



# Code of practice for injured or sick reptiles and amphibians

Department of Climate Change,  
Energy, the Environment and Water



## Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

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### Acknowledgements

This code has been prepared in consultation with veterinarians Dr Robert Johnson, Dr Chantal Witten, Dr Mikala Welsh and Dr Aditi Sriram. The department has also prepared the document in consultation with NSW Wildlife Information, Rescue and Education Service Inc (WIRES) and NSW Wildlife Council members: Native Animal Trust Fund Inc, Sydney Metropolitan Wildlife Services Inc, Tweed Valley Wildlife Carers Inc, Wildlife Carers Network Central West Inc, Wildlife Animal Rescue and Care Society Inc, and Wildlife Rescue South Coast Inc.

Cover photo: Eastern water dragon (*Intelligama lesueurii*).  
Shona Lorigan/DCCEEW

Published by:

Environment and Heritage

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Energy, the Environment and Water

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ISBN 978-1-923285-62-0

EH 2024/0286 October 2024

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# Preface

The *Code of practice for injured or sick reptiles and amphibians* (the code) is intended for those authorised to rescue, rehabilitate and release reptiles and amphibians. The code has been developed to ensure the welfare needs of these animals are met and the conservation benefits stemming from their rehabilitation and release are optimised. It also aims to ensure that risks to the health and safety of volunteers rescuing and caring for these animals are reduced and easily managed.

Compliance with the code does not remove the need to abide by the requirements of the:

- *Prevention of Cruelty to Animals Act 1979*
- *Poisons and Therapeutic Goods Act 1966*
- *Veterinary Practice Act 2003*
- *Animal Research Act 1985*
- *Local Government Act 1993*
- *Firearms Act 1996*
- *Biosecurity Act 2015*
- *Protection of the Environment Operations Act 1997*

or any other relevant laws and regulations.

Compliance with the standards in the code is a condition of a biodiversity conservation licence to rehabilitate and release sick, injured and orphaned protected animals issued under the *NSW Biodiversity Conservation Act 2016*. A person who contravenes a condition of their licence is guilty of an offence under section 2.14 (4) of this Act.

The code is neither a complete manual on animal rehabilitation care nor a static document, and must be implemented by a person trained in accordance with *Reptile and amphibian rehabilitation: training standards for the wildlife rehabilitation sector* (DCCEEW 2024).

The code will be periodically reviewed to incorporate new knowledge of animal physiology and behaviour, technological advances, developments in standards of animal welfare and changing community attitudes and expectations about the humane treatment of reptiles and amphibians. The NSW Department of Climate Change, Energy, the Environment and Water (the department) will consult licence holders regarding potential changes to the code and give written notice when the code is superseded.



# 1. Introduction

This code sets standards for the care and housing of a reptile or amphibian that is incapable of fending for itself in its natural habitat. It refers to over 340 species of reptiles and amphibians found in New South Wales but does not refer to sea turtles or sea snakes, which are covered in the *Code of practice for injured and sick sea turtles and sea snakes*.

In New South Wales, 9 species of amphibians and reptiles are listed as critically endangered, and 34 species and 2 populations are listed as endangered. A further 31 species are listed as vulnerable. (See Schedule 1 of the NSW *Biodiversity Conservation Act 2016*.)

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, 6 species of amphibians and reptiles are listed as critically endangered, 15 species as endangered and a further 19 as vulnerable (see Appendix A).

This code comprises both enforceable provisions and guidelines. **Enforceable provisions are identified by the word ‘standards’ and they must be followed.**

## 1.1 Principles

The development of the code has been guided by 4 key principles which apply to all aspects of reptile and amphibian rescue, rehabilitation and release.

### Prioritise the welfare of reptiles and amphibians

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

### Avoid harm to wild reptile and amphibian 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 ecosystems and wildlife communities. At all stages of wildlife rehabilitation, the potential adverse ecological outcomes must be considered and conservation benefits for wild reptile and amphibian populations maximised.

### Minimise the risks to human health and safety

There are many risks in all aspects of rehabilitation, including both personal injury and disease, and these must be considered to ensure preventative measures are in place. All personnel involved in rescue, rehabilitation and release of reptiles and amphibians must understand practical health and safety measures such as undertaking a risk

assessment, using personal protective equipment and delaying action if necessary to ensure safety measures are in place to protect their health and safety.

