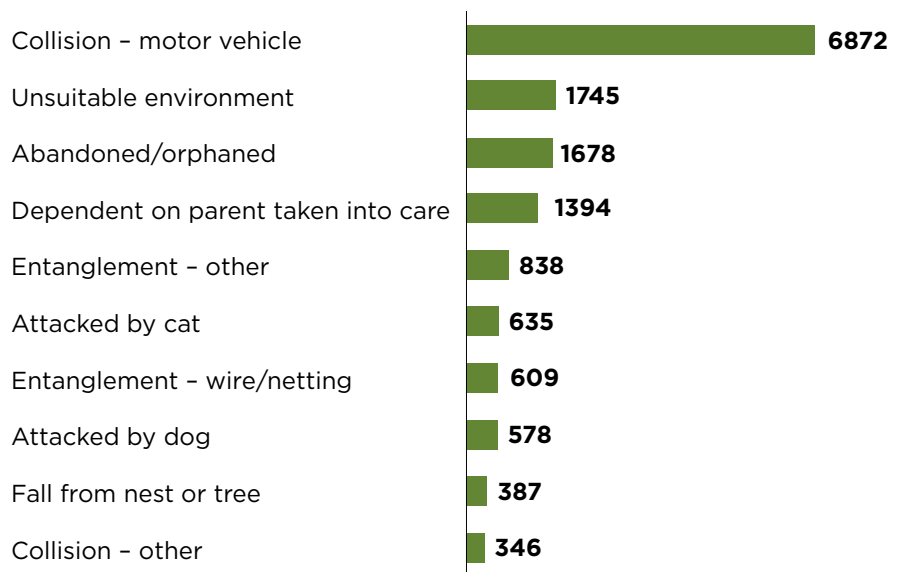

Reason	Number
Collision – motor vehicle	6872
Unsuitable environment	1745
Abandoned/orphaned	1678
Dependent on parent taken into care	1394
Entanglement – other	838
Attacked by cat	635
Entanglement – wire/netting	609
Attacked by dog	578
Fall from nest or tree	387
Collision – other	346

Figure 23 Top ten most common reasons for mammal rescues in 2018–19.

19%

of **mammals**
were
rehabilitated
and released

Overall, 19% of rescued mammals were able to be rehabilitated and released, a decrease on 24% from the previous year. Unfortunately, about half died or required euthanasia. Short-beaked echidnas were the only commonly rescued species that had more individuals released than died (or euthanased) (Figure 24). Eastern grey kangaroos had the lowest rehabilitation rate (only 7% of animals were released) as did other macropod species and common wombats. More than 40% of sugar gliders were released and 28% of koalas.
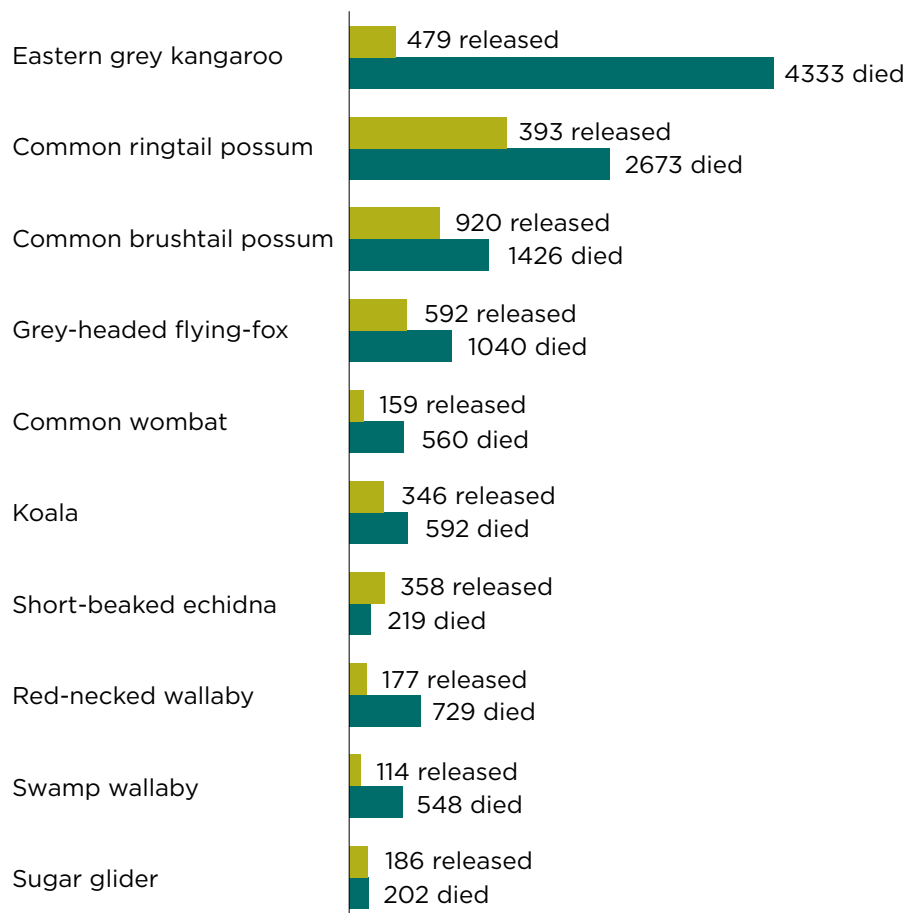
Eastern grey kangaroo
479 released
4333 died

