



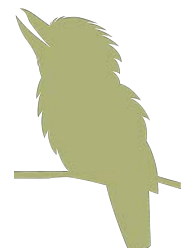
**sydney
wildlife
rescue**



Rescue and Care Manual

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GENERAL INFORMATION

INTRODUCTION

Welcome to the Sydney Metropolitan Wildlife Services (Sydney Wildlife Rescue) Rescue and Care Manual.

Sydney Metropolitan Wildlife Services was launched in May 1997 by the Hon. Pam Allan, MP, then Minister for the Environment. As our name indicates, we operate only in the Sydney Metropolitan area, from the Hawkesbury River in the north, to Wollongong in the south and from the foothills of the Blue Mountains to the ocean.

The region we operate in is the Country on which members and Elders of local indigenous communities and their forebears have been custodians for many centuries and on which Aboriginal people have performed age-old ceremonies of celebration, initiation and renewal. We acknowledge their living culture and their unique role in the life of the region. We pay our respects to the Traditional Owners of the Land and to Elders past, present and emerging.

Native animals in New South Wales are protected by the Biodiversity Conservation Act, 2016. Sydney Wildlife is [licensed](#) to rehabilitate injured, sick and orphaned protected animals by the National Parks & Wildlife Service (NPWS), a directorate of the Department of Planning and Environment (DPE).

Since inception, our membership has grown from approximately 100 to about 450 and we currently operate five branches throughout the metropolitan area. While we are divided into branches, it is important to remember that we are a single organisation; the branches merely being a more convenient way to network, administrate, communicate, hold meetings, etc.

The authority that allows you to operate under the terms of Sydney Wildlife's [Group Wildlife Rehabilitation Licence](#) is annually-renewable; these are the [Terms and conditions](#).

While we are interested in all aspects of ecology, our primary focus is on native fauna and how it relates to and is affected by different factors within its environment. Sydney has many unique species, which are faced with problems not found elsewhere in the state, and it is these local issues which Sydney Wildlife Rescue aims to address.

We cannot isolate animals from the rest of the environment. Urban sprawl and loss of habitat are the major contributors to the demise of native animals, closely followed by domestic and feral animal attacks. Accordingly, education at all levels of the community is a primary objective and the only truly effective weapon in the long-term conservation of wildlife and its habitat.

The Sydney Wildlife [Constitution](#) provides the framework within which the organisation operates. It is important that you read this document, in particular the clause Part II – Objects. Throughout the training course you should bear in mind the points made in this clause as it is these that encapsulate the nature of our organisation.

Working within Sydney Wildlife is like anything else in life. It requires considerable time and commitment and can be frustrating or distressing at times. When an animal in your care dies or must be euthanased, particularly if you have spent weeks or months caring for that animal, it can be quite soul-destroying and lead to feelings of failure or inadequacy. If this happens, don't blame yourself. Always remember that an animal comes into care only because it needs help, that you are trying to give it a second chance and that otherwise it would certainly die.

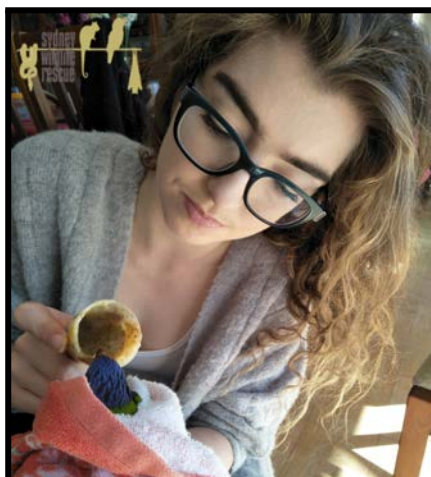
These feelings are normal, and all our foster carers have been through the same learning curve and emotions that you will inevitably experience in the coming months.

To counteract the sad moments, there is nothing so rewarding as the realisation that you have saved an animal's life, or at that wonderful moment when you successfully release a rehabilitated animal back into the wild.

Being an entirely voluntary organisation, we rely on our members to make the difference. For the organisation to succeed, we need you to be committed to do your share of rescues and foster care, to be an active member of your branch and to help with fundraising and office work.

This is the basic manual that is augmented by species specific manuals. It is a work in progress that is compiled by Sydney Wildlife Rescue members for Sydney Wildlife Rescue members and is the intellectual property of the organisation.

We hope you find the training course interesting and informative and that when you finish it you will be keen to play your part in helping our native wildlife.



ORGANISATION AND ADMINISTRATION

- **Branch organisation and administration**
- **Rescue Line**
 - How the system operates
 - Trello
 - BatchGeo
 - Rescue Line shifts
 - Vets
 - Snake handlers
 - Donations
- **Online platforms/websites**
- **Social media**



Branch organisation and administration

For administration purposes, Sydney Wildlife has divided the Sydney area into five branches: Northern Districts, Northern Beaches, South West, Central and North West. Refer to the [Boundary and Branch Map](#) on Wild Apricot.

Each Branch has its own Executive Committee consisting of a Chair, Vice-Chair, Secretary and Treasurer. On this committee are various Animal Coordinators who register, track and monitor the treatment of animals within their Branch. The statistics gained by the Animal Coordinators are reported back to National Parks and Wildlife as part of our licencing conditions.

You must register an animal with your Branch Animal Coordinator each time you have an animal come into your care. This is necessary for:

- statistical purposes
- getting advice on the correct treatment and care of animals
- finding 'buddies' where necessary.

Our Animal Coordinators are a great source of information and knowledge. These positions change each year and when you become more experienced you may consider volunteering for one of these positions in your Branch.

Refer to [The Role of Your Coordinator](#).

Rescue Line

Please visit our [Office Info site](#) (password protected for members) for current information regarding office processes and systems.

The following notes are included so that new members will understand how the Sydney Wildlife Rescue Line operates. Everyone working on the Rescue Line is a volunteer and the more people there are to help, the more the load will be shared.

During COVID we closed the office and moved our operations online, enabling members to work remotely for our service to continue 24/7. When COVID restrictions eased we were able to reopen the office. We now have the flexibility of operating the Rescue Line remotely as well as from the office.

The Rescue Line operates 365 days a year and we are always in need of help. Training and follow-up support is provided and you can work from home or from our rescue office in the Lane Cove National Park. It's a great way to meet other members and an interesting and informative way to learn more about the animal species we deal with, as well as the many problems and issues involved. If you would like more information please contact the Office Manager.

How the system operates

The Rescue Line receives a telephone call from a MOP regarding a distressed animal. A Rescue Line operator records relevant information about the animal such as its location and injuries in Trello. The MOP is given basic instructions on the care of the animal until a rescuer arrives.

The MOP is asked if they are willing and able to transport the animal to a vet, or to our nearest carer. This means that a rescuer does not need to be found if the MOP is able to help and the animal may get the treatment it needs more quickly. When requesting a MOP to transport an animal to a vet, please ensure that you inform them that there will be no charge

It is helpful for identification of the animal, its condition and location, if the MOP can send a photograph.

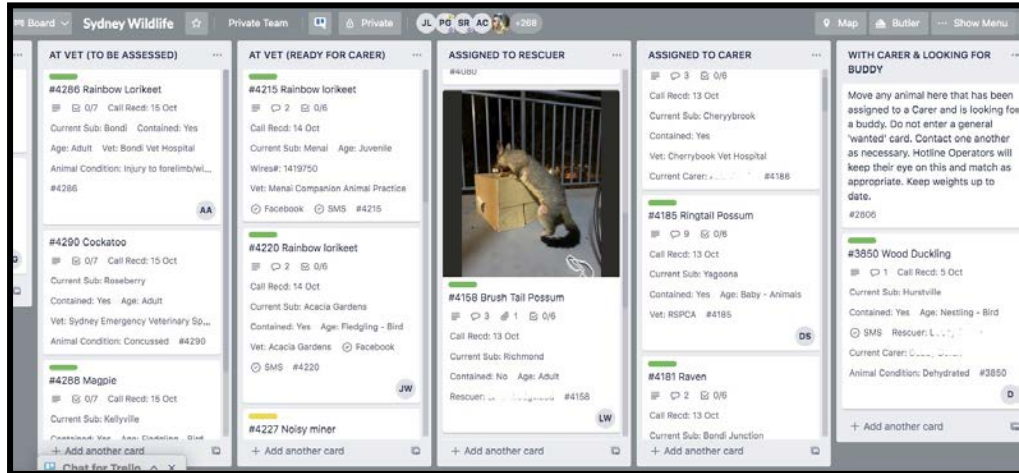
Trello

Trello is the online system used to record information for each call in a card that is accessible to all members. A Record Number is automatically assigned when a new card is created. It contains relevant questions that should be asked and the data is recorded if available. Whenever possible, please give the Record Number to the MOP who may wish to phone back later, to enquire after 'their' animal.

Information is extracted from Trello that gives an accurate picture of the number and type of calls that come into the office each year and provides the data required for our twice-yearly reports to the National Parks and Wildlife Service.

Online training is provided for [Rescue Line Operators](#) and for [Carers and Rescuers](#) (password protected for members).

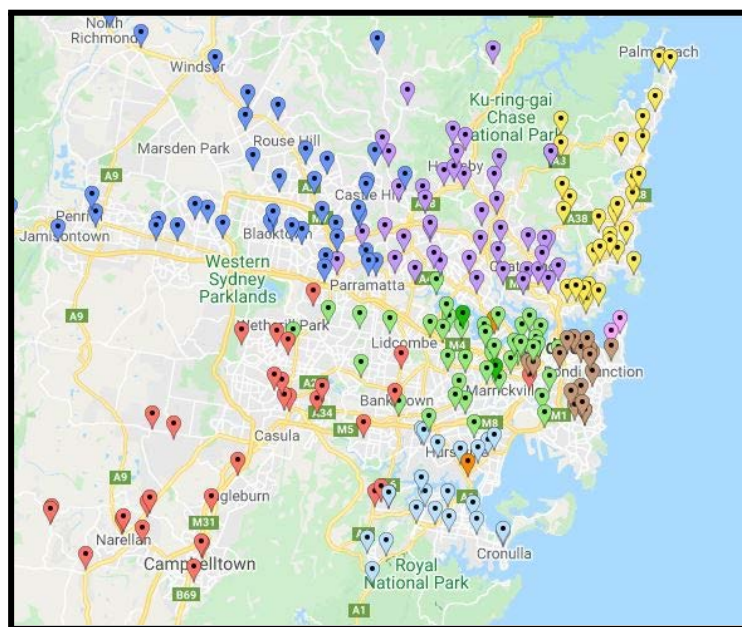
If you are requested by an office volunteer to rescue or care for an animal, please do so if possible. Remember that if you say “no” you are not only saying “no” to the office volunteer, but more importantly to the animal that is in trouble and whose life may depend on your assistance.



BatchGeo

Rescuers, carers, and veterinary surgeries are all part of our simple-to-operate BatchGeo online mapping system.

BatchGeo includes the details and location of every member, their rescue availability, species training and care facilities. It also includes the contact details, location, operating hours and suitability for particular species (birds, reptiles, etc) of vets.



It is the responsibility of every Sydney Wildlife member to ensure their own contact information is kept current.

- If you are going away on holiday or are unavailable for any other reason, you should update your details in Wild Apricot (the member platform) at least a week in advance.
- BatchGeo is updated weekly from Wild Apricot by an administrator.

When a rescuer or carer has been found for the animal, the card in Trello is updated with the member's name.

- The rescuer or carer is then the 'owner' of the card and is responsible for updating the card until the animal's fate is known (it dies, is released, euthanised, etc).
- If the animal is passed from a rescuer to a carer, or from one carer to another, they must be assigned to the card as the carer and the original carer must be removed.
- Once the fate is known, the card must be updated and closed.

Rescue Line shifts

The Rescue Line operates seven days a week. Shifts are 9am to 1pm, 1pm to 5pm and 5pm to 9am (After Hours).

Anyone wishing to work on the rescue line is given full training either in the rescue office or over the phone and is supported during their initial shifts. Wherever possible you would be working with a buddy. Shift hours can be split to suit the availability of the operator.

Vets

Sydney Wildlife has a network of vets who will accept native animals free of charge. Their details are recorded in the BatchGeo Vet List mapping system.

If it is apparent from the Rescue Line call that the animal needs to be taken to a vet, the MOP is asked if they are prepared to do so. If they are, the closest vet to them is located from the Vet List. They are given a choice if there is more than one. The name of the vet they take it to is recorded in Trello for follow-up.

It is helpful for either the Rescue Line operator or the MOP to call the vet beforehand to let them know the animal is coming. Always give the Trello record number to the MOP and the vet.

Remember to tell the MOP that no charge will be made by the vet.

Veterinary surgeries will contact the Rescue Line when they have wildlife that are in need of a carer. The details of the vet, animal and where it was found are recorded in Trello. Batchgeo is searched for a suitable carer in the area.

Our vets are very valuable to us; we could not operate effectively without them. Please always be polite and courteous.

Sydney Wildlife's Mobile Care Unit is staffed by volunteer vets and runs clinic days. Details are on Wild Apricot.

Refer to [VETS](#).

Snake handlers

Sydney Wildlife has skilled reptile handlers who will relocate or rescue snakes and other reptiles or give advice to MOPs who have reptiles on their property. These members are listed on BatchGeo.

Contact only a trained snake handler for a call regarding snakes and monitors.

- A great deal of knowledge is needed in the identification and handling of these animals.
- You should not try to identify a snake over the phone, but instruct the caller to keep themselves, children and pets away from the animal and try to keep an eye on its whereabouts.
- Then ask a snake handler to contact the MOP.
- If the caller is able to photograph the animal safely it will aid identification.

A photograph will also help with misidentification. Blue-tongued lizards are often reported as snakes.

[Reptiles](#) such as lizards and turtles may be rescued and relocated by any rescuer. If the reptile is sick or injured it should go to a trained reptile handler for care as specialised equipment is needed.

Donations

There are several ways to make a tax deductible donation to Sydney Wildlife Rescue.

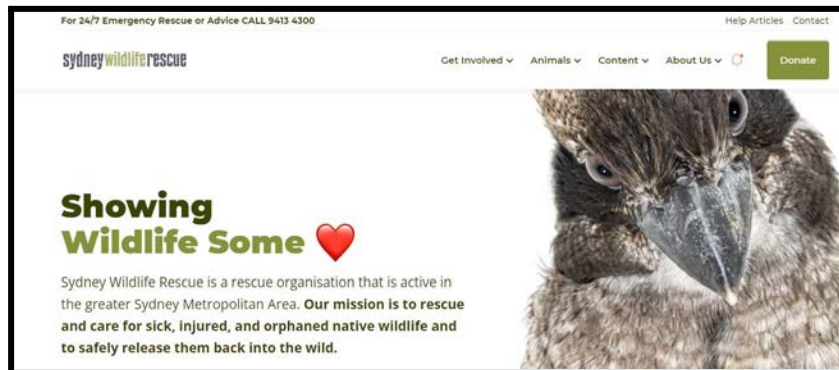
- Donors can go to our [website](#) and click on the DONATE button. This will take them to a page where they can donate using their credit card or paypal account. They enter their name and address, credit card or paypal details, and their donation amount. They will then be emailed a tax receipt.

This page also gives them the information needed to make a bank transfer. As we are a registered charity, it is a legal requirement that all donations go to a dedicated donations bank account; our Public Gift Fund account. Donors need to enter their name and address on the page so that we can send them a tax receipt, as this information doesn't automatically come through with a bank transfer.

- If a MOP gives you a cash or cheque donation, you can either bank it to our public gift fund account (BSB 062 028, a/c 1043 1932), or put it in the Treasurer's pigeon hole in the office in Lane Cove. Make sure to get the donor's full name and contact details (email is OK) and pass this information on to the [Treasurer](#) so that we can send a receipt.

Online platforms/websites

The [Sydney Wildlife public website](#) has information for the public such as volunteering, FAQs, and making a donation.



Wild Apricot

The [Sydney Wildlife Members' Website](#) is commonly known as Wild Apricot. It has information *about* the organisation. It contains the following information:

The Directory includes a list of Board members, Branch Positions and Animal Coordinators as well as members' profiles. You can edit your profile to include records of specialist training courses and refreshers that you have undertaken, your availability for rescues and caring, and dates when you will be away.

This information is loaded into the Batchgeo maps system on a weekly basis. This information is used by the Rescue Line operators to search for rescuers so it is essential that you keep the details of your training and availability up-to-date.

Training Manuals and Promotional Materials includes: manuals and related documentation for rescue and care, DPE codes and documents, and upcoming specialist training courses such as snakes, macropods and joey possums.

Other information includes: Helpful Guides, Mobile Care Unit, Wildlife Links, Policies, Forms and Licences and Membership Renewal/Resignation.

The process for renewing your membership of Sydney Wildlife (due on 1st of July each year) is made easy with an online renewal and payment system via the Members' Renewal page.

The members-only Sydney Wildlife Facebook page is a vibrant and interactive forum for sharing the experience of being a wildlife carer in Sydney.

The Sydney Wildlife Rescue Facebook Page is used for daily posts of urgent animal rescues by Rescue Line operators.

The [Sydney Wildlife Office Info site](#) (commonly known as Weebly and password protected for members) has 'how to' information, such as how to use Trello.

[Trello](#) is the online system for recording rescue information. All rescues you undertake can be viewed by you from your computer or phone by searching the animal's record number or your name.

Social media

Use of social media is a significant part of our outreach activities. The reach and pervasiveness of social media present both a challenge and an opportunity to Sydney Wildlife.

The [Social Media Policy](#) outlines how social media must be used in the context of our organisation. It is aimed at protecting our reputation as an organisation, our volunteers, and the animals for whom we care.

Members who use social media in a private capacity should not post photos which may be perceived in the following ways: humanising native animals, inappropriate housing, feeding and handling, portraying wildlife in care as pets and that depict graphic images of injuries.

DPE CODES OF PRACTICE

The Department of Planning and Environment (DPE) publishes codes of practice that cover all aspects of rescue, care and release of protected native animals that are incapable of fending for themselves in their native habitat.

- These codes set out standards (mandatory requirements) and guidelines (agreed best practice) that have been developed to ensure that the welfare needs of native animals are met and the conservation benefits stemming from their rehabilitation and release are optimised.
- These codes aim to ensure that the risks to the health and safety of volunteers rescuing and caring for these animals are reduced and easily managed.
- Compliance with the standards in these codes is a condition of a biodiversity conservation licence (BCL) to rehabilitate and release sick, injured and orphaned protected animals issued under the NSW Biodiversity Conservation Act 2016 (BC Act).

The DPE species codes of practice are based on four key principles that apply to all aspects of rescue, rehabilitation and release.

1. Prioritise the welfare of native animals

The main objective of wildlife rehabilitation is to relieve suffering in sick or injured wildlife. The rehabilitation and release of native animals to the wild is the primary objective. It must not be pursued to preserve life of the animal at all costs or achieve broader conservation outcomes where the animal is subject to unreasonable and unjustifiable suffering.

2. Avoid harm to native animal populations and other wildlife communities

In wildlife rehabilitation there is a risk of adverse ecological outcomes. The inappropriate release of animals can have significant detrimental effects on the local ecosystem and wildlife communities. At all stages of wildlife rehabilitation, the potential adverse ecological outcomes must be considered and conservation benefits for wild native animal populations maximised.

3. Minimise risks to human health and safety

There are many risks in all aspects of rehabilitation, including both personal injury and disease, requiring consideration to ensure preventative measures are in place.

All personnel involved in rescue, rehabilitation and release of native animals must understand practical health and safety measures such as undertaking a risk assessment, using personal protective equipment and even delaying action to ensure safety measures are in place to protect their health and safety.

4. Optimise capacity to care

Wildlife rehabilitators must ensure that they can provide for the essential needs of native animals undergoing rehabilitation, and that they have the resources to adequately prepare the animal for release back into the wild.

When the wildlife rehabilitator's capacity to care is exceeded, unacceptable standards of care or welfare may result. Wildlife rehabilitators must be mindful of their capacity to care, particularly when there is an influx of wildlife requiring care due to major incidents, significant weather events or disease outbreak.

When the capacity to care is exceeded there are three acceptable management options:

- refer the animal to another licensed wildlife rehabilitator with a current capacity to care for the mammal
- increase the capacity to care by increasing or pooling resources
- lower the euthanasia threshold in combination with early-stage triage of newly rescued animals and proper veterinary assessment and prognosis of animals in care.

Lowering the standards of care, such that they are not consistent with this code, is not an acceptable response to exceeding the capacity to care. In circumstances that involve major catastrophic events and where capacity to care is exceeded, lowering the threshold for euthanasia is a more appropriate response than not rescuing animals in distress.

Training

The DPE codes of practice include standards and guidelines for training to ensure that wildlife rehabilitators have appropriate knowledge and skills to ensure the welfare of animals in their care.

It is a mandatory requirement that all Sydney Wildlife training materials comply with and teach the standards and guidelines described in the codes.

ANIMALS THAT WE DO AND DON'T RESCUE

Members who have done the Rescue and Care Course can rescue and/or care for these animals:	
Amphibians	Native frogs
Birds	Native birds such as: brush turkeys, butcherbirds, channel-billed cuckoos, crested pigeons, cockatoos, corellas, currawongs, ducks, galahs, ibises, king parrots, koels, kookaburras, magpies, magpie-larks, noisy miners, musk lorikeets, rainbow lorikeets, rosellas, plovers, ravens, sacred kingfishers, seagulls, tawny frogmouths, wattle birds. Altricial chicks if the member is available to feed them frequently.
Mammals	Possom rescue: ringtail and brushtail possums. Possom care: joey ringtails under 400g and joey brushtails under 800g need to be cared for by an experienced carer. * Other mammals: antechinuses, bandicoots, echidnas, gliders and native rodents.
Reptiles	Blue-tongued lizards, skinks, water dragons, bearded dragons and freshwater turtles.
<p>*You need to get advice from your coordinator <i>before</i> going to rescue one of these mammals. Your coordinator will give you advice on handling and transporting it, and will decide who the best person is to care for it. These mammals (especially joeys, puggles and pups) have different diets and housing needs and must be cared for by a member with suitable facilities and with guidance from an experienced carer. Injured echidnas need to be seen by a coordinator as some vets may not have enough experience with them.</p>	

Members who have done specialist training can rescue and/or care for these animals:	
Birds	Raptors (including owls) Seabirds (excluding seagulls) and penguins can be rescued but need to go to Taronga Zoo's wildlife hospital for care.
Mammals	Bats: macrobats and microbats. Macropods: kangaroos, wallabies, wallaroos. Marsupials: joey ringtails and brushtails, koalas, wombats.
Reptiles	All snakes (including sea snakes), monitors and marine turtles. Escaped pet reptiles are balloted by a herpetological society to rehome them. Members who are trained to handle snakes may rescue non-native reptiles even though they are not included in our licence. Reptiles that may have been smuggled into the country illegally or have been illegally bred and raised here are quarantined and reported to the Department of Primary Industries .
Endangered native animals such as the brush-tailed rock-wallaby, Manly/little penguin, swift parrot, orange-bellied parrot should be reported to the Department of Planning and Environment .	
Animals that we don't rescue:	
Non-native (introduced or exotic) species	Birds (such as blackbirds, common/Indian mynas, feral pigeons, spotted turtle doves, laughing doves, mallard ducks, red-whiskered bulbuls, starlings, sparrows), foxes and non-native rodents. It is an offence under the National Parks and Wildlife Act, 1974 to release non-native animals because they have a detrimental impact on native animals and their habitat. Refer to Non-native animals .
Unusual non-native animals	Non-native animals that are not commonly seen such as cane toads, chameleons, corn snakes, exotic pet reptiles and red slider turtles must be reported to the Department of Primary Industries .
Pets	Cats, dogs, rabbits, guinea pigs, etc.
Other	Farm animals, dingoes, insects (including spiders) and fish.



Cane toad.

SPECIES THAT REQUIRE SPECIALIST TRAINING

Bats

Flying-foxes and microbats must only be rescued and cared for by members who have successfully completed the specialist Sydney Wildlife Flying-fox course as well as a designated specialised microbat course.

There is a special app that all bat rescuers have on their phones called 'X Matters' which we share with WIRES. The office should only notify bat rescues through the app.

Should you arrive at a rescue and find that instead of the animal you were expecting, it is actually a bat **DO NOT TOUCH IT OR ATTEMPT TO RESCUE IT.**



As with venomous snakes, it needs a specialist rescuer. Call the Rescue Line and ask them to send out an urgent call via X Matters, giving all details and observations that you can make from a safe distance. It may be helpful to send a photograph.

A very small percentage of bats may have a virus called Australian bat lyssavirus. **For all bats we apply the 'no touch' rule.** ABLV is carried in saliva and whilst it is a very fragile virus outside the body, it can be spread via scratches and bites, saliva, mucous membranes or broken skin. It is important to make sure that the MOP who reported the animal knows not to touch the bat.

If it is possible to contain the bat without touching it by placing a cardboard box or laundry basket over it, do so. Ensure that nobody has touched it, has been bitten or scratched and that pets and people are kept away until a vaccinated and authorised member can rescue it.

Joey possums

The Rescue and Care Course does not authorise you to care for [joey possums](#) (ringtails weighing under 400g and brushtails weighing under 800g).

If you go to a rescue and find that the possum is a joey, or a mother with joeys, you must contact your coordinator or an [experienced and qualified carer](#) immediately.

Refer to [Female possums - special considerations](#).



Macropods

Only Sydney Wildlife Members who have completed the Macropod Training Course can rescue macropods as they need specialised handling and care.



Monitors (Goannas)

Only Sydney Wildlife Members who have completed the Venomous Snake Handling course and training in Monitors are to attempt to rescue these dangerous animals. Do not, under any circumstances, attempt to handle a monitor unless you have completed the monitor-handling training.

Monitors have a variety of weapons that include their bite, locking jaw, claws, and a tail that can be used with precision as a whip. Startled or distressed goannas automatically seek to climb the nearest tall object in order to escape but when panicked are also known to readily climb people, causing great distress and potential injury to both.



Monitors eat decomposing or rotting food/prey so their mouth harbours bacteria that can cause serious infection.

If you go to a rescue and find the animal is a monitor, call the office to find an experienced handler, or if you know a monitor handler you can call them directly.

Raptors and seabirds

Other than seagulls, most seabirds, e.g. cormorants, pelicans and penguins have special needs and are difficult to care for in captivity.

An experienced carer should rescue these birds.

The rescue may be difficult (you need to protect your face and eyes) and the bird will probably need to be treated for dehydration.



Cormorants have razor-sharp beaks.

Raptors are birds of prey such as owls, falcons, kites and eagles. Only members who have completed specialist raptor training will be sent to rescue a raptor.

If you get to a rescue and find that the bird was incorrectly identified and it is one of these birds, you should not attempt to rescue it. Contact the office and ask for assistance from an experienced rescuer or an alternative rescuer.

Snakes

Only Sydney Wildlife Members who have completed the Venomous Snake Handling course are to attempt snake rescues.

Do not, under any circumstances, attempt to handle a snake unless you have completed this course.



As many of our snakes (including sea snakes) are venomous, all snake bites must be treated as potentially fatal. However, you will never be asked to do a snake rescue by our

office unless you have completed the course. If an animal has been misidentified and turns out to be a snake, contact the office for a snake handler.

If bitten by a snake, apply a pressure bandage immediately, do not wash the bite area. Call an ambulance and sit quietly while waiting for it to arrive.

FIRST AID & SAFETY PRECAUTIONS

- **General information**
 - **Basic first aid principles**
 - **Insurance**
 - **Flying-foxes and microbats, Snakes, Monitors (Goannas), Birds, Possums**
 - **Bacterial diseases: Leptospirosis, Q fever, Salmonellosis, Mosquito and tick-borne diseases**
-

General information

Before handling wildlife, rescuers should be aware of possible safety risks and take necessary precautions to minimise harm to themselves and the animal. Sick or injured wildlife can cause injury, and disease transmission is possible both to and from humans.

Capture and handling should be undertaken only by SWR members who are appropriately trained and experienced.

Rescuing and caring for native animals can lead to scratches and bites, as well as contact with the bodily fluids of animals when dealing with diseases or wounds. See [Minimise risks to human health and safety](#).

Some of the animals we deal with can pass on various diseases (zoonoses) or can be venomous. Refer to the DPE list [Zoonoses - animal diseases that can infect people](#) for more information.

It is recommended that all Sydney Wildlife members maintain their tetanus vaccination and undertake a course in basic first aid. Immuno-compromised persons should avoid all contact with sick wildlife. Wear PPE (disposable gloves and mask) to prevent disease transmission when handling animals and when cleaning enclosures.

Basic first aid principles

Basic first aid principles and hygiene protocols should always be applied:

- thoroughly wash scratches or bites with soap and water
- treat scratches or bites with antiseptic
- seek medical advice or attention as required.

Insurance

Sydney Wildlife members are covered by Volunteer Accident Insurance. This coverage applies to financial members.

For the safety and welfare of both wildlife and the public, MOPs should never be asked to assist with the capture or handling of wildlife.

If an injury or accident occurs, advise the Board or your Branch Secretary and record the details in the Incident Report Form (available on Wild Apricot). The Board Secretary will submit the Incident Report Form to the NWC who will submit it to the insurers.

Flying-foxes and microbats

Only Sydney Wildlife Members who have completed the Flying-fox and Microbat course are authorised to rescue and care for bats. See [Bats](#).

Snakes

Only Sydney Wildlife Members who have completed the Venomous Snake Handling course are authorised to rescue and care for snakes. See [Snakes](#).

Monitors (goannas)

Only Sydney Wildlife Members who have completed the Venomous Snake Handling course and training in Monitors are authorised to rescue these dangerous animals. See [Monitors \(goannas\)](#).

Birds

Birds can carry the disease chlamydiosis (or psittacosis) which can be transferred to humans through inhalation. If you develop a persistent cough or respiratory infection, let your doctor know that you have been in recent contact with birds. For more information see the NSW Government [Psittacosis \(Ornithosis\) fact sheet](#).

[Raptors and most seabirds](#) should be rescued by an experienced member.

Possums

Possums can suffer from [thrush](#) and this can be passed to humans. Always ensure that you thoroughly wash your hands before and after handling possums.

Ringtails can suffer from [tularemia](#) which has been found recently in Sydney but is still rare. It is carried by insects such as mosquitoes and ticks. It is not transmitted from person to person. For more information see the NSW Government [Tularemia fact sheet](#).

Bacterial diseases

Leptospirosis

Leptospirosis is caused by leptospira bacteria that are found in infected animal urine and tissues in livestock (cattle, pigs, sheep, goats, deer), pets (dogs, horses, cats), wildlife (native animals, such as possums) and pests (rats and mice).

Leptospirosis in Australia is found in warm and moist regions such as northeastern NSW and Queensland. It is treated with antibiotics. Recovery from leptospirosis infection can be slow with a chronic-fatigue-like illness that lasts for months.

For more information see the NSW Government [Leptospirosis fact sheet](#).

Q fever

The bacteria (*Coxiella burnetii*) is shed in birthing products, urine, faeces, colostrum and milk, and can be contracted through direct contact with infective material on broken skin or through inhalation of infective material (e.g. inhalation of faeces aerosolised during lawn mowing or cleaning enclosures). Animals shedding the bacteria are asymptomatic.

Infections in humans can be asymptomatic or can result in acute or chronic illness presenting with flu-like symptoms, fevers, muscle aches and sweats. Vaccination for people at risk is the best way to prevent Q fever. Good hygiene practises and thorough disinfection will help but are not adequate alternatives to vaccination.

For more information see the NSW Government [Q fever fact sheet](#).

Salmonellosis

Salmonella spp. can be spread from wildlife to humans in different ways.

Reptile-associated salmonellosis is a well-described phenomenon, especially among children. The increasing popularity of keeping reptiles and other exotic animals as pets may present a public health problem, as such animals are commonly carriers of *Salmonella* and thereby can infect humans directly or indirectly.

For more information see the NSW Government [Salmonellosis fact sheet](#).

Mosquito and tick-borne diseases

As wildlife carers we are often in the bush collecting foliage and rescuing or releasing animals. This may expose us to mosquitoes and ticks.

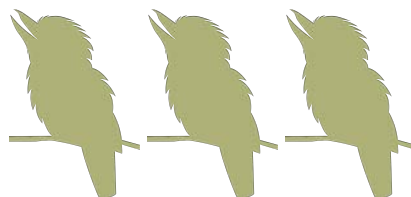
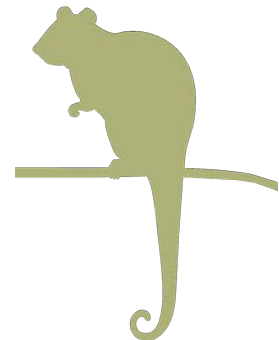
Mosquitoes and ticks aren't just a nuisance - they can transmit diseases.

- Cover-up with loose-fitting long sleeved shirts and long pants when outside.
- Apply mosquito repellent to exposed skin.
- Take special care during peak mosquito biting hours, especially around dawn and dusk.
- Remove potential mosquito breeding sites from around the home and screen windows and doors.

For more information see the NSW Government [Mosquitoes are a health hazard fact sheet](#) and the NSW Government [Babesiosis fact sheet](#) and for information on preventing tick bites.

RESCUE AND CARE - ANIMALS

- **BIRDS**
 - **DUCKS**
- **ECHIDNAS**
- **POSSUMS**
- **REPTILES**
 - **LIZARDS**
 - **FRESHWATER TURTLES**
 - **BASIC CARE OF REPTILES**



BIRDS

- **Identification and classification**

- Identifying a chick or juvenile
- Precocial and altricial chicks

- **Bird anatomy**

- Feathers
- Skeleton
- Respiratory system

- **Basic rescue**

- Before you leave for the rescue
- When you get to the rescue site
- How to catch a bird
- When you have captured the bird
- Transport

- **Common rescues**

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- A bird is trapped in a stairwell or in a factory or building
- A bird is trapped in fishing line or netting
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 - Reuniting chicks with their parents
 - Adoption by other adults
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- Initial treatment - stabilisation
- Dehydration
- Husbandry plan and record keeping

- **Common injuries and diseases**

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- Broken wings
- Broken or injured feet and legs
- Broken beaks in rainbow lorikeets
- Cat, dog or other predator attack

- Concussion
- Leg paralysis
- Loss of an eye
- Parasites
- Pox viruses
- Rat lungworm in tawny frogmouths

- **Basic care**

- Monitoring
- Stress
- Controlling disease transmission
- Quarantine
- Caring for chicks
 - Heating
 - Imprinting
 - Buddying

- **Feeding/Food**

- Basic feeding principles
- Weighing
- Live insects as food
- Emergency diets for birds in care
- Substitute diets for birds in care
- Feeding chicks
 - Weaning
 - Emergency diet for most chicks
 - Weighing

- **Housing**

- Intensive care housing
- Intermediate care housing
- Pre-release housing
- Housing chicks

- **Release**

- Suitability for release
- Release considerations
- Hard release
- Soft release

Identification and classification

Correct identification is an essential prerequisite for successful rehabilitation. There are many identification tools such as bird identification books, smartphone apps and online guides that can help. Taking a photograph and sending it to your coordinator is often the best way to identify a bird.

You will quickly need to identify the species of bird that comes into your care as this determines its diet. It is impossible to correctly feed and care for a bird unless you understand its behaviour and diet in the wild.

There are several factors which provide clues to the identification of birds. These include:

Size

Size is an important characteristic but obviously varies with the age of the bird. Nevertheless, a sulphur-crested cockatoo is still a very big bird even when it is a chick.

Colour

Colour is usually a vital clue but often varies between sexes.

- Some species have differing colour varieties known as 'morphs'.
- Young birds often do not resemble their parents in colouring until they are one or two years of age.
- Check the colour of the eyes and the feet to distinguish between birds of a similar appearance.