## Optimise capacity to care

Wildlife rehabilitators must ensure they have the capacity to provide for the essential needs of reptiles and amphibians undergoing rehabilitation, and 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 3 acceptable management options:

- refer the reptile or amphibian to another licensed wildlife rehabilitator with a current capacity to care for the animal
- 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 veterinary assessment and prognosis of reptiles and amphibians in care.

Lowering the standards of care so 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.

## 1.2 Interpretations

### Objectives

'Objectives' are the intended outcomes for each section of this code.

### Standards

'Standards' describe the mandatory specific actions needed to achieve acceptable animal welfare levels. These are the minimum standards of care that must be met. They are identified in the text by the heading 'Standards' and use the word 'must'.

### Guidelines

'Guidelines' describe the agreed best practice following consideration of scientific information and accumulated experience. They also reflect society's values and expectations regarding the care of animals. A guideline is usually a higher standard of care than minimum standards, except where the standard is best practice.

Guidelines will be particularly appropriate where it is desirable to promote or encourage better care for animals than is provided by the minimum standards. Guidelines are also appropriate where it is difficult to determine an assessable standard. Guidelines are identified in the text by the heading 'Guidelines' and use the word 'should'.

## Notes

Where appropriate, notes describe practical procedures to achieve the minimum standards and guidelines. They may also refer to relevant legislation.

### 1.3 Definitions

In this code:

**Amphibians** are members of the vertebrate animal class Amphibia and include frogs, toads and salamanders.

**Barrier nursing** refers to animal care protocols that provide complete isolation of a patient to minimise the risk of cross-contamination, both between patients and from patients to their wildlife rehabilitator. It includes the physical separation of patients, avoiding sharing tools and furniture equipment between animals, wearing personal protective equipment such as masks, eye protection, gloves, gowns, aprons, overshoes, and using infection control procedures such as equipment sterilisation and regular use of disinfectant.

**Bridge** is the bony structure that connects the carapace (upper shell) and plastron (lower shell) on freshwater turtles.

**Brumation** is when reptiles temporarily become sluggish and inactive during extended periods of low temperature (usually in the winter months) to conserve energy. They will have a lowered body temperature, decreased respiration and a lower metabolic rate.

**Chytrid fungus** (*Batrachochytrium dendrobatidis*) is a fungal pathogen that causes the disease chytridiomycosis, which has led to the decline and extinction of Australian frog populations.

**Carapace** is the hard upper shell of a freshwater turtle.

**Curved carapace length (CCL)** is the measurement from the front of the carapace (where the carapace and skin meet) down the midline of the carapace to the back edge of the carapace (over the tail) The tape measure follows the curve of the carapace.

**Dry-docking** is the process of keeping a freshwater turtle out of water, often employed in turtles with significant shell injuries. It assists with faster, more effective healing than if the turtle is left in the water.

**Experienced amphibian or reptile rehabilitator** means someone who has an extensive knowledge of current rehabilitation techniques gained through training courses and many years of successfully rehabilitating and releasing amphibians and reptiles.

**Rehabilitation care plan** means developing a plan for the rehabilitation and care of a reptile or amphibian that includes monitoring, feeding and treatment as well as the plans for release.

**Immediate risk of injury** means the likelihood of an animal becoming injured and requiring care is high if immediate intervention is not undertaken, based on a reasonable situation assessment.



**Jacobson's organ**, also known as the vomeronasal organ, is located just above the roof of the mouth of a reptile and is used to assist with foraging by tracking odour particles in the air, allowing the reptile to follow the scent of potential prey.

**Marine park** is defined as an area declared and managed under the *Marine Estate Management Act 2014*.

**Plastron** is the underside of a freshwater turtle's shell.

**Park** means a national park, historic site, state conservation area, regional park, nature reserve, karst conservation reserve or Aboriginal area reserved under the *NSW National Parks and Wildlife Act 1974*, or any land acquired by the minister under this Act.

**Protected animal** means any amphibian, reptile, bird or mammal (except dingoes) referred to in Schedule 5 of the Biodiversity Conservation Act that is native to Australia or that periodically or occasionally migrates to Australia, including their eggs and young.

**Recovery**, when referring to an individual, means a return to a functional condition after an injury or illness. This includes the natural ability of an animal to feed, interact, move and evade risks and hazards in a wild situation.

**Refeeding syndrome** is a serious and potentially fatal condition that can occur when foods are reintroduced to animals that are severely malnourished.