Common ringtail possum
393 released
2673 died

Common brushtail possum
920 released
1426 died

Grey-headed flying-fox
592 released
1040 died

Common wombat
159 released
560 died

Koala
346 released
592 died

Short-beaked echidna
358 released
219 died

Red-necked wallaby
177 released
729 died

Swamp wallaby
114 released
548 died

Sugar glider
186 released
202 died

Figure 24 Fate of commonly rescued mammals in 2018-19.

Case study: Red-necked wallaby

Red-necked wallaby (*Macropus rufogriseus*) is a medium-sized macropod marsupial, common in the more temperate and fertile parts of eastern Australia, including Tasmania. It is a frequently rescued species in New South Wales. Over the five years from 2014–15 to 2018–19 there have been at least 4641 red-necked wallaby rescues. Numbers have been steadily increasing over the previous three years, with an 18% increase over the previous 12 months.

Year	Number reported
2014–15	885
2015–16	933
2016–17	792
2017–18	930
2018–19	1101

More than 67% of red-necked wallaby rescues were a result of collisions with motor vehicles. The second most common reason for rescue was being orphaned or abandoned. At least 56% of red-necked wallabies were juvenile or younger in age. Where injuries were reported, red-necked wallabies were most likely to suffer injuries to the hindlimb or multiple health issues at one time.

Rescues for red-necked wallabies were most common in winter and in the MidCoast, Lismore and Port Macquarie–Hastings local government areas.

Unfortunately, only 16% of red-necked wallabies were able to be returned to the wild in 2018–19. There are good news stories. Meredith Ryan, President of FAWNA (For Australian Wildlife Needing Aid), tells the story of Keeva on the next page.

Keeva, the red-necked wallaby

Keeva came into care with FAWNA members Jane and Susanne on 1 September 2018. She was approximately 200 days old and weighed 950 grams. She was in good condition and had been separated from her mother when a dog chased the mob.

Keeva was a very nervous joey and it took two weeks to get her to respond in a confident way; after that she started to thrive. She began to eat grass and dirt and then a couple of weeks later in early October she started having dirty beds, runny poo, etc. This took two weeks for us to get it under control.

On 28 November while in the joey run, she managed to escape through the gate when it was opened. It was just on dusk and she disappeared into the bushy area of the garden, making her very hard to find.

We were advised to leave her pouch hanging in the run with the gate open. The waiting time began and we sat in the run calling her with a bottle of milk in hand until 11pm. She didn't return that night or the next day but 36 hours later we found her in the run, grazing like nothing had happened. The panic was over. After her return she was very clingy and it took a while for her to settle down again.

On 9 December 2018 she was transferred to a FAWNA soft-release site where she could be gradually introduced to locals of her own kind over four months. Keeva was successfully released in April 2019 in the Pappinbarra River Valley, just before reaching her sexual maturity at around 14 months of age.

Postdating the reporting period – August 2020 - Keeva is now seen with her second joey.

Meredith Ryan, FAWNA President

Marine mammals

Volunteers don't just rescue mammals on land, they help marine mammals such as dolphins, whales, seals and dugongs. They do this by both sighting and reporting animals in need to National Parks and Wildlife Service and assisting in operations to rescue marine mammals. Volunteers are often the 'eyes on the water' that give first advice about marine mammals needing assistance and play a crucial role in ensuring speedy response. Marine mammals are seldom taken into care like terrestrial species and when they are it is with specialist facilities who are equipped to rehabilitate these animals.