Special features

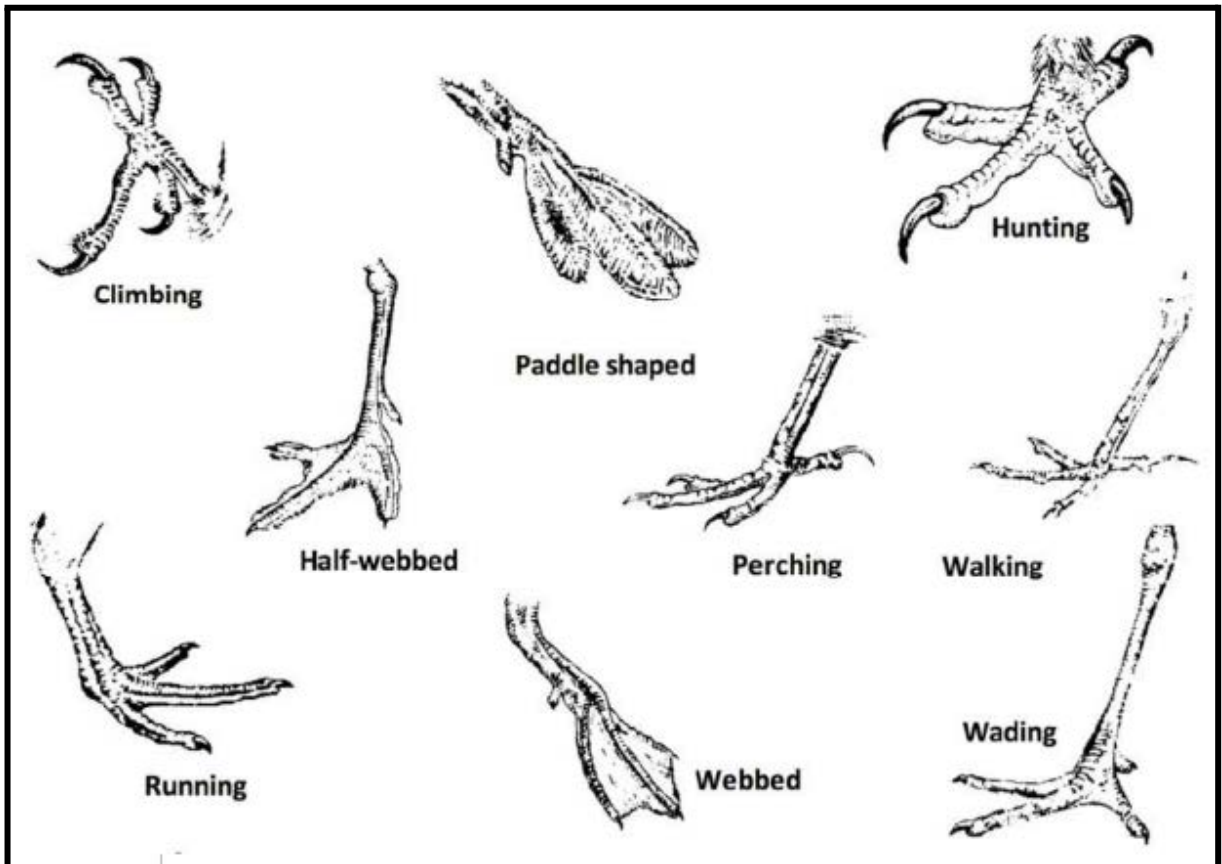
Some birds have special features, which make them very easy to identify. For example, the facial wattles of the plover and the sulphur crest of the cockatoo.



Feet

The length and shape of the legs and feet provide useful information about the bird. The colour of the legs and feet can be used to distinguish between birds of a similar appearance.

Common leg/foot types:



Beaks

The shape and size of a bird's beak is a clue to its behaviour and diet.

Common beak types

Sifting



Spoonbill

Spearing



Eastern great egret

Prising



Oyster catcher

Probing



Magpie

Grasping



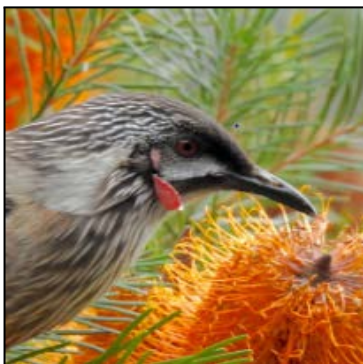
Laughing kookaburra

Tearing



White-bellied sea-eagle

Nectar seeking



Red wattlebird

Seed cracking



Sulphur-crested cockatoo

Nectivore



Rainbow lorikeet

However, beak shape alone can be misleading. For example, a **lorikeet** may appear to have a seed-cracking beak even though its diet consists mainly of nectar.

Location

When a bird is found in Sydney, it can be assumed that it is a bird which is normally found in, or migrates through, this region. Some birds do not move further than one kilometre, such as wrens, butcherbirds and tawny frogmouths. Nomadic birds, such as figbirds, follow food sources.

Details about the location where the bird was found can help with identification. If it was found near water, it may be a wading bird. If found near the beach, it may be a seabird.

Occasionally this may not be the case. Sometimes birds can be blown off course in strong winds, go further afield than usual looking for food, or be brought into the Sydney region by humans (escaped pets).

Behaviour

Observation of a bird's behaviour can narrow the field for potential identification. Does the bird perch or does it appear to be ground-dwelling? Is it more active during the day or night?

- **Raptors** hunt live prey and use their feet as a tool to grasp and tear food apart. Owls, eagles and hawks are raptors found in the Sydney area.
- **Nightjars** may be similar to raptors in appearance, but they catch prey with their wide beaks and do not use their feet to grasp and tear food apart. They are mainly nocturnal and insectivorous, such as the Australian owlet-nightjar. The tawny frogmouth is closely related.
- **Cuckoos** lay their eggs in the nest of others and allow them to raise their chicks. They may be frugivorous or insectivorous. Some of the better-known cuckoos such as the koel and the channel-billed cuckoo are migratory.
- **Migratory birds** come to, or pass through Sydney once or twice a year, searching for food. They often travel long distances. Examples include the common koel and the shearwater.
- **Water birds** spend a lot of time in local waterways and may be insectivorous or granivorous. They usually have long wading legs or shorter webbed feet for paddling. Examples include herons, plovers and ducks.
- **Sea birds** spend most of their time in flight, hunting at sea for fish and crustaceans. They usually have long beaks and webbed feet. Examples are the petrel and the shearwater.

Diet

Birds may generally be classified by the food types that they commonly eat. Food preference influences behaviour and the location in which the birds are commonly found. Each species has developed physical characteristics which assist it to find its preferred source of food.

- **Nectivores/nectarivores** eat the nectar and pollen from native flowers and flowering gums. They generally have a tongue which is brush-like or feathered at the end to collect nectar from plants. Examples include lorikeets and honeyeaters.
- **Insectivores** eat insects from vegetation or when in flight. Examples include the cuckoo-shrike, magpie and magpie-lark. Some birds, such as the noisy miner, have both an insectivorous and nectarivorous diet.
- **Frugivores/fructivores** eat fruits such as figs and berries. Many of these birds are migratory as they can only survive where the fruit is in season. Examples include the fig bird and the common koel.

- **Granivores** eat grains and seeding grasses. Parrots usually have strong beaks with which to crack large seeds, while pigeons and doves mainly take smaller seeds from the ground. Examples include the galah, rosella and crested pigeon.
- **Carnivores** eat live prey or carrion. Examples include owls and other raptors. Many insectivorous birds such as magpies and butcherbirds have a partly-carnivorous diet.
- **Omnivores** have a varied diet, which may include a combination of fruit, plant matter, grains, insects and other live prey. The pied currawong is the best-known omnivore in the Sydney region.

Many birds will vary their normal diet in times of food scarcity or if their nutritional requirements vary. For example, chicks often require an increased level of protein and young nectivores and frugivores may eat insects during the period in which they are growing.

Identifying a chick or juvenile

When a bird is difficult to identify or does not appear to be feeding itself, you should always consider the possibility that it may be a juvenile.

Size is not a good indicator of a bird's age, some juveniles can be the size of an adult.



Young birds have special needs (many require hand-feeding or crop-feeding) and they are often difficult to identify.

Some of the signs that a bird is young may include:

- downy feathers
- gaping mouth (particularly when you approach)
- repetitive call
- uncharacteristic plumage colouring
- being docile and easy to handle.

Precocial and altricial chicks

Precocial chicks can walk as soon as they hatch and tend to be feathered. They can thermoregulate and are quickly able to feed themselves.

There is a scale in precociality. Some hatchlings are totally independent of their parents. For example brush turkey chicks.

Others are **semi-precocial** and need their parents for protection and warmth, and follow their parents, but can find their own food and feed themselves. For example, the Australian wood duckling.



Altricial chicks hatch with their eyes closed. They are usually born naked or have only a thin cover of down, are not mobile and are unable to thermoregulate or feed themselves.



Kookaburra hatchling



Magpie nestling (10 days old)

Bird anatomy

Birds are endothermic (warm-blooded) vertebrates that evolved from the velociraptor family of dinosaurs.

Birds are characterised by having:

- feathers
- wings
- toothless beak
- high metabolic rate
- four-chambered heart
- strong, lightweight skeleton
- unique respiratory system.

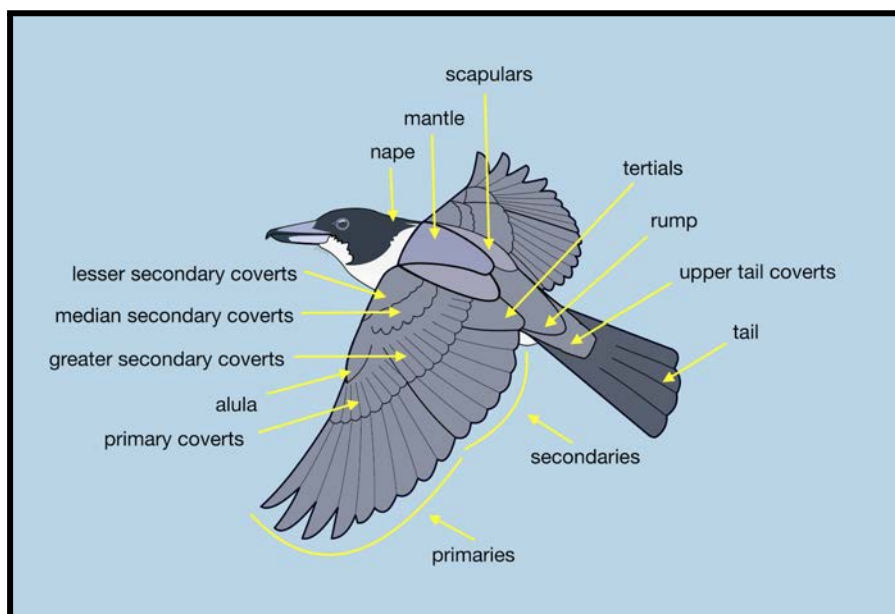
Adaptations that are specifically developed for flight include:

1. Feathers

Feathers are unique to birds and are made of keratin, a lightweight material that is both flexible and rigid enough to withstand the motion of flight.

Feathers are important for:

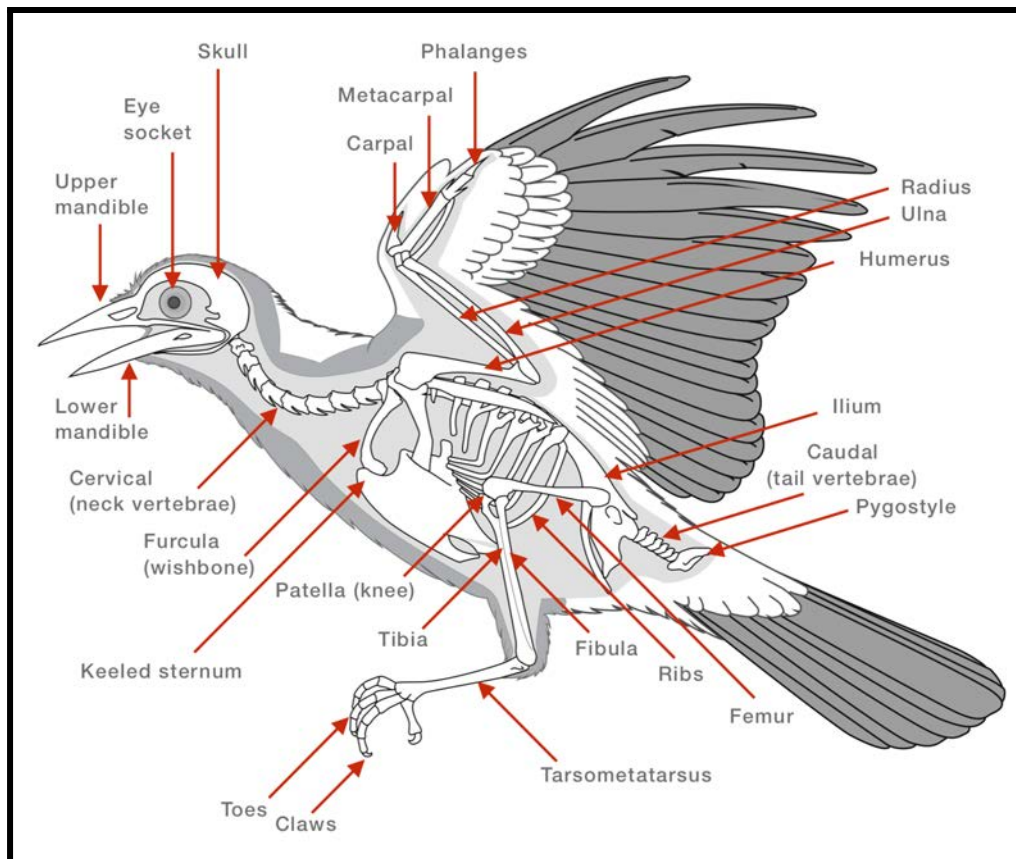
- warmth
- flight
- waterproofing
- attracting a mate
- camouflage.



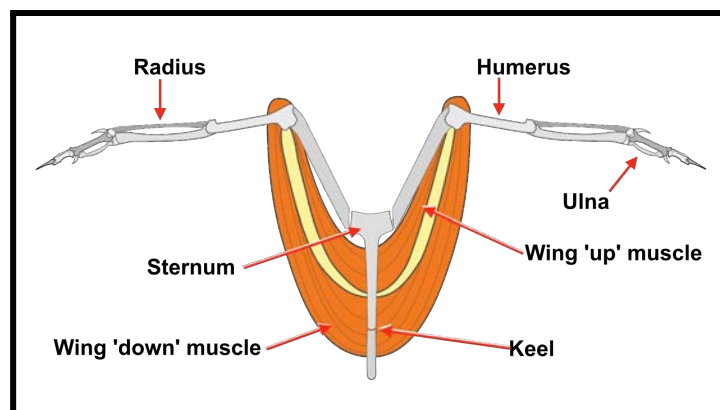
2. Skeleton

Birds have a lightweight skeleton made of mostly thin and hollow (pneumatized) bones.

- The skeleton accounts for about 5% of the total body weight.
- The bones of diving birds are often less hollow.
- A toothless beak weighs less than a jaw.



Magpie skeleton.



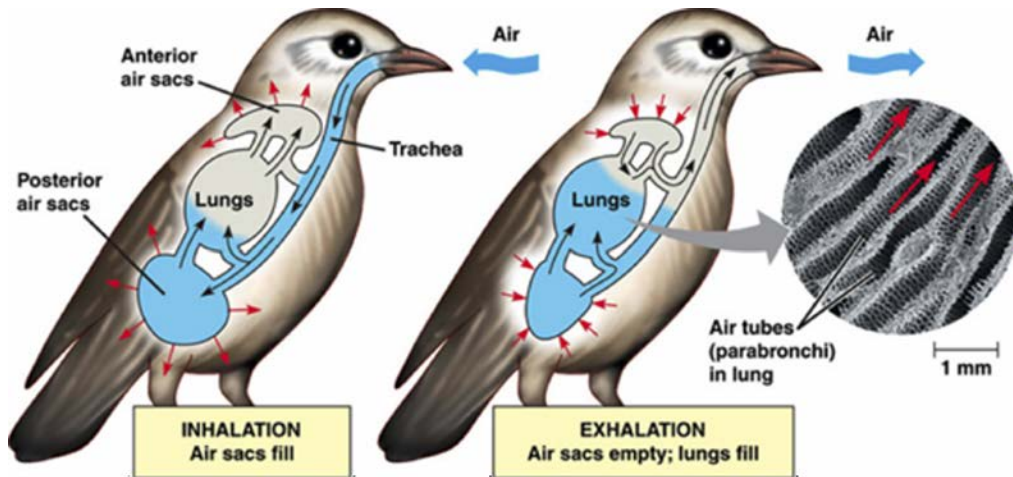
Sternum section.

3. Respiratory system

Birds have the most efficient respiratory system of all animals enabling them to take in enough oxygen to power flight, even at high altitudes.

Lungs are connected to air sacs in the thorax and the rump, and a complex system of tubes carries oxygen to almost all parts of the body including the quills of the feathers.

This system of sacs and tubes is of utmost importance to the survival of the bird.



Rupture of any of the air tubes or sacs will often cause death. Birds that are brought in by cats often have ruptured air sacs. Birds that have suffered such injuries or suffer from acute infectious diseases involving the respiratory tract, will sometimes be found with skin that is filled with air. Any part of the body, or even the whole body, may be puffed up like a balloon.

Chicks lacking in vitamin D can also have this condition.

Basic rescue

The [Code of Practice for Injured, Sick and Orphaned Native Birds](#), October 2011 (Code of Practice for Birds) has standards and guidelines for the rescue and care of native birds (excluding birds of prey).

Refer to [Initial Treatment and Care Guidelines for Rescued Native Birds](#) (DPIE, 2021). The purpose of these guidelines is to standardise the initial treatment of native birds requiring rescue or rehabilitation in line with the [Code of Practice for Birds](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Refer to *Rescue* (section 3). The objective is to conduct a native bird rescue to minimise further stress and injury to the bird.

Other than seagulls, most seabirds (such as penguins, cormorants, pelicans and mutton birds) have special needs and are difficult to care for in captivity. Taronga Zoo's wildlife hospital has excellent facilities and is the best place for the rehabilitation of seabirds.

It is better for an experienced carer to rescue these birds. The rescue may be difficult and the bird will probably need to be treated for dehydration. If you get to a rescue and find that the bird was incorrectly identified and it is one of these birds, you should not attempt to rescue it. Contact the office and ask for assistance from an experienced rescuer or an alternative rescuer.

Your safety, the safety of MOPs and the safety of animals is paramount at all times.

- Identify possible risks and take steps to avoid them.
- Understand your capabilities and don't take risks.
- Get advice from your coordinator if you are in any doubt as to what to do.
- Never ask a MOP to assist in a rescue or to handle the bird. They can hold an open towel to block an escape route but they must not be involved in capturing or handling the bird.

To appear sick or injured is a death sentence for birds in the wild. Weak birds easily fall victim to predators and its own species may kill it rather than allow it to draw attention to the flock. Consequently, such birds may brighten up and feign good health when approached or handled.

This is a survival instinct. Under normal circumstances a healthy wild bird will not allow humans to approach it.

Sydney Wildlife often gets calls where people claim: "I have found a bird but there is nothing wrong with it". Remember that if you can catch it easily, it is sick and it may even be near death.

The aim is to release orphaned and injured native birds into their natural habitat as soon as they are fit enough to survive in the wild.

- It may be possible to save a bird's life, but it may not be possible to ensure its successful return to the wild.
- If a bird's condition means that it will not be accepted back into its territory, or will not thrive when returned to the wild, it should not be put through the stress and trauma of hospitalisation and rehabilitation.

The decision to euthanase a bird should be made in consultation with your coordinator or your vet. Refer to *Euthanasia* (section 5) in the [Code of Practice for Birds](#).

Before you leave for the rescue

Make sure that you have the following information:

- the caller's name, telephone number and address
- the bird's record number and the exact location it was found so that it can be returned to its own territory

Find out as much as you can about the circumstances in which the bird was found. A photograph can help you to assess the situation.

- What condition is the bird in?
- Will you need to capture it or is it already contained?

Make sure you have the appropriate rescue equipment.

- A lined rescue basket for chicks (warmth) and to prevent feather damage.
 - Cut the neck and arms off an old T-shirt and use it to line the inside. Use another to cover the outside. Do not use a rescue basket if there is any suspicion of [PBFD](#).



- A cardboard box (not for a cockatoo) or a pet carry-cage for larger birds.
 - Routinely using a disposable cardboard box is recommended to prevent the spread of [PBFD](#) and to keep your equipment safe from contamination.
- A branch as a perch on top of a towel on the bottom will give the bird something to grip onto so that it does not slide around.
- A rolled towel to support a bird that is injured or unable to perch.
- Floor coverings must be non-slip (do not use paper), non-ingestible and tangle-free.
- A few extra towels. Don't use towels that have rough or frayed edges because the bird can get entangled and you will have a bigger problem than you started with.
- A first aid kit, hi-vis vest (your safety is important!), hand sanitiser, latex gloves, torch or head torch for night rescues.
- A net such as the one you get with your rescue basket, or a net with a long handle (for difficult to reach situations) and gloves to protect your hands in awkward/dirty situations.
- If you are rescuing a chick, take a small heat source (e.g. microwave gel heat pad) wrapped in a towel to prevent the bird coming into direct contact with it.
- The container size must be appropriate for the species, size, temperament and strength of the bird. The bird must have enough space to stand.

A cardboard box is essential to prevent the spread of [Pbfd](#) and is ideal to transport a bird to a vet or fellow carer.

- Instead of having to take the bird out of your rescue basket, you can hand it over in the box so it doesn't suffer unnecessary stress.
- Poking a branch through holes punched low in both sides (use tape to make sure it can't rotate), will give the bird something to grip on and will keep its tail clear of its faeces. Use a rolled towel to support a bird that is injured or unable to perch.



Beware – don't use a cardboard box for cockatoos because they can easily chew their way out of it.

They can even chew through a plastic carry-cage.

Use a sturdy dog or cat carrier.

Covering it with a thick towel and keeping noise levels down may help to prevent this.



When you get to the rescue site

You may NOT ask a member of the public to assist in a rescue or to handle the bird. Our insurance covers you. For the safety and welfare of both wildlife and the public, MOPS should never be asked to assist with the capture or handling of an animal.

Before a rescue attempt you must assess the risks to yourself and members of the public.

If a bird is not within reach, you are not obligated to climb ladders or take risks when attempting a rescue, but use your initiative appropriate to the situation.

How to catch a bird

A bird learns quickly and you may only get one chance to catch it. Assess the situation – you can learn a lot by taking a few moments to observe.

- Survey the location and the position of the bird.
- Assess the risks to the bird from environmental hazards and from capture.

- Protect the bird from additional stressors during rescue, such as onlookers, loud noises, other animals and extremes of temperature.
- Try to predict where the bird will go if approached.
- Locate a suitable place where the bird can be trapped.
- Plan a strategy to gently encourage the bird in that direction.
- Walk slowly and quietly, avoiding eye contact.
- Have your net or towel ready.
- Move quickly and decisively when you have the bird in a good position for capture.
- Covering a bird's head, containing both wings in the folded position and holding both legs will often assist with calming a bird and facilitating rapid rescue.
- Do not catch/handle birds with towels that have holes, frayed edges or loose threads. The bird can become entangled and will have to be cut free.

If a bird is not captured on your first attempt, or is no longer there, give the MOP the record number and ask them to phone our office if the bird returns. It may be harder the second time, but it is worth trying.

When you have captured the bird

Make sure the rescue basket, cardboard box, or carry-cage is securely closed.

Accurate data is important for successful treatment. Don't hesitate to ask members of the public for information when you rescue a bird.

If a MOP has been caring for the bird for a couple of days, or has only called for help because the bird's condition has deteriorated, find out:

- When and where the bird was found.
- What the situation was that it was found in.
- How long they have had it, what it has been fed, and whether they have tried to give it water.

An inexperienced person may have tried to feed the bird and usually will have managed to "give it a drink". Sadly, this may have consisted of dripping water into the semi-conscious bird, often causing pneumonia.

Be diplomatic when dealing with members of the public who might have done more harm than good. Keep in mind that their intentions are good and leave them with a positive impression of Sydney Wildlife.

Transport

Refer to *Transport* (section 4) in the [Code of Practice for Birds](#). The objective is to minimise further stress and injury to a native bird during transport.

Everything you do should be aimed at preventing feather damage and to minimise stress. Feather damage can considerably extend the time needed in care. A bird's survival depends on it having healthy feathers.

Make sure the rescue basket, cardboard box, or carry-cage is securely closed.

- Cover the rescue basket with a towel or put it in a large fabric shopping bag (the big green Bunnings bags are a good fit).
- Secure it with a seatbelt if possible, or place it securely on the floor. For your safety, always use the left-hand side of the car away from the traffic.
- Cover the rescue basket with a towel.
- Use towels that have holes, frayed edges or loose ends for covering cages/crates - not for containing/handling a bird.
- Keep the radio off and keep children and pets away.
- Never leave a bird unattended in a parked car in hot weather. Hot cars can kill.



Lift and move the rescue basket gently; the bird may be in pain and will be startled by sudden movement. The bird must be positioned so its breathing is not restricted, and its pain or discomfort is minimised.

The container used for transport must be kept at a temperature that is appropriate for the age, species and condition of the bird.

- 28°C is appropriate for fledglings, juveniles, immature and adult birds in most circumstances.
- 28–32°C is appropriate for hatchlings, nestlings and branchlings with the higher temperature for younger birds with no feathers.

Birds must not be transported in the back of uncovered utes, car boots that are separate from the main cabin, in the rescuer's lap, or on the body and under the clothing of the rescuer.

Make sure the bird is kept warm and quiet. Go straight home or straight to the vet.

Common rescues

Some birds can be dangerous, and care must be exercised when handling them. Birds with long beaks can easily poke you in the eye and even small birds' claws can pierce the skin. Raptors are particularly dangerous because of their sharp talons and only raptor-trained rescuers should attempt to handle them. Your coordinator or buddy can give advice and help with rescues.

Assess the situation – you can learn a lot by taking a few moments to observe. You can then act decisively and quickly to minimise stress for the bird.

A bird is on the ground

- Have your rescue basket/cardboard box/carry-cage ready to contain and transport the bird.
- Drop a towel over the bird and gently pick it up, wrapping it in the towel. This will safely contain the bird and will help to protect your hands.
- Always be aware of where the bird's head is when it is wrapped in the towel.
- Some carers hold the bird firmly by the back of the head to prevent it biting.

A bird is trapped in a stairwell or in a factory or building

If the bird is flying around, particularly in a building such as a factory, it is generally not possible to capture it.

- The bird's natural instinct is to fly upwards towards light.
- Open the windows and doors, turn off all the lights and it should find its way out.
- Scatter food in front of an open window or door.
- If this fails it may be necessary to wait until the bird is weak from exhaustion or hunger and will be easier to catch.

A bird is trapped in fishing line or netting

- Wrap the bird in a towel to contain it before you attempt to cut it free.
- Cut the line or netting free if it is attached to anything (other than the bird).
- Take the bird to a quiet, suitable place to remove the line or netting using a small pair of nail scissors.
- Don't release the bird back into its environment without a thorough check-up. It may appear unharmed but bruising and injuries are not always obvious.
- Severe injuries will need treatment by a vet.

Chicks separated from their parents

This is a common problem, particularly in spring. For information on ducklings see [Ducks - Rescue](#).

Nestlings are found on the ground because they have been blown out of their nests, fallen from their nests, or have been rejected by their parents.

Some fledglings, such as magpies and noisy miners, spend a lot of time on the ground when they are learning to self-feed and to fly.

At this stage they are vulnerable, but their parents will be close by, watching and protecting them.



Chicks, like these currawongs, are best left with their parents.

We can hand-rear them but we can't give them the same variety of food or teach them appropriate social behaviour.

Do not take a chick into care unless you are sure that the parent has abandoned it, or the situation is dangerous. If possible give the bird back to its parent - it will be better off and it's a lot easier than hand-raising it.

Our aviaries become full and we sometimes have difficulty coping with the number of juvenile birds which have been 'rescued' by well-meaning members of the public.

It is not true that birds will reject their young if they have been touched by humans. Most birds are very protective towards their chicks and will not desert them.

Reuniting chicks with their parents

If the chick is in good condition and you know where it has come from, always try to reunite it with its parents if they are nearby and will continue to care for it.

- Each species is different.
- You must consult your bird coordinator for advice specific to the species you are dealing with before you attempt to reunite a chick with its parents.
- If your branch's bird coordinator is not available, contact the bird coordinator of another branch.

Hatchlings

Hatchlings generally need to be hand-reared; it is unlikely that you will be able to find/access its nest/hollow to return it to the family group.

Reuniting open-nesting birds

Examples of birds that build open nests in the branches of trees are magpies, currawongs, noisy miners and wattlebirds.

Nestlings

If a nestling is very young (sparsely feathered) and cannot be put back in the nest it should be taken into care with the possibility of reuniting when it has fledged and is able to fly a little.

If a nestling is feathered and is begging/calling, it can be put in a makeshift nest if the parents are nearby.

- Tie the makeshift nest as high up as is practicable and safe for you in the same tree as the nest, or a nearby tree with foliage cover.
- Watch from a distance for as long as it takes to make sure that the adult birds are coming to feed it.
- If the adults do not sit with it overnight, cover it with a washer or bring it inside if it's cold and put the nest out again early the next morning.

Using a makeshift nest is always problematic.

- Firstly, if there are other chicks in the home nest the parents will most likely feed them first.
- Secondly, it is likely that the adults will not be able to sit with the chick overnight if they have others in the home nest so the lone chick will be open to the cold and to predation.

It could be best to hand-rear the chick to the point of flying and then to try to reunite it.

Fledglings

If a fledgling is healthy and is begging/calling and the parents are around:

- place it in an open wire-topped basket so the adults can find it
- tease it with food to get it to call
- if the adults come, take it out of the basket and put it on a branch (or on the ground if it is a magpie) and wait for the adults to feed it
- throw food on the ground to encourage the adults to do so
- return later to make sure the fledgling has not been abandoned.

This currawong chick was in a dangerous and exposed area on the side of a vehicle driveway.

It was initially fed by its parents, but they did not return to feed it. Fortunately, a concerned MOP was watching and phoned the Rescue Office.

The chick was taken into care and was hand-reared.



Reuniting birds that nest in hollows

Examples of birds that nest in tree hollows are lorikeets, kookaburras, rosellas and cockatoos.

If a nestling is healthy and the hollow is active (i.e. the parents are around) engage the assistance of a tree climber and return the chick to the hollow. In most other cases the nestling will have to be taken into care and hand-raised.

Kookaburra chicks can be reunited by placing them in a specially designed kookaburra box in view of the adults.

Reuniting a chick that has been in care for a short time

If a chick has been in care for a short time (e.g. overnight at a vet) it may still be possible to reunite it with its parents.

The chick must be able to fly upwards of at least a metre.

Try reuniting the chick early in the morning when adults generally call. Although adults will also call late in the day, an early morning release gives the chick more time to reunite and be fed before nightfall.

Listen for the call of the parent or the cheeping of siblings. Some birds, such as the butcherbird, can be difficult to see, so identifying their call will let you know that they are around. The chick should respond by calling for food to attract their attention.

- Keep the chick in a closed rescue basket on the ground under a tree, close to where it was found.
- Encourage the chick to call loudly by waving food in front of its beak as this will attract the parents' interest.
- Scatter food on the ground for the adults to pick up and hopefully offer to the chick.
- Don't open the rescue basket too quickly. Wait for the parents to respond to the chick's calls. They may swoop at you.
- When you open the rescue basket the chick should quickly join its parents.
- Wait at a suitable distance to make sure that cats or other birds don't attack it.

If you can't hear or see the parents, take the chick back into care and try again earlier the next morning.

Always get advice from your coordinator before you attempt to reunite a chick.

Adoption by other adults

Some species such as noisy miners, wattlebirds, currawongs, kookaburras and magpies will adopt a chick which is not their own. If you are unable to reunite a chick you can try the following:

- leave the chick out in a cage where local birds can access it (but not harm it)
- local birds may soon arrive and bring food to feed the chick.

You have to watch the chick all the time. Showing an interest in a chick does not always mean the adult has good intentions. Noisy miners may attack an unknown chick that is in their territory and predatory birds may try to eat it.



Wild rainbow lorikeets interested in a chick in care.



Kookaburra chick being fed by a local adult.

Watch the [Kookaburra Chick's First Feed From a Foster Parent](#) video.

Plovers (masked lapwings) and chicks

Plovers use the same nesting place every year and are very defensive of their eggs and chicks. They use the same grazing territory and will guide their chicks to the same foraging spot year after year.

They will noisily attack intruders, or feign injury (such as a broken wing) to lure intruders away from the nest.

Because they often nest in unsuitable locations, rescuers can be called out to rescue chicks on rooftops or separated from their parents, or to rescue an adult bird that appears to have a broken wing but takes flight after luring you away from its nest/chicks.

Schools and sporting groups will sometimes ask for a plover nest to be moved.

Relocation is futile.

If the eggs are removed, the parents won't follow them, but will start nesting in their chosen spot again immediately.



It is recommended to:

- protect the nest with a barrier such as temporary fencing, or put a chair or table over it; local council rangers may oblige by placing traffic cones around the nest
- put up a sign to advise passers-by of the plovers nesting
 - including information about a plover's nesting behaviour can create positive interest
 - state that the disruption is temporary; the eggs hatch in 3-4 weeks and the parents will move the family group to a foraging spot.

Relocation or removal of a native bird's nest or eggs requires a NPWS permit.

Assessment

Refer to *Case assessment* (section 2) in the [Code of Practice for Birds](#). The objective is to assess a native bird in order to determine the type of intervention required. Refer to the *decision tree* flowchart (p.7) on how to perform a situational assessment to establish the appropriate course of action when you get to a rescue.

Refer to sections 2 and 4 of [Initial Treatment and Care Guidelines for Rescued Native Birds](#).

The Code of Practice for Birds (section 2.1.2) requires rescuers to arrange for a bird to be assessed by a vet or an [experienced wildlife rehabilitator](#) within 24 hours of rescue to ensure accurate diagnosis and prompt treatment or euthanasia.

We recommend immediate action. Take the bird to a vet, or take it home and contact your coordinator for advice as soon as possible. Do not wait 24 hours.

Call your coordinator immediately if you are not sure what to do.

If you have not immediately taken the bird to a vet, you need to assess it when you get home to determine the type of care and housing that is required for its rehabilitation.

Hatchlings and nestlings must be assessed by an [experienced carer](#).

When a bird comes into care, isolate it in a separate area until its disease status can be determined. If you don't know what's wrong, get advice from your coordinator or a vet.

Immediately isolate a bird with suspected [PBFD](#).

Refer to Controlling disease transmission between animals (section 6.3) in the [Code of Practice for Birds](#).

Initial treatment - stabilisation

Treat all birds for stress by providing warmth, dark and quiet. Leave an adult bird to settle in a dark, quiet room for at least 30 minutes. If a chick is quiet and not begging, treat it for stress and give it a little time to stabilise.

During this time prepare:

- an appropriate cage that is set up with food and foliage and is in a suitable position ready to house the bird after the assessment
- the equipment that may be needed for the assessment such as towels, scales, torch, and phone to take photos to send to your coordinator.

While the bird is being kept warm and quiet, [identify](#) it if you have not already done so. You need to plan an appropriate care regime.

- If you cannot identify a young bird, ask your coordinator for help. In an emergency you can treat it as an insectivore because most chicks are fed some insects in their diets.
- Remember that the young of some species do not gape and beg (e.g. pigeons, doves and precocial birds).

After about half an hour, assess the bird in a quiet and secure room. Wear disposable gloves and a mask if there is a risk of disease transmission. Examine the bird with its body supported and its head covered. The head covering must be removed only during the examination of the head, beak, mouth and eyes. Start at the head and move down.

Handling should be tailored to each animal based on its health status and temperament. Never push an animal beyond its pain or patience threshold. Contact your coordinator if you are unsure what to do.