**Reptile** means any reptile listed or referred to in Schedule 5 of the Biodiversity Conservation Act that is native to Australia, including their eggs and young. Reptiles from the orders Testudines (turtles and tortoises), Crocodylia and Squamata (snakes and lizards) are found in Australia; however, only members of the Squamata and Testudines are native to New South Wales.

**Thermoregulation** is the ability of an animal to maintain a constant body temperature. Reptiles are 'ectothermic', meaning they rely on external sources of heat such as the sun to regulate and maintain their body temperature. Different species have a preferred optimal temperature zone (POTZ).

**Venomous snakes** are mainly from the family Elapidae, which is front-fanged. They include many Australian snakes such as the brown and red-bellied black snakes, taipan and death adder. A few venomous snakes are from the family Colubridae, which have rear fangs delivering a less toxic venom (for example, brown tree snake).

**Wildlife rehabilitator** means someone who is authorised by a wildlife rehabilitation provider, zoological park or is individually licensed by the department to rehabilitate and release protected animals.

**Wildlife rehabilitation** means the temporary care of an injured, sick or orphaned protected animal with the aim of successfully releasing it back into its natural habitat.

**Wildlife rehabilitation provider** means an incorporated wildlife rehabilitation group, individually licensed wildlife rehabilitator or a facility that is licensed by the department under the Biodiversity Conservation Act to rehabilitate and release protected animals.

**Zoonoses** are diseases that can be transmitted from animals to humans.

## 2. Case assessment

### 2.1 Assessing reptiles and amphibians

#### Objective

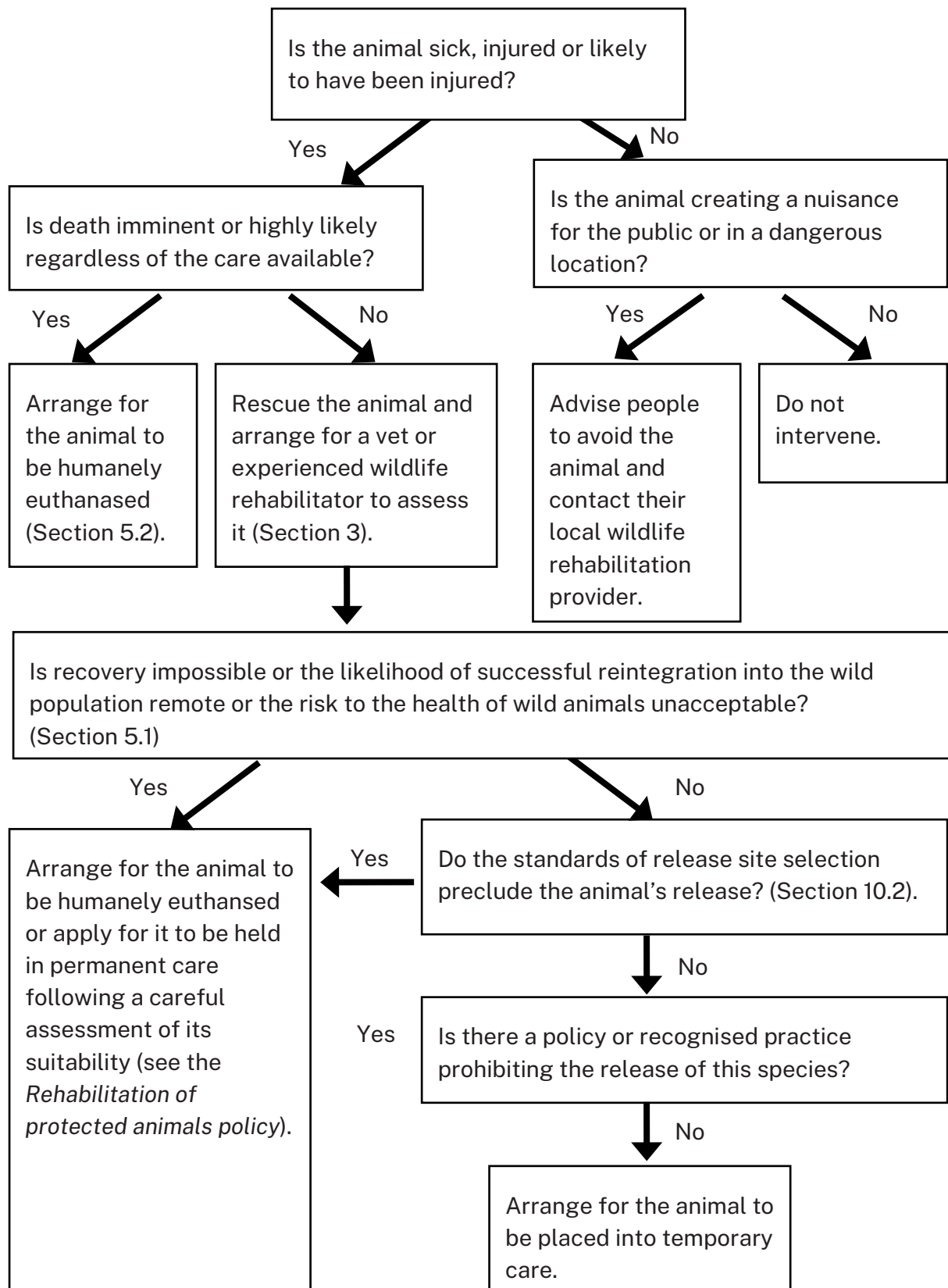
Assess a reptile or amphibian to determine the type of intervention required. The primary objective of rehabilitation is the successful reintegration of the animal back into the wild population, and all decisions are in pursuit of this goal. This will mean that some animals may benefit from rehabilitation whereas others will need to be euthanased.