In 2018–19 there were 71 dolphins and whales (cetaceans) reported involving 13 species, including five unidentified animals. They included three threatened species: the humpback whale, southern right whale and sperm whale. Humpback whales were the most common cetacean accounting for 58% of all interactions (Figure 25). Sightings are not included in this analysis.

There were also at least four species of seal reported. They included approximately 75 entries for New Zealand fur-seals and 19 entries for Australian fur-seals; both are threatened in New South Wales. Nine leopard seals and six Subantarctic fur-seals were also reported; the latter species is listed nationally as 'vulnerable'. In addition, there were at least 250 other 'unknown' fur-seals reported by responding organisations. Providing accurate numbers for seals can be difficult due to occurrences of multiple events involving the same animal over several days.
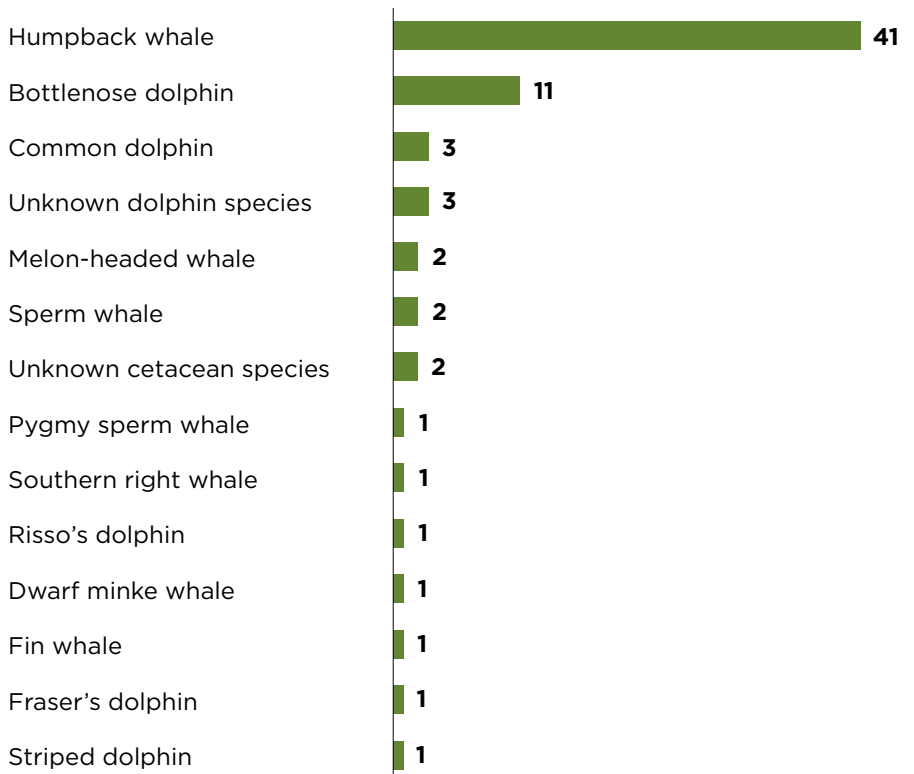
Species	Count
Humpback whale	41
Bottlenose dolphin	11
Common dolphin	3
Unknown dolphin species	3
Melon-headed whale	2
Sperm whale	2
Unknown cetacean species	2
Pygmy sperm whale	1
Southern right whale	1
Risso's dolphin	1
Dwarf minke whale	1
Fin whale	1
Fraser's dolphin	1
Striped dolphin	1

Figure 25 Cetacean species responded to in 2018-19.

Cetaceans can require assistance for a variety of reasons. This year there were 27 entanglements, 11 strandings, 3 entrapped dolphins and 26 carcasses. Seals are often reported as haul-outs or as thermoregulating seals assessed for possible entanglement or other injury.

NPWS is the lead responder for marine mammal incidents but relies heavily on partners. ORRCA (Organisation for the Rescue and Research of Cetaceans in Australia) is a multistate responder organisation that plays a critical role in gathering information, community engagement and observation. ORRCA is licensed by NPWS as well as other licensed facilities such as Taronga Conservation Society, Sea World and Dolphin Marine Conservation Park. Other wildlife rehabilitation groups also provide valuable assistance passing information on about marine mammal events.