Check the following:

- abnormal behaviours such as walking in a circle, staggering or tipping forward while walking
- wing and leg symmetry
- discharge from the eyes, ceres, mouth or vent
- bleeding or wounds
- bone fractures

- body condition - feel the keel (ridge on the sternum or breastbone); a very thin bird is a sign that it has been compromised for a while
- feather condition such as soiled, matted, damaged or missing feathers
- vent condition; a soiled vent indicates the bird has been on the ground for an extended period, green, matted feathers indicate diarrhoea
- a broken beak or beak misalignment
- rapid breathing
- eye condition such as no eye movement, opaque eyes, sunken eyes, or blood in the eye
- internal mouth condition such as colour, smell, oral lesions, throat swelling or obstruction; throat worm is common in currawongs and magpies
- heat and swelling of the joints
- missing digits or talons and perching ability (e.g. grasping of a pen or pencil)
- parasites such as ticks, lice or flat flies
- abnormal faeces
- uncharacteristic smells
- ruptured air sacs show as soft, gassy swellings on the neck or side of the body
- all parrots must be assessed for [Pbfd](#).

If the bird has any of these abnormalities, or if its faeces are not a normal colour and consistency, it must be taken to a vet urgently. Pain management is essential.

Dehydration

Treat the bird for stress before commencing rehydration (keep warm, dark and quiet). Do not attempt to rehydrate a cold bird. Offer warm Vetafarm Spark Liquid and water using a dropper to the side of the beak.

- Water alone may not be enough to rehydrate.
- Don't squirt fluid into the throat as it could get into the lungs.
- Watch to see if the bird swallows. You may need to be patient and persevere.

If a bird is severely dehydrated it may need a subcutaneous injection of fluids by a vet.

The bird's body temperature should be stabilised and it should be rehydrated before attempting to feed it. Dehydrated birds cannot digest food.

The bird must be weighed and the stage of development identified. The [Wombaroo Feeding Guidelines for Native Birds](#) has a weight guide for most species. Weight is a good indication of a bird's physical condition.

Refer to *Care Procedures - Assessment* (section 6.1) [Code of Practice for Birds](#). The objective is to identify the severity of wounds, injuries or disease to determine the best course of action for a native bird undergoing rehabilitation.

Contact your coordinator to discuss a care plan. If you are not able to care for the bird it must be transferred to a carer who can.

Husbandry plan and record keeping

Formulate a husbandry plan with your vet or coordinator. The plan should include:

- daily care routines including medication, feeding, cleaning and handling
- regular [monitoring](#) and assessment as required
- observe and monitor health and behaviour indicators to make informed decisions
- set milestones for rehabilitation progress then reassess.

Accurate records must be kept to track the progress and outcomes for birds in care. Refer to [Trello](#). Record keeping (section 12) is a mandatory requirement of the [Code of Practice for Birds](#).

Birds must be physically fit and possess the appropriate survival skills prior to release. Preparations for release start at the time of rescue and continue throughout the rehabilitation process. Many species will gradually lose their survival skills in captivity, so it is vital their time in care is kept to a minimum.

Common injuries and diseases

Beak and feather disease - psittacine beak and feather disease (Pbfd)

Pbfd is the most highly infectious and common viral disease that can affect any type of parrot as well as other species. It is carried on feather dust, droppings or crop secretions, making nestlings most susceptible. It is known as 'runner syndrome' in lorikeets. There is no known risk to human health.

Immediately isolate a bird with suspected Pbfd.

Due to the nature of the virus the best defence is to prevent it contaminating your equipment in the first place.

If you rescue a bird that you suspect has Pbfd you must call your coordinator for advice to ensure that you do everything necessary to prevent the spread of Pbfd.

- Do not put the bird into your rescue basket, cages or aviaries. Use a disposable cardboard box.
- The disease is highly contagious and will infect porous surfaces such as dirt floors, wooden perches, towels, etc. These must all be removed and destroyed. A dirt floor can never be disinfected and the aviary can never be used for parrots again.
- Metal and plastic can be cleaned using F10 in a stronger concentration than usual (refer to the manufacturer's instructions).

- All faeces etc., should be removed with detergent and a brush, and the items sprayed with F10 and left to dry for at least 20 minutes.
- Thoroughly wash your hands with F10.
- Never handle a PBF D bird and then another bird without washing your hands with F10. Your clothes may also be contaminated. Put clothing and F10 in a bucket and soak for 24 hours.

We recommend F10 as it has been proved effective for this disease and is a non-toxic product that is widely used by avian and reptile enthusiasts. Other disinfectants can be used for general cleaning.

Typical presentation of PBF D in rainbow lorikeets

Fledglings (brown/orange beak) are often found on the ground soon after leaving the nesting hollow.

- They are able to flap their wings but can gain little height.
- Dropped feathers can be curved; the shaft is pinched and contains blood residue.
- Early loss of flight feathers from the tail and wings in young birds. They have a stunted appearance.



Typical presentation of PBF D sulphur-crested cockatoos

Birds come into care as juveniles or adults. Juveniles often present in the early stages with just the tail feathers missing.

- They have abnormal feather growth: primary wing and tail feathers, and sometimes crest feathers, may be missing.
- Due to the absence of powder-down the bird cannot keep clean so has a dirty appearance. The beak will be shiny and may also be elongated.



PBFD can result in death due to secondary infections caused by long-term immunological suppression and attack by animals or other birds.

Because most parrots tend to flock together, an infected bird can spread the disease throughout the flock. Trying to treat a bird with the disease, or releasing a bird that has regrown its feathers and appears well, is irresponsible.

The [Code of Practice for Birds](#) (5.1.1) states that all birds carrying (or suspected to be carrying) an incurable disease that may pose a health risk to other wild animals, e.g. psittacine beak and feather disease, must be euthanased without exception. Once diagnosed, [euthanasia](#) by a vet is the only option. There is no known effective treatment for PBFD.

Broken wings

No attempt should be made to treat a joint fracture in any bird. Once diagnosed, [euthanasia](#) by a vet is the only option.

- This is of paramount importance for migratory birds such as koels and channel-billed cuckoos, and birds that hunt on the wing, such as swallows and swifts.
- Another consideration is that territorial birds, such as kookaburras, magpies and noisy miners must be returned to their social group within a specific timeframe.
- If the damage is severe and/or accompanied by feather loss, the bird may need to be in care for too long to be successfully returned to the wild.
- Young birds kept in care for any length of time will severely [imprint](#), making a successful release impossible.

Broken or injured feet and legs

Depending on the species, some birds can survive with a damaged or missing foot if it is an old injury and it is evident that the bird is managing to fend for itself in the wild.

This is not the case for:

- birds that feed and/or dwell extensively on the ground, such as magpies, magpie-larks, plovers, quails and ducks
- birds that perch and climb in trees to find food, such as nectivores
- birds that need to use their claws for catching prey and feeding, such as carnivores.

Birds presenting with only one leg should be euthanased unless it is an old injury and it is evident that the bird is managing to fend for itself in the wild.

[Euthanasia](#) is mandatory if a bird's ability to move normally and consume food unaided is permanently impaired.

Recovery is possible for a bird with a broken leg if it can successfully be treated by splinting, pinning or strapping.

However, if a lengthy period of intense physiotherapy will be required, [euthanasia](#) is recommended.

Contact your coordinator for advice.



Broken beaks in rainbow lorikeets

Rainbow lorikeets sometimes get broken beaks, usually the top mandible. It is mainly caused by collisions.

Rainbow lorikeets use their beaks (and claws) to climb when foraging for food, and for feeding their young.

[Euthanasia](#) is mandatory if a bird's ability to sense its environment (i.e. taste) is permanently impaired due to a missing or injured beak, or if its ability to consume food unaided is permanently impaired.



Cat, dog or other predator attack

Predation events by birds, cats, dogs and other animals can result in significant internal injury that may not be readily apparent on physical examination.

Externally, signs of predation may be limited to missing feathers, blood-stained matted feathers or musculoskeletal injuries (lameness, inability to fly). On closer examination, puncture wounds, bruising or more severe trauma such as fractures may be identified.

Treat cat attack as urgent because the bacteria found in a cat's saliva can cause fatal septicemia. Immediate veterinary attention and antibiotic treatment is required even if there are no visible injuries.

Concussion

Birds frequently get concussion from flying into windows and from vehicle collisions.

- **Symptoms:** unconscious, conscious but unable to fly, lack of coordination and weak legs, partial paralysis, twitching, head-tilting or turning, and regurgitating.
- **Treatment:** first aid to provide a quiet, dark enclosure with warmth. Do not try to feed it or give it water. If it convulses or is unable to balance, swaddle it in a towel to avoid feather damage.

Depending on the level of trauma, you may need to take the bird to a vet for pain management and to check for internal injuries. The bird may require a few days to recover in a larger enclosure. Sometimes recovery can take up to one month.

Leg paralysis

Species such as magpies and rainbow lorikeets, respond well to a series of Multiplex vitamin injections, followed by oral doses of Vitamin B over a period of a few weeks.

The main problem is for the carer to prevent feather damage whilst the bird is recovering. However, most birds presenting with paralysis are normally found to have neurological problems. Experience has shown that most of these birds do not recover.

Loss of an eye

A bird must be [euthanased](#) if its ability to sense its environment is permanently impaired due to a missing or injured eye. It will be vulnerable to predators. Birds that migrate, fly swiftly or feed on the wing cannot survive with one eye.

Parasites

Internal parasites include:

- **gape worms** are fairly large red worms that infest the airways of birds that forage for worms and grubs in the soil; infection is caused by eating the eggs in faeces of infected birds, or intermediate hosts like earthworms, snails and slugs
- **throat worms** present as small soft lumps in the throat with the white thread-like worm emerging from the centre; the worms burrow into the throats of magpies, butcherbirds, currawongs and magpie-larks, taking food as it passes through the mouth and throat.
- **roundworms** are gastrointestinal parasites that burrow into the intestinal lining.

External parasites such as lice are often found in higher numbers in debilitated birds, and occasionally mites, ticks, fleas and flies.

Pox viruses

There are a number of recognised pox viruses, some examples are fowlpox, psittacine pox and mynah pox.

Symptoms are lesions that look like large wart-like nodules and are mostly found on the bare skin of the feet and legs, eyelids and the base of the beak.

Topical treatment with Betadine should help and the infection should heal within a couple of weeks.

Get veterinary advice on the use of antibiotics to treat secondary infections.

Good nutrition will help recovery.



Magpie with pox virus.

Pox viruses most commonly occur in summer and early autumn through the bites of infected mosquitoes, mites, midges or flies. However, transmission can also occur directly between birds through wounds, or by wounds coming into contact with contaminated objects.

Isolate an infected bird and disinfect all enclosures and perches.

Rat lungworm in tawny frogmouths

Rat lungworm or *Angiostrongylus cantonensis* is a nematode that infects tawny frogmouths when they eat infected slugs or snails.

It affects the bird's central nervous system.

Symptoms include leg paralysis or paresis, loss of balance resulting in the bird falling forward onto its face with its tail cocked in the air and sometimes involuntary shaking.



Treatment involves a combination of worming and anti-inflammatory medication. The bird will need to be properly assessed by a vet and the outcome is usually [euthanasia](#).

Refer to [Angiostrongylus and Australian Wildlife](#) (Wildlife Health Australia, 2019).

Basic Care

Monitoring

Refer to *Monitoring* (section 6.2) in the [Code of Practice for Birds](#). The objective is to check the health of a bird undergoing rehabilitation so that concerns can be promptly identified and managed.

Monitor food intake levels and assess hydration. A hand-reared bird must have its temperature closely monitored and a heat source and humidity provided until it is able to thermoregulate.

A healthy bird should have:

- well-groomed feathers
- a clean beak
- alert eyes
- natural, active demeanour appropriate for the species
- symmetrical wings (look for wing droop indicating a fracture)
- firm droppings (except frugivores, nectivores and water birds).

Sick birds may have:

- ruffled feathers
- a dirty head from vomiting
- inability to stand or perch
- irregular breathing
- mites
- runny droppings, blood in the droppings, or no droppings (indicating dehydration).

Feathers must be kept clean

Congeaed food or faeces on feathers will prolong a bird's time in care. You cannot release an otherwise healthy bird if its feathers are damaged or dirty.

- Soak and soften solidified matter with warm water on a tissue. Gently wipe in the direction of the feathers and allow the water to soak in. Then using another warm, wet tissue, continue until all matter is removed.
- Try to do this before the food or faeces hardens. Keeping birds clean is a serious part of your work – don't allow them to become, or remain, dirty.

Stress

Minimise stress by simulating the bird's natural environment to allow it to act as naturally as possible; this will maximise the potential for a successful release.

- When medicating a bird or changing dressings, minimise handling time by having everything you need close to hand.

- Keep the bird away from dogs and cats (and their smells) and humans (if possible), to minimise stress.
- House a very ill bird indoors. See [Intensive care housing](#).

Recuperating birds can be housed in an outdoor aviary if there is enough protection from adverse weather conditions. See [Intermediate care housing](#).

Not everything needed to care for birds during rehabilitation will be covered in the following notes, but the advantage of belonging to Sydney Wildlife is that there will always be someone you can ask for help or advice if something unexpected crops up.

Controlling disease transmission

Refer to section 6.3 *Controlling disease transmission between animals* in the [Code of Practice for Birds](#). The objective is to prevent the spread of diseases among native birds undergoing rehabilitation. Stressed animals are more susceptible to contracting and expressing infectious diseases.

Good hygiene practises are important for you and for the birds in your care.

- Wash your hands before and after handling a bird, and before handling the next one.
- Do not allow anyone to handle a bird if they have not washed their hands.
- Keep feeding equipment for different birds separate and clean thoroughly.
- Keep enclosures and housing materials disinfected and clean.
- Wear a mask when cleaning to avoid inhalation of dust and faeces.

Contagious diseases may not always be obvious. Some diseases can be transmitted between animals and humans. For example:

Salmonellosis is transmitted by poor hygiene practices where food and water become contaminated by faeces. The infection can be transmitted from birds to humans and can cause severe gastroenteritis. It is important that you follow the prevention guidelines in the [NSW Government Salmonellosis fact sheet](#).

Psittacosis is caused by a bacterium called *Chlamydia psittaci*. It can be transmitted to humans. If you have an infected bird in care it is critical that you follow the prevention guidelines in the [NSW Government Psittacosis fact sheet](#).

Thrush (Candidiasis) is a yeast infection that mainly affects the digestive system. It is commonly found in the environment. It can be transmitted from birds to humans by close contact.

Quarantine

When a bird comes into care, isolate it in a separate area until its disease status can be determined. If you don't know what's wrong, get advice from your coordinator or a vet.

Immediately isolate a bird with suspected [Pbfd](#). Due to the nature of the virus the best defence is to prevent it contaminating your equipment in the first place. Get advice from your bird coordinator to ensure that you do everything necessary to prevent the spread of Pbfd.

A bird suspected or known to be carrying an infectious disease must be kept under strict quarantine conditions (housed in an individual enclosure in a separate room) throughout its rehabilitation. Carers must make every effort to reduce the risk of spreading the disease or of contracting zoonoses by wearing appropriate PPE (such as a mask, gloves or gown). All equipment must be disinfected and must not be shared with other animals in care.

Caring for chicks

A chick is a young bird anywhere in development from a hatchling to a fledgling. The stages of development are:

- **hatchling** = a chick that has recently emerged from the egg until its eyes open.
- **nestling** = a chick that is still in the nest and is unable to perch; its eyes will be open and its fluffy down is being replaced by feathers and it is starting to thermoregulate.
- **branchling** = a chick that can stand on the edge of the nest and hop onto nearby branches.
- **fledgling** = a chick that has attempted or completed its first flight but still returns to the nest or remains in close proximity to the nest; some species leave the nest before they can fly and spend time on the ground, or on branches near the nest.

A juvenile is a young bird that has never completed a moult of its feathers, can resemble the adult female of the species and can be the same size as an adult.

- You can care for [altricial chicks](#) if you are available to feed them frequently during the day. Chicks may require buddying and special equipment for feeding and for warmth.
- You will need to get advice and support from your coordinator.

Heating

Feathers keep a bird warm. A sick juvenile or an unfeathered chick will need warmth for its survival.

- 28–30°C is appropriate for feathered chicks.
- 32–34°C is appropriate for unfeathered chicks (including hatchlings with pin feathers).
- 30–35°C is appropriate for precocial nestlings.
- 30–32°C is appropriate for ducklings for the first week, reduced by 3°C each week until the third week, when the heat may be removed (depending on the weather).

Artificial heat is required for all chicks.

- Place a heat pad or a [ceramic heat lamp](#) (as used for reptiles) in the rescue basket/cage to provide warmth.
- A hot water bottle should *only* be used in an emergency or as a temporary measure because the temperature can't be controlled and it can leak.
- Wrap the chick in a towel.
- Place a soft, light face washer on top of the chick to help it feel secure.
- If the chick can move around, set the basket up so that the chick can approach or move away from the heat source as required.

The [Code of Practice for Birds](#) (section 8.2.4) states that electrical heat sources must be regulated by a thermostat.

Heat pads take several hours to reach maximum heat. Check every half hour at first. Overheating will lead to rapid death.

- The Warm.A.Pet Heat Pad is stocked in the Sydney Wildlife Office. It has a voltage/heat setting on the power supply that controls the amount of heat. To comply with the Code of Practice for Birds and to avoid fatalities it must always be used with a thermostat.
- Check the temperature with the temperature probe and use the thermostat control to keep the temperature within a specified range.

There are several thermostat products on the market. Some thermostats are expensive and are not easy to set up, with overly-sensitive dials needing frequent checking and resetting.

The Reptile One Ezistat Thermostat is stocked in the Sydney Wildlife Office and complies with the Code of practice. It is recommended because it is reliable and is easy to use.



Ducklings and other small water birds need to be kept warm. Never allow them to swim or get wet and cold. Refer to [Ducklings](#).

Imprinting

Most chicks imprint on their parents to learn appropriate behaviours and to identify with their species for life. This learning is critical for a chick to grow up and survive in the wild.

When in care, young birds can form a strong attachment to a surrogate parent, or a 'mother figure'. Some species are more susceptible than others to inappropriate imprinting. Cuckoo chicks, such as koels, don't imprint on surrogate parents.

Imprinting is difficult to reverse and may mean that the bird cannot be successfully returned to the wild. Imprinted birds are unable to form normal relationships. When they are released, they often harass members of the public and are not accepted by other birds of their kind.

The [Code of Practice for Birds](#) (section 5.1.1) states that imprinted birds must be euthanased.

Buddying

This is the term used for raising chicks together to avoid [imprinting](#) on the carer, and to encourage natural behaviour.

Orphaned chicks that live in flocks or family groups should be reared with at least one buddy and cannot be released on their own. Releasing a buddy group/small flock gives them all a better chance of survival in the wild.

If [reuniting](#) and [adoption](#) fails, the chicks have to be hand-reared with particular care taken to avoid imprinting, which happens very quickly.

- Find a buddy as soon as possible.
- Handle chicks as little as possible.
- Use a hand-puppet when hand-feeding.
- Avoid eye contact, don't talk to them and don't treat them like pets.



Rear chicks in groups according to diet. A suitable buddy from a different species is better than no buddy at all. For example, wattle birds can be reared with noisy miners, and magpies with currawongs if no better buddy is available.

Give them the opportunity to interact with local birds in your garden. Don't expose chicks to regular household noises such as TV, children or pets.

Register all chicks with your coordinator so that buddies can be found quickly and easily.

Watch the [Lorikeet Juvenile Buddies Preening After a Bath](#) video

Feeding/Food

Refer to section 7. *Husbandry* in the [Code of Practice for Birds](#). The objective is to ensure the bird has a feeding and watering regime that encourages rapid recovery, supports growth in juveniles, and assists with the maintenance of foraging behaviour necessary for survival in the wild.

Basic feeding principles

- Wash your hands and clean all food preparation surfaces and equipment before preparing food.
- Do not attempt to feed a bird until it has been [rehydrated](#) and warmed (regained its normal body temperature).
- Food that is available in the wild or that mimics food in the wild (for example insectivore and nectar substitutes) must form the basis of the native bird's diet.
- The location of the food should be appropriate to the species, e.g. ground-foraging birds should be fed from the floor. Small birds such as noisy miners and lorikeets can have a D-cup hanging on the side of the cage.
- Larger birds like magpies need a heavy deep dish on the floor.
- Always provide a source of clean, fresh drinking water. This should be checked and changed regularly as birds are also inclined to bathe in their drinking water.
- Nestlings and hatchlings must not have water dishes in their enclosure. They must have a daily fluid intake included in their diet.
- Keep animal food separate from human food.
- Never give cold food from the fridge.
- Food that requires thawing must be thawed in a refrigerator (less than 4°C) over 24 to 48 hours. Unused food must never be refrozen. Food that is thawed and has been in a fridge for 24 hours and has not been used must be discarded.
- Never allow food to spoil or become contaminated with faeces.
- If you are [hand-feeding a chick](#), avoid getting food on its face or feathers.

Find out what the bird in your care eats in the wild so that you can feed it appropriately. Consult your coordinator as soon as possible for advice.

If food is continually refused, assist-feeding is a short-term option for adult birds only. Assist-feeding a sick bird can cause stress and could be counterproductive. Get advice from your coordinator.

The [Wombaroo Feeding Guidelines for Native Birds](#) gives useful information on each species including natural diet, secondary diet, captive diet and juvenile diet. You should download it and always refer to it when planning a diet as it gives the weights, pictures and quantities to feed.

See [Flora for wildlife in care](#) and [Live food for animals in care](#) and refer to [Flora for wildlife in care](#) by Bev and Ian Young.

Watch the [Foliage for Food](#) video

Weighing

Weigh the bird on a regular basis to make sure it is gaining or maintaining weight. Weighing equipment must be cleaned and disinfected between each bird.

Live insects as food

Home-bred cockroaches, mealworms and crickets are an excellent food source. Frozen crickets can be purchased in bulk and kept in the freezer until needed and defrosted a few hours before being offered.

Watch the [Live Diets for Birds](#) video

Insects can be purchased at pet supply shops, but you can source your own by:

- making a trap using a light to attract insects onto a white sheet at night
- searching for insects under bark and fallen logs
- putting a small piece of ripe fruit into the enclosure to attract flies for a ready source of maggots.

Insects from domestic gardens, dry compost heaps or worm farms can be used as live food. However it can pose a disease and poisoning risk.

- Do not use insects taken from damp compost litter as fungus spores and diseases may cause respiratory issues.
- You must be certain that insects have not been in contact with insecticides or pesticides.
- Do not use snails or slugs, due to the risk of rat lungworm disease.

The most common mammals to feed to meat-eating birds are frozen mice and rats that can be bought at a pet supply shop. Immature rats and mice are a valuable food item for many bird species and by law must not be fed live.

Insectivore meat-mix recipe

Be prepared by keeping a small quantity of beef mince (5 Star) and quality steak in your freezer. This meat-mix is good for emergency feeding; rats and mice provide a more balanced diet.

Ingredients

- 20 gms 5-Star beef mince
- 10 gms (1 scoop) of Insectivore powder (Wombaroo)

Method

- Combine the ingredients in a bowl and add a little water to moisten.
- Roll into small balls (size depends on the size of bird).

Insectivore Egg Mix recipe

Ingredients

- 1 mashed hard-boiled egg (40 gms)
- 20 gms (2 scoops) Insectivore powder (Wombaroo)

Method

- Mash the egg well.
- Combine the ingredients in a bowl and add a little water to moisten.
- Roll into small balls (size depends on the size of bird).

Keep the mixture refrigerated and warm it before use. Use a little warm water to dunk the balls into before feeding.

These recipes are from the [Wombaroo Feeding Guidelines for Native Birds](#). Do not add vitamin, mineral or concentrated food supplements to the Meat Mix or Egg Mix recipes as it may significantly alter the balance of nutrients.

The Meat Mix and Egg Mix preparations are nutritionally similar and are interchangeable.

Meat Mix and Egg Mix can be frozen in resealable plastic bags. Put the mix into a plastic bag, roll it into a thin layer and score it into sections with the back of a knife. This will make it easy to break off a frozen section when needed.

Hydrate the bird before giving solid food by using a 1ml syringe and slowly dripping liquid alongside the beak. Refer to [Dehydration](#).

For a kookaburra or butcherbird, give defrosted meat strips moistened with warm water and rolled in Insectivore powder.

Mealworms, crickets and maggots can be provided separately.

Emergency diets for birds in care

If you don't have the ideal food when a bird comes into care, there may be acceptable substitutes in your kitchen or garden that will suffice in an emergency.

Carnivores and insectivores

Ideal: lean beef or chicken strips dusted with insectivore mix, freshly caught insects, mealworms, maggots, cockroaches and pinkie mice.

Emergency: [Insectivore meat mix](#) or [Insectivore egg mix](#).



Insects and frozen pinkie mice can be bought from most pet supply shops.

Granivores

Ideal: grasses that have gone to seed, tree branches with leaves and spent flowers that have gone to seed, commercial bird seed (with the sunflower seeds removed).

Emergency: milk arrowroot (or similar) biscuits, dry toasted whole wheat bread, most fruit, or chopped hard-boiled egg rolled in a little wheat germ.

Nectivores

Ideal: native flowers and nectivore mix.

Emergency: apples and grapes or fruit juice; a small amount of honey in water will also suffice as a very short-term stopgap.

Substitute diets for birds in care

Birds in care must not be given too much substitute (artificial) food; their diet must be as close as possible to the natural food that they will find when released.

Young birds must learn to search for and recognise natural food if they are to survive in the wild.

Refer to [Wombaroo Feeding Guidelines for Native Birds](#) for useful information on each species including natural diet, secondary diet, captive diet and juvenile diet.

Feeding chicks

All chicks need to be fed frequently (every hour or so depending on the species) during daylight hours.

- When a chick comes into care you must make certain that it is warm and hydrated before you feed it.
- A chick coming into care will most likely be suffering from dehydration. Gently dip the beak into some warm water with Vetafarm Spark, or slowly drop it onto the outside of the beak with a syringe and wait for the chick to swallow.
- Very young chicks need to be kept warm when being fed. Warm your hands as well.
- When hand-feeding chicks provide extra water directly to the beak, especially in hot weather.
- Chicks that need to be crop-fed and nocturnal birds have special requirements that you need to discuss with your coordinator.
- Never give fridge-cold food; it should be at room temperature. Leave just enough out for the next meal so that it does not spoil.
- Prevent food from getting onto a chick's face or feathers. Make sure that the feathers and beak are kept clean to prevent skin irritations and fungal infections.
- When the chick is self-feeding or as soon as it starts getting feathers, provide fresh water daily.
- Hand-feed a chick that is begging or gaping.

Watch the [Feeding a Figbird Chick](#) video

Refer to [Wombaroo Feeding Guidelines for Native Birds](#) for useful information on each species including natural diet, secondary diet, captive diet and juvenile diet.

Nectivores

Chicks need to be hand-fed with:

- Vetafarm Bird Neocare
- Passwell Hand Rearing Food.

When most of their feathers have grown, they can be given:

- Wombaroo Lorikeet & Honeyeater Food (wet mix) and
- Wombaroo Complete Lorikeet (dry mix).
- Native flowering plants.



Rainbow lorikeet nestling being fed.

Nectarivorous chicks learn to self-feed quickly and there is seldom a problem with weaning.

- They will need a regular supply of fresh native flowers to learn to recognise their natural food source.
- Spraying the flowers with a little Lorikeet & Honeyeater Food will encourage them to self-feed.
- Give them branches with a variety of leaves and flowers that have gone to seed, for variety and to stimulate interest.

Granivores

Start with Wombaroo Granivore Rearing Mix and introduce their natural diet as they grow, by giving them plants with fresh seeds still attached.

Supply a large range of native branches, flowers and seeds.

Granivorous chicks can be difficult to wean. Unlike the bird's parents, you can't demonstrate how they should eat their natural diet.

Get assistance from your buddy or coordinator if a granivorous chick needs crop feeding.



Corella chick being hand-fed.

Watch the [Feeding a Grass Parrot Chick](#) video

Carnivores and insectivores

These chicks may be fed a variety of foods and your co-ordinator will recommend a diet to suit their needs.

Hand-feeding a kookaburra chick.

- Food should be at room temperature, never straight from the refrigerator.
- Raw meat should be preservative-free.
- Mince contains too much fat and usually has preservatives added.
- Where possible, natural foods should be provided. Insects can be bred or caught from the wild.

Watch the [Feeding a Kookaburra Chick](#) video

Refer to [Wombaroo Feeding Guidelines for Native Birds](#) for useful information on feeding chicks. You should download it and always refer to it when planning a diet as it gives the weights, pictures and quantities to feed.

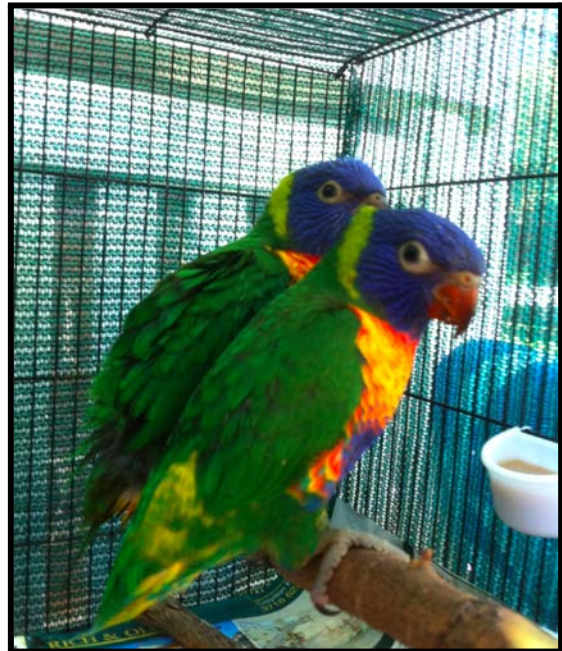
Weaning

It is important to recognise the different developmental stages of chicks.

Hand-reared chicks must be weaned, i.e. taught to identify and find their food (forage or hunt) and feed themselves, before release. There is an optimal time for each species.

Chicks cannot be taught to self-feed until they are ready, but you also need to recognise that while you continue to hand-feed them they may not be stimulated to start self-feeding.

- You will need to reach a balance between starving the chick and continuing to hand-feed.
- Chicks that are ready to self-feed usually display changing behaviours; they become restless and more difficult to feed and may grab at food but not actually eat it.
- You can train a chick to self-feed by stimulating its natural feeding instincts. For example, give insectivorous chicks live insects (moving prey) on the floor.



Your coordinator can give you advice on the different stages of development and weaning.

When feeding an insectivorous or carnivorous chick, dunk defrosted [meat-mix](#) in warm, pre-boiled water or extra binding fluid to rehydrate it a little and to make it easier to swallow.

- Offer food held in tweezers or stuck on the end of a toothpick.
- Feed a few balls then give more fluid from the syringe.
- Continue to feed until the bird has had enough. Get advice from your coordinator on feeding chicks.

[Buddying](#) will encourage self-feeding and will help avoid [imprinting](#) on the carer.

Emergency diet for most chicks

- Vetafarm Bird Neocare or Passwell Hand Rearing Food.
- [Insectivore Egg Mix](#).

Weighing

Weigh chicks on a regular basis to make sure they are gaining or maintaining weight.

Housing

Refer to section 8. *Housing* in the [Code of Practice for Birds](#).

The objective of housing is to ensure a native bird undergoing rehabilitation is housed in enclosures that keep it safe, secure and free from additional stress.

Stress due to captivity must be minimised. Enclosures must be appropriate for the bird's needs and circumstances and must be comfortable and clean.

General enclosure requirements:

- they must be escape-proof
- designed and positioned to protect birds from contact with predators and pests
- insulated from urban noises (radios, TVs, laundry appliances, mowers, cars, barking dogs etc)
- not be exposed to strong vibrations or noxious smells (wood smoke or fumes, etc)
- be constructed from materials that are non-porous such as plastic or metal
- materials must be non-toxic
- positioned so that birds cannot see, or be seen by, pets; pets not only make wildlife fearful, but can also desensitise them to danger after release
- smaller non-aviary cages must be 0.7 metres off the ground
- when housed together, birds must be able to retreat into their own space and they must be monitored for signs of aggressive interactions
- kept clean and disinfected with F10 between animals.

Refer to [Carry-cages, cages and aviaries](#).

The Code of Practice for Birds lists three types of housing.

1. Intensive care housing

The objective of intensive care housing is to facilitate frequent monitoring, treatment, feeding and rehydration during the period immediately after coming into care and until the bird is stabilised.

Intensive care housing is a short-term enclosure, large enough for a sick or injured bird to maintain its normal posture but not enough space to run, jump or fly.

- The bird's head and tail must not touch the roof or floor while perching or standing.
- A bird that is unable to perch must be supported with a tightly rolled-up U-shaped towel with no loose threads on top of extra padding (e.g. rubber or foam matting).
- Substrate should be replaced as required, wear a mask when cleaning to avoid inhalation of dust and faeces. Disturbance to birds in care and the risk of increasing stress levels should be considered when deciding the frequency of substrate change.
- A bird in intensive care housing for more than 24 hours must experience a light-dark cycle that replicates outside conditions. If an artificial light source is used, it must be separate from any artificial heating.
- The enclosure must be designed and positioned so that visual and auditory stimuli are reduced (such as by covering with a natural fibre towel and placing it in a quiet room).
- There must be adequate ventilation without allowing excessive draughts.
- A constant temperature appropriate to the native bird's species, age and the nature of its illness or injury must be provided and must be regularly monitored using a thermometer. Electrical heat sources must be regulated by a thermostat.

Intensive care housing must be kept at an ambient temperature which is appropriate for the age of development of the native bird, for example:

- 28°C is appropriate for fledglings, juveniles, immature and adult birds. This means the bird will have warmth around its body and as it's condition improves it will gradually move away from the heat source. Correct humidity will prevent the bird from dehydrating. Place a wet sponge or similar in a shallow container next to the heat source, ideal humidity is around 80%.
- 28–30°C is appropriate for feathered chicks.
- 32–34°C is appropriate for unfeathered chicks (including hatchlings with pin feathers).
- 30–35°C is appropriate for precocial nestlings.
- 30–32°C is appropriate for ducklings for the first week, reduced by 3°C each week until the third week, when the heat may be removed (depending on the weather).

A lined rescue basket, or a lined rescue basket set up with [artificial heating](#) can be used for short-term intensive care depending on the size, age and rehabilitation needs of the bird.



- Birds in intensive care (hatchlings through to adult) must be monitored repeatedly during the day, including food and water intake, and weighed at least twice a week.
- Self-feeding native birds in intensive care must have their food and water intake monitored and be weighed twice a week.

For enclosure sizes refer to Appendix 2. *Minimum enclosure size standards* in the [Code of Practice for Birds](#).

2. Intermediate care housing

The objective of intermediate care housing is to provide a mobile bird with enough space to allow some physical activity while enabling it to be readily caught for monitoring or treatment.

This type of housing is suitable for an adult bird progressing from intensive care, or a hand-reared juvenile that needs more space but still requires hand-feeding. A small cage lined on three sides to prevent feather damage is a suitable enclosure for intermediate care. Refer to Appendix 2. Minimum enclosure size standards in the [Code of Practice for Birds](#).