#### Standards

- 2.1.1 The decision tree in Figure 1 must be followed when determining how to respond to a reptile or amphibian encounter.
- 2.1.2 Rescuers must arrange for the reptile or amphibian to be assessed by a veterinarian or experienced wildlife rehabilitator within 24 hours of rescue to ensure accurate diagnosis and prompt treatment or euthanasia. If this is not possible due to the remoteness of the location, expert advice must be sought (for example, by phone or video conference).
- 2.1.3 Frog eggs and tadpoles that have been rehabilitated must not be released back into the wild. This is to prevent potential disease or pathogen transmission from ranavirus and chytrid fungus. If captured in New South Wales, they must be euthanased.

#### Notes

- 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. It does not include an animal defending its territory (for example, magpie) or exhibiting other normal behaviour (for example, python incubating eggs).
- For managing negative interactions with aggressive wildlife, please review the department's *People and wildlife policy*.



**Figure 1 Decision tree for course of action when an amphibian or reptile is encountered**

# 3. Rescue

## 3.1 Rescuing reptiles and amphibians

### Objective

Rescue a reptile or amphibian to minimise their further stress and injury.

### Standards

- 3.1.1 Before a rescue attempt, the rescuer must assess the risks to the reptile or amphibian from environmental hazards and from capture.
- 3.1.2 Before a rescue attempt, the rescuer must assess the risks to themselves and members of the public.
- 3.1.3 Rescuers must employ the correct rescue equipment and techniques for the size, condition and species of reptile or amphibian and be trained in its use (see Section 11 'Training'). For example:
- venomous snakes must only be rescued by wildlife rehabilitators who have undertaken a venomous snake handling course, which includes training in venomous snake bite first aid
  - pick up a large freshwater turtle by holding the front and back of the carapace (excluding turtles with a carapace, bridge or plastron injury: see 3.1.6). They must not be picked up by the sides of the carapace or by the head, neck or legs
  - use hooks, bags and tubes for snakes
  - use a hoop net or scoop to capture freshwater turtles or amphibians in water.
- 3.1.4 The following methods must not be used to capture a reptile or amphibian:
- turning a lizard or freshwater turtle upside down or onto its back
  - using tongs
  - grasping a gecko or skink by the tail as they will discard the tail as a defence mechanism (known as 'tail autotomy')
  - grasping a death adder by the tail; this is to ensure the tail, which is used as a lure, is not damaged and the rescuer is not bitten due to the adder's short body length
  - pulling a lizard or freshwater turtle by the tail
  - dragging a reptile backwards
  - using loose netting, snap traps or sticky glue traps.
- 3.1.5 Rescuers must take steps to protect reptiles and amphibians from additional stressors during rescue, such as onlookers, loud noises, other animals and extremes of temperature.