Case study: ORRCA

In 1985, 62 false killer whales stranded at Crowdy Head on the north coast of New South Wales. The whales were being thrown around and bashed to death on the rocks by the surf, with rescuers struggling in the appalling conditions. Taking matters into his own hands, a local visionary decided to take one of the whales on the back of a truck to the sheltered fishing port on the other side of the headland about a kilometre away, where he would nurse it back to health. This was so successful that the order was given to transport all the surviving animals across to the port. That decision helped save a further 33 whales at that incident. No longer would stranded animals be doomed to die.

Following this event, ORRCA (Organisation for the Rescue and Research of Cetaceans in Australia) was formed in the November of 1985 by a group of volunteers who wanted to make a difference in these unpredictable events.

35 years on, ORRCA is a growing, multi-state, all-volunteer team whose primary focus continues to be the rescue, preservation, conservation and welfare of whales, dolphins, seals and dugongs in Australian waters.

Uniquely ORRCA is the only wholly volunteer marine mammal rescue group licensed by National Parks and Wildlife Service (NPWS) to do the work we do. Our member network enables us to attend rescue incidents ranging from single to multi-animal incidents across popular and sometimes very remote and vast stretches of coastline around Australia.

Across the winter months, ORRCA often sees a spike in seal numbers hauling out. This coincides with the minke, humpback and southern right whale northerly migration. In recent years, we have also seen an increase in the number of whale entanglements which has increased the number of calls into our ORRCA Rescue Hotline. The coordinated management of the many incidents over this period can be immense and we are grateful to have such a dedicated and experienced team of volunteers ready to help the marine mammals that frequent our waters and our coastlines.

Just another rescue training day

While hosting an ORRCA Rescue Training Workshop back in February 2019 at Kurnell in south Sydney, the ORRCA Rescue Hotline received an incident call stating there was a baby orca stranded in Kurnell.

As it turned out, it was a Risso's dolphin calf which had stranded and was still alive. The ORRCA training team and 15 of its newest rescue members, plus nine National Parks and Wildlife Service (NPWS) staff who had also just been trained by ORRCA, were directly put into action. A convoy of vehicles travelled the five minutes down the 4WD beach to assess the situation and start the rehabilitation process.

A multi-agency, team effort

The ORRCA rescue members with the help of NPWS staff and local surf life saving club members searched the area for the young dolphin's mother. Together they did everything they could, in trying and deteriorating conditions, to support this very young animal. Unfortunately, as it was milk dependent, the decision was made by senior vets from the Taronga Wildlife Hospital and Dolphin Marine Conservation Park that unfortunately, this little calf was unable to be saved.

The takeout

No one could have foreseen this event happening on an ORRCA rescue training day, let alone within five minutes from the workshop. The feedback and takeout from the newest recruits was that this practical hands on experience reinforced all the skills learnt throughout the valuable day long training workshop. It truly was an initiation into the work the ORRCA team has provided our coastal communities for the last 35 years and will continue to long into the future.

Leesa Pratt, ORRCA President

Appendix 1:
List of data providers 2018–19

The Department is grateful to the following organisations and independent licence holders who provided their records for 2018–19.

Wildlife rehabilitation organisation and facilities

Australian Seabird Rescue (ASR)

Dolphin Marine Conservation Park

For Australian Wildlife Needing Aid (FAWNA)

Friends of the Koala (FoK)

John Moroney Correctional Centre

Kangaroo Protection Co-operative

Koala Conservation Australia

Koalas In Care

Ku-ring-gai Bat Conservation Society (KBCS)

Looking After Our Kosciuszko Orphans (LAOKO)

Native Animal Rescue Group (NARG)

Native Animal Trust Fund (NATF)

Northern Rivers Wildlife Carers (NRWC)

Northern Tablelands Wildlife Carers (NTWC)

NSW Wildlife Information, Rescue and Education Service (WIRES)[1]

Organisation for the Rescue and Research of Cetaceans in Australia (ORRCA)

Port Stephens Koalas (PSK)

Rescue and Rehabilitation of Australian Native Animals (RRANA)

Saving Our Native Animals (SONA)

Sunraysia

Sydney Metropolitan Wildlife Services (SMWS)

Taronga Conservation Society

Wildlife rehabilitation organisation and facilities

Tweed Valley Wildlife Carers (TVWC)

Waterfall Springs

Wildcare Queanbeyan

Wildlife Aid

Wildlife Animal Rescue and Care Society (Wildlife ARC)

Wildlife in Need of Care (WINC)

Wildlife Rescue South Coast (WRSC)

Independent licence holders

C McGregor

E Latham

I Kopievsky

J McConnell

K Holdsworth

L Hayes

P Hughes

R Molony

S Stewart

S Brookhouse

S Rowe

[1]WIRES contributed about 64% of the wildlife rescue data for 2018–19.