- If an artificial heat source is provided, the bird must be able to move to a cooler section of the enclosure. Electrical heat sources must be regulated by a thermostat.
- Birds must experience a light-dark cycle that replicates outside conditions. This may be achieved by placing the enclosure in a well-lit room or in a sheltered area outside.
- The enclosure must contain habitat elements that enable the native bird to perform a range of natural behaviours. For example:
 - an area providing natural foliage protection that the bird can retreat to

- a perching bird must be provided with multiple perches that are high enough for its tail feathers to clear the substrate
- a waterbird or seabird must be provided with a pool of clean water deep enough for swimming without scraping their feet on the bottom and a dry area covered with a soft substrate.
- A variety of wooden perches must be provided to allow the native bird to find a comfortable position and minimise the risks of pressure sores (bumblefoot).
 - Perches must be a diameter that prevents the bird from piercing its own foot, small enough to allow a comfortable grip, fixed and hanging so the bird can practice keeping its balance on a moving perch, and must be securely attached.
 - Intermediate housing must provide birds that cannot fly with a series of perches and ramps to assist them to move to higher positions in the aviary.
- Intermediate housing outside needs to be sheltered from prevailing weather conditions such as rain, wind and sun.
- Substrate must be absorbent and easily cleaned or replaceable. Particle substrate (e.g. straw, cat litter, wood shavings, or sawdust) must not be used. Wear a mask when cleaning to avoid inhalation of dust and faeces.
- Be careful of large openings as they can provide an opportunity for escape. Hang/peg a tea towel, shade cloth or something similar over the opening while tending to the bird's needs.



Immature and adult native birds in intermediate care and fledglings and juveniles must be monitored at least once a day and weighed at least once a week.

For enclosure sizes refer to Appendix 2. *Minimum enclosure size standards* in the [Code of Practice for Birds](#).

3. Pre-release housing

The objective of pre-release housing is to give the bird the opportunity to regain its physical condition, acclimatise to current weather conditions and practice natural behaviour. At this stage of rehabilitation, interactions between the native bird and humans will be greatly reduced.



Pre-release housing must provide:

- Sufficient space for the native bird to move about freely and express a range of natural behaviours.
- Areas where the native bird can gain exposure to prevailing weather conditions and areas where it can shelter. There should be a roof over at least part of the aviary and protection on some sides against wind, rain and excessive sun exposure.
- Contain habitat elements that enable the native bird to perform a range of natural behaviours. For example:
 - perching birds require a variety of perches designed to suit the size and habits of the species being housed
 - waterbirds require a pool of clean water deep enough for swimming without scraping their feet on the bottom and a dry area covered with a soft substrate
 - carnivorous and insectivorous birds require dirt, logs and leaf litter for foraging
 - smaller birds (Passeriformes) require foliage at different heights to weave in and out

- tawny frogmouths require thick sticks and logs so they can imitate dead branches for camouflage
 - parrots and cockatoos (Psittaciformes) require grasses, seeds, casuarina and eucalypt branches with nuts for foraging
 - honeyeaters (Meliphagidae) need foliage with native flowers.
- Most birds like a place to hide, such as in branches with foliage. However, too much foliage can damage feathers and inhibit the ability to fly. Arrange perches and foliage to allow for lots of space to exercise as well as a place to hide.
- Perches must be made from sturdy, natural branches.
 - Never use dowelling or other artificial materials. A bird's feet can be damaged if its claws are able to wrap all the way around the branch.
 - Large birds need large branches of various sizes.
 - Branches should be cleaned regularly to avoid foot infections and must be cleaned thoroughly or changed between birds.
- Enclosures must be designed and positioned so that exposure to humans is kept to the minimum required for monitoring, feeding and cleaning.
- Substrate in pre-release housing must be easy to clean and suitable for the species' requirements. For example:
 - a layer of blue-metal aggregate covered by washed river sand allows for good drainage
 - concrete must be avoided or covered with another soft substrate as it can cause infections such as bumblefoot; birds with soft feet, such as waterbirds, should not be kept on a concrete or hard floor as their feet will be permanently damaged
 - sand must be closely monitored for contaminants and replaced regularly
 - wear a mask when cleaning to avoid inhalation of dust and faeces.
- Do not put astroturf on the floor. It is not easy to clean, so can become a breeding ground for bacteria, and has sharp plastic points.
- Be wary of large doors as they can provide an opportunity for a speedy bird to escape. Ideally an aviary should have a double-door entry. Alternatively, you can hang a shade cloth 'curtain' or something similar over the open cage door (to create a 'double door') while tending to the bird's needs.
- Some birds fly towards light and will injure themselves trying to escape from the aviary. To avoid this, cover parts of the aviary or line it with translucent material such as shade cloth. Be particularly careful of birds with long tails such as kookaburras and koels as their tail feathers are damaged very easily in captivity and the bird is then unable to be released.

A bird being prepared for release must be observed daily, from a distance, to determine if it is physically and behaviourally ready (refer to [Suitability for release](#)).

For enclosure sizes refer to Appendix 2. *Minimum enclosure size standards* in the [Code of Practice for Birds](#).

Housing chicks

If a bird is unfeathered, or a nestling, house it in a rescue basket. See [Intensive care housing](#).

- Form a nest shape with towels lined with paper towels or you can use a small wicker basket or a dog bowl with an old nest or leaves inside, surrounded with shredded newspaper or coconut fibre.
- Try to imitate the natural nest of the species. A kookaburra or rosella will prefer a hollow rather than an open nest, so use a small box or provide overhead cover.
- You can place a face washer or small towel on top of the bird to make it feel secure.

Artificial heat is required for most nestlings. See [Heating](#).

Once a nestling is perching it must have access to aviaries that allow free flight in order to encourage normal development. Most chicks like a place to hide so provide some foliage from their natural environment. [Substrate](#) must be appropriate for the species and must be changed daily but try to avoid stressing the chick when cleaning.

The cage may be put in a sheltered outdoor position but will need to be brought inside at night or in cold weather.

Enclosures should be positioned to minimise [imprinting](#).

Sunlight

It is important to give chicks a little exposure to direct sunlight each day to allow metabolism of vitamin D which assists the absorption of calcium. Placing chicks next to a closed window is not sufficient as UV rays do not penetrate glass.



Butcher bird chick sunbathing

Partially cover the basket with a towel and place it in a sheltered outside area where it can get some sun for 10 minutes or so each day. This will introduce the chicks to an outdoor environment where they can hear local birds. It may also attract the interest of local birds and possible adoption.

You do need to keep watch; never leave chicks alone outdoors.

- Keep chicks away from ants.
- Currawongs and butcher birds predate on the chicks and have been known to pull chicks through the bars of cages.

An alternative to time in the sun is the use of a full spectrum light that simulates natural sunlight. They can be bought from most pet supply shops.

Please note that nestlings that would normally be in a tree hollow (lorikeet, rosella, granivore parrot or kookaburra) do not need exposure to sunlight.

Gregarious chicks should not be kept alone and should be [buddied](#) as soon as possible.

Release

Release is returning a bird to the wild after rehabilitation, or releasing hand-reared chicks. A lot of time and effort goes into rescue and care; release is equally important. See [The ethics of release](#).

Suitability for release

Refer to section 9. *Suitability for release* in the [Code of Practice for Birds](#). The objective is to ensure the bird is physically fit and has the appropriate survival skills before its release. Preparations for release will start at the time of rescue and continue throughout the rehabilitation process. Many species will gradually lose their survival skills in captivity, so it is vital their time in care is kept to a minimum.

A bird must be physically and behaviourally ready for release.

- It has recovered from all injuries/diseases.
 - Are you passing on a problem? For example, never release birds with infectious diseases such as Pbfd.
- Its plumage and skin are adequate for survival in its natural habitat.
 - Check the feathers. Are they complete and in good order? Is the bird clean and able to preen itself?
- Its weight and condition is within the appropriate range for its species, age and sex.
 - Birds must be weighed before release.

- It can recognise, catch and consume appropriate, naturally-available food.
 - A bird can survive on life support in care but will it be able to fend for itself in the wild? Is it self-feeding and can it recognise natural food?
- It can recognise and interact normally with other members of the same species (social species only).
 - Is it a social species that has been away from its family group for too long to be recognised when it returns? Will it be treated as an intruder (i.e. attacked)?
- It can recognise and successfully avoid predators.
 - Can it recognise pets as predators?
- It is not attracted to humans or to sights, sounds or smells that are specific to captivity.
 - Will it approach humans for food?
- It can navigate effectively through its natural environment.
 - Can it fly and walk normally? Will any disability impede its survival?
- It has appropriate fitness levels as determined by observation.
- It has acclimatised to prevailing climatic conditions.

The [Code of Practice for Birds](#) recommends pre-release aviary sizes for different size birds. The aviary must be large enough for birds to get sufficient exercise to strengthen their flight muscles and ensure cardiovascular fitness. This is especially important for hand-reared juveniles.

Readiness for release must be confirmed by an [experienced avian rehabilitator](#).

Release considerations

Refer to section 10. *Release considerations* in the [Code of Practice for Birds](#).

Time of release

The time of release is important for different species. The objective is to ensure a bird is released as soon as it is ready and at a time that minimises stress and maximises its chances of survival in its natural habitat.

Release must be at a time of day/night that enables a bird to immediately investigate and settle into the release environment. The optimal release time for most diurnal animals is approximately one hour after dawn and for most nocturnal animals is approximately one hour after dark. Crepuscular (most active during twilight hours) birds (such as the tawny frogmouth) must be released at dusk.

Weather conditions must be favourable for at least the next 48 hours.

Different species have different considerations for release. For example:

- territorial birds must be released where they were found and before their territory is likely to be reoccupied
- insectivorous species must be released during periods of high insect abundance (spring and summer)
- migratory species must be released at least two weeks before their typical departure period; rehabilitated juveniles and adults must have time to strengthen their flight muscles and will need exercise in a flight aviary; it is a death sentence to send an ill-prepared bird on a long migratory journey.

Release site selection

The objective is to ensure the wild native bird populations and natural environment are not negatively impacted by the release of a bird, and the released bird has the highest likelihood of survival.

If the location where the bird was found is assessed as an unsuitable environment for release, it must be released in a suitable environment as near as possible to this location without transporting it across a physical boundary that it would not normally cross or further than it would normally move.

A native bird can only be released in a regional/national park or state conservation area if:

- It was originally found in that location.
- Written consent for the release has been obtained from the relevant NPWS Area Manager (issued under s.11 of the National Parks and Wildlife Regulation 2019).
- The release complies with the relevant Department of Planning and Environment policies on translocation.

If the exact location where the bird was found is known and it is a suitable environment for release, it must be released there.

If the exact location where the bird was found is known but it is unsuitable for release, it must be released in a suitable environment nearby.

Territorial birds such as kookaburras must be released where they were found. Birds that are part of a flock such as rainbow lorikeets should be released back into their flock.



A suitable environment for release is one that:

- contains appropriate habitat and adequate food resources
- does not have too many competitors for food resources
- is occupied by members of the same species
- does not place the bird at a high risk of injury.

Wildlife rehabilitators must not release large numbers of individuals at a single location, as increased competition is likely to have a detrimental effect on the existing population. Different factors must be considered based on species, sex, release site location and environmental conditions.

Hard release

Hard release is suitable for releasing a juvenile or adult bird that has been in short-term care back to its point of rescue. Temporary post-release support is not given; on release it must fend for itself.

Soft release

Soft release is when you provide temporary post-release support such as when you release birds into your garden by opening your aviary to let juveniles that have been reared together leave if the local conditions are suitable to support them in the wild.

Soft release hand-reared juveniles with others of the same kind.

Always get advice from your coordinator before you release a bird.

DUCKS

- **Identification**
 - Australian wood duck
 - Pacific black duck
- **Rescue**
- **Housing**
 - Housing ducklings, Warmth, Water
- **Feeding/Food**
 - Feeding adult ducks, Feeding ducklings
- **Release**

Identification

The two most common species of native duck in the Sydney area are the Pacific black duck and the Australian wood duck (maned wood duck), however chestnut teals occasionally need rescue and care. Ducks are classified as herbivores.

Australian wood duck

The Australian wood duck's natural habitat is grassland, open woodland and wetlands, including public gardens and parks. They mostly feed on land. Their natural diet mainly consists of plant material supplemented by insects.



Pacific black duck

The Pacific black duck's natural habitat is any area with water that has plenty of vegetation, including public gardens and parks.

They mostly feed in the water. Their natural diet consists mainly of plant material, particularly the seeds of aquatic vegetation. Aquatic insects, snails and small crustaceans make up the rest of their diet.



Rescue

The [Code of Practice for Birds](#) has standards and guidelines for the rescue and care of native birds (excluding birds of prey).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Refer to *Rescue* (section 3). The objective is to conduct a native bird rescue to minimise further stress and injury to the bird.

Your safety, the safety of MOPs and the safety of animals is paramount at all times.

- Identify possible risks and take steps to avoid them.
- Understand your capabilities and don't take risks.
- Get advice from your coordinator if you are in any doubt as to what to do.
- Never ask a MOP to assist in a rescue or to handle the animal. They can hold an open towel to block an escape route but they must not be involved in capturing or handling the animal.

The main rescue scenarios are:

- **Sick or injured adults**

Adult ducks can be caught with a large net or a large towel. Use a net with a long handle or a pool scoop if they are in water.

- **Lone ducklings**

Observe quietly from a distance. Are the ducklings quiet or sounding distressed? Are there any other ducks to be seen or heard? There is a very good chance that a parent is close by and within a short time they will be safely together.

Always try to reunite ducklings with their family group. If it is not possible to do so, the ducklings will have to be hand-reared.

- **Adult ducks with ducklings**

Adult ducks with ducklings often take up residence in back yards with swimming pools as these provide a source of food and a 'pond' on which to seek refuge from any threat.

You may need a few helpers, especially if there are many ducklings, and you will need a cage large enough to house them all. Do not assume that capturing a group of ducklings will be easy. They can run fast and will hide in dense undergrowth.

- **The ducklings must be caught first.** This cannot be overemphasised. If either or both adult birds are caught first, the ducklings will flee to the nearest undergrowth and become difficult, if not impossible, to locate and catch.
- Don't worry if mum flies away - she will return.

- With your helpers, make slow and deliberate movement toward them with the aim of getting them into the pool. They will head for the water as they see it as a safe haven.
 - When threatened with capture the ducklings will dive to escape and can be scooped up in the pool net when they resurface.
 - If they 'duck-dive', wait until they surface before trying again to catch them. If they are pursued under water, they are likely to drown.
 - Put them into the cage immediately, but be aware that even day-old chicks can jump quite high and they may try to get out of the cage as soon as you put them in.
 - The parents should immediately come to protect their chicks and can be caught with a net attached to a long pole. The mother duck will desperately try to protect her ducklings. Quick reflexes are essential.
 - Alternatively, take all the ducklings into a shed, outside laundry, or kitchen. Stand behind the open door and wait for the parents to go in after the ducklings. Shut the door immediately so they cannot escape. Quickly catch them with a towel and put them in the cage with the ducklings.
- **Ducklings that can't get out of swimming pools**

Make a ramp with a large piece of cardboard covered with a towel (to stop them slipping back into the water) for them to clamber onto and get out of the pool.

Ducklings can survive for about 24 hours on the yolk sac that they absorbed just before hatching. If they stay in the pool for more than 24 hours they are likely to become malnourished, fatigued, and can drown. Chlorine can also be harmful to their skin.

Case History

- Three orphaned Pacific black ducklings needed rescuing. They had left the caller's yard and set off down a footpath bounded by high fences on both sides. As soon as they were pursued and felt threatened, they went through a wire section of the fencing and hid in very dense ground cover.
- The rescuers climbed over the fence and waited very quietly in the vicinity. After about 20 minutes the ducklings started to make subdued calls to each other enabling the rescuers to find and capture them.
- They could not be reunited with their family group, were reared in care and were released when their flight feathers were fully developed. Without rescue they would have perished.

Housing

Refer to section 6. *Care procedures*, section 7. *Husbandry* and section 8. *Housing* in the [Code of Practice for Birds](#).

An aviary or duck pen must have a dirt floor because ducks have soft webbed feet that are prone to bumblefoot (a bacterial infection that gets into pressure sores). Concrete floors or other hard surfaces will not only damage their feet, but may cause joint problems or arthritis in the long-term.

Spread dry leaf litter or straw on the floor and rake it out regularly. Do not use hay as a substrate - it can get damp and lead to fungal pneumonia. The enclosure must have good ventilation and must not become damp and smelly.

Ducks need an area to forage, a protected area to sleep, water to splash around in and a covered area that is protected from direct sun as they can suffer heat-stress.

Australian wood ducks and Pacific black ducks can be housed together.

Housing ducklings

Ducklings usually come into care in the first few days after hatching. If a lone duckling comes into care, it is vital that it is buddied as soon as possible. A lone duckling may die after a few days in solitary care. Australian wood ducklings and Pacific black ducklings can be buddied together.

During the first week or two, ducklings can be housed in a large plastic crate or empty fish tank. Put newspaper, towelling or soft leaf litter on the bottom and change it regularly.

A sheet of glass on top will keep the warmth and the ducklings in. They are real escape artists and can jump higher than you would expect. Leave a narrow gap between the glass plate and the edge of the plastic crate to provide a fresh air source.

Raising ducklings is not difficult if you have the right equipment and follow the basic guidelines.

Warmth

Ducklings need an artificial heat source day and night for the first three weeks, or until their feathers start to emerge.

30–32°C is appropriate for ducklings for the first week, reduced by 3°C each week until the third week, when the heat may be removed (depending on the weather).

A heat mat is generally not advised as ducklings need to be able to move away from heat if it gets too hot. Ducklings can overheat.

Hang a heat lamp in a protective cage (to prevent contact) at one end of the enclosure.

Ducklings can jump very high and may burn themselves on the lamp if it is not inside a heat cage.

Hang a feather duster, rag mop-head, or a soft tea towel (like a little tent) from the top of the enclosure, suspended to about 5 cm above the floor. It will give them a warm place to hide.



When a duckling is fully covered with feathers and down, it will be able to maintain proper body temperature even when the outside temperature is low.

At about three weeks they can be moved into a very well-sheltered aviary, or a cage with an open bottom that lets them graze on grass.

Duck pens must have a soft floor because ducks are susceptible to bumblefoot.

The floor must be kept clean and dry because ducks can get aspergillosis from fungal spores that grow in damp organic material.



Water

Young downy ducklings must not be allowed to get wet until their feathers emerge.

This is about three weeks after hatching. They are not waterproof (their fluffy down absorbs water) and they may get hypothermia, or die from pneumonia if they get wet and cold.

- Provide drinking water in a shallow dish to prevent them from getting wet when they drink. You can put pebbles in the container to prevent them from getting into the water.
- When ducklings first come into care, try floating a little insectivore mix or a few tiny seeds on top of the water. This will attract their attention and encourage an early pecking response.
- They must not be allowed to swim.
- If they do get wet they need to be warmed and dried immediately.

They can be given a shallow dish for swimming when their feathers emerge at about three weeks. Ducklings can drown, so all water containers must be shallow and they must be able to get out easily.

Feeding/Food

Refer to section 7. *Husbandry* in the [Code of Practice for Birds](#).

Feeding adult ducks

The Australian wood ducks' natural diet consists of 99% green herbage with 1% insects. They mainly feed by grazing on land and need access to lawn and clumps of grass. They can be fed:

- a moist mix of water and *Passwell Crumbles mixed with chopped greens (shredded lettuce, spinach, endive or bok choy)
- grass, clover, herbage and aquatic vegetation.

The Pacific black ducks' natural diet consists of plant material (70–95%), particularly the seeds of aquatic vegetation. Aquatic insects, snails and small crustaceans make up the rest of their diet. They mainly feed in the water by “dabbling” (upending) and occasionally forage on land in damp, grassy areas. Food can be given in a stable, shallow bowl. They can be fed:

- a moist mix of water and *Passwell Crumbles mixed with chopped greens (shredded lettuce, spinach, endive or bok choy) and *Insectivore Rearing Mix
- mealworms
- aquatic vegetation, seeding grasses, insects and budgie seed.

Fresh drinking water must always be available and must be replaced daily.

Feeding ducklings

Ducklings are semi-precocial and if in good health will feed themselves.



Australian wood ducklings and Pacific black ducklings can be fed:

- a moist mix of water and *Passwell Crumbles mixed with chopped greens (shredded lettuce, spinach, endive or bok choy) and *Insectivore Rearing Mix.
- supplement this with seeding grasses, and a selection of mealworms, maggots and worms.

The juvenile diet is similar to the adult diet, but they need extra protein. Be careful not to give too much protein, as they can develop angel wing.

- Initially, food should be sprinkled all over the floor to encourage them to start pecking.
- Very young ducklings can be encouraged to eat by giving them crumbled hard-boiled egg yolk.
- They are more likely to start pecking if they can see contrasting colours in the food such as small dark seeds.
- A shallow bowl or plate for food can be provided once they learn to peck; it will help prevent food from being trampled and from being contaminated by faeces.

*[Wombaroo Feeding Guidelines for Native Birds](#) gives detailed feeding information for an adult and juvenile diet according to weight and age, with instructions for making food mixes in the appendices.

Fresh drinking water must always be available and must be replaced daily.

Release

Refer to section 9. *Suitability for release* and section 10. *Release considerations* in the [Code of Practice for Birds](#).

Readiness for release must be confirmed by an [experienced avian rehabilitator](#).

Australian Wood Ducks mate for life so adults must be released where they were found if possible. However, they have adapted well to urban life and adults and juvenile ducks may be released anywhere others are thriving and there is a good supply of water and food.



Pacific black ducks can be released where others are thriving if there is lots of water and a good supply of food. They are not territorial, but a male will protect a female and the brood.



ECHIDNAS

- **Identification**
 - **Reproduction**
 - **Rescue**
 - Transport
 - **Basic Care**
 - **Assessment**
 - Quarantine
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 - Eyes, beak, nostrils and ears
 - Feet and nails
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 - Burns
 - Dog or fox attack
 - Limb injuries
 - Salmonellosis
 - Ticks
 - **Husbandry plan and record keeping**
 - **Feeding**
 - **Housing**
 - **Release**
-

Identification

The short-beaked echidna is the only species of echidna in Australia. It is found in forests, woodlands, heath, grasslands and arid environments throughout Australia and Tasmania.

It is not difficult to identify an echidna.

- Their bodies are covered with coarse brown/black hair and they have cream/brown/black spines on their backs and sides.
- The prickly spines are modified hairs that are made of keratin; they are not dangerous.
- They have an elongated and slender snout that is referred to as a beak. It is not made of keratin and bone like a bird's beak, it is made up of the bones of the skull and the lower mandible.



- The beak has electroreceptors that makes it very efficient at sensing burrowing prey such as earthworms, termites and ants.
- A tiny mouth and toothless jaw is located under the beak.
- A long, sticky tongue is used to catch prey. In the process a lot of soil is consumed that is expelled in droppings.
- The echidna uses its beak and sharp claws to break open ant and termite nests, and to lift logs and rocks to find food.
- Their limbs are strong and short with large claws. The claws on their hind limbs are curved backwards for digging.

Echidnas are remarkably strong for their size and are strong swimmers.

It is estimated that in the wild echidnas can live for up to 50 years. There is no consistent weight difference between males and females.

Reproduction

Echidnas are monotremes (the most primitive order of mammals) and are characterised by laying eggs and by having a common opening (cloaca) for the urogenital and digestive systems.

There is no easy indication of sex.

The sex organs in both sexes are internal and do not develop until the echidna is ready to reproduce.

Adult males tend to be larger and have non-venomous spurs on their hind feet that can give a nasty scratch.

However, the presence of spurs is not a definitive way of determining sex. All young echidnas (less than four years of age) have spurs.



The platypus and the echidna are the only egg-laying mammals. Like all mammals, female monotremes nurse their young with milk.

Females do not have a permanent pouch. The skin swells up on either side of the belly when an egg develops and the egg is laid directly into it.

A blind, naked puggle emerges from the egg about 10 days later. Milk is secreted through special pores on the female's belly. Puggles are suckled in this rudimentary pouch for two or three months.

The echidna is a solitary animal. However, they do get together in the breeding season which is usually winter/early spring. The typical 'echidna train' can be seen at this time – the female at the front with several males following. Breeding takes place every 3-5 years.



When the puggle develops spines and becomes too prickly, the mother will build a burrow for it (there is no nest). She backfills the burrow as she leaves making it difficult for predators or well-meaning rescuers to find.

She will return to feed the puggle only once every five days for the next six months. The puggle takes a huge amount of milk at these infrequent feeds. She will spend a few hours feeding and grooming it and will backfill the burrow when she leaves.



The puggle remains in the burrow until weaning; it is weaned when it is about 210 days old (seven months). The mother will not backfill the burrow before she leaves for the last time and the puggle is left alone to fend for itself. It has never been out of the burrow and has not been taught what to eat or how to hunt for food.

Rescue

[The Code of Practice for Injured, Sick and Orphaned Protected Fauna](#), June 2011 (Code of Practice for Fauna) has standards and guidelines for the rescue and care of native animals.

Refer to [Initial Treatment and Care Guidelines for Rescued Echidnas](#) (DPIE, 2021). The purpose of these guidelines is to standardise the initial treatment of echidnas requiring rescue or rehabilitation in line with the [Code of Practice for Fauna](#).

- It provides guidance on the initial care and management of echidnas following rescue through to physical examination, initial treatment and stabilisation.
- It provides advice on managing the more common rescue encounters in echidnas, including trauma, burns and orphaned puggles.

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Refer to section 2. *Rescue and physical examination* in the [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Get advice from your coordinator before going to rescue an echidna. Your coordinator will give you advice on handling and transporting it, and will decide who the best person is to care for it (especially if hand-rearing a puggle is required). Echidnas have specific diets and housing needs but may be cared for by a new member if they have the facilities, and with guidance from an [experienced carer](#).

Your safety, the safety of MOPs and the safety of animals is paramount at all times.

- Identify possible risks and take steps to avoid them.
- Understand your capabilities and don't take risks.
- Wear appropriate clothing such as thick long sleeves and covered shoes.
- Light-weight work or sportswear gloves will allow the rescuer to feel and respond to the echidna's movements. Heavy leather gloves are not recommended.
- Wear a mask particularly if the animal is showing signs of disease.
- Never ask a MOP to assist in a rescue or to handle the echidna. They can hold an open towel to block an escape route but they must not be involved in capturing or handling the echidna.
- Get advice from your coordinator if you are in any doubt as to what to do.

Echidnas have few natural enemies, but they may be killed by cars, dogs, foxes and occasionally by goannas. Cats or birds may take puggles.

Except when rescuing an echidna from the middle of a road, observe the echidna before capture. Identify what position it is in (curled-up or stretched-out), observe its behaviour and gait if it is moving, and look for the presence of external wounds or bleeding.

An echidna's response to injury or danger is to dig into whatever substrate it is on, or to curl up into a ball. This makes it difficult to assess injuries. If an echidna is stretched-out flat or is unresponsive to touch (no movement of spines) it is likely to have severe injuries.

Decide if rescue is really needed. If the echidna is in someone's yard and is uninjured, it will eventually move on – there is no need to interfere. Echidnas are extremely sensitive to sound, smells and movements and MOPs should be advised to keep pets and onlookers away.

Refer to *Distance examination* in section 2 of the [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

If the echidna is in a dangerous place such as on the side of the road, or is injured, pick it up gently but firmly by placing your hands under the shoulders. Never hold or pull an echidna by the back legs.

If the echidna digs itself into the soil, kneel behind the echidna and dig down with your hands to lift it. DO NOT use a spade. You can protect your hands by manoeuvring a car mat under it, rolling it in the mat and moving it away from the road. Put it in a safe place in the direction it was going so that it does not try to cross the road.

Refer to *Capture and handling* in section 2 of the [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Signs of stress in echidnas are not obvious.

Digging in or curling into a ball is a normal reaction to threats, but can also be signs of stress.

Stressed echidnas will make vigorous attempts to escape and they will often urinate and sometimes defecate.



During July to October check the temporary pouch area for a puggle or signs of lactation. It will look like two fleshy folds on the echidna's ventrum (belly). A very young puggle will not be visible; gently part the folds with your fingers. A larger puggle can be partially visible between the folds of the pouch.

Rescued pouch and burrow young must be kept quiet in a comfortable, dark container and transferred to an [experienced wildlife rehabilitator](#) as soon as possible. If the puggle weighs under 100 grams it has a poor prognosis for survival. Burrow young weighing above 200 grams can be successfully hand-reared and released.

Do not attempt to feed or insert any device into the mouth as the mouth is still developing and this can result in damage to the delicate beak structure.

The care of puggles must be undertaken by [experienced wildlife carers](#), or under the supervision of experienced wildlife carers. It is an intensive process requiring experience and time commitment - in some cases many months.

Transport

Refer to *Transport* in section 2 of the [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Echidnas are clever, strong, good climbers and are excellent escape artists. Beak damage must be avoided as they will poke their beak into any potential escape route. Beak damage can potentially make the echidna unsuitable for release.

A strong hessian catch bag or towel wrapped around the echidna can be used for carrying and for short distance transport.

If transportation in a vehicle is necessary, the echidna must be placed in a solid, ventilated wood or plastic transport container with a secure lid.

Cardboard or styrofoam boxes are not suitable as they are easily destroyed. Pet carry-cages or crates with plastic or metal slits can cause injuries to the feet and the beak.

Avoid placing an echidna in direct sun or in a heated vehicle. Echidnas should be kept cool (less than 25°C) and in darkness and quiet during transport.

Wet towels can be used to keep an echidna cool.



Many local vets do not have the experience to treat an echidna. Vets experienced in treating echidnas are Taronga Wildlife Hospital, Canley Heights Vet Hospital and the Sydney Wildlife Mobile Care Unit.

If you are unable to take the echidna to a vet with appropriate experience, injured echidnas can be seen by an experienced coordinator who can then decide on an appropriate course of action.

Make sure the echidna is kept contained and quiet. Go straight home or straight to the vet.

Refer to [Case Assessment](#).

Basic care

When injured or distressed, an echidna may lower its respiration, heart rate, body temperature and metabolism and go into torpor. It is uncommon for echidnas to vocalise or show any obvious signs in response to pain. When cool to the touch, lethargic and unresponsive to handling, the echidna may be in torpor, it is not necessarily due to pain, injury or illness.

Torpor is an energy-saving mechanism during which the animal lowers its body temperature, respiration, heart rate and metabolism. Echidnas use daily torpor during times of rest, and in response to stress, trauma or healing processes.

Their temperature can drop as much as 10°C during the night. Seasonal torpor may relate to cold weather, food availability or extreme weather events such as bushfires. Torpor is a life-saving mechanism for a lot of species.

Unlike most mammals, echidnas should not be kept warm with any form of heat source. They will rapidly overheat.

They can tolerate low temperatures, which will trigger torpor after a period of exposure. Compared with other mammals the echidna has a low core body temperature of between 31–33°C; their preferred temperature range is 20–30°C.

Assessment

An initial examination can be performed on rescued echidnas with appropriate physical restraint. Refer to *Restraint for physical examination* and *Physical examination* in the [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Sedation or anaesthesia, administered by a veterinarian, may be required to reduce stress associated with handling, and is necessary for a thorough physical examination.

Handling should be tailored to each animal based on its health status and temperament. Never push an animal beyond its pain or patience threshold. Contact your coordinator if you are unsure what to do.

Hygiene is important. Always wash your hands thoroughly before and after handling an echidna.

Quarantine

Treat all echidnas as potentially infectious and take precautions to minimise disease transmission between animals and humans. Isolate an echidna in a separate area until its disease status can be determined. Wear PPE (gloves and mask) to prevent disease transmission.

If you don't know what's wrong, get advice from your coordinator or a vet.

Refer to *Quarantine and managing infectious disease* in the [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Check the following

Dehydration

Hydration status is not easily assessed in echidnas. Even emaciated echidnas can show moderate to good hydration.

- In well-hydrated echidnas, the top end of the beak will be bulbous and not flat. Pads on the front feet should be firm, resilient and spongy.
- Dehydrated echidnas may have sunken eyes, reduced skin turgor on limbs, and dry wrinkles on the beak. Flat, empty feeling pads can indicate dehydration or poor body condition.

Echidnas produce concentrated urine; with their low metabolism this allows them to live in the extremes of our Australian environments. Most rescued echidnas tend to be adequately hydrated and fluid therapy may not be immediately necessary. Oral fluids can be offered to echidnas that are bright, alert and able to drink. Subcutaneous fluids must be administered by a qualified and experienced vet.

Eyes, beak, nostrils and ears

Immediately seek urgent veterinary attention if there are signs of blood, exposed bone or wounds to the eyes, beak or ears.

Bleeding or blood-tinged discharge from the nostrils requires veterinary attention. Note that it is normal for an echidna to 'blow bubbles' through their nostrils during normal breathing when being handled. This nasal discharge is usually clear white to colourless and is not a sign of injury or disease.

Feet and nails

Assess the feet and nails for symmetry and wounds. Abnormalities should be assessed by an [experienced wildlife carer](#) or vet.

Limbs

Echidna's front legs are short and powerful. The hind legs are rotated backwards, and the hind feet point backwards at rest.



Where possible, gait should be assessed before capture. All signs of lameness or wounds indicative of trauma require a thorough veterinary assessment with sedation or anaesthesia.

Spines and skin

- A patch of broken spines can indicate impact area, such as from a vehicle.
- Melted spines or patches of exposed skin are often a result of burn injuries.
- A combination of loss of hair between spines and crusty skin can indicate mange.
- Identify wet patches or blood on the spines to check for deeper wounds. Deep wounds are painful and should only be explored under sedation or anaesthesia by a vet.

Common injuries and diseases

Echidnas mainly come into care through motor vehicle collisions. Injuries are less conspicuous due to their protective spines. Internal damage, injured beaks and broken bones are most likely.

Refer to *Initial treatment - stabilisation* and *Common rescue encounters* in [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Beak injuries

Beak injuries are serious and require immediate veterinary attention for assessment and pain relief. Handle the echidna carefully as this injury can affect its ability to breathe.

If the beak is badly injured, [euthanasia](#) may be the only option. If the electroreceptors are damaged the echidna will be unable to find food and will die when released. Get advice from your coordinator as some beak injuries can heal.

Check for bleeding or blood-tinged discharge from the nostrils.

Note that it is normal for an echidna to 'blow bubbles' through their nostrils during normal breathing when being handled. This nasal discharge is usually clear white to colourless and is not a sign of injury or disease.

Burns

During fires echidnas will retreat to a known burrow, or dig into the ground. They may be able to completely bury themselves and go into torpor to wait out the fire.

They can emerge with melted or absent spines and singed hair. Spines are shed and replaced naturally; fire-damaged spines may take years to be replaced.

Burn injuries are extremely painful. Take the echidna to a vet for pain relief and assessment as soon as possible.



Dog or fox attack

Internal injuries are often more severe than they appear to be externally and the only noticeable external signs may be broken spines. All echidnas injured in an animal attack should be taken to a vet.

Limb injuries

The echidna should be kept confined with minimal handling and be taken to a vet as soon as possible. Open fractures (the bone is exposed) increase the risk of infection and the prognosis is poor.

Remember - the hind limbs of the echidna are naturally rotated backwards.

Salmonellosis

The bacteria is shed in faeces and can be transmitted directly by handling or indirectly through contact with contaminated objects.

- Symptoms in echidnas: most animals that shed salmonella are asymptomatic.
- Symptoms in people: can include nausea, vomiting, diarrhoea, fever and abdominal pain and cramps.
- Prevention: hygiene and PPE are essential, including hand washing, regular disinfection of equipment, and isolation of affected animals.

Ticks

Ticks are the most significant external parasite found on echidnas and are commonly found in the short spines and hairs surrounding the ear slits.

Healthy, fit adult echidnas generally do not have heavy tick loads. High tick burdens are most often found on young echidnas that may be in poor condition or have underlying health issues; a thorough veterinary assessment is required to investigate underlying illness or injury.

Manual removal of ticks should only be performed following initial examination and stabilisation with minimal stress to the echidna. Prolonged handling of wild echidnas for tick removal can be stressful for the animal.

Husbandry plan and record keeping

Formulate a husbandry plan with your vet or coordinator. The plan should include:

- daily care routines including medication, feeding, cleaning and handling
- regular monitoring and assessment as required
- observing and monitoring health and behaviour indicators to make informed decisions
- setting milestones for rehabilitation progress then reassess.

It should include your notes on:

- initial assessment of condition, mobility and injuries
- advice from your coordinator

- details of veterinary examinations with the recommended treatment and medications with dosages
- feeding, diet and weight.