- 3.1.6 Rescuers must take care to prevent further injury to a reptile or amphibian, for example:
- support the whole body of a lizard when handling – do not let the caudal (tail) end hang down when handling
  - support and handle gravid (or potentially gravid) reptiles gently
  - support and handle snakes that may have eaten recently gently, to prevent stress on the digestive system and unnecessary regurgitation
  - lift a turtle with a carapace injury on a cushioned solid object such as a stretcher, mat or foam to limit movement; the carapace must not be touched
  - ensure careful placement of rescue equipment around injured snakes
  - support the bulk of a snake’s body during capture to avoid injury to the spine.
- 3.1.7 Rescuers must wear powder-free nitrile or latex gloves and change them between each animal when handling any amphibian. This is to protect the animal’s fragile skin, which is covered in glands and very permeable.
- 3.1.8 Rescuers must use suitable work health and safety techniques to minimise the risk of injury to the rescuer. For example:
- wear personal protective equipment such as closed shoes, long sleeves and pants, safety high-viz vests
  - carry a first aid kit including a snakebite compression bandage when rescuing all snakes
  - treat and handle all snakes as venomous unless identified as non-venomous with full certainty
  - wash hands or use hand sanitiser to clean hands before and after rescuing (except with amphibians: see 3.1.7)
  - never reaching across or over a large lizard (particularly carnivorous lizards such as monitors) unless their head is restrained
  - when rescuing animals such as turtles from water sources (for example, ponds and rivers), take care to avoid accidental drowning. If entering the water ensure it is safe to do so and additional personnel are present to assist.
- 3.1.9 Members of the public must not be involved with the rescue of snakes and must be encouraged to keep away from the animal to minimise the risk of snake bite.
- 3.1.10 Unless there is an immediate risk of injury from human or domestic animal attack, rescuers must discreetly monitor snakes rather than immediately attempting to rescue them, to identify if the snake is undertaking a natural behaviour and does not need intervention. For example:
- shedding its skin (ecdysis)
  - digesting its prey after recently eating, in which case disturbance may cause regurgitation
  - digging a hole to nest



- being sluggish and inactive during an extended period of low temperature (brumation)
- forming part of a breeding ball (where many male snakes swarm around a female)
- forming part of a pair of male snakes (for example, eastern brown or red-bellied black snake) fighting to determine who will breed with a female
- gathering in groups, which is a behaviour common to species such as the yellow-faced whip snake – regularly found under rocks or in crevices in winter months with several individuals together, or common tree snakes who gather in roof spaces.

3.1.11 When using traps to rescue a snake or monitor, take care to prevent further injury. Wildlife rehabilitators must ensure the trap:

- is only used for a snake when other methods cannot be used, and the snake is known to move from a certain access point or hole (for example, a snake under concrete that cannot be dug out)
- is made from a non-abrasive material (such as shade cloth for a snake trap) and has no sharp surfaces
- is designed to prevent damage to a monitor’s tail from the trap door slamming down (for example, a hose sliced in half moulded around the front of the base of the trap)
- is an appropriate size for the species (for snakes: funnel traps with a 60–80 cm length and 25 cm diameter; for small monitors: Elliot traps; for large lace monitors: a large 1-metre-square crab trap)
- has easy access (such as a side zipper) to release the animal
- has been baited with appropriate food (for example, for snakes: scented with rodent droppings; for lace monitors: raw chicken cable-tied to the base)
- is covered with a towel in a dark colour (except for the door) to provide a secure environment to reduce stress
- has protection from heat or rain if the trap is set outdoors
- is checked regularly (at least every 8–12 hours for snakes and every 2–3 hours for lace monitors).

3.1.12 Rescuers must ensure the spine and tail of a reptile are protected from damage as they can easily fracture. Care must be taken when placing snakes into a bag to ensure no part of the animal is trapped in the twist of the bag.

3.1.13 Upon receiving knowledge of the location or the capture of a non-native reptile or amphibian listed in Schedule 3 of the *Biosecurity Act 2015*, wildlife rehabilitation providers must immediately notify the NSW Department of Primary Industries and Regional Development by calling 1800 680 244 or completing their online reporting form. They must then follow any instructions from them regarding that animal.

- 3.1.14 If there is strong evidence that the animal is an escaped pet (for example, it was found well outside its natural range), the wildlife rehabilitation provider must:
- make reasonable efforts to locate the owner and return it – for example, by taking the animal to a veterinarian to determine if it is microchipped or by calling the local herpetology group
  - otherwise, notify the NSW National Parks and Wildlife Service Wildlife