Appendix 2: Definition of anthropogenic and natural causes

Encounter types used to report on anthropogenic and natural causes of rescue.

Cannot be attributed
Abandoned/orphaned
Attack – suspected/other
Collision – other
Dependent on parent taken into care
Disease – botulism
Entanglement – other
Entrapment
Event – drought
Event – extereme heat
Event – fire
Event – flood
Fouled by substance
Ingestion of a foreign object
Unknown
Unsuitable environment

Anthropogenic
Attack – cat
Attack – dog
Attack – fox
Collision – building
Collision – motor vehicle
Collision – vessel strike
Domestic pet – escaped
Domestic pet – seized
Domestic pet – surrendered

Anthropogenic
Electrocution
Entanglement – marine debris
Entanglement – netting
Entanglement – wire
Human impact – habitat alteration/tree falling
Human impact – intentional harm
Human impact – interference
Poisoned
Negative interaction

Natural
Attack – bird
Attack – same species
Disease – chlamydia
Disease – external parasite
Disease – internal parasite
Disease – mange
Disease – other
Disease – psittacine beak and feather disease (PBFD)
Event – storm
Fallen from nest or tree
Stranded/haul out

Acknowledgments

National Parks and Wildlife Service, as part of the Department of Planning, Industry and Environment, thanks the wildlife rehabilitation sector for all the important work they do rehabilitating our sick and injured wildlife. We are grateful to Zoe Harrison and Arad Banafshi both from WIRES, Julia McConnell, Robyn Gommers fromTweed Valley Wildlife Carers, Meredith Ryan from FAWNA and Leesa Pratt from ORRCA for sharing their personal stories. We look forward to profiling the work of other volunteers in the future.

This report has been prepared by Ron Haering, Hannah Ryan and Shona Lorigan, NPWS Biodiversity and Wildlife Unit.

Photo credits

Cover photo: Masked lapwing (*Vanellus miles*) also known as a spur-winged plover. Inhabits rivers, wetlands and open country (Rosie Nicolai/DPIE);
Preface: White eared honeyeater (Hannah Ryan);
Contents: Squirrel glider (*Petaurus norfolcensis*), with atypical white tipped tail (Ken Stepnell/DPIE);
Page 1: Carpet snake (*Morelia spilota*) (John Turbill/DPIE);
Page 3: Australian Seabird Rescue volunteers celebrating turtle release (Australian Seabird Rescue Inc.);
Page 4: Zoe Harrison (WIRES); Zoe Harrison releasing a koala (WIRES);
Page 5: Arad Banafshi (WIRES);
Page 6: Green turtle (*Chelonia mydas*) (Rosie Nicolai/DPIE);
Page 9: Common dolphin (Wayne Reynolds/DPIE);
Page 12: Grey-headed flying-fox entangled in fruit tree netting (Adrian Caruana/WIRES);
Page 14: Squirrel gliders in care (Robyn Gommers/TVWC);
Page 15: Wombat (*Vombatus ursinus*) (Vanessa Duncan);
Page 17: King parrot (Shona Lorigan)
Page 19: Rainbow lorikeet (Hannah Ryan);
Page 21: Diamond python (Julia McConnell);
Page 22: Blue tongue lizard in care (Hannah Ryan);
Page 23: Eastern water dragon (Hannah Ryan);
Page 25: Eastern carpet python (*Morelia spilota mcdowelli*) (Matthew Mo/DPIE);
Page 27: Koala (Hannah Ryan);
Page 29: Keeva (Jane Duxberry/FAWNA);
Page 30: Keeva (Jane Duxberry/FAWNA);
Page 31: New Zealand fur seal (*Arctocephalus forsteri*) (John Spencer/DPIE);
Page 33: Bottlenose dolphin calf (Jodie Lowe/ORRCA);
Page 36: Lace monitor (Hannah Ryan);
Page 37: Galah (*Eolophus roseicapillus*) Willandra National Park (John Spencer/DPIE);
Imprint: Eastern grey kangaroos grazing near Pretty Beach Cabins, Murramarang National Park (John Yurasek/DPIE).

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 Getting involved in wildlife rehabilitation or use the IFAW 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.