When you care for an echidna, you need to keep in regular contact (daily if necessary) with your coordinator or an [experienced carer](#). They need to be familiar with its condition and progress; their advice and support will help you give the echidna its best chance of survival.

Accurate records must be kept to track the progress and outcomes for echidnas in care. Refer to *Record Keeping* in [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Echidnas must be physically fit and possess the appropriate survival skills prior to release. Preparations for release start at the time of rescue and continue throughout the rehabilitation process. Many species will gradually lose their survival skills in captivity, so it is vital their time in care is kept to a minimum.

If euthanasia is necessary, refer to *Euthanasia* in [Initial Treatment and Care Guidelines for Rescued Echidnas](#).

Feeding

Echidnas have low metabolic rates and can survive as healthy animals without food for extended periods of time especially when in torpor.

Pouch and burrow young



Caring for and feeding pouch or burrow young **MUST** be undertaken by an [experienced carer](#).

It is unknown how often a pouch young suckles while in the mother's pouch. Once the young has been placed in a nursery burrow, the mother returns to suckle it for about two hours every five days.

Do not attempt to feed or insert any device into the mouth as the mouth is still developing and this can result in damage to the delicate beak structure.

Adults

Echidnas have specific diets. Always get advice from an [experienced carer](#) before offering any food to a rescued echidna. The appropriate type, volume, method and frequency of feeding will depend on the age and health status of the echidna.

Echidnas use their beaks for foraging. A strong, healthy beak is vital for survival in the wild.

Watch the [Echidna foraging](#) video



The wire cover prevents birds from eating the echidna's food.

Housing

Echidnas must be housed separately until their disease status is determined by a vet or an [experienced carer](#).

Keep an echidna sheltered from direct heat and in a quiet environment free from stressors, noise, domestic animals, people and strong smells.

Get advice from an [experienced carer](#) on how best to house an echidna. They are solitary animals.

Release

The home range of an echidna can be 200 hectares or more. However, they must be released back to the area where they were rescued.

This is important as they have territories and if the echidna is a female there may be a puggle in a burrow.

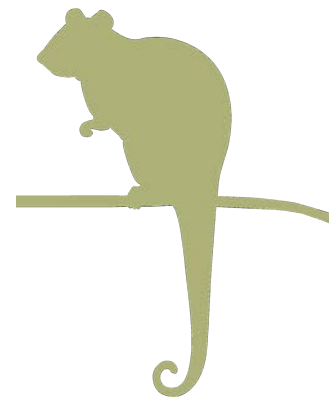
Echidnas are most often active during the early morning and late afternoon to avoid the heat of the day. The best time for release varies depending on the season; it should not be too hot. Release an echidna on a cool afternoon.

Readiness for release must be confirmed by an [experienced wildlife rehabilitator](#).



POSSUMS

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Identification

Sydney has two main types of native possum, the ringtail and the brushtail. Possums are nocturnal marsupials.

Ringtail possum

The ringtail's fur colour ranges from a dull grey, dull fawn to red with a creamy white belly.

The ears are small and rounded with soft fine margins and the claws are short.

The tail is generally as long or longer than the body and is prehensile (used as a fifth limb for anchoring when moving, feeding and carrying nest material) with a white/pink tip on the last third.

Adults weigh between 800 g and 1 kg.



Brushtail possum

The brushtail is much larger, about the size of a large cat.

The fur colour can vary from silver-grey to brown, with a creamy white belly. They have a pointed face, long oval ears, a pink nose and black markings around the snout, and long sharp claws.

The distinctive tail is shaped like a brush and is black and bushy, it is prehensile with a strip of bare leathery skin on the underside to help grip onto branches.

Adults weigh between 2 and 3 kg.



Basic rescue

The [Code of Practice for Injured, Sick and Orphaned Possums and Gliders](#), 2021 (Code of Practice for Possums and Gliders) has standards and guidelines for the rescue and care of possums.

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Refer to the [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#), 2021. The purpose of these guidelines is to standardise the initial treatment of possums requiring rescue or rehabilitation in line with the [Code of Practice for Possums](#).

- It provides guidance on the initial care and management of possums following rescue through to physical examination, initial treatment and stabilisation.
- It provides advice on managing the more common rescue encounters in possums, including trauma, burns, orphaned joeys and disease syndromes including exudative (stress) dermatitis.

Refer to section 3. *Rescue* and section 4. *Transport* in the [Code of Practice for Possums and Gliders](#).

Refer to section 2. *Capture, restraint and physical examination* in the [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#).

Your safety, the safety of MOPs and the safety of animals is paramount at all times.

- Identify possible risks and take steps to avoid them.
- Two rescuers may be required. For example, if the possum is entangled in netting one person may need to hold the possum while the other cuts the netting.
- Understand your capabilities and don't take risks.
- Get advice from your coordinator if you are in any doubt as to what to do.
- Never ask a MOP to assist in a rescue or to handle the possum. They can hold an open towel to block an escape route but they must not be involved in capturing or handling the possum.
- Capture must be swift and effective. Limit exposure to additional stressors such as onlookers, loud noises, and other animals.

Be aware that everything you do during the rescue and transportation may be stressful to the possum. Stress can kill!

Essential rescue equipment

- Rescue basket or cardboard box lined with something the possum can grip onto, such as a rolled up towel. Don't use newspaper, it is too slippery.
- The container must be well-ventilated so that air can circulate around the possum. Its breathing must not be restricted, and its pain or discomfort must be minimised.

- Possum handler
 - Two plastic flower pots of the same size with the bottom cut out of one and fastened (twist-ties, cable ties or similar) together at the top lips. The possum can be easily removed by unfastening the halves - particularly good for brushtail possums.
- Two towels
 - One to catch the possum - it goes into the rescue basket/box with the possum
 - One to cover the box/basket to reduce stress (creates a dark and quiet space). Don't use towels with frayed edges due to the risk of entanglement.
- *A small heat source (e.g. microwave gel heat pad) is needed for an animal in pain or shock, or for an immature joey. The warmth in the rescue basket or cardboard box must be appropriate for the age and condition of the possum:
 - 26°C is appropriate for an adult, subadult and furred pouch young in most circumstances
 - 30°C is appropriate for velvet pouch young
 - 32°C is appropriate for unfurred pouch young.
- A net with a long handle.
- Gloves to protect your hands in awkward/dirty situations.
- A head-torch so that you have both hands free.
- Your phone with access to the details on Trello and to establish the location on gps when needed, and to seek advice or take photos.
- First aid kit, hand sanitiser and hi-vis vest for safety.

*A hot water bottle should not be used as a heat source for possums. It can scald a possum or leak and the possum will get wet.



Before attempting to rescue a possum, take some time to assess the situation. You can learn a lot by taking a few moments to observe.

- Is it an adult, a [female with a joey](#), a juvenile, or a joey?
- What information can you determine from the location?
- Is the possum by the side of the road, under power lines or could it have fallen from a roof?
- Are there any obvious injuries?
- Has the possum been attacked - can you see blood or saliva on its fur?
- Can the MOP provide more information?

Try to determine how mobile the possum is.

- How long has it remained in the same position?
- Is it sick or injured, or could it just be sleeping?
- Is it alert and responsive?
- Does it look up at you as you approach?

You need to make a judgement about what the possum might do when you try to pick it up and be prepared for a sudden reaction.

Sick and injured possums can respond in a variety of different ways. Really sick possums are often quiet and subdued, but possums that are stressed or very frightened can behave in an aggressive manner. You should always be careful to avoid being bitten and scratched. The key to safe possum handling is to find out as much as you can about the rescue circumstances, and then plan your rescue using appropriate equipment.

To catch a possum

- Make sure your rescue basket is open and as close to the possum as possible.
- If it is a ringtail or an injured and inactive brushtail, cover the possum with a towel, taking notice of the location of the head at all times, and gently, but firmly, scoop it up securely and as quickly as possible place the possum in the towel into the rescue basket. Close the lid quickly and latch it.
- If the possum is active and in a contained area, you may be able to coax it into a possum-handler (2 plastic flower pots joined together with one base removed) as they will often willingly move into a dark, covered space. If the possum won't oblige, you can place the possum-handler over the possum's head and give a firm push from the rear. Once the possum is inside, quickly place a towel securely over the exit and place the possum-handler in the rescue basket.



- If catching a brushtail possum without a possum-handler, throw a towel over the possum and simultaneously grip the base of the tail, keeping track of where the head is located.

- Never catch a possum by the tail or bend the tail backwards. Care must be taken when placing a possum in a rescue basket to ensure its tail is inside the basket before you close it. Tails fracture easily.
- Hold the possum away from your body. If a possum can touch your clothing with its claws it is very likely that you will get scratched.
- Do not attempt to hold a possum by the scruff of the neck, or allow its head to bear the weight. Always support the possum's weight with your other hand under its bottom.
- Wrap it in the towel, holding firmly and keeping it away from your body, while putting it into the basket. Close the lid quickly.
- Once the possum is contained in the basket, completely cover the basket with an extra towel to reduce stress by providing darkness and quiet.
- Do not open the rescue basket or remove the towel until you are indoors in a secure room.

Immediately make an assessment as to whether to take the possum home first for observation, or directly to a vet for treatment.

If there is any suspicion a cat has been involved, the possum should go to the vet for an antibiotic injection – even if you can't see a puncture mark or wound.

As soon as practicable, contact your coordinator and register the possum. Your coordinator is an [experienced carer](#) who will give you advice on care practices, estimated length of stay in care, and on suitable housing.

Transport

Everything you do should be to minimise further stress and injury. Stress is reduced by darkness, warmth and quiet.

The possum's world has just been turned upside down. It has lost all contact with the environment it recognises and has been thrust into your world. To even the bravest possum, you are enormous and smelly. It may be in pain or in shock.

A possum is a wild animal; do not treat it as a pet. Any attempt to comfort it physically (stroking) or with your voice will stress it further.

Cover the possum with a towel before placing it in your rescue basket (or box). This will:

- provide darkness to help the possum feel secure
- prevent the possum from sliding around; if it is injured it is probably in pain.

Lift and move the rescue basket gently.

- The possum may be in pain and will be startled by sudden movement.

Never leave a possum in a car unnecessarily.

- Even with windows partially open, never leave a possum unattended in a parked car in hot weather. Hot cars can kill.
- Cover the rescue basket or box with a heavy thick towel. This will keep warmth in and noise levels down.
- Pets, the radio, children and traffic noise should be avoided. Close the windows, turn off the radio and ask your passengers to be quiet. Sounds from your environment are tolerable to urban possums, but only if the animal feels it is well-hidden and the noise comes from a distance.
- Do not allow the rescue basket to slide around in the car. Stabilise it with a seatbelt or place it securely on the floor.
- Towels with frayed edges can be used for covering rescue baskets.



Possums must not be transported in the back of uncovered utility vehicles, car boots that are separate from the main cabin, in the rescuer's lap or on the body and under the clothing of the rescuer.

Make sure the possum is kept warm and quiet. Go straight home or straight to the vet.

Refer to [Case Assessment](#).

Female possums – special considerations

You are not authorised to care for joey possums (ringtails weighing under 400g and brushtails weighing under 800g) until satisfactorily completing the Sydney Wildlife Basic Possum Course. However, you do need to know what to do if you get to a rescue and a female possum has one or more joeys.

Female possums may have a joey/s in her pouch or a larger joey/s clinging onto her or close-by. Mothers and joeys must be rescued together.

- Take care that older joeys do not become separated from the mother.
- Always search the rescue site in case there is more than one joey that needs to be rescued. Ringtails can have between two and four joeys and brushtails can have up to two joeys.
- If you rescue a female possum that has died or is injured, always check for joeys in her pouch.
- If the mother has died, do not attempt to pull a joey from the pouch as you may damage its mouth if it is attached to the teat. Keep the mother's body warm and take it to an [experienced carer](#) or vet as soon as possible.

- If a female possum needs to be [euthanased](#) ask the vet to check the pouch for a joey before proceeding. Pouch young need to be removed PRIOR to euthanasia or they will also die.
- Joeys can often be kept with sick mothers while in care, but this will depend upon the condition of the mother. Orphaned joeys must be buddied.

Refer to [Joey possums](#). You must seek the advice of your coordinator as soon as possible.

Common rescues

Possum in a roof, room or chimney

Roof

We do not remove possums from roofs. Refer the MOP to one of the humane and ethical commercial removal contractors listed in Weebly, or a possum coordinator can advise the MOP how to do the 'removal' in the simplest, least stressful way. Let the MOP know that it is illegal to move the possum away from its immediate vicinity and encourage them to provide a possum box in their garden to give the possum a new home.

Room

The easiest way to remove a possum from a room is to provide an escape route. Leave a door or window open with a trail of food leading out. Turning the lights on at night will encourage the possum to move towards the darkened exit and the smell of the food.

If it can't find its way out it will look for a place to hide as dawn approaches. A possum is sometimes found inside during the day, curled up and asleep in a quiet place such as the top of a high bookshelf.

The best thing to do is to close the door so that the possum can't get out of the room if startled, and to leave it undisturbed until after dark. When it wakes up it will be hungry and can be encouraged to leave in the manner described above.

If the possum can't find its way out, or if it is in a dangerous situation, it can be rescued during the day and released at least one hour after dark. It will generally be asleep and will be easier to contain. It is better for the possum to find its own way out at night.

Chimney

A brushtail will sometimes make its home in a chimney. Depending on how far down the chimney the possum is and whether there is an exit point, it may be appropriate to entice it out by leaving food in the fireplace. You may need to set a possum trap to capture it when it emerges.

The MOP could place a desk lamp in the fireplace shining up the chimney, leaving it on for three consecutive days and nights. The possum will be deterred by the light. Once the possum has left, the chimney-top can be blocked to stop it returning.

The easiest way to remove a possum trapped in a chimney is to lower a thick rope into the chimney to allow the possum to climb out. If the possum has fallen into the lower part of the chimney and is trapped by the fireplace grate or some other structure built around the opening it may need to be physically removed.

Members of the public can be encouraged to dismantle these structures by warning them of the unbearable smell that lingers for weeks if a possum is cruelly left to die in this situation. Get permission from the owner of a rental property if parts of a chimney need to be removed or dismantled.

Possum out in daylight

Possums are nocturnal and they do not come out in daylight unless there is something wrong. It may be blind or sick, or it may have been unable to find suitable shelter the previous night. Take it home to assess it, or take it straight to a vet, as necessary.

If a possum needs to be removed from an unsuitable environment, take it away and return it for release one hour after dark. Do not release possums during the day.

Trapped possums

It is illegal to trap possums and move them more than 150 metres from the site of capture. Relocated possums nearly always die because they are highly territorial and do not fare well in unfamiliar surroundings or in the territory of another possum.

The belief that possums belong in the bush and that it is kinder to relocate them there is not true. Urbanised possums do not know how to live in the bush and may starve or be taken by predators.

Many people find possums to be a nuisance if they live in their roof and eat the plants in their gardens. If you are called to rescue a trapped possum, suggest that the MOP provides alternative housing such as a possum box.

Explain that not only is it illegal to remove the possum, but that the possum will die if relocated and that another possum will move in. If you must relocate a possum, move it somewhere close.

Joey possums

Joeys are often separated from their mothers and should be taken into care straight away as they can rarely be reunited. They can fall off their mother's backs, or may be found in the pouch or clinging to a dead mother. Always search the rescue site in case there is more than one joey that needs to be rescued. Refer to [Female possums - special considerations](#).

The Rescue and Care Course does not authorise you to care for joeys so you must take the joey to your coordinator or to an [experienced and qualified carer](#) immediately.

To successfully get the joey to a carer you must be quick and observe the following:

- do not attempt to remove a joey from the pouch of a dead mother as you may injure the joey; it is vital to keep the mother warm to prevent the joey from getting cold and dying
- small joeys are unable to maintain their body heat and need to be kept warm (32 degrees)
- if a joey is not in the pouch it can be very stressed and may be calling for its mother
- keep it warm, dark and quiet; as it is probably used to being in a pouch, place it in a beanie or wrap it in a soft, warm towel - keep it warm and confined and do not allow it to run around.

Joeys that have been separated from their mothers are usually dehydrated and this can result in death. It is essential that you take the joey to your coordinator or an [experienced carer](#) as soon as possible.

Ringtail joeys weighing under 400g and brushtail joeys weighing under 800g have not yet been weaned and cannot be cared-for by new members.

They have very specific needs and specialist training and equipment is required to care for them.



Assessment

Refer to section 2. *Case Assessment* and section 6. *Care Procedures* in the [Code of Practice for Possums and Gliders](#).

Refer to section 4. *Initial treatment and stabilisation* in the [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#).

Quarantine

Isolate a possum when it comes into care in a separate area until its disease status can be determined. If you don't know what's wrong, get advice from your coordinator or a vet.

Refer to section 6. *Quarantine and managing infectious disease* and section 7. *Zoonotic disease* in the [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#).

Whatever the condition of the possum, when initially in your care it must be treated for stress by providing quiet, dark and warmth for a minimum of half an hour to reduce stress. The possum is a wild animal that is already stressed or in pain and being handled by a human will add to the trauma. The possum needs to be able to rest and begin feeling safe and warm.

Hypothermia

It is safe to assume that most orphaned, sick and injured possums will be hypothermic (low body temperature) when rescued and require thermal support, especially joeys. Refer to [Heating](#).

Dehydration

Possums coming into care may need fluids. Treating dehydration is a priority as vital organs may already have started to shut down. Fluids can only be absorbed if the possum is warm, i.e. the possum should not feel cold to the touch. We strongly recommend that EVERY injured possum be offered fluids to rehydrate as part of its initial care, especially burns victims.

Dull eyes and dry gums are a sign of dehydration.

If it is safe to do so, do the pinch test by giving the skin around the shoulder a reasonable pinch and watching how quickly it springs back. If it is very slow, the possum needs rehydration. If the skin stays up (tenting) and the possum is lethargic and cold it probably has severe dehydration.

Treat the possum for stress before commencing rehydration (Keep warm, dark and quiet). Luke-warm VyLyte, Lectade or Vetafarm Spark Liquid for All Animals (follow the instructions on the bottle) may be given by dripping it onto the possum's lips with a syringe or by encouraging the possum to lap. If dehydration is severe it may need to be taken to a vet for subcutaneous fluids.

Make sure that both the possum and the VyLyte/Lectade/Spark are warm for rehydration to be effective.

Hydration is vital for possums with burns. VyLyte/Lectade/Spark can be given. In most cases veterinary attention is needed for the burns and the vet will administer subcutaneous fluids.

Wash your hands thoroughly before and after the examination. Wear latex gloves if necessary. Be organised with your equipment and rehydration fluid and perform the assessment as quickly and as thoroughly as possible to minimise stress to the possum. Do the examination in a warm, quiet and secure room.

Handling should be tailored to each animal based on its health status and temperament. Never push an animal beyond its pain or patience threshold. Contact your coordinator if you are unsure what to do.

The [Code of Practice for Possums and Gliders](#) section 6.1 *Assessment* requires possums to be checked for:

- bleeding from the eyes, mouth, nostrils or cloaca
- clear fluid from the eyes, ears or mouth
- neurological injuries (e.g. head tilt)
- external wounds (e.g. puncture wounds) or matted, wet-looking fur
- bone fractures (i.e. include jaws, tail and all limbs)
- fur and body condition by manual assessment
- signs of lethargy (e.g. demeanour is quiet, animal is easily handled)
- respiration and heart rate (e.g. rapid breathing, panting, open-mouth breathing and elevated heart rate)
- eye condition (i.e. dilated or uneven pupils, erratic eye movements, sunken eyes, blindness and cataracts)
- signs of shock (e.g. pale or blue mucous membranes, cold extremities)
- temperature
- disease or infection (e.g. abnormal breath sounds, swollen lymph nodes, discharge from eyes, nose and cloaca, diarrhoea)
- external parasites (i.e. check the entire body, look for eggs on the fur)
- odd smells
- pouch condition for females (e.g. presence of young, enlarged or elongated teat, maggots, infection)
- physical palpation of the abdomen to ensure it is not distended and to assess for nodules or masses (e.g. the abdomen is soft and not swollen)
- mobility (e.g. climbing, walking and tail grip)
- injury to the digits or claws
- swelling and lumps (e.g. tumour, abscess or cyst).

The [Code of Practice for Possums and Gliders](#) requires rescuers to arrange for a possum to be assessed by a vet or an [experienced wildlife rehabilitator](#) within 24 hours of rescue to ensure accurate diagnosis and prompt treatment or euthanasia.

We recommend immediate action; take the possum to a vet or contact your coordinator for advice - do not wait 24 hours.

Husbandry plan and record keeping

Formulate a husbandry plan with your vet or coordinator. The plan should include:

- daily care routines including medication, feeding, cleaning and handling
- regular [monitoring](#) and assessment as required
- observe and monitor health and behaviour indicators to make informed decisions
- set milestones for rehabilitation progress then reassess.

Accurate records must be kept to track the progress and outcomes for possums in care. Refer to section 12. *Record Keeping* in the [Code of Practice for Possums and Gliders](#).

Possoms must be physically fit and possess the appropriate survival skills prior to release. Preparations for release start at the time of rescue and continue throughout the rehabilitation process. Many species will gradually lose their survival skills in captivity, so it is vital their time in care is kept to a minimum.

Wildlife carers are not allowed under National Parks and Wildlife Services licence conditions to keep possums in permanent care. If the prognosis is that the possum cannot be returned to the wild successfully upon recovery, it must be euthanased.

Possoms are wild animals and their survival instinct is to hide signs of pain. Most injuries, including open wounds, fractures, bites or burns are painful and require pain relief. Pain relief must be prescribed by a veterinarian.

Common injuries and diseases

Refer to section 6. *Care Procedures* in the [Code of Practice for Possums and Gliders](#).

Refer to section 4. *Initial treatment and stabilisation* and *Common rescue encounters* in the [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#).

The first thing you need to do is to assess whether the possum requires treatment by a vet. All treatments, outcomes and potential expenses arising from this must be discussed with your coordinator.

Hygiene is important. Always wash your hands thoroughly before and after handling a possum. Wear disposable gloves and a mask if there is a risk of disease transmission.

Animal attack

Joey ringtail possums that have been attacked (or even 'mouthed') by a cat rarely survive, especially if there are detectable puncture wounds. However, evidence shows that antibiotics can help if administered within 12 hours.

Shining a UV light on a possum will assist in identifying possible victims of dog or cat attack, as it shows the presence of body fluids.

Every possum attacked by a cat must see a vet immediately. Recommended antibiotics are Amoxycillin or Baytril. The possum must be given a probiotic, such as ProN8ure (Protexin), to replace the lost gut flora. This is particularly important for ringtail possums because oral antibiotics tend to destroy more of the gut flora on which the ringtail's digestive process is dependent.

Get advice from your coordinator on the correct use and dosage of ProN8ure.

Brushtail possums normally respond well to antibiotics.

Due to their larger size, adult brushtails seldom suffer cat attack but are susceptible to the bites of dogs and other possums.



Blindness and cataracts

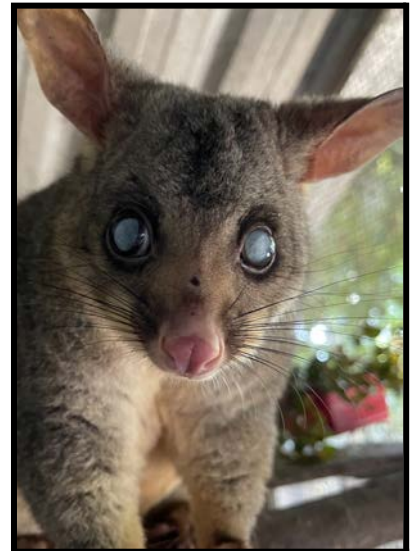
Blindness and deterioration of vision is not uncommon in both types of possum and is often difficult to detect.

Blindness should always be suspected if a possum is active during daylight hours, but not concussed, and appears to be very docile.

Vision impairment associated with head trauma can be temporary and sight can return after a few weeks.

Cataracts are hard to treat successfully. Unfortunately possums are usually [euthanased](#), even if only one eye is affected, as they will have difficulty coping in the wild.

Euthanasia is mandatory for permanent blindness. A blind possum (even if blind in only one eye) must not be released.



Broken, damaged or missing limbs

Normally a possum presenting with a fracture of any kind should be [euthanased](#). Considerable stress is placed on the possum by surgery and confinement in a plaster cast and splint, plus the necessary restriction for the time needed for the fracture to heal is considered inhumane.

Permanently damaged or missing limbs are serious as the possum probably cannot be rehabilitated and successfully released. It is sometimes kinder to euthanase the possum immediately.

Broken jaws in brushtail possums

You need to consult a vet about prospects for rehabilitation. Minor breaks in the jaw can be wired, but vets may not be prepared to undertake this level of intervention.

If a jaw is wired, intensive care will be required for several weeks. The pain and trauma that the possum will experience means that [euthanasia](#) is normally mandatory.

Burns from fire or hot surfaces

Burns can look superficial, however there can be significant underlying damage.

Take the possum to a vet immediately to assess the damage and to decide whether to treat or to [euthanase](#).

Hydration is vital.

Give VyLyte/Lectade/Vetafarm Spark Liquid for All Animals. Cooled boiled water may be safely given.

In most cases veterinary attention is needed and the vet will administer subcutaneous fluids.

If treatment is viable the possum will need immediate and ongoing rehydration and pain relief as well as topical treatment of the burnt areas.

Possoms with burns are difficult to care for and new carers need to work closely with their coordinator or an experienced carer.



Electrocution

Electrical burns are often associated with possums in urban areas. Burns are extremely painful and the paws will be damaged or blackened.

If the wound is old and has healed, and the possum has come into care for some other reason, it may eventually be released, particularly if it is a male.

Female possums need to be able to carry their joeys (sometimes up to three for a ringtail) on their backs so they need all their limbs and tail to be fully functional. Always discuss this with your coordinator and the vet.

A possum with wounds that are fresh and are suspected to be due to electrocution must be taken to a vet immediately. The extent of the damage, both internally and externally, the pain and stress to the possum and the potential for infection or gangrene, should all be considered when deciding whether or not the possum can be rehabilitated.

Hydration is vital. VyLyte/Lectade/Vetafarm Spark Liquid for All Animals can be given. In most cases veterinary attention is needed and the vet will administer subcutaneous fluids.

Eye injuries

Joey and juvenile possums sometimes suffer damage to the eyes from bird attack.

- If the eyes are injured, flush gently with a warm sterile saline solution.
- Do not put any substance other than a commercially-prepared saline solution into the eyes.
- Treat for stress, i.e. keep warm and quiet, administer fluids, and disturb as little as possible.



A possum presenting with an eye injury that will lead to the loss of sight in that eye should be [euthanased](#).

Exudative (stress) dermatitis

This skin condition is seen mainly in brushtails and is prevalent in the Sydney region. The exact cause is unknown but multiple factors are likely to contribute to the disease and progression of the lesions, including hypersensitivity, bacterial or fungal agents, trauma, skin parasites and stress.

It presents as minor to severe skin lesions with fur loss, affecting mainly the hindquarters, tail and eyes. Wild possums can be treated without capture by putting medication on food that is left out for them.



It can be treated with penicillin (injection or oral), clavulox or ceclor. It is not contagious, but the associated staph infection can be transmitted to humans through open wounds on the skin. Always keep open wounds on your skin clean and covered to prevent any type of bacterial infection.

The [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#) states that euthanasia should be considered in possums with severe exudative dermatitis, as prognosis for return to good health and successful survival in the wild is very poor.

For possums with exudative dermatitis, criteria for euthanasia are:

- more than 20% of its body is affected
- there is extensive scarring around the face
- movement is affected
- it is a subadult dispersing male
- no significant recovery after 14 days of treatment.

The welfare of displaced males, young or geriatric, in overcrowded urban areas should also be considered, as the prognosis for survival is very poor, and there is a high likelihood of recurrence of exudative dermatitis.

Injuries from motor vehicles and falls

The severity of the wounds must be assessed. If healing is likely to take more than a few weeks, it is probably kinder to [euthanase](#). Prolonged treatment is very stressful and the possum will lose its claim to its territory if it is absent for too long. The possum's chance of survival after release will be greatly compromised.

If there is paralysis or poor movement in any area (but no broken bones or spine) anti-inflammatory treatment should be considered and time given for possible recovery. Carers should watch for improvement for up to two weeks, but if there is no sign of improvement in this time the possum should be euthanased.

If the possum has no visible wounds, but is showing symptoms of concussion or shock, it should be treated for shock (warmth, quiet and darkness) and taken to a vet.

Maggots

Maggots can be found anywhere in the fur or in wet areas such as the eyes, mouth, pouch, cloaca or open wounds.

Carers should always inspect for maggots if a possum has been found lying on the ground, especially in warm weather.

- The eggs are laid in the fur and look like small creamy-coloured, sticky clumps. The individual eggs are small and you will only see them if you look carefully. They can be removed with a fine flea comb.
- When the eggs hatch they look like small worms (as small as a grain of rice) and they quickly move into orifices and open wounds.

Maggots can cause serious damage to a possum. Get advice from your coordinator or urgent veterinary treatment for severe infestations and if maggots are found in external orifices.

Poisoning

Poisoning is difficult to diagnose as the possum can present in poor condition but with no apparent injury.

Symptoms: pale nose and gums, frothing at the mouth, dilated pupils, smelly diarrhoea, immobility and lethargy, or panting and shallow breathing.

Poisoning is more common in brushtails. Always check if there are joeys in the pouch because they could die from ingesting their mother's milk.

If poisoning is suspected, take the possum to the vet immediately. Treatment varies according to the poison. Possums that have ingested rat poison can sometimes be treated with vitamin K injections.

Prolapse

This occurs when a possum's intestine is found protruding from its cloaca.

A possum with prolapse needs to be taken to the vet for treatment.



Sarcoptic mange

This is a skin disorder caused by mites. It is characterised by matted, dirty fur and may appear similar to [exudative \(stress\) dermatitis](#). It appears to be more common in south-western Sydney. It is very contagious to other animals, including humans.

Hygiene is important. Always wash your hands thoroughly after handling an infected possum.

Swollen paw syndrome in ringtail possums

In this condition one or more paws will be obviously swollen and there is often a 'constricted' appearance around the ankle. The paw may become gangrenous or be chewed off. The cause is unknown and treatment with antibiotics can be initially successful in reducing swelling. However the condition returns when antibiotic treatment ceases and [euthanasia](#) is recommended.

Tail injuries

The ringtail possum uses its prehensile tail as an anchor when feeding, moving and carrying nest material. Ringtails can survive if a small part of their tail is missing, however females would be greatly handicapped by the loss of full use of her tail when coping with the added weight of joeys.

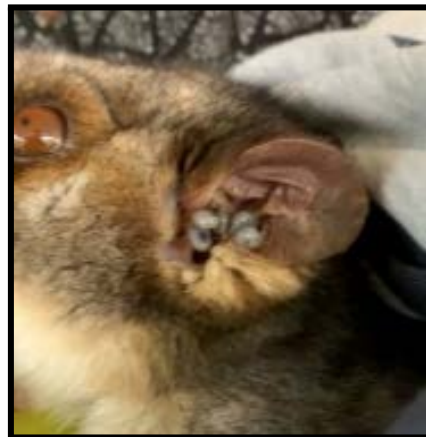
The brushtail possum's tail is also prehensile, but it does not depend on this 'fifth limb' to the extent that a ringtail does. However, if the possum has come into care because its tail has been bitten or broken off, then it may be kinder to [euthanase](#) it as its survival could be severely compromised when released back into the wild. If the tail has been missing for some time and the animal is well-nourished and groomed, it is obviously coping with the disability.

The [Code of Practice for Possums and Gliders](#) states that if there is loss of more than 30% of the tail, the possum should be euthanased.

Ticks

Possums often have ticks.

They can be found anywhere on the body, but are common around the ears and head, and are generally not a problem unless they present in large numbers or the possum is very unwell.



Nevertheless, all ticks on possums should be removed. If the possum has numerous ticks, contact your coordinator for advice regarding treatment. Ticks may be a sign of other problems.

[Tularaemia](#) is a recent problem associated with ringtails bitten by an infected tick.

Thrush

Thrush is a common infection in both ringtail and brushtail possums. It presents as wet-looking fur, red or orange coloured staining around the mouth, and sometimes diarrhoea.

Thrush is a zoonotic infection - it can easily infect humans who are in contact with the animal.

Thrush can be easily treated with Nilstat and by improving hygiene practises

To avoid infection:

- handle the possum with latex gloves
- make sure you have washed your hands thoroughly after handling, including under your fingernails.



Tularaemia

Tularaemia has recently (early 2020) been found in ringtails in Sydney but is still rare. It is associated with ringtails bitten by an infected tick. Ringtails will appear very sick, but there are few other outward signs or injuries. All cases need to be reported to Taronga Zoo's wildlife hospital.

If tularaemia is suspected, immediately take the possum to a vet for diagnosis because it is a highly infectious, zoonotic disease (known to be passed on to humans).

Be extremely careful with hygiene and always wear latex gloves when handling the possum. Humans can also be infected from handling a dead possum with tularaemia. Refer to the NSW Health [Tularaemia fact sheet](#).

Basic care

Refer to section 4. *Pain relief, Wound care and Bandaging* in [Initial Treatment and Care Guidelines for Rescued Possums and Gliders](#).

Wildlife rehabilitators must ensure they can provide for the essential needs of possums undergoing rehabilitation, and that they have the resources to adequately prepare the possum for release back into the wild.

Wound care and medications

It is important to keep wounds clean and open.

- Wounds may be bathed with saline solution. Betadine and water solution is quite strong and should be used only on the advice of a vet or your coordinator.
- Do not stress the possum by over-cleaning - once or twice a day should be enough. If the possum is on antibiotics, regular cleaning may not be required. An alternative to cleaning is to simply spray the wound with Ilium Oticlean.

It is important to thoroughly clean any puncture wounds.

- Cut away matted and dirty fur to give you better access to the injury.
- Antibiotics can be difficult to administer, so long-lasting injections are preferred.
- Injections are preferable for ringtails as oral antibiotics tend to destroy more gut flora on which the ringtail's digestive process is dependent.
- Do not give injections to any possum unless you have been properly trained as it can cause significant stress and additional injury to the animal if performed incorrectly.

Above all, allow the possum to rest quietly to reduce stress.

Amoxil pink drops are the easiest oral antibiotic to administer for brushtails as most like the taste and will lick the medicine off the end of the dropper. Although other drops may be labelled as 'palatable', they don't seem to be as readily accepted and may have to be mixed with food.

Medicines can be mixed with a possum's favourite food to ensure that it is not wasted and that the possum gets the required dosage.

- The food/medicine mixture should be offered when the possum is hungry and before any other food is offered.
- Restrict the amount of the favourite food to ensure that the possum does not tire of it and is always keen to eat when it comes to medicine time.
- Surplus food should be removed from the cage in the morning.

Follow the advice of the vet or your coordinator on the care and specific requirements of the individual possum.

This is particularly important if you suspect your possum might be a joey. Joeys have special requirements for heating, feeding and toileting and can quickly die if the correct procedure is not followed.

Until you have completed the Basic Possum Course you will be unable to care for joey possums. You may be able to care for juveniles for a short period of time, at the discretion of your coordinator.

Monitoring

Refer to section 6.2 *Monitoring* in the [Code of Practice for Possums and Gliders](#).

It is important to check the health of a possum undergoing rehabilitation so concerns can be promptly identified and managed. The type and frequency of monitoring will vary with the species, age and stage of development, type of injury or illness and required treatment.

Monitoring includes:

- visually assessing body condition
- determining food intake levels
- noting quantity and quality of scats and urine
- determining climbing mobility
- looking for changes in behaviour. e.g. signs of aggression and stress
- noting fur and skin condition
- checking for signs of injury, disease and parasites.

Monitoring and weighing frequency:

- juvenile, subadult and adult possums in intensive care must be monitored at least twice a day
- juvenile, subadult and adult possums in intermediate care must be monitored daily and weighed weekly
- subadult and adult possums in pre-release care must be discretely monitored daily and weighed weekly if they can be caught without causing stress, as they have begun the dehumanising phase of their rehabilitation.

Each possum should have a [husbandry plan](#).

Stress

Remember that stress can kill or exacerbate an existing injury. Ringtail possums are particularly susceptible to stress and may simply drop dead because of it. Minimising stress must have absolute priority.

- Always keep possums warm, in the dark and quiet.
- Do not handle them more than necessary.
- Do not show the possum to neighbours, children or friends.
- Keep the possum away from all household pets.

If you really care about the possum, you will protect it from all unnecessary stress.

Signs of stress vary but can include:

- aggressive behaviour - some ringtails will spring at you when frightened
- lethargy
- repetitive paw licking is a sign of severe stress.

Feeding/Food

Refer to section 7. *Husbandry* in the [Code of Practice for Possums and Gliders](#).

Ensure that the possum has a feeding and watering regime that encourages rapid recovery, supports growth in juveniles, and assists with maintaining foraging behaviour necessary for survival in the wild.

Possums must be provided with a balanced and complete diet that supports growth and development and is appropriate for the species, size, stage of development, mobility and physiological status of the animal.

Possums should always have fresh water and a wide variety of fresh native foliage supplied daily as their primary food source.

Insects such as cicadas, moths, lacewings or mealworms can be given.

Non-native foliage and supplementary foods should be given sparingly.

Possums must not be fed:

- **brassic**as (such as bok choy, broccoli, cabbage, cauliflower or kale) as it could result in gastric dilatation, bloat and possible kidney and liver damage
- **legumes** (such as peanuts, green beans and peas) are toxic and should not be fed
- **meat**
- **dairy products**
- **cakes or biscuits**
- **cow's milk** (even in an emergency)
- **roses or other ornamental plants** as they are not part of the natural diet and may encourage the possum to raid people's gardens.

Sick and emaciated ringtail possums may be offered 'pap'. Pap is the soft daytime poo of an adult ringtail which they and their joeys consume. It contains good bacteria and can be made into a poo shake for a joey or a compromised adult possum with diarrhoea or caecal stasis. You must refer to an [experienced possum carer](#) to determine the appropriate mixture for each possum.

Adult brushtail possums with a mouth injury or poor appetite can be given unsweetened apple purée with Wombaroo High Protein Supplement, Biolac (2 tablespoons), or Wombaroo Lorikeet Mix (1 tablespoon).

Watch the [Foliage for Food](#) video

Native foliage safe for possums

Acacia (Wattle)	Angophora (Gum)	Banksia
Callistemon (Bottlebrush)	Calytrix (Fringe Myrtle)	Eucalyptus (but not red stemmed new growth)
Ficus (fig)	Grevillea	Hakea (Needlebush)
Kunzea (Tick Bush)	Leptospermum (Tea Tree)	Melaleuca (Paperbark)
Syncarpia (Turpentine)	Syzygium (Lilly pilly)	

Non-native foliage safe for possums

Crepe Myrtle	Liquidambar	New Zealand Christmas Bush
Photinia	Plumbago	

Plants TOXIC to possums - IF IN ANY DOUBT DO NOT FEED

Avocado	Azalea	Brassicas (such as bok choy, cabbage, cauliflower, kale or broccoli)
Camphor Laurel	Cassia	Eucalyptus (red stemmed new growth)
Frangipani	Hop Bush	Hibiscus
Hydrangea	Illawarra Flame Tree	Kangaroo Apple
Lantana	Legume - any plant in the legume family (has pea-like flower such as green beans and peas)	Nightshades - e.g. Brugmansia
Oleander	Pepper Tree	Privet
Tomato plants	White Cedar	

For a full listing with colour photographs see [Flora for Wildlife in Care](#) by Bev and Ian Young. Refer also to [Flora for wildlife in care](#) and [Natural food for wildlife](#) in care in this manual.

Feeding ringtail possums

The ringtail is a herbivore and hind gut fermenter so fresh tips of a variety of native foliage must be supplied daily. This is a vital factor in maintaining the health of their digestive systems.

Ringtails are fussy and will only eat the fresh tips of foliage. Some Lilly pilly berries can be given.

They do eat flowers, but leaves are the most important source of food and can be found all year round.

Flowers should be given sparingly to ringtails over 250g due to the high sugar content.

Their main diet must consist of fresh native foliage - mainly the foliage that is found in the area where they will be released.



Fruit has a high sugar content that can cause fermentation and bloat often resulting in death. A very small amount of apple (1/4 small apple) can be given to ringtails over 250g. Ringtails under 250g must not be given any fruit.

Starchy foods such as oats and bread must not be given as the digestion of these encourages the growth of enzymes contraindicated in the digestion of eucalyptus and native leaves. The enzyme can prevent proper digestion of native leaves after release.

Small amounts of vegetables can be given as a supplement to foliage, not as a substitute. **Suitable vegetables:** carrots, celery, pumpkin, spinach and sweet potato/kumara.

A few raw almonds a week or 1 day can be given to ringtails over 250g only.

Extra protein may be given such as boiled egg, or insects like moths, cicadas or lacewings.

Joeys under 250g must not be given supplementary foods due to the detrimental effect on their developing gastrointestinal health.
Supplementary food must be strictly limited to no more than 5% of the total diet for ringtails over 250g as this does not mimic their wild diet.

Feeding brushtail possums

Brushtails will eat a wider variety of food including native plants, insects such as moths, cicadas or lacewings, fruit and vegetables.

- **Suitable vegetables:** carrot, corn, pumpkin, silverbeet, sweet potato/kumara and zucchini.
- **Suitable fruit:** apples, bananas, berries, grapes, melons, mandarins, oranges, pears and peaches.
- **Other supplements that can be given in small amounts are:** rolled oats, boiled egg and almonds (a few a week).



Housing

Refer to section 8. *Housing* in the [Code of Practice for Possums and Gliders](#).

Ensure that a possum undergoing rehabilitation is housed in an enclosure that keeps it safe, secure and free from additional stress. See also [Carry-cages, cages and aviaries](#).

Intensive care housing (indoors)

Intensive care housing is used to facilitate frequent monitoring, treatment, feeding and rehydration during the period immediately after coming into care and until the possum is stabilised.

Intensive care housing must meet the following standards:

- there must be sufficient space for the possum to sit upright, to stretch its body and limbs and to move away from urine and faeces, but not enough space to climb
- intensive care enclosures must have the following floor dimensions:
 - ringtail possums - at least 0.35 metres long by 0.3 metres wide. Please note that rescue baskets (given out at the RCC) do not meet these dimensions, juvenile or adult possums should not be kept in a rescue basket for longer than 12-24 hours.
 - brushtail possums - at least at 0.5 metres long by 0.4 metres wide.



- A constant temperature appropriate to the possum's stage of development or the nature of its illness or injury.
 - For the correct temperature level for heat mats according to weight, refer to the Biolac or Wombaroo Feed Charts on [Wild Apricot](#).
 - The ambient temperature for an adult ringtail in shock should be brought up to about 33°C (just lower than their normal body temperature of 34°C).
 - The ambient temperature for an adult brushtail should be brought up to about 34°C (just lower than their normal body temperature of 36.5°C).
 - A sub-adult or geriatric ringtail possum should be brought up to one or two degrees LESS than 33°C and a sub-adult or geriatric brushtail possum should be brought up to one or two degrees LESS than 34°C.
 - **A rapid change of temperature must be avoided.** Gradually increase the temperature over a few hours.
 - The temperature must be regularly monitored using a thermostat, with minimal disturbance to the possum. Refer to [Heating](#).
 - Heat mats must not be in direct contact with the possum to avoid potential contact burn injuries.
- The possum (excluding pouch young) must be able to experience a light–dark cycle that replicates outside conditions.
- There must be adequate ventilation without allowing excessive draughts.
- Enclosures must be designed and positioned to reduce visual and auditory stimuli (e.g. by covering it with a towel and placing it in a quiet room).
- Enclosures must be a minimum of 0.8 metres from the ground.
- Enclosures must have easy access for the carer to keep it clean, and to medicate and assess the possum.
- Use soft substrate such as towels, blankets, lamb fleece and sheeting that is replaced when soiled.

At least two types of food should be available in the cage, such as native foliage and banana/apple or small bowl of oats for a brushtail, or native foliage and small amounts of suitable vegetables for a ringtail over 250g.

Fresh drinking water and [food containers](#) should be attached to the cage, or in spill-proof dishes on the floor to provide suitable access. Very sick possums may not be able to get to the food if it is placed too far from them.

Sick or injured possums may be kept overnight in a rescue basket or cat carry-cage.

Due to their size an adult brushtail will need a larger enclosure such as a dog crate.



Unless a juvenile or adult possum is extremely ill or needs to be restrained, do not keep it in a rescue basket or carry-cage for more than 12-24 hours. It should be moved into an intensive care cage or an intermediate care cage depending on its needs.

Heating

The [Code of Practice for Possums and Gliders](#) section 8.2.4 states that electrical heat sources must be regulated by a thermostat.

There are several thermostat products on the market.

Some thermostats are expensive and are not easy to set up, with overly-sensitive dials needing frequent checking and resetting. Rescue basket with heat mat and thermostat set-up.



The Warm.A.Pet Heat Pad has a voltage/heat setting on the power supply that controls the amount of heat. To comply with the Code of Practice and to safely avoid fatalities it should always be used with a thermostat.

The Reptile One Ezistat Thermostat is stocked in the Sydney Wildlife Office and complies with the Code of practice. It is recommended because it is reliable and is easy to use.



A heat pad may be positioned under the cage or inside the cage under towels if the possum is **very ill or in shock**. This is particularly important in the colder months. Ensure heat pads are not in direct contact with the possum to avoid potential contact burn injuries.

The temperature probe must be secured at the bottom of the cage under a juvenile or adult possum. Check the temperature regularly and adjust accordingly. Once established, the thermostat will ensure the correct temperature day and night and you can be confident that the possum will not be too hot or too cold.

Symptoms of overheating or a high temperature are:

- licking front legs
- bright pink ears that are warm to touch
- panting, open-mouth breathing.

Intermediate care housing (indoors/outdoors)

Intermediate housing is used to provide a mobile possum with enough space to allow some physical activity while enabling it to be readily caught for monitoring or treatment.

Intermediate care housing must meet the following standards:

- provide sufficient space for the possum to move about freely while being conveniently sized for capture
- a possum must experience a light-dark cycle that replicates outside conditions, such as placing the enclosure in a well-lit room or placing it in a sheltered area outside
- a cage that is less than 1.5 metres long by 1.5 metres wide and 1.5 metres high must be placed at least 0.8 metres off the ground
- intermediate care enclosures for ringtail and brushtail possums must have floor dimensions that are *at least 1 metre long by 0.6 metres wide and a height of 1.5 metres.



- an outside enclosure needs to be sheltered from rain, wind and sun
- the substrate must be absorbent and easily cleaned or replaceable
- particle substrate (e.g. straw, wood shavings, or sawdust) must not be used
- electrical heat sources must be regulated with a thermostat; see [Heating](#)
- it must contain habitat elements that enable the possum to perform a range of natural behaviours, for example:
 - a place for the possum to hide such as a nest box or drey
 - fresh browse and foliage for nest and drey building
 - at least three climbing branches of different textures and heights
- all food and water containers and nest box or drey must be secured to the side of the housing or secured on a shelf above the floor; they must not be placed on the floor of housing - never encourage a possum to go to the ground to find food.

* If more than one possum is in the intermediate enclosure it should be increased by 10% of the measurements included in the standards.

The larger cage will allow you to offer the possum a greater variety of food, branches of various sizes to climb on, [a 'vase' for foliage](#) and shelter within the cage. Provide water in a D cup attached to the side of the enclosure.

Both indoor and outdoor cages still need to be completely covered with towels or sheets to prevent draughts, or to discourage children or pets from peering into the cage. If the possum has an open wound, covering the cage will help to protect it from flies, mosquitoes and maggots.

Make sure you securely fasten the doors as possums are good at escaping. For small brushtails and ringtails, the wire mesh will need to be no more than one-centimetre

square to prevent escape. A large parrot cage will need to be covered in the same mesh in order to contain them.

Give the possum somewhere to hide inside the cage

- **An artificial drey for ringtails**

Dreys can be made from two wire planter baskets joined into a sphere and filled with coconut fibre. The drey should be suspended high up.



- **A small box such as a wine cask for small brushtails**

Make sure the opening is large enough. Cover the cask with masking tape to further enhance its weather resistance. The box should be secured high up.



Nest boxes and dreys must:

- be waterproof
- provide privacy
- be the appropriate size for the species and number of animals
- minimise exposure to extremes of temperature
- contain suitable insulation
- be constructed from breathable products (e.g. exterior-grade hardwood, plywood or hollow logs and not plastic)
- not be made from plastic or terracotta pots.

Never house possums in direct sunlight. They are nocturnal and prefer to be in darkness. Do not be surprised if a possum appears to be sleepy or lethargic during the daytime. This is perfectly normal. They should be left alone to rest during daylight hours.

Never house adult possums together as they can be aggressive to each other and will find company stressful, particularly if they are ill.

Natural foliage may be kept fresh by using a plastic container such as a vase; this will need to be attached to the side of the cage to stop the possum knocking it over. For young juveniles ensure that [foliage containers](#) have screw-on lids with drilled holes to prevent them from falling in and drowning.

Clean the cage floor daily and remove any old food or soiled bedding. Replace branches and clean the cage between possums. Refer to [Disinfection](#).

Pre-release housing (outdoors aviary)

The objective of pre-release housing is to give the possum the opportunity to regain its physical condition, acclimatise to current weather conditions, and practice natural behaviour. At this stage of rehabilitation, interactions between the possum and humans will be greatly reduced. Refer to [Aviaries](#).

Pre-release housing must meet the following standards:

- there must be sufficient space for the possum to move about freely and express a range of natural behaviours, for example: brushtail possums need to run about the enclosure in short bursts
- it must provide areas where the possum can gain exposure to prevailing weather conditions and areas where it can shelter
- it must contain habitat elements that enable the possum to perform a range of natural behaviours. For example:
 - branches of different thickness and textures and to improve climbing skills
 - natural fibre ropes or a log, with a diameter of greater than two centimetres, hung vertically and horizontally so that it swings to encourage agility and mobility
 - foliage and browse for drey and nest building
 - ringtails require bark and foliage for drey building.

- pre-release housing must provide hanging foliage, branches or logs for the possum to climb if they fall to the ground
- foliage, browse and bark must be positioned in such a way as to encourage exercise
- all food and water containers must be secured to the side of the housing or secured on a shelf above the floor; they must not be placed on the floor of housing
- a nest box or drey must be at least 1.5 metres off the ground
- there must be at least two containers for both water and food
- pre-release housing must be designed and positioned so that exposure to humans is kept to the minimum required for monitoring, feeding and cleaning
- pre-release enclosures for ringtail and brushtail possums must have the following floor dimensions: 1.5 metres long by 1.5 metres wide and a height of 1.8 metres. If more than one possum is in the pre-release enclosure it should be increased by 10% of the measurements included in the standard above.

All orphaned joeys raised in care must spend time in pre-release housing before release. Any animal that has been in care for more than a week must go into pre-release housing before release to regain fitness.



Release

Refer to section 9. Suitability for *release* and section 10. *Release considerations* in the [Code of Practice for Possums and Gliders](#). Refer to [The ethics of release](#).

A possum must be released no more than 150m from where it was found.

Possums must not be released until they are physically and behaviourally ready. They must be healthy and fit enough to survive in the wild and have the skills to find food, avoid predators, interact normally with their own species and navigate through their natural environment.

A possum must be released as soon as it is ready and at a time that minimises stress and maximises its chances of survival in its natural habitat.

Readiness for release must be confirmed by an [experienced possum rehabilitator](#).

Possums must be released at a time of day that enables them to immediately investigate the environment. The best time for release is at least one hour after dark. Possums must not be released during the day. They are unable to see well during the day, become disoriented and stressed and may be attacked by birds or other predators.

Before release always check that the weather conditions will be favourable for at least the next 24 hours. Do not release if it is windy or if bad weather is forecast.

Possums must be returned to the area where they were found. Ringtails live in family groups, and brushtails are particularly territorial. A possum spends its life in a particular area and is trained by its parents in where to find food and what dangers to avoid.

If the location where the possum was found is an unsuitable environment for release, the possum must be released in a suitable environment as near as possible to this location without transporting it across a physical boundary that it would not normally cross (e.g. a river) or further than it would normally move. For example:

- adult brushtails and ringtails - 150 metres from the rescue location
- hand-raised brushtails and ringtails must remain within 50 kilometres of the rescue location.

If there is no information about where the possum was found, it must not be released.

A possum can be released in a national park only when written consent for the release has been obtained from the relevant NPWS Area Manager.

Possums that are moved to unfamiliar territory find it difficult to cope and generally die. If you believe that a possum cannot be returned to its place of origin, you must discuss this with your coordinator. Do not relocate suburban possums in bushland.

Nest boxes or dreys must be supplied in locations where there are no natural tree hollows or areas affected by bushfire. They must not be placed on a solitary tree or a deciduous

tree, they must be at least 3 metres from the ground for nest boxes and 2 metres for dreys and positioned so the possum can enter or exit easily (e.g. on a tree trunk with branches nearby).

Adult possums that have been in care for a few days may be released at the base of a tree, close to where they were found. Make sure that the possum climbs away before leaving the site.

Possums that have been in care for longer should be released in a familiar box or drey as they may have lost their home to another possum.

This is an interim step that provides them with some protection while they adjust to their surroundings.



If possible transport a possum secured in its usual nest box or drey to reduce stress.

However, a box or a drey with a possum inside can be heavy to lift and hard to fix to a tree and movement may cause panic resulting in the possum pushing its way out and disappearing off into the trees.

- Keep the possum in a pillowcase in your rescue basket while you erect the box or drey.
- Place the box or drey in a sturdy tree in a sheltered position with dense foliage, high enough to prevent human access from the ground.
- Keep the exit hole sealed off, then gently tip the pillowcase into the box, or guide it through the entrance hole of the drey.
- Before you leave, make sure that the possum will be able to emerge later.

Do not force the possum to leave immediately, leave it alone. Generally, it will have moved on by the following morning.

Do not leave food at the base of a tree as it will encourage the possum to come down to the ground, making it vulnerable to predators. Never encourage a possum to come to the ground for food.

Hard release

This is when an adult or wild juvenile possum that has been in short-term care is released back to its point of rescue and is not given temporary post-release support. It must fend for itself.

Soft release

Hand-reared possums must be provided with temporary post-release support. They should be housed at the release site for at least two weeks before soft release commences.

Possums that have been in care for extended periods of time, or being released back into recovering firegrounds, are provided with temporary post-release support.

This may include supplementary feeding, shelter provision, and protection from predators and extreme weather.



- **It is best to do your first release with your coordinator or an [experienced carer](#).**
- **The time and effort put into care must be followed by careful release planning.**
- **There are many factors to take into consideration for a release to be successful and give the possum the best chance of survival.**

REPTILES

- **Identification/Misidentification**
- **Non-native and introduced reptiles**

- **LIZARDS**
 - **Identification**, Blue-tongued lizard, Common garden skink, Eastern water skink, Eastern bearded dragon, Eastern water dragon
 - **Rescue**, Useful rescue equipment, Transport, Handling lizards, Lizards in danger
 - **Common injuries and diseases**, Cat attack, Dehydration, Dog attack, Lizard caught in a sticky trap, Yellow fungus disease

- **FRESHWATER TURTLES**
 - **Identification**, Eastern long-necked turtles, Sydney basin short-necked turtles
 - **Rescue**, Handling turtles, Turtles in danger
 - **Common injuries and diseases**, Dehydration, Fractured shell, Yellow fungus disease

- **BASIC CARE OF REPTILES**
 - **Cleanliness and hygiene**
 - **Husbandry plan and record keeping**
 - **Feeding/food**, Feeding lizards, Feeding dragons, Feeding turtles
 - **Housing**, Housing lizards, Housing dragons, Housing turtles, Heating, Ultraviolet light
 - **Release**, Releasing lizards, Releasing turtles

Identification/Misidentification

Australia has an extremely rich and diverse range of reptiles and many species can be found in the Sydney area. If you are lucky enough you may encounter some of these fascinating creatures.

Unfortunately, many come into care because their native habitat is being destroyed through increasing urbanisation, introduced species (especially cats and dogs) and close encounters with motor vehicles and lawn mowers.

These creatures are often misunderstood or feared, and have been unnecessarily persecuted. Reptiles play an extremely important role in the ecosystem and have evolved over millions of years into highly specialised creatures.

As wildlife carers it is our responsibility to assist any injured reptiles.

Misidentification is common

MOPs will often call the Office reporting a snake when it is actually a blue-tongued lizard.

- The first question to ask is "Does it have legs?". If it has legs it is not a snake and the MOP can relax.
- If it is a snake it never blinks; snakes don't have eyelids. If it blinks it is almost always a lizard and the MOP can relax.
- Understandably the MOP may be frightened and won't want to get too close.
- MOPS must not interact with an unidentified reptile.
- Ask for a photo if it is safe to do so. It may help, but you will probably need to edit it to see what it really is.
- Be patient and understanding. People who are not familiar with blue-tongued lizards might easily mistake one for a snake.

Correct identification is really important

- We never guarantee the identity of a species from a bad photo over the phone.
- Rescue Line operators will always get advice from a reptile coordinator if they are unable to positively identify the reptile.
- You may rescue lizards but will not be asked to rescue a snake or a monitor.

Non-native and introduced reptiles

If identification suggests that a reptile is either not native to Sydney or is an introduced species you must refer it to your reptile coordinator for advice. It must not remain in the wild, be released or [euthanased](#).

Species that are native to Australia, but not to Sydney, include escaped pets such as the central bearded dragon or shingleback lizard.

Introduced reptiles are a biosecurity issue and must be immediately quarantined and reported to the [Department of Primary Industries \(DPI\)](#). In most cases the DPI will want to trace the reptile's origin and will want details of the capture site and circumstances. Accurate records are essential. Examples include tortoises, red-eared slider turtles and corn snakes.

It is an offence under the National Parks and Wildlife Act to release non-native animals into the wild as they have a detrimental impact on native fauna.

Australian reptiles that are not native to Sydney can be rescued but must not be released. Refer them to your coordinator.

The four main types of reptiles that are found in the Sydney metropolitan area are turtles, lizards, snakes and monitors.

Only members who have completed the Snake catch-and-release course are authorised to rescue and care for snakes and monitors (goannas). Members who have not completed this course are authorised to rescue and care for lizards and turtles.



LIZARDS

- **Identification**
 - **Blue-tongued lizard**
 - **Common garden skink**
 - **Eastern water skink**
 - **Eastern bearded dragon**
 - **Eastern water dragon**
 - **Rescue**
 - Useful rescue equipment
 - Transport
 - Handling lizards
 - Lizards in danger
 - **Common injuries and diseases**
 - Cat attack
 - Dehydration
 - Dog attack
 - Lizard caught in a sticky trap
 - Yellow fungus disease
- Refer to **BASIC CARE OF REPTILES** for: **Cleanliness and hygiene, Husbandry plan and record keeping, Feeding/food, Housing, Heating, Ultraviolet light and Release.**

Identification

Lizards are usually identified by the presence of limbs, an external ear opening and a fleshy tongue. Exceptions to this include limbless lizards and earless lizards.

There are four families of lizards in the Sydney region:

- geckos (*Carphodactylidae* family)
- skinks (*Scincidae* family)
- legless lizards (*Pygopodidae* family)
- dragons (*Agamidae* family)

The main types of lizards you will encounter are blue-tongued lizards, common garden skinks, eastern water skinks, eastern bearded dragons, and eastern water dragons.

Blue-tongued lizard

(*Tiliqua scincoides*)

Blue-tongued lizards are commonly found throughout eastern and northern Australia and are easily recognisable by their deep blue tongues. Their natural habitat consists of woodlands and grasslands but they do well in urban environments.

The blue-tongued lizard is the largest of the skinks.

They are territorial; the territory of a male can cover over half a kilometre. Females give birth to live young that are precocial (can fend for themselves).

They eat insects, slugs, snails, vegetation, berries and flowers. Adult length is up to 60 cm.

They are harmless and will hiss but rarely bite.

They don't have teeth; they have hard gums. When they do bite they tend to hang on and can cause bruising or bleeding.

The best way to dislodge a blue-tongued lizard when bitten is to place it on the ground so that it feels fully supported and it will generally let go on its own.



Many little skinks are found in Sydney including the common garden skink, the eastern water skink, the delicate garden skink, and the wall skink.

Common garden skink

(*Lampropholis guichenoti*)

Common garden skinks are harmless, small fast-moving lizards, and commonly seen when it is warm and sunny. They eat slugs, crickets, cockroaches and other small insects that are commonly found in gardens. The young hatch from eggs. Adult length is between 9 and 14 cm.

Like the blue-tongued lizard, they are good residents to have in your garden.



Eastern water skink

(*Eulamprus quoyii*)

Eastern water skinks are commonly found in forests, parks and urban gardens in eastern Australia. They eat aquatic insects, snails, tadpoles, small fish, smaller lizards and native fruit. Females give birth to live young. Adult length is between 25 and 30 cm.

These harmless skinks are also known as the golden water skink.



Eastern bearded dragon

(*Pogona barbata*)

The eastern bearded dragon is often confused with the frill-necked lizard of northern Australia; it will puff up and raise its beard when frightened or startled and expose its bright yellow inner mouth. It should be noted that if the interior of the mouth is not yellow then it is not native to the Sydney area and should not be released.

The eastern bearded dragon is a relatively large, common, semi-arboreal lizard found throughout the Sydney area. It inhabits dry woodland, often basking on logs where its camouflage protects it from predators.

- Its colour can vary from yellowish brown to dark brown above, to a uniform grey, with a creamy belly; the tail is often banded.
- It will bite if carelessly handled.
- Eastern bearded dragons feed on insects, flowers and soft herbage.
- Adult length is between 50 and 60 cm.



Dragons can lose condition rapidly and become malnourished. This can be noted by checking the base of the tail. If it is not round and plump but looks 'boney' then the dragon is in poor condition.

Eastern water dragon

(*Intellagama lesueurii*)

The eastern water dragon is a large, common, semi-aquatic, arboreal dragon that frequents the streams and rivers of eastern Australia. It is more often heard than seen when it plops into the water from its basking position.

Water dragons are good at climbing trees and like all lizards bask in the sun. When disturbed they drop into the water and swim to the bottom – where they can stay until the danger passes or for up to 60 minutes. Adult length is up to 1 metre (two-thirds of it being its tail).

In care, water dragons need enough water to fully submerge themselves. They will rarely eat while being watched.

Water dragons are very territorial and tend to be part of a colony. They are fast and strong, capable of inflicting deep wounds if handled carelessly.

Water dragons are grey or grey-brown above, typically with a series of obscure, blackish, transverse bars.

The belly is cream, with mature males being red to orange on the chest and upper belly. The female belly can be slightly pink.

A distinct, blackish, temporal streak or band is present along each side of the head commencing just behind the eye.

They have raised vertebral spines that crest over the neck and continue along the spine.

Average adult size is 80 cm.



Water dragons feed on a variety of insects and aquatic organisms, including frogs, as well as other small terrestrial vertebrates. They will also eat fruit and berries.

As they bathe daily and defecate in the water, the water will need to be changed daily if not more frequently. Water dragons generally rehabilitate better in a large enclosure such as an aviary and they need branches to lie on.

Their enclosure should have at least eight hours sun exposure and they should not be kept with birds.

Rescue

The [Code of Practice for Injured, Sick and Orphaned Protected Fauna](#), June 2011 (Code of Practice for Fauna) has standards and guidelines for the rescue and care of native animals.

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Refer to section 5. *Rescue* and section 6. *Transport* in the [Code of Practice for Fauna](#).

Your safety, the safety of MOPs and the safety of animals is paramount at all times.

- Identify possible risks and take steps to avoid them.
- Understand your capabilities and don't take risks.
- Wear disposable gloves if there is a risk of disease transmission.
- Get advice from your coordinator if you are in any doubt as to what to do.
- Never ask a MOP to assist in a rescue or to handle the reptile. They can hold an open towel to block an escape route but they must not be involved in capturing or handling the reptile.

Useful rescue equipment

- Rescue basket, pet carrier or cardboard box.
- Towels.
- Cable clamps are efficient for keeping a reptile contained in a pillow case. If you don't have a cable clamp, a rubber band will do.
- Pillow cases are ideal for making lizards feel safe and concealed.
- Pliers, scissors and wire-cutters for freeing lizards that have become entangled in netting or mesh.
- Gardening gloves - thicker gloves for rummaging around in a garden or garage and thinner gloves for catching a spiky dragon.

Transport

- Put the lizard into a breathable cloth bag (pillow case) and tie it off with a cable clamp or rubber band.
- Put the bag into an appropriately sized box, rescue basket or plastic storage container.
- Always transport in a clean and disinfected container. Never place a lizard in a container that has held dirt or other animals and that has not been thoroughly cleaned. You must avoid the risk of disease transmission into the wild population.
- To avoid overheating, never leave the lizard in a hot car or in direct sunlight.

Make sure the lizard is kept contained and quiet. Go straight home or straight to the vet. Refer to [Case Assessment](#).

Handling lizards

Lizards should always be supported from underneath and never turned on their backs.

- **Small lizards** can be picked up with one hand by placing the thumb and forefinger across the shoulders and curling around and underneath the front legs. The remaining fingers support the belly (smaller lizards can be herded or scooped into a container to avoid dropping their tails).

- **Blue-tongued lizards** should be picked up in a similar manner and then held with all limbs supported. Never pick any skink up by the tail as it may shed it as a defence mechanism.



- **Dragons** can be held by the base of the tail with one hand, while the other hand gently but firmly holds the neck and shoulders.

Dragons can inflict a serious bite and catching large specimens should only be attempted after suitable training.



Lizards in danger

Blue-tongued lizards and dragons often need to be removed from the road or moved out of reach of a dog. If uninjured, they can be relocated to a safer environment where there is some shelter such as rocks and shrubs.

People who have an irrational fear of a reptile cannot be talked out of wanting it removed. In this case it is probably in the best interests of the reptile to remove it.

Sometimes the MOP may reconsider if you explain that blue-tongued lizards are perfectly harmless and that they eat insects (including funnel-web spiders) and snails in the garden.

It is preferable that a territorial lizard is not relocated. It may be struggling to cope in an environment disturbed by urban development and has found refuge in the MOP's yard. Relocating it will be stressful; it will struggle to find water, food and shelter. Explain how to create a 'lizard friendly garden' with natural or artificial shelter for the reptiles. Shelter can take the form of rocks, bushes or even partly-buried short lengths of drain pipe.

Water dragons live in a colony and should not be removed from their group.

You must always get advice from your reptile coordinator before you relocate a lizard.

Common injuries and diseases

Most lizards come into care as a result of cat/dog attacks or injuries from lawn mowers and whipper-snippers, requiring veterinary attention.

Lizards with serious injuries should be taken to a vet for treatment without delay. Lizards respond well to treatment - however recuperation may take a long time.

Antibiotics will need to be considered where puncture wounds have been sustained or where there is an open wound.



Infectious disease and parasitic diseases in urban reptiles are uncommon but are on the rise due to environmental stressors.

Common problems include:

- hit by a car
- animal attack
- infected wounds
- whipper-snipper or lawn mower injuries
- missing limbs and digits
- skin infections
- fungal diseases - see [Yellow fungus disease](#)
- trapped in netting or on a sticky trap.

Cat attack

Young blue-tongued lizards and smaller varieties of skinks are prone to cat attack.

Even if the reptile is rescued before the cat kills it, these attacks are generally fatal without veterinary intervention and a course of antibiotics.



Dehydration

Identifying dehydration in reptiles is similar to most other animals. Symptoms are:

- sunken eyes
- skin that 'tents' when pinched
- general lacklustre/dull appearance of the skin
- lethargy
- pale and sticky oral mucosa.

Putting a dehydrated reptile into a shallow container of warm water to soak is often the best way to encourage it to drink.

- The water needs to be shallow enough for it to stand in without being submerged.
- Place a rock or other object in the container for the reptile to rest its head on.
- A bucket with a lid with holes is a suitable container to use.

When the reptile has soaked for about 20 minutes it should be housed in an enclosure with an appropriate temperature gradient. It must always have access to fresh water in a large heavy-based container that cannot tip over.

Reptiles should have between 10-40 ml of fluid per kg of body-weight each day. Oral rehydration is best. Hartmann's Solution is preferred for subcutaneous rehydration.

Administering subcutaneous fluids varies from dragons to lizards to turtles and will require veterinary attention or the assistance of an [experienced reptile carer](#).

Dog attack

This is a common injury for adult blue-tongued lizards.

- Losing part of a tail can be a problem if a large section has been torn off.
- Fat is stored in the tail for the dormant period (brumation) in winter.
- Your reptile vet or reptile coordinator will advise you as to the lizard's chances in the wild.
- If it is living in a friendly backyard with a good food supply it will survive and grow fat-storing tissue back on the end of the tail stump.



Note that the toes were missing on the hind left leg before the attack. This is not uncommon and is often caused by a bad skin-shed; the old skin tightens and dries around the digits cutting off blood supply. Blue-tongued lizards can cope in the wild if some toes or one limb are missing.

Before returning the blue-tongued lizard to its home territory, ask the MOP to secure lengths of polypipe or terracotta pipe under rocks at intervals at the base of a fence or to blend them into a rockery. The more the better. This will give the blue-tongued lizard 'panic-rooms' for shelter when domestic pets are roaming the garden. A dog that has never experienced the thrill of killing a lizard can be trained to ignore lizards, but even with training you can't always depend on some dog breeds.

Lizard caught in a sticky trap

Watch the [How to Remove a Lizard From a Sticky Trap](#) video

Watch the [Healthy Lizard Release After Sticky Trap](#) video

Yellow fungus disease

Nannizziopsis barbatae has been identified in lizards in Australia. Refer to [Yellow fungus and related diseases in Australian reptiles](#).

It is highly contagious. Contact your reptile coordinator immediately.

FRESHWATER TURTLES

- **Identification**
- **Eastern long-necked turtles**
- **Sydney basin short-necked turtles**
- **Rescue**
 - Handling turtles
 - Turtles in danger
- **Common injuries and diseases**
 - Dehydration
 - Fractured shell
 - Yellow fungus disease

Refer to **BASIC CARE OF REPTILES** for: **Cleanliness and hygiene, Husbandry plan and record keeping, Feeding/food, Housing, Heating, Ultraviolet light and Release.**

Identification

Freshwater turtles live almost entirely in water, where they consume and catch their food. It is natural behaviour for turtles to wander quite long distances over land, particularly during hot weather or drought.

In the Sydney area, the most common species of native turtle are the Eastern long-necked turtle and the Sydney Basin short-necked turtle. Other short-necked turtles in the Sydney metropolitan region include the Macquarie River turtle and Murray River turtle.

Eastern long-necked turtles

(*Chelodina longicollis*)

They are commonly found in creeks, rivers, dams and ponds in eastern Australia. No other species of long-necked turtle occurs naturally in the Sydney area. They are also known as the snake-necked turtle.

The long-necked turtle can be distinguished from all other Australian members of its family by possession of only four claws on the webbed front feet.

They are largely carnivorous, feeding on small fish, tadpoles, molluscs and crustaceans. Their very long necks are used to strike out to catch food.

- They have strong jaws and can bite if carelessly handled.
- Their colour is variable, from tan or rich brown to dark brown or black above and white, cream, yellow or brown below.



Females lay up to ten or more eggs in a hole excavated in the bank of its stream or swamp, usually in early summer.

The upper shell is called the carapace and the lower shell is the plastron. The segments are called scutes. Shell length is around 25 cm. The plastron is notably wider at the forelegs while all other species have an almost oval plastron.

Sydney basin short-necked turtles

(*Emydura macquarii*)

- Sydney basin short-necked turtles eat aquatic plant material, invertebrates, and dead fish.
- The young hatch from eggs.



Get confirmation from your coordinator or an [experienced reptile carer](#) on the identification of any turtles you rescue or care for because the care requirements for long-necked and short-necked turtles can differ.

Rescue

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As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Refer to section 5. *Rescue* and section 6. *Transport* in the [Code of Practice for Fauna](#).

Your safety, the safety of MOPs and the safety of animals is paramount at all times.

- Identify possible risks and take steps to avoid them.
- Understand your capabilities and don't take risks.
- Wear disposable gloves if there is a risk of disease transmission.
- Get advice from your coordinator if you are in any doubt as to what to do.
- Never ask a MOP to assist in a rescue or to handle the turtle. They can hold an open towel to block an escape route but they must not be involved in capturing or handling the turtle.

Handling turtles

When you pick a turtle up its legs will start paddling. Depending on the size of the turtle, it can push your hands away with considerable force and can scratch you.

- There are two main methods of holding a turtle.
 - The first is to have one hand on top of the shell with the other hand underneath.
 - The second is to hold the turtle in a pincer grip from the rear (thumb on top shell, fingers on bottom shell).
- Do not pick a hatchling up by the sides of the shell; the shells are soft and too much pressure can injure a young hatchling.
- Turtles have defensive musk glands and can squirt a stinking liquid that has a persistent odour. Wear disposable gloves.
- It will wriggle so be careful not to drop it.
- It may also try to bite, so hold it well away from your body and keep track of where the mouth is.

Watch the [Handling Long-necked Turtles](#) video

Turtles in danger

Sydney Wildlife often receives calls from people who have found a turtle in the park, beside the road or in their backyard. They think it is a problem because the turtle is far from water.

- This is not the case and if the turtle is not injured it can just be moved out of any immediate danger (off the road) and allowed to continue on its way.
- If found in the garden, the turtle can just be left, providing that there are no cats or dogs that are likely to hurt it.

If the turtle needs to be relocated to a safe place, take it to the nearest bushland area and release it, preferably near a water source.

Turtles that could be escaped pets should not be released. The signs of a pet turtle include it being overly gregarious or being painted.

Freshwater turtles can be washed down rivers during floods and can be mistaken for marine turtles if they are found on a beach.

- Freshwater turtles have webbed toes and claws, marine turtles have flippers.
- Do not put a freshwater turtle in the ocean, the salt water will kill it.
- Different turtle species live in different waterways; it is critical for their survival to return them to the correct habitat.

Common injuries and diseases

Dehydration

See [dehydration](#) in the Lizard section.

Fractured shell

This is a common injury for turtles and is often caused by vehicle collisions, dog attacks and lawn mowers. The shell has good healing properties but is extremely sensitive.

Antibiotics are essential to prevent infections and painkillers are needed to alleviate stress.

Exposing the fracture to water may increase the risk of infection; the turtle may need to be 'dry-docked'.



The turtle must be taken to an experienced vet or Taronga Zoo's wildlife hospital for treatment.

Yellow fungus disease

Nannizziopsis barbatae has previously been identified in lizards and has recently been detected in two wild freshwater turtles in the Sydney region. Refer to [Freshwater turtle disease notification](#) (Wildlife Health Australia).

It is highly contagious. Contact your reptile coordinator immediately.

BASIC CARE OF REPTILES

- **Cleanliness and hygiene**
 - **Husbandry plan and record keeping**
 - **Feeding/food**
 - Brumation
 - Feeding lizards
 - Feeding dragons
 - Feeding turtles
 - **Housing**
 - Housing lizards
 - Housing dragons
 - Housing turtles
 - **Heating**
 - **Ultraviolet light**
 - **Release**
 - Releasing lizards
 - Releasing turtles
-

The [Code of Practice for Fauna](#) has standards and guidelines for the husbandry and care of protected fauna.

Refer to section 8.2 *Controlling disease transmission between animals*.

Cleanliness and hygiene

If you have reptiles as pets, don't keep them in the same room as rescued reptiles.

You can transmit disease from a rescued reptile to your pet reptile. Wear disposable gloves and a mask if there is a risk of disease transmission. It works the other way around too; wildlife may pick up parasites and disease from your pets. Keep them apart.

You can also be infected by the animals you care for. Keep all animal food-related containers and equipment separate from your own. Wash them separately from your own; in the laundry if you have one.

Wash your hands and equipment thoroughly. This cannot be overemphasised.

- You can infect all your reptiles if you don't wash your hands and equipment thoroughly before and after handling each animal in your care.
- Disinfect hard surfaces and equipment.

Wash all equipment well and rinse with hot water. Use F10 disinfectant on hard surfaces (diluted according to instructions as a wash or spray) and leave to air dry.

Cleaning agents:

- weak bleach solution (usually 10 ml per litre of cold water)
- Repti-Kleen is a commercially-available sanitising product that can be purchased from specialist pet shops
- F10 is subsidised and available from the Wildlife Office.



Do not use Pine-o-clean, eucalyptus oil or other odorous products unless they are for glass cages that can be rinsed well and left in the sun for a day.

Husbandry plan and record keeping

Husbandry can often be a challenge because there are so many factors to consider, such as the size of the reptile, appropriate housing and feeding conditions to allow for natural behaviour, maintaining cleanliness, minimising stress and maintaining the correct temperature gradient required for the species.

Formulate a husbandry plan for rehabilitation with your vet or coordinator. The plan should include:

- daily care routines including medication, feeding, cleaning and handling
- regular monitoring and assessment as required
- observe and monitor health and behaviour indicators to make informed decisions
- set milestones for rehabilitation progress then reassess.

Accurate records must be kept to track the progress and outcomes for reptiles in care. Refer to *Record Keeping* in the [Code of Practice for Fauna](#).

Reptiles must be physically fit and possess the appropriate survival skills prior to release. Preparations for release start at the time of rescue and continue throughout the rehabilitation

process. Many species will gradually lose their survival skills in captivity, so it is vital their time in care is kept to a minimum.

Feeding/food

Refer to section 9. *Husbandry* in the [Code of Practice for Fauna](#).

If you understand a reptile's behaviour in the wild you will understand its needs in care and what to feed it. It will be more comfortable if you try to replicate its natural habitat, food and routine.

Brumation

Feeding lizards that come into care during winter is complicated and can be very difficult. An emaciated lizard will need assessment from a vet to advise whether it needs warming to digest medications and food.

Always get advice from your coordinator or an experienced carer when a lizard comes into care during winter.

Food

The following foods can be offered to reptiles in care

- Most soft sweet fruit such as banana (in moderation due to high potassium content), strawberries, blueberries, mulberries and tomatoes.
- Crickets, mealworms and woodies can be given as these are foods that they are likely to encounter in the wild.
- Snails can be given if you are sure that they have not been in contact with insecticides, pesticides or snail baits.
- Eggs and raw meat in small quantities. These foods are high in protein and can lead to an accumulation of uric acid, which can lead to gout, loss of toes and arthritis.
- Vegetables (small amounts that are grated - raw or steamed): spinach, kale, bok choy, lettuce (not iceberg), peas, beans, sweet potato or broccoli.
- Commercially-produced pelleted food.
- Defrosted and warmed small pinkie mice can be given to larger lizards.

Refer to [Suitable native and non-native foliage for lizards and skinks](#).

In captivity, a diet of insects will not be sufficiently balanced.

- Live foods must be dusted with a calcium and multivitamin supplement.
- Add the supplements to the food once every third feed.



The following foods should not be offered to reptiles in care

- Pet food containing seafood should NOT be given to lizards of any age.
- Do NOT feed dog or cat food to any reptile as the salt content is too high and it encourages them to feed from pet bowls often exposing them to danger.
- No minced meat of any kind is to be fed to baby or juvenile lizards.

Lizard lunch recipe

Note: this meal should be fed only once every two weeks to adult lizards in care and is not recommended for baby lizards. Whenever possible, use the food choices listed above.

Ingredients

- 500g (or less) lean beef mince ('heart smart'), preferably canned AD Recovery (available from vets)
- 1 punnet strawberries
- 1 can apricots, peaches, pears (in natural juice only, not syrup). Use fresh fruit if possible, but remove skin as much as you can
- 1 egg
- a generous sprinkle of Reptivite/Reptical vitamin-calcium powder.

Method

- Drain juice from fruit.
- Blend all ingredients together in a food processor.
- Add a little of the juice to make the mixture the right consistency.

Freeze in small plastic containers to be used (thawed) as required. Ice-cube trays work well.

Amount and frequency

Feed blue-tongued lizards every two days. A suitable amount of food would be equivalent to the size of the lizard's head. On sunny, warm days they will easily eat that much, but on cooler days they will eat less. Juveniles should be fed every one to two days.

Fresh food should be available every day for lizards that are recuperating from an injury, are malnourished, or are babies/juveniles.

Baby lizards may require 'assist-feeding' initially and should be carefully monitored to ensure that they are consuming food.

Skinks may need to be encouraged to feed by offering them moving insects.

Do not feed lizards unless they are within the temperature range 28 to 34°C and they need to stay in this range while the food digests. Lizards will not want to feed if they are too cold and if you assist-feed them there is a high risk that the food will not be digested. This can be fatal.

Feeding lizards

Assist-feeding

In general, lizards should not need to be assist-fed; they can go for long periods of time without food. However, baby lizards may require assistance with feeding if they are undernourished.

Hold the reptile correctly, supporting its back, and gently open its mouth by applying pressure either side of the jaw.

Place a pinkie mouse, insect or snail (without its shell) into the lizard's mouth. Sometimes a blunt instrument can assist in pushing the food into the mouth cavity.

Lubricating the food with raw egg can also assist in enticing the reptile to eat. The lizard will automatically close its jaws.

Ensure that food is always available because the lizard needs to feed itself. However, if it is not eating, then you may need to assist-feed it.

Consult your coordinator if you think a lizard needs to be assist-fed.

Feeding dragons

Dragons can be given the same basic food as lizards. The bulk of their diet should be live food. Do not give snails.

Fruit and vegetables are an important part of a balanced diet for dragons. However, supplementary foods that are high in oxalic acid prohibit the uptake of calcium. Mostly give bok choy, parsley, kale, green cabbage, endive and watercress. Occasionally give spinach, carrot, beans, broccoli and sweet potato. Rarely give fruit and peas.

- Feed adults two to three times a week.
- Feed juveniles every one to two days. They may need to be encouraged to feed by offering them moving insects.
- Feed very young dragons up to twice a day.

Watch the Kellyville Pets [Feeding bearded dragons video](#) video

Feeding turtles

Turtles normally take food only in the water and can only swallow it below the surface. For turtles where the injury must be kept dry, this can be difficult. Do not feed raw meat alone as it is very deficient in vitamins and minerals.

- Live food: crickets, wood roaches, silkworms, black soldier fly larvae, feeder fish, shrimp, earthworms, bloodworms.
- Pelleted diets, frozen turtle foods, frozen pinkie mice.
- Short-necked turtles will also eat some leafy greens and aquatic vegetation such as duckweed or common watercress.

A suitable amount of food is equivalent to the size of the turtle's head.

- Feed adults every two to three days.
- Feed juveniles once a day.

Make sure that you remove all left-over food at the end of the day; do not leave it in the hope that the reptile will eat it later.

Housing

Refer to section 10. *Husbandry* in the [Code of Practice for Fauna](#).

Reptiles should be housed in a manner that encourages rapid recovery and supports natural behaviour necessary for survival in the wild. Reptiles can be arboreal, semi-arboreal, terrestrial, aquatic or semi-aquatic; enclosures must be suited to the specific needs of the species.

Enclosures must be secure and lockable (escape-proof), well ventilated, easy to clean and positioned correctly.

Refer to the minimum enclosure size guidelines in the Appendices *Table 3. Reptiles* in the [Code of Practice for Fauna](#).

Housing lizards

Lizards can be housed in:

- an aquarium (with high sides to prevent escape)
- a large plastic storage container
- a glass enclosure specially made for reptiles.

Enclosures will require a mesh or ventilated lid, fastened to prevent escape.



- Give the lizard a small cardboard box, pieces of plastic drainpipe (cleaned and then sprayed with F10) or cardboard tubing to hide in; do not leave a lizard exposed.
- Use newspaper, butcher's paper, or paper towel as substrate.
- Do not use cat litter because it is very absorbent and can cause problems if ingested.
- Do not use soil, leaves, bark or anything else from the garden due to the possibility of bacterial spores infecting open wounds.
- Avoid using aquarium gravel or small stones as ingestion can result in intestinal damage and possibly death.
- Keep the substrate scrupulously clean. Change the substrate regularly and remove droppings immediately. Blue-tongued lizards have very thin skin and easily get infections.
- Provide clean rocks (well-scrubbed with bleach) for rubbing against but only if the lizard does not have wounds that could be irritated or inflamed from rubbing. This is particularly important when the lizard is shedding its skin.

Enclosures must be regularly disinfected (every week) with a weak bleach solution (10 ml per litre of cold water), Repti-Kleen or F10. Refer to [Cleanliness and hygiene](#).

Never house small lizards with large lizards. Try to place together lizards of similar size and watch carefully to make sure they are compatible. Remove babies immediately if a blue-tongued lizard gives birth in care.

Watch the [Setting Up a Blue-tongued Lizard Enclosure](#) video

Wherever possible allow the lizards to bask in the sun, but beware of predators such as snakes, rats, mice and birds.



Use a rabbit hutch covered with mouse wire that is high off the ground or a plastic box covered with shade cloth. Alternatively, a fluorescent UVA/UVB light bulb can be used.

Housing dragons

Eastern water dragons generally rehabilitate better when housed in a large enclosure such as an aviary that has branches to lie on and a heavy, large dish of water to bathe in.

- Branches must be angled no greater than 45°.
- A small heavy-based dish of water must be placed away from the heat source and must be deep enough for them to fully submerge themselves.
- They often eat in water.
- Change the water frequently (daily at least) as they defecate in water.
- The enclosure should have at least eight hours of sun exposure.
- They are very adept at jumping so make sure their enclosures are escape-proof.
- They should not be housed in the same aviary as birds.

Housing turtles

Turtles live almost entirely in water and must be housed in an aquarium.

- A water area of 100 cm x 150 cm with a depth of 40 cm is required for an adult, with an equal area of dry ground; the turtle must be able to roll over completely without getting caught on the bottom.
- Cover the bottom with aquarium gravel or stones, sloped upwards at one end to provide a dry area for basking.
- Loose soil or vegetation cuttings should be provided for the turtle to bury itself in during the cooler months while hibernating.
- The water temperature is important; it needs to be maintained at 23 to 26°C.
- Water quality is very important. 25% should be replaced every week. The pH needs to be maintained between 7.4 and 8.0 and test kits can be obtained from pet stores. Water conditioners and filters can also be purchased from pet shops.
- The basking area needs to be under an artificial heat source.
- An artificial UV light is required for long-term care. If a UV light cannot be provided access to direct sunlight is needed for about 30 minutes each day. Lack of UV light can result in a vitamin D and calcium deficiency.

Heating

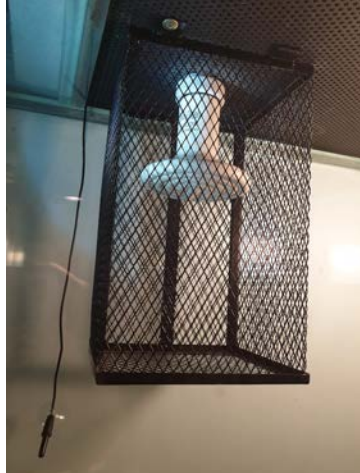
All reptiles are ectothermic and require an external heat source to survive. However, they can overheat and will avoid extreme daytime heat.

The importance of heating cannot be overstated. Keeping a reptile at the wrong temperature can cause stress and can even lead to death.

- **If you cannot provide artificial heat and suitable housing then you can only provide a lizard with short term housing (1 to 2 nights).**
- **You must contact your coordinator and organise for the lizard to be passed to a carer with appropriate facilities.**

Heat sources include:

- ceramic heat emitters
- heat mats
- heat cable.



Ceramic heat emitter and ceramic heat emitter in a heat guard.

A ceramic heat emitter placed at one end of the enclosure will allow the reptile to move to/from the heat source as required.

An adhesive heat mat that attaches under the base of a glass enclosure.



Heat is generally provided 24/7 with a 12-hour day/12-hour night lighting setup.

- Avoid reflector or spotlight globes that concentrate heat on one spot; they will burn the reptile.
- The temperature under the light/heat source should be about 35°C and the temperature at the other end of the enclosure should be about 18 to 24°C. This temperature gradient is essential; reptiles must be able to move between temperature ranges.
- Experiment with various wattage bulbs to find the one that is suitable for your set up.

- Thermometers must be used to accurately measure the temperature of the enclosure. It is recommended to use a thermostat or rheostat (dimmer switch) to prevent overheating.
- A heat mat can also be used.
- Do not place the enclosure on a cold floor, such as concrete, because it will absorb most of the heat.
- Use a dark coloured tile (or something similar) for the lizard to bask on. Place it at an angle so that the lizard can hide under it and still maintain a good body temperature.

The [Code of Practice for Fauna](#) requires all heat sources to be regulated by a thermostat.

The Reptile One Ezistat Thermostat (pictured) is stocked in the Sydney Wildlife Office.

It is reliable and easy to use.



Ultraviolet light

- Ultraviolet light (UV) is essential for the growth and maintenance of many reptile species.
- Providing an adequate source of UV can be challenging.
- Ultraviolet A (UVA) helps to regulate behaviours such as feeding and diurnal movement.
- Ultraviolet B (UVB) allows the synthesis of vitamin D which helps to absorb calcium.
- Many diseases seen by vets are attributed to deficiencies due to a lack of UV.



UVB light and UVA light

Indoor ultraviolet light

In summer, UV should be provided for 12 to 14 hours per day. In winter this can be reduced to 9 to 12 hours.

The UV component of any light source will degrade faster than the visible light source, so it is recommended to change the globe every 6-9 months.

Outdoor ultraviolet light

On a sunny day reptile enclosures should be put outdoors for a few hours.

Sunlight will provide reptiles with both UVA and UVB light - needed once or twice a week for a reptile in long-term care. Part of the enclosure must be in the shade at all times to prevent overheating.

Glass enclosures are unsuited to the transmission of UV. Always use wire mesh reptile enclosures to provide reptiles with outdoor UV.

Your coordinator will give you advice on setting up an enclosure with heating appropriate to the reptile's needs.

Release

Refer to section 11. *Suitability for release* and section 12. *Release considerations* in the [Code of Practice for Fauna](#).

Readiness for release must be confirmed by an [experienced reptile rehabilitator](#).

Reptiles must be physically fit and able to survive in the wild before they are released. See [The ethics of release](#).

NPWS requires a reptile to be released within a 10km radius of its rescue site. Get advice from your coordinator about release and about an appropriate/new release site if required.

Releasing lizards

- The lizard should be released back into its territory.
- Ensure the reptile is not due to shed its skin. If it is, it's to keep it until after the shed has occurred.
- It is best not to feed the lizard just before release as it may not be able to obtain the thermal exposure it needs to digest food.
- If the territory is assessed as unsuitable (savage dog/cat or a construction/building site) get advice from your coordinator.
- Do not release a lizard in winter or late autumn. If necessary the lizard will need to remain in care until spring.

- Diurnal lizards should be released mid-morning to mid-afternoon on a warm sunny day. The cool of early morning or late afternoon will render them sluggish and birds or prowling cats can take advantage of them. Too late in the afternoon does not allow them time to find somewhere to shelter overnight.

Releasing turtles

- Release close to the capture site. If the turtle was found on a road, release the turtle in the direction it was heading.
 - Choose a release day that is warm and sunny and where the following few days will also be warm and sunny.
 - Release in the early morning to allow the turtle adequate time to warm up.
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RESCUE AND CARE - GENERAL

- CASE ASSESSMENT
- VETS
- EUTHANASIA
- ETHICS OF RELEASE
- CARRY-CAGES, CAGES AND AVIARIES
- FLORA FOR WILDLIFE IN CARE
- NATURAL FOOD FOR WILDLIFE IN CARE



CASE ASSESSMENT

- The [Code of Practice for Fauna](#) has standards and guidelines for case assessment of protected fauna.
- If available, refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).
- Relevant codes and guidelines are listed on [Wild Apricot](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

The objective of case assessment is to assess native animals to determine the type of intervention required. The primary objective of rehabilitation is the successful reintegration of native animals into the wild population and all decisions are to be informed by this goal. This will mean that some fauna may benefit from rehabilitation whereas others will need to be euthanased.

An animal creating a nuisance for the public generally refers to an animal that has entered a person's house and/or represents a human health risk (e.g. a venomous snake in a playground). It does not include an animal defending its territory (e.g. a magpie) or exhibiting other normal behaviour (e.g. a brush turkey building a mound).

Once a rescue has been completed, the rescuer must immediately assess the situation in order to determine what to do next.

Is immediate veterinary attention required?

- Severe injuries must be taken to the vet immediately for treatment or [euthanasia](#).
- A cat-attacked animal requires urgent antibiotics and should be taken to the vet immediately.
- Suspected bone fractures need to be assessed by a vet.

However, some animals appear to have nothing wrong with them or do not have the type of problem that requires veterinary intervention, for example an undernourished animal or bird, or an orphaned chick, fledgling or joey possum. As soon as practicable, phone your coordinator to discuss the animal and register it.

The [Code of Practice for Fauna](#) states that rescuers must arrange for a native animal to be assessed by a vet or an [experienced wildlife rehabilitator](#) within 24 hours of rescue to ensure accurate diagnosis and prompt treatment or euthanasia.

We recommend immediate action; take the animal to a vet or contact your coordinator for advice as soon as possible - do not wait 24 hours.



Joey bandicoots, chicks, puggles and possum joeys (ringtails weighing under 400g and brushtails weighing under 800g) need urgent care and should be taken to an [experienced carer](#) who can devote the attention necessary. Most vets are not equipped or do not have the time or facilities to care for babies.

Native wildlife is placed under severe stress when housed at a vet surgery with cats and dogs. The amount of time that animals spend at a vet should be minimised.

VETS

Sydney Wildlife has a network of vets whose details are recorded in the BatchGeo Vet List mapping system. If you are called by the Rescue Line to rescue an animal that obviously needs veterinary treatment, the operator can suggest vets close by if you do not know your local vets.

If an animal needs to be taken to a vet, either the Rescue Line operator or the Sydney Wildlife rescuer should call the vet beforehand to ask if the vet will be able to attend to the animal.

This is not only a courtesy to the vet; it can affect the outcome for the animal. If the vet is unable to see the animal, for example they are not familiar with the species or they do not have capacity, time will not have been wasted. It is in the best interests of the animal to be taken to a vet who can attend to it.

Always make sure that the Trello record number is given to the vet.

If a Sydney Wildlife member takes an animal to a vet, a charge may be made for drugs or, when necessary, x-rays or surgery. The vet should warn you if costs will be incurred and it is always best to clear major expenses with your coordinator in advance. Please pay the account and claim a refund through your branch.

If the Rescue Line operator asks a MOP to take an animal to a vet, the MOP will not be charged for any expenses.

If you take an animal to a vet but are not able to care for it, let the Rescue Line operator know that you will leave it at the vet; the Rescue line operators will follow up with the vet and will find a carer if required. Let the vet know that you will not be the carer.

Please do not leave animals at vets unless instructed by the vet to do so. Wait until treatment has been given and take the animal away with you.

Most vets do not have areas specifically set aside for native animals and they are often housed in cages next to cats and dogs which is, of course, extremely stressful and frightening for them.

Be prepared to wait as paying clients may be treated first.

Veterinary surgeries contact the Rescue Line when they have wildlife in need of a carer. The Rescue Line operator records details of the vet, animal and where it was found in Trello and searches Batchgeo for a suitable carer in the area.

For a vet pickup, always phone the vet to make sure the animal is still there (sometimes vets phone WIRES and SWR for a carer) and to tell them what time to expect you. Make sure you have the appropriate equipment for transporting the animal. Ask for a copy of the animal's treatment record.

Be wary of the term 'ready for release'. It can mean that the vet has done their bit and it is up to you to decide when to return it to the wild. It does not mean that the animal is fit and well enough to thrive in the wild.

- If you pick an animal up from a vet that is 'ready for release' do not take it back to the rescue site and let it go.
- Take it into care and observe how it copes for a day or two.
- Watch it feeding, flying, climbing or walking. Is it healthy, robust and fully fit to thrive in the wild?

Releasing an animal too soon can be a death sentence. Remember - readiness for release must be confirmed by an [experienced wildlife rehabilitator](#).

Our vets are very valuable to us; we could not operate effectively without them. Please always be patient and polite and do not openly disagree with them. If you are not happy with the treatment or advice given by a specific vet, take the animal to another vet, or consult your coordinator.



Sydney Wildlife's Mobile Care Unit is staffed by volunteer vets and runs clinic days. Details are on Wild Apricot.

EUTHANASIA

- The [Code of Practice for Fauna](#) has standards and guidelines for the euthanasia of protected fauna.
- If available, refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#), or the [Code of Practice for Birds](#).
- Relevant codes are listed on [Wild Apricot](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

The [Code of Practice for Fauna](#) euthanasia objective is “To end an animal’s life in situations where death is imminent; or recovery is impossible; or the likelihood of

successful reintegration into the wild population is remote; or the animal poses an unacceptable health risk to wild animals.”

If you suspect that an animal should be euthanased, take it to a vet as soon as possible to minimise its suffering. If unsure, check with your coordinator. It is cruel to subject native animals to the stress of care if they have no prospect of being returned to the wild.

Fauna must be euthanased without exception when:

- death is imminent or highly likely regardless of the treatment provided
- it is suffering from chronic, unrelievable pain or distress
- it is carrying (or suspected to be carrying) an incurable disease that may pose a health risk to wild animals
- its ability to consume food unaided is permanently impaired due to a missing or injured jaw, teeth or beak
- it is at a stage of development where it is unlikely to be hand-reared to the point where it can be released (such as unfurred pouch young with its mouth still fused and ear canals not open)
- it has significant burns to the face, genitals, digits, nail beds, tail or feet.

Fauna must be euthanased (unless DPE has granted permission to hold it in permanent care) when:

- there is no suitable release location
- its ability to reproduce is lost due to an injury, disease or procedure
- its ability to locomote normally (i.e. run, climb, crawl, hop, fly or swim) is permanently impaired due to a missing or injured limb, wing, foot, backbone or tail
- its ability to sense its environment (i.e. see, hear, smell, taste or feel) is permanently impaired due to a missing or injured organ (e.g. eye, ear or nose)
- its ability to catch or handle food is permanently impaired due to a missing or injured digit (e.g. missing rear toe in raptors)
- its advanced age renders it unable to survive in its natural habitat
- it is an amphibian (due to the risk of spreading chytrid fungus).



THE ETHICS OF RELEASE

- Introduction
- Conservation considerations
- Non-native animals
- Release site considerations
- Food recognition and supplemental feeding
- Imprinting and humanising
- General release criteria



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- The [Code of Practice for Fauna](#) has standards and guidelines for the release of protected fauna.
 - Refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).
 - Relevant codes are listed on [Wild Apricot](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Introduction

The legislation and policies of the NPWS (a division of the DPE) and Sydney Wildlife's licence conditions and policies relating to the release of fauna are designed to:

- ensure that each animal has the best chance of survival by being released into a familiar area or, at the very least, into habitat that is as close as possible to that from which it was removed and in which its forebears evolved; and ensure that the release will have minimal or preferably no adverse impact on resident animals or the environment
- ensure that diseases are not transferred to populations of the same species in differing geographical areas and that the genetic integrity of a species is maintained within its endemic locale
- animals may not be released into a National Park without the written permission of the Senior Ranger or Area Manager even if the animal was rescued from the park.

The release of rehabilitated fauna is possibly the most rewarding aspect of our task as carers. It is therefore vital that you consider every aspect of your care methods in relation to the eventual release of the animal.

Every member should give serious thought to a variety of factors when they are about to release an animal. We call these considerations the ethics of release. They are not statutory obligations, but they are nonetheless extremely important, not only for the welfare of the animals involved, but also for your own peace of mind.

Conservation considerations

Is the release of an animal in the best interest of the resident fauna and habitat of the area selected for release? How well do you understand the fauna population at the release site? Where does the animal you are releasing sit in the food chain? Did the animal come from this area and what will be the impact of its introduction or reintroduction?

The basic consequences of an irresponsible release of a species into an area in which it does not belong may be the local extinction of another species, which competes for limited food and nesting sites.

It is important for the conservation of native species that pets are locked up at night, and are not allowed into national parks at any time. The strong scent left by cats and dogs in bushland areas may discourage native animals from going about their natural activities.

If you are not entirely convinced that the proposed release is responsible in all respects, don't release the animal. Consult with your coordinator and/or an [experienced carer](#).

Non-native animals

It is an offence under the National Parks and Wildlife Act, 1974 to release non-native animals because they have a detrimental impact on native animals and their habitat.

We do not rescue non-native animals. However, it can happen that you will get to the rescue and find that the animal is non-native.

For example, we sometimes get a call for a noisy miner that turns out to be a common mynah, or for a ringtail possum that turns out to be a non-native rat.



A MOP who has found an injured or orphaned non-native animal obviously cares enough to have called us and deserves our respect.

- Let the MOP know that our licence does not cover non-native species.
- The MOP can take the animal to the vet themselves and pay for its treatment.
- The MOP is within their rights if they want to raise the animal as a pet.

If you take a non-native animal into care you will never be able to release it and it will take up valuable space which you would use to rehabilitate native animals.

As a member of Sydney Wildlife, your responsibility will be to take the non-native animal to a vet for euthanasia.

Release site considerations

Another consideration is, of course, the welfare of the individual animal to be liberated. For example, not every water body is going to provide optimum, or even suitable, habitat for all duck species. An area that supports Pacific black ducks may not support wood ducks, which need more than water and rely upon the availability of adjacent grazing land.

The easiest way of determining the suitability of a site for release is to ascertain whether it already supports a reasonably sized and healthy population of the species to be released. If you are releasing several animals, you must also consider the likely impact of your release on the sustainable area population.

It is important to remember that if the habitat is already supporting the species that you intend to release, there may be little if any room for the new animals.

The aim of rescue and foster-caring of sick, injured and orphaned fauna is successful release back into the wild. Research your animal's history and the species' ecology to determine the best available release site and give it a fighting chance of survival.

Food recognition and supplemental feeding

Many animals don't rely entirely on instinct to know how and on what to feed. In many cases young animals are fed by their parents for many weeks after leaving the nest or nursery, while they learn to recognise and catch their own food.

Hand-reared animals must learn to fend for themselves when they are released and the most immediate problem facing them is the recognition of natural food and finding suitable shelter. A hand-reared magpie that has thrived on minced meat, Wombaroo Insectivore, pinkie mice and mealworms will have problems finding these items out in the bush.

Appreciate that these items are the only ones that your bird has learned to recognise as food. If you, its provider, abandon it in the bush, in all probability it will die from starvation within a few days because it can't recognise wild food.

A lot of successful work has been done on how to teach a young bird to identify and locate natural food and you have the advantage in a rehabilitation organisation of learning from the experiences of your fellow foster-carers. Ask a few questions and investigate how experienced foster-carers teach hand-reared magpies to recognise and capture natural food.

In other cases, where it has not been possible to teach your animal the ways of survival, it may be necessary to release your animal at a site where supplementary feeding can be provided while it learns to forage for natural foods (soft release). This technique is suitable for hand-reared animals, rainbow lorikeets, sacred kingfishers and all aerial-feeding species such as swallows and dollarbirds.



If your personal circumstances do not allow you to provide training or supplementary feeding, it doesn't mean that you can't be a successful contributor to wildlife care. Rehabilitation organisations need people to do the basic caring of young animals as much as they need people who have aviaries and facilities to specialise in 'finishing school'.

Imprinting and humanising

Imprinting and humanising is to be avoided at all cost. The successful rehabilitation of animals, especially hand-reared birds and marsupials, can be severely compromised by the degree of imprinting.

Imprinting is a learning process where animals form a strong attachment to a human either as a surrogate parent or a surrogate sexual partner, or to other animals in the rehabilitating household (such as friendly cats and dogs), or to food type or its presentation, or even to the environment in which it is held. Animals which are imprinted are difficult and often impossible to release.

Humanising is equally serious. If an animal does not fear humans, domestic pets and disturbance in general then their survival time in the wild will be limited, perhaps to only a few hours.

Wildlife needs to recognise and fear potential predators like humans, dogs and cats. Please don't kill animals with kindness. Remember, if a wild animal learns to love you, you've probably condemned it to death.

General release criteria

Animals should be released as close as possible to their point of origin

- Many animals are highly territorial and newcomers to an area may meet with aggression from the local population.
- A rehabilitated animal is more likely to be accepted if it is returned to the population from which it came.
- Animals also become familiar with their home environment and moving them to another area may create additional obstacles.
- If the animal came from a particular site there is most likely suitable habitat for it back there; we cannot know this about a new site.

Animals should be released during their naturally-active period

- The optimal release time for most diurnal animals is approximately one hour after dawn and for most nocturnal animals is approximately one hour after dark.
- You should also be aware of when animals feed (if it is at certain times) as this often corresponds to a daily peak in aggression from the local population.

Be aware of the needs of the species that you have in care

- If it is migratory when does it need to be released?
- Does it need to be released in a group?

The animal you are proposing to release must be able to:

- recognise members of its own species
- move about in a natural manner
- recognise its NATURAL food
- find its own food.

Has the animal been [humanised](#)?

Has it [imprinted](#) on you, its food dish, your cat, dog, kids?

Is the habitat that you are proposing to release the animal into suitable?

Release is difficult for both you and the rehabilitated animal. Try to learn as much about the species as possible from the wild and other [experienced carers](#) to give the animal the best possible chance. Remember – call your species coordinator if you have any questions.

Readiness for release must be confirmed by an [experienced wildlife rehabilitator](#).

CARRY-CAGES, CAGES AND AVIARIES

- **Carry-cages**
- **Cages**
 - Intensive care housing
 - Intermediate care housing
 - Pre-release housing
 - Disinfection
 - Cage floors/substrate
 - Perches
 - Food/water containers
 - Cage size
 - Location of the cage
- **Aviaries**



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- The [Code of Practice for Fauna](#) has standards and guidelines for the transport, husbandry and housing of protected fauna.
 - If available, refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).
 - Relevant codes are listed on [Wild Apricot](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Carry-cages

Carry-cages are mainly used to transfer animals. They must be:

- appropriate for the size and temperament of the animal
- designed and secured to prevent injury or escape
- adequately ventilated
- kept at a temperature appropriate for the species and age
- set up to minimise pain, discomfort, light, noise or vibrations; this may involve padding walls and covering floors with a nonslip, non-ingestible, tangle-free surface.

There are several basic carry-cage designs

Cane and timber baskets/carry-cages

- These materials are not acceptable as they cannot be cleaned and sterilised effectively.

Bottom half plastic, top half wire, opens from the top.

- This design is ideal because it allows easy access and is easy to clean and sterilise.
- The wire top section should be lined to prevent feather damage in birds.



All plastic with a door at one end (cat/dog crates).

- This design can be difficult to use because reaching in to remove large/heavy animals can be awkward.
- It is suitable to use for smaller animals that are easy to handle.
- It is easy to clean and sterilise.



Rescue basket

- Depending on the size of the animal this design is ideal because it allows easy access and is easy to clean and sterilise.
- It is easy to line to prevent feather damage and will prevent stress by keeping animals warm and in darkness.
- Cut the neck and arms off an old T-shirt and use it to line the inside. Use another to wrap around the outside.



A strong cardboard box

Cardboard boxes are readily available and are suitable for transport and for very short-term care only. Routinely using a disposable cardboard box is recommended to prevent the spread of [PBFD](#) and to keep your equipment safe from contamination. It can be destroyed after a single use.

- **Don't forget to make air holes for ventilation.**
- **You can push a branch through the sides as a perch.**
- **Make sure that it is properly secured and that the animal can't escape.**
- **Beware – cockatoos will chew their way out.**



Cages

- The [Code of Practice for Fauna](#) sets out minimum sizes for enclosures for the care of native animals. See Section 15. Appendix A: Minimum enclosure size guidelines.
- If available, refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).
- Relevant codes are listed on [Wild Apricot](#).

The objective of housing and good husbandry is to keep animals in care safe, secure, comfortable, and clean. Enclosures must be appropriate for the animal's needs and circumstances, and stress due to captivity must be minimised.

Cages must be:

- escape-proof
- designed and positioned to protect animals from contact with predators and pests
- insulated from urban noises (radios, TVs, laundry appliances, mowers, cars, etc)
- not exposed to strong vibrations or noxious smells (wood smoke or fumes, etc)
- be constructed from materials that are non-porous such as plastic or metal. Materials must be non-toxic
- positioned so that animals cannot see, or be seen by, pets; pets not only make wildlife fearful, but can also desensitise them to danger after release
- if multiple animals of the same species are kept in a single enclosure, there must be sufficient space to avoid conflict
- kept clean and disinfected between animals.

When an injured animal comes into your care, always take into consideration the following:

- food and behaviour in the natural environment
- the type and extent of injuries.

The following are important points to consider:

- wild animals need a place to hide or they will suffer from extreme stress; provide natural foliage, a box or drey as a hide
- when feeding an animal, think about how it would normally feed itself and locate its food in a natural position; for example, place food for magpies on the ground and food for possums high up
- extremely ill animals need to have their food placed within easy reach
- monitor food intake; for example, if a bird does not eat in 24 hours, it may need to be assist-fed (force-fed), discuss food intake with your coordinator if it is a problem
- nocturnal animals (such as possums) will be lethargic during the day and will eat mainly at night
- always offer water; be careful; if a water container is knocked over the animal may be forced to lie on damp bedding, and young animals have been known to drown if they fall into water containers.

The codes of practice list three types of housing.

Refer to *Housing* in each of the animal sections above for species specific information.

1. Intensive care housing

Intensive care housing is an enclosure that reduces activity for a short period of time to facilitate frequent treatment, feeding and hydration. It must be large enough for a sick or injured animal to maintain its normal posture and to stretch its body and limbs, but not enough space to climb, run, jump or fly.

A lined rescue basket, or a lined rescue basket set up with artificial heating can be used for short-term care (12-24 hours) depending on the species, size, age and rehabilitation needs of the animal.

The [Code of Practice for Fauna](#) (section 10.2.1.4) states that electrical heat sources must be regulated by a thermostat.

2. Intermediate care housing

Larger cages are suitable for intermediate care housing to provide mobile fauna with enough space to allow some physical activity while enabling it to be readily caught for monitoring or treatment.

Try to simulate the natural environment of the animal. Wild animals need a place to hide away or they will suffer from extreme stress.

3. Pre-release housing

An enclosure such as an outdoor aviary that allows for rehabilitation to peak condition and natural behaviour, acclimatisation to weather and reduced interaction between carer and bird. For example, an [aviary](#).

Disinfection

- All cages used for the rehabilitation of native animals are effectively 'animal hospitals' and must be maintained in a clean and sterile condition.
- Use disinfectants such as F10 (available through Sydney Wildlife's office), a bleach solution, or scrub with clean water and leave in the sun to dry.
- Clean cages frequently to remove faeces, old/bad food and other contaminants that aid the spread of infection and that will inhibit rehabilitation.
- It is advisable to wear a mask when cleaning to avoid inhalation of dust and faeces.



Cage floors/substrate

When housing animals, especially animals with wounds, ensure that cage floors are disinfected and kept clean disinfected and that substrates cannot harbour bacteria and risk infection.

Substrate must be a soft, non-slip material that can be changed easily, such as sand, leaf litter or towels. Straw, hay, shredded paper, grass clippings or sawdust must not be used as it can lead to infection.

Astroturf/Artificial grass

Do not use astroturf/artificial grass as a substrate. Some of the chemicals used in its manufacture are known carcinogens, it gets really hot (Gardening Australia's Sophie Thomson has tested it), it is not easy to clean (can become a breeding ground for bacteria), has sharp plastic points and disposal is an environmental problem.

Newspaper

Newspaper is cheap and absorbs moisture. However, when used as a substrate it can be slippery and will not lift the animal above contaminants such as faeces. It must be changed frequently and the under-flooring must be disinfected.

Bark chips, ground litter (leaves, sticks etc.)

These are acceptable substrates for aviaries and cages housing mammals. This type of floor covering is hard to sterilise so must be changed frequently.

Bark chips or ground litter should not be used in bird cages, particularly for parrots. It is suspected that the spores from fungi that break down the bark and litter can enter a bird's respiratory system and cause disease.

A cage without a bottom can be placed directly on the ground on bark chips or ground litter, so long as it can be moved to a fresh spot daily.

Sand, soil, grass

Bottomless cages can stand directly on sand, soil or grass.

The cage must be moved to a fresh spot daily (with minimal disturbance to animals in care), or the sand or soil must be turned over regularly to provide a fresh surface.



Fresh sawdust, timber shavings

The codes of practice do not recommend the use of straw, wood shavings or sawdust as substrate.

Perches

- Use natural branches of varying thickness with knots and other irregularities.
- This will ensure that the animal exercises its feet, does not develop 'claw' feet (if it is a bird), and becomes accustomed to the different sizes of branches it will find in its natural habitat.
- **Never use smooth materials such as dowel, broom handles, metal, plastic or other unnatural materials as perches.**



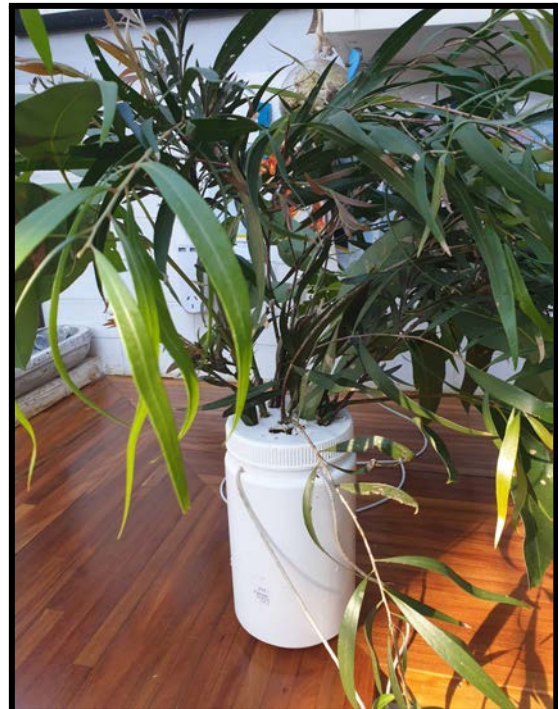
Food and water containers

Use safe vases/containers for foliage. If a young or curious animal falls into a deep container of water, it may not be able to get out. Water containers for drinking, bathing or foliage should not have openings that are wide enough or are deep enough to trap or drown an animal.

Foliage placed in the cage should be kept in a safe 'vase' with water to keep it fresh.

Use a plastic container with a screw-on lid.

- Drill holes in the screw-on lid.
- Drill holes near the top of the container and thread string through to secure it to the bars of the cage.
- Fill it with water to keep the foliage fresh.
- Poke foliage through the holes.



Use a plastic bottle with a screw-on lid.

- Drill holes into the bottom of a thoroughly-washed plastic milk bottle, drink container, etc.
- Attach it upside down to the side of the aviary with the cap on.
- Fill it with water to keep the foliage fresh.
- Poke foliage through the holes.
- Unscrew the cap at the bottom to drain the water when it needs to be refreshed.



- Attach food and water containers in the cage to give the animal easy access and to avoid spillage and contamination.
- Putting food and water containers within an already-secured container in your enclosure will make it easier to change food and water without needing to attach the containers every time.
- Ensure that fresh, clean water is always available.
- Bathing water must be kept separate from drinking water.

Clean food and water containers daily with soap and water. All residues must be removed.

Cage size

The [Code of Practice for Fauna](#) sets out minimum sizes for enclosures for the care of native animals. See Section 15 Appendix A: Minimum enclosure size guidelines. Refer to the specific code for minimum enclosure size guidelines for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).

Follow the guidelines and consider the following:

- size of the bird
- physical condition of the bird
- need for exercise, mobility and maintenance of muscle mass.

Ask yourself the following questions:

1. Will the cage damage the animal?
2. Can the animal escape from the cage?
3. Will I be able to service and attend to the animal's requirements?
4. Is the door large enough to allow me access to the animal in the cage?
5. Is there room for a drey/box/hide if required?

Location of the cage

Consider the following:

- What will happen if there is a change in the weather?
- Will the animal stay dry in the case of rain?
- Will the animal overheat as the sun moves across the sky?
- Will the animal be cold when the sun goes down?
- Is the animal in a draught or in the direct line of the wind?
- Will the animal be distressed or die of fright from the noise of surrounding activities?
- Is the animal exposed to predators such as rats, snakes, foxes, cats, dogs or carnivorous birds?

Aviaries

An aviary is generally used for pre-release housing to give animals the opportunity to regain physical condition, acclimatise to current weather conditions and practise natural behaviour. Larger aviaries that allow animals to exercise and build up their strength prior to release are normally referred to as 'flight' or 'release' aviaries.

The same rules apply for fitting-out aviaries as for cages, however attention should be paid to the following:

- the aviary should be positioned so that exposure to humans is kept to the minimum required for observation, feeding and cleaning
- position it away from traffic and other noises
- there should be a roof over at least part of the aviary and protection on some sides against wind, rain and excessive sun exposure
- the aviary as well as the floor/substrate must be easy to clean and disinfect
- it is advisable to wear a mask when cleaning to avoid inhalation of dust and faeces
- it must have large branches of different thicknesses and sizes that are placed well off the ground for animals that climb or perch
- waterbirds require a pool of clean water deep enough for swimming and a dry area covered with a soft substrate
- chicken wire must not be used in bird enclosures as it can cause severe beak and feather damage
- new galvanised wire must be weathered for 6 to 8 weeks or washed with a mild acidic solution (such as half water, half vinegar) as it is toxic (risk of zinc poisoning), especially for parrots
- possums require nest boxes and branches at various heights with foliage cover
- the aviary must be escape-proof; an aviary for birds capable of flight should have a double-door entry system
- there must be no sharp edges on which an animal can injure itself

- most animals like a place to hide, such as in branches with foliage; too much foliage can reduce space for exercise - arrange perches and foliage to allow for lots of space to exercise as well as a place to hide
- it must provide protection from predators such as rats (can dig their way in), snakes, foxes, cats, dogs or carnivorous birds
- it should be separated from cats and dogs.



FLORA FOR WILDLIFE IN CARE

- **Balanced nutrition and variety**
- **Collecting flora**
- **Some common native flora of the Sydney region**
- **Supplementary foods - (non-native)**
- **Suitable native and non-native* foliage for lizards and skinks**
- **Some toxic native plants to avoid**
- **Some toxic exotics to avoid for ALL wildlife**



-
- The [Code of Practice for Fauna](#) has standards and guidelines for feeding protected fauna.
 - Refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).
 - Relevant codes are listed on [Wild Apricot](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Balanced nutrition and variety

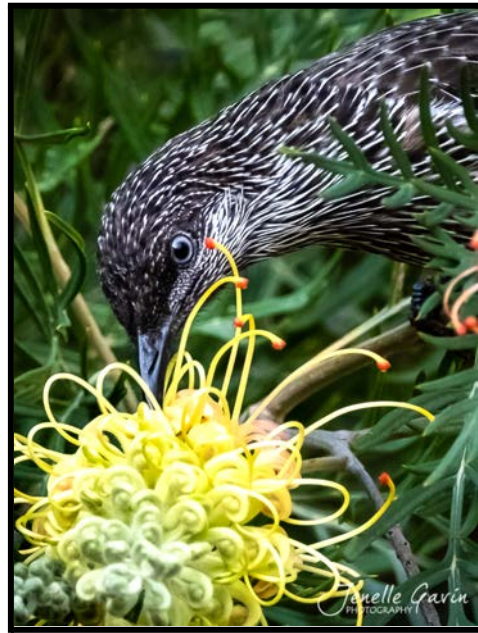
Animals in care need an environment and food as close as possible to what they would have in the wild.

Observe each species in its natural habitat.

- What does it EAT?
- Where does it SHELTER?

Use this knowledge in setting up your cage or aviary and in selecting food for the animal.

If in doubt, speak to your coordinator or an [experienced carer](#).



Provide as wide a selection of flora as possible and include leaves, seeds, fruits and flowers. Insects on leaves are fine for birds but not for possums.

Many mammals and birds are not exclusive in their diets; for example rainbow lorikeets are nectivores but they will also eat seeds and leaves, and will feed their nestlings insects.

Possums have individual preferences, just like us – a delicacy to one, may be ignored by another. Brushtails will eat mature leaves, whereas ringtails prefer new tips.

Not all foliage needs to be edible.

- Provide a wide variety of native flora that is both suitable as food for a bird or animal and some that is not necessarily on the menu but may well be found in the same habitat.
- This will give your animals an opportunity to learn to search for food and to recognise the wide range of plant species found in their natural environment.
- Do not use known [toxic plants](#) such as oleander. While the animal would probably not eat it, the artificial environment of the cage might upset that natural instinct.

Watch the [Foliage for Food](#) video

Collecting flora

Flora provided as food must be fresh and replaced every day. If you can't collect flora daily, you can keep it fresh in a bucket of water in a shady place. If possible, collect early in the day when leaves contain more water. It is not necessary to replace 'habitat' flora as often.

Be discreet in collecting to avoid being 'reported' by zealous ratepayers. Your hi-vis vest lends some 'authority' and may help you to explain.

Collect in areas that are free from pollutants. Avoid busy traffic areas and areas that dogs or cats frequent (urine/faeces) - the smell of domestic pets is stressful for wildlife.

Native flowers of most species often have small insects that are feeding on the nectar. These may be included in the mix of plants offered to insectivorous birds. Remove all insects from foliage for animals that don't eat insects. Possums in care have died from allergic reactions to insect bites.

Foliage will provide a natural environment and screening for birds in care and may assist in encouraging young birds to begin exploring and foraging.

When animals are close to release, try to collect flora from the area in which they are to be released to familiarise them with the flora their new environment has to offer. Use secateurs when collecting foliage to minimise damage to the plant and allow it to recover quickly.



Keep your secateurs in the glove box of your car and clean them regularly with methylated spirits to ensure that you are not inadvertently spreading pathogens such as *Phytophthora* and Myrtle rust that are devastating to a number of native plant species in the Myrtaceae family.

Do not completely remove all flowers, seeds or new growth from a plant. Remember, wild native animals need to feed too and some seed must be allowed to fall to the ground for future germination.

Consider planting your own native garden. This can save you time looking for foliage in your local area.

Contact your local Council for a list of appropriate local species. They may supply tube stock to local residents free of charge, or may give you the name of a local nursery that specialises in native plants endemic to your area.

Some common native flora of the Sydney region

Plant Species suitable for feeding native birds and possums	Birds				Possums
	Nectivore	Insectivore	Granivore	Frugivore	
<i>Acacia sp.</i> (Wattles)			Y		Y
<i>Acmena or Syzygium sp.</i> (Lilly pilly)				Y	Y
<i>Allocasuarina sp.</i> (Sheoak)					Y
<i>Angophora sp.</i> (Apple trees)	Y				Y
<i>Baeckea imbricata</i> (Heath myrtle)					Y
<i>Banksia sp.</i> (Banksias)	Y				Y
<i>Callistemon sp.</i> (Bottlebrushes)	Y				Y
<i>Calytrix tetragona</i> (Fringe myrtle)					Y
<i>Casuarina glauca</i> (Swamp oak)			Y	Y	Y
<i>Clematis spp.</i> (Old man's beard)	Y				Y
<i>Dianella revoluta</i> (Native flax lily)				Y	Y
<i>Eucalyptus sp.</i> (Gum trees)	Y				Y
<i>Eustrephus latifolius</i> (Wombat berry)	Y				Y
<i>Ficus sp.</i> (Fig trees)				Y	Y
<i>Grevillea sp.</i> (Spider flowers)	Y				Y
<i>Hakea sp.</i> (Hakea)	Y				Y
<i>Kunzea ambigua</i> (Tick bush)		Y			Y
<i>Lambertia formosa</i> (Mountain devil)	Y				Y
<i>Leptospermum sp.</i> (Tea tree)	Y	Y	Y		Y
<i>Melaleuca sp.</i> (Paperbarks)	Y				Y

<i>Pandorea pandorana</i> (Wonga vine)	Y				Y
<i>Persoonia sp.</i> (Geebung)	Y			Y	Y
<i>Pittosporum sp.</i> (Pittosporum)			Y	Y	
<i>Smilax glycyphylla</i> (Native sarsparilla)	Y			Y	Y
<i>Syncarpia glomulifera</i> (Turpentine)	Y				Y
<i>Tristania neriifolia</i> (Water gum)					Y
<i>Tristaniopsis laurina</i> (Water gum)					Y



Supplementary foods - (non-native)

Some common non-native plants are acceptable foods.

However, do not encourage using these before native flora - we do not want our released animals making nuisances of themselves in people's gardens (with possible dire consequences for the animal).

Non-natives that are non-toxic, favoured and enjoyed

Cape leadwort - <i>Plumbago auriculata</i>	New Zealand Christmas bush - <i>Metrosideros thomasi</i>	Rosemary - <i>Salvia rosmarinus</i>
Sweetgum - <i>Liquidambar sp.</i>	Crepe myrtle - <i>Lagerstroemia sp.</i>	

Suitable native & *non-native foliage for lizards and skinks

* Clover (<i>Trifolium repens</i>) - flowers, leaves, seeds	* Dandelion (<i>Taraxacum officinale</i>) - flowers, leaves and seeds	Basket grass (<i>Oplismenus hirtellus</i>) - flowers, leaves and seeds
* Nasturtium (<i>Tropaeolum majus</i>) - flowers and flower buds.	Native geranium (<i>Geranium solanderi</i>) - flowers, leaves and seeds.	Native violets (<i>Viola spp.</i>) - flowers, leaves and seeds.
Pennywort (<i>Centella asiatica</i>) - leaves and flowers.	Kidney weed (<i>Dichondra repens</i>) - flowers, leaves and seeds.	Purple fan flower (<i>Scaevola aemula</i>) - flowers, leaves and seeds.
Native raspberry (<i>Rubus sp.</i>) - flowers, leaves and berries.	* Indian/Wild strawberry (<i>Duchesnea indica</i>) - flowers, leaves and berries.	Cockspur (<i>Plectranthus parviflorus</i>) - flowers, leaves and seeds.
Native sarsparilla (<i>Smilax glycyphylla</i>) - berries.	Blue flax lily (<i>Dianella revoluta</i>) - berries.	Wombat berry (<i>Eustrephus latifolius</i>) - berries.
Weeping grass (<i>Microlaena stipoides</i>) - leaves and seeds.	Maidenhair fern (<i>Adiantum aethiopicum</i>) - leaves.	Native love grasses (<i>Eragrostis spp.</i>) - leaves and seeds.
Lilly pilly - <i>Acmena sp.</i> and <i>Syzygium sp.</i> - fruit.		

The native grasses and herbs as described in this table make lovely groundcovers for your garden and are all safe for lizards and skinks, both as habitat and food.

These plants are very shallow-rooted and easily grown in low long tubs or planter boxes that can be readily placed into an enclosure for a lizard or skink to graze on or shelter in. Some examples of suitable native grasses are included above but there are many more.



For examples of native grasses see [Grasses: native & exotic in the Hornsby Shire](#)

Some toxic native plants to avoid for ALL wildlife

Any plant in the <i>Fabaceae</i> (Legume) family, i.e. Pea family	Hop bush - <i>Dodonea sp.</i>	White cedar - <i>Melia azedarach</i>
New growth on <i>Eucalyptus sp.</i> with red colouring in stems	Kangaroo apple - <i>Solanum aviculare</i> or Blackberry nightshade - <i>Solanum nigrum</i> (<i>Solanaceae</i> Family)	Pepper tree - <i>Schinus molle</i>
Illawarra flame tree - <i>Brachychiton acerifolius</i>	Foxgloves - <i>Digitalis purpurea</i>	Angels trumpet - <i>Brugmansia spp.</i> (<i>Solanaceae</i> Family)

Native birds and animals, even when young, seem to instinctively avoid toxic native plants, however for their wellbeing we should avoid them. For more information please see [Australian Native Poisonous Plants](#).

There are some exotic (introduced) weeds that look like Australian native plants. For more information see [Ground Covers](#) (Hornsby Shire).

Some toxic exotics to avoid for ALL wildlife

<i>Ligustrum sp.</i> - Privet	<i>Nerium oleander</i> - Oleander	<i>Plumeria sp.</i> - Frangipani
<i>Rhododendron spp.</i> - Azalea	<i>Solanum spp.</i> - e.g. Tomato plants and a number of plants in the <i>Solanaceae</i> family	<i>Hydrangea sp.</i> - Hydrangeas
<i>Hibiscus sp.</i> - Hibiscus	<i>Senna pendula</i> - Cassia	<i>Persea americana</i> - Avocado leaves (new)
<i>Cinnamomum camphora</i> - Camphor Laurel	<i>Cotoneaster glaucophyllus</i> - Cotoneaster	<i>Erythrina spp.</i> - Coral trees
<i>Daphne odora</i> - Daphne	<i>Lantana camara</i> - Lantana	<i>Digitalis purpurea</i> - Foxglove

Native animals may not recognise exotic plant species and therefore we do not recommend their use.

Refer to [Flora for Wildlife in Care](#) by Bev and Ian Young.

**IF IN DOUBT – DON'T FEED IT
CHECK WITH A COORDINATOR OR *EXPERIENCED CARER**



*An experienced carer/rehabilitator is someone who has extensive knowledge of current rehabilitation techniques gained through training courses and many years of successfully rehabilitating and releasing wildlife.

NATURAL FOOD FOR WILDLIFE IN CARE

- **Introduction**
- **Live food for animals in care**
- **Catching live food**
- **Insects in compost**
- **Housing and breeding live insects**
 - Aphids
 - Cockroaches
 - Crickets
 - Fruit Flies
 - Grubs
 - Maggots
- **Housing and breeding live insects continued**
 - Mealworms
 - Moths
 - Slaters
 - Snails
 - Woodies
 - Worms
 - Rats, mice and day-old chicks
- **Presentation of food**
- **Food for hand-raised animals**

-
- The [Code of Practice for Fauna](#) has standards and guidelines for feeding protected fauna.
 - Refer to the specific code for the animal you have in care, such as the [Code of Practice for Possums and Gliders](#) or the [Code of Practice for Birds](#).
 - Relevant codes are listed on [Wild Apricot](#).

As a wildlife rehabilitator it is essential that you follow these standards and guidelines.

Introduction

As a wildlife carer you are exposed to many species of native animal, each with their own unique natural food requirements and feeding needs. The truth of the matter is that we can only hope to provide a very poor substitute for this natural diet while an animal is in care, due to the complexity of most animals' diets. In just one survey the rainbow lorikeet has been recorded feeding from 43 species of plants.

The problems associated with providing a natural diet for animals in care are many, ranging from where you can legally collect foliage for possums to “how do I train my fledgling powerful owl to catch ringtail possums”!

The best way to learn about providing for animals in care is by observing animals in the wild. You may not know what plants in your area make suitable ringtail food, but your local ringtails do. Likewise with birds, if you have an opportunity to observe some of the more common species in their natural environment, do so; you will not only learn about what they eat but also how they gather their food and in what types of habitat they can be found.



Possibly the most difficult birds to feed are insectivores. In many species we simply don't know which insects they eat or how they find them. Even when we do know what they eat, we often don't know how to obtain a sufficient quantity.



There are several solutions to this:

- add whatever you can find in the garden to the bird's substitute diet
- provide a habitat for the animals in care that will attract their natural food, such as a planted aviary
- attract insects to your garden by giving them habitat such as sawn logs or trunks, a compost heap or a pile of lawn clippings
- breed your own food.



Live food for animals in care

It is essential to provide live food to animals in care because:

- it provides variety, familiar foods and nutrients from a natural diet, and
- animals learn natural foraging techniques and how to 'deal' with live food.

You can only feed INVERTEBRATES (animals without a backbone) as live food. It is illegal to feed any live vertebrate to an animal (this includes live mice to snakes!).

Catching live food

- Worms, moths, flies, maggots, fruit flies, grubs, mealworms, cockroaches and crickets are all examples of live food that can be found in your garden.
- You must be certain that insects used as food have not been in contact with insecticides or pesticides.



Do not feed live insects if your neighbours use poisons, insecticides or pesticides such as fly spray, roach spray, snail bait or Ratsak. Ingesting insects that have been exposed to these substances can be fatal to an animal.

Insects in compost

Insects from dry compost heaps can be used as live food. However, compost can pose a disease and poisoning risk.

- Do not use insects taken from damp compost litter as fungus spores and diseases may cause respiratory issues for birds.
- You must be certain that insects have not been in contact with insecticides or pesticides.

Care must be taken when placing fresh compost in aviaries. There could be fungi present in damp organic matter which might cause diseases such as aspergillosis (a respiratory disease).

Housing and breeding live insects

What you put into the food for insects, will go into the animals that you have in care. It is very important that all housing containers are cleaned regularly to minimise disease. It is advisable to wear a mask when cleaning to avoid inhalation of dust and faeces. This can lead to serious illness (emphysema).

You must also feed your insects well. Supplements can be added to the live food prior to feeding animals in care. Insectivore mix, reptile mix, cricket supplement, etc, can be purchased at most pet shops.

Watch the [Live Diets for Birds](#) video

Aphids

Aphids breed on rose bushes and succulent plants in the garden. They can be harvested by tapping the leaf or stem of the plant while holding a container underneath.

Cockroaches

Cockroaches are good for lizards, tawny frogmouths, magpies and other insectivores. You can easily catch cockroaches using a soft drink can. Remove the lid and leave a small amount of the soft drink in the can. Cockroaches will climb into the can and be trapped. If you leave the can in your kitchen overnight, you will almost certainly be guaranteed a successful catch. Make sure that no cockroach baits have been used in the area or you may inadvertently poison your birds.

Crickets

Crickets are difficult to breed but may be purchased from pet or aquarium shops and kept for several weeks in a fish tank or a ventilated plastic container.

- Keep them dry! Moisture build-up will kill crickets rapidly.
- Keep them warm if you want to breed them (sand in the bottom of the container will encourage breeding).
- Crickets do not have a long life-span - between 2 to 4 weeks in the right environment.
- Provide water in a shallow dish and put a scouring pad into the dish to avoid drowning.
- Food for crickets: carrot, lettuce, plus animal and calcium supplements.
- Put crickets in the fridge to slow them down prior to feeding to animals.



Remember – crickets jump!



Watch the [Live Diets for Birds](#) video for instructions on breeding your own supply of crickets.

Fruit Flies

Fruit flies are good for small insectivorous birds such as silvereyes, wagtails, swallows, cuckoo shrikes and noisy miners.

- You can catch fruit flies by cutting 1/3 off the top of a plastic bottle (water or soft drink bottles work well).
- Place a bit of soft fruit such as rockmelon or grapes in the bottom portion of the bottle. Turn the top portion upside down (like a funnel) and place it in the bottom portion. The two portions should fit together snugly. This allows the flies to get in, but not out.

When you have captured some fruit flies, place a towel over the bird cage and release the fruit flies in the cage. The towel will stop the fruit flies escaping.

Start offering fruit flies to hand-reared birds as soon as possible so they learn to follow and catch flying insects.

Grubs

The larger insectivores such as kookaburras and magpies relish the grubs of beetles. These can be found in soil, mature mulch piles or decaying tree branches (borers). Lizards love them!

Watch the [The Way to a Blue-tongued Lizard's Heart](#) video

Maggots

The humble maggot is packed with protein and provides a great lunch.

- Maggots can be harvested easily and inexpensively within 7-10 days during the warmer months.
- They can be left to become pupae and added to mixes. Keep them in the fridge or freezer or you may end up with a container of flies.
- Breed them outside to minimise odour.

Watch [Live Diets for Birds](#) for instructions on breeding your own supply of maggots.

Mealworms

Mealworms are easy to cultivate and are attractive to a wide range of animals including insectivorous bats, lizards and birds. The four development stages are worm, pupa, beetle and egg.

- Purchase your initial stock from a pet store or aquarium.
- House mealworms in an ice-cream container. Remove a section of the lid and replace it with fly screen material.
- Put a layer of unprocessed bran as food in the bottom. It will need to be topped up regularly. Mealworms will also eat carrot peel.
- They excrete fine dry droppings which will build up under the bran.
- When the container is full, sift out the mealworms, discard the droppings and start over with fresh bran. Be careful not to do this while the eggs are incubating.

Watch [Live Diets for Birds](#) for instructions on breeding your own supply of mealworms.

Squash or remove the head before giving mealworms to small birds or chicks to prevent them from biting the bird during ingestion.

Some animals find mealworms hard to digest because they have tough skins. Mealworms are quite fatty and should only be given to supplement a diet. Many birds will also eat mealworm pupae and beetles.

Moths

You can attract moths and other flying insects by placing a low-wattage safety light in your aviary. An insect zapper can be a useful harvester of dead insects.

Slaters

Slaters eat dead or decaying organic material. They require a moist cool location and can easily be bred in lawn clippings, or under bricks or wood in the backyard.

Snails

Do not use snails or slugs for birds or possums due to the risk of rat lungworm disease.

Snails can be given to blue-tongued lizards and can be collected from your garden, particularly after rain. You can create a snail lure by a shallow dish of stale beer outside overnight; snails will crawl in and drown. They can then be stored in the fridge or freezer.

Use snails that have not been exposed to snail bait. If you have neighbours that use baits, do not collect snails from your garden. Snail baits are cumulative poisons which build up over time. A healthy-looking snail can still have a toxic effect on your lizard.

Woodies (native cockroaches)

You can encourage the availability of woodies in your garden by placing sawn sections of tree trunks in mulch or dirt areas. As the timber breaks down the roaches will move into the decaying timber.

If you don't have woodies in your garden you can purchase your initial stock of live-bearing cockroaches online or through aquarium supply shops and pet shops.

- Keep them in groups in cardboard egg containers or even toilet roll centres.
- Put a thin, smooth layer of Vaseline spread around the top of the container (approximately 75mm wide) to keep them from climbing out.
- Food for woodies: carrot, lettuce, plus animal and calcium supplements and dry dog food.
- You can provide water, as for crickets, or simply leave them with a piece of carrot.
- Containers need to be kept as clean as possible. Roaches can rapidly become smelly and dirty. They need good ventilation.
- They will live happily in dark, tight places with lots of other woodies.

Watch [Live diets for birds](#) for instructions on breeding your own supply of woodies.



Worms

Worms are good for ducks, omnivorous birds (currawongs, ravens), and lizards.

Compost is a great source for worms, but do not feed tiger worms or leopard slugs to any animals in care, as these worms can transmit parasitic meningitis.

Worms can be stored for several weeks in a plastic container with moist unprocessed bran in the crisper section of your fridge.

Rats, mice and day-old chicks

Rats and mice are packed full of protein, calcium and roughage and offer an essential balanced diet for animals in care. They can be easily bred. If you prefer to purchase them, they are available in all sizes, from less than 1g pinkie mice to 300g+ adult rats.

Sydney Wildlife keeps a supply of day-old chicks in the office freezer.

Larger animals need to be chopped for smaller birds. This is easier to do when the animal is partly frozen, using a sharp knife or kitchen shears.

Animals other than insects should be humanely euthanased prior to feeding. Remember, it is illegal to feed live mice and rats to animals.

Presentation of food

How do we present live food to the animals that we have in care and how do we stop them escaping before consumption?

- Active insects can be put in a plastic container and can be prevented from leaving by a thin film of Vaseline smeared around the rim.
- If the animal in care's hunting skills are still developing, it may be necessary to slow insects down prior to presentation; this can be achieved by placing insects in the fridge for a short time (crickets for about a minute, cockroaches for a little longer).

The ways in which animals locate their food is just as diverse as the food itself; some use their eyes and ears; some dig and others catch insects in the air. Birds that feed on the ground will benefit from being fed on the ground, and those species that feed in the tree-tops should be fed from elevated perches.

It is often necessary to be a little creative in order to get animals to feed naturally. Talk to [experienced carers](#) and your coordinator about methods that they have used for different species.

[Imprinting](#) is a conditioned behaviour that can occur with food. A lorikeet chick eating lorikeet mixture from a white dish will grow up looking for trees with white flowers (or white dishes at worst).

- This problem occurs not only with the way in which the food is presented but also with the time of feeding and the food itself.
- Keep the animal's diet as varied as possible to avoid conditioning to a particular food type.
- It is also a good policy to move food around an aviary and vary the time when food is available to encourage the bird to forage for food in a natural way.

Food for hand-raised animals

- Natural food is particularly important for young animals as they need to develop the skills required to find their own food in the wild.
- When we raise a young animal, it is essential that they have acquired these skills prior to release.
- Although it is easy to mix up commercial food and pop it in the enclosure, a little extra effort on your part will give every animal its best chance of successful release.



The most important points to remember are:

- offer a variety of foods including a natural selection if possible
- find out about the animal's natural behaviour and feed it accordingly
- the longer an animal is in care, the more important a natural balanced diet becomes.

Not only do young animals need to be able to identify natural food, they also need practice finding natural food. They must have these skills to be considered ready for release.



USEFUL RESOURCES

Sydney Wildlife Resources

- [Animal Transfer Policy](#)
- [Application for Membership Renewal Terms and Conditions](#)
- [Boundary and Branch Map](#)
- [Code of Conduct](#)
- [Constitution](#)
- [DPE codes of practice and documents](#)
- [Flora for Wildlife in Care](#)
- [Lone Rescuer Protocol](#)
- [The Role of Your Coordinator](#)
- [Social Media Policy](#)

MediDivert supplies clean hospital waste, such as syringes, saline, dressings and much more, at no cost. Ordering and contact details are available on [Wild Apricot](#).

Commercial Information

- [Chemical Essentials F10](#)
- [Wombaroo Feeding Guidelines for Native Birds](#)

Department of Planning and Environment

- [DPE species codes and guidelines](#)
- [Helping Wildlife in Emergencies](#)
- [Helping Wildlife During Floods](#)
- [Living With Native Animals](#)
- [Native Animal Fact Sheets](#)
- [Protected Native Plant Licences](#)
- [Protected Species](#)
- [Rehabilitating Native Animals](#)
- [Rehabilitation of Protected Animals Policy](#)
- [Wildlife Licences](#)

National Parks and Wildlife Service

- [Pets and Animals in National Parks](#)
- [Protecting Biodiversity](#)

New South Wales Wildlife Council

- [Information for Rehabilitators](#)

- [Emergency Response for Black Summer Bushfires 2019-20 - where are we now?](#)

Other

- [Australian Wildlife Rehabilitation Conference papers](#)
- [FaunaOz Education books](#)

Further reading

- Care and Handling of Australian Native Animals. Suzanne J. Hand.
- Caring for Australian Native Birds. Heather Parsons.
- Caring for Australian Wildlife. Sharon White.
- Care of Australian Reptiles in Captivity. John Weigel.
- Husbandry and Rehabilitation of Injured Native Birds. Dr Anne Fowler.
 - Dr Anne Fowler has written many books on the husbandry and rehabilitation of Australian birds, mammals, marsupials and reptiles.
- Native Plants of the Sydney Region. Baker, Corringham & Dark.
- Readers Digest Complete Book of Australian Birds.
- Taronga Zoo's Guide to the Care of Urban Wildlife. Erna Walraven.
- Urban Wildlife of New South Wales. Edited by John Pastorelli.
- Burnum Burnum's Wild Things Around Sydney. Sainty, Abell & Jacobs (hard to find but is a pocket sized field guide of plants and animals and Aboriginal legends - available from Nokomis)
- Attracting Birds to Your Garden in Australia. John Dengate.

PHOTO CREDITS

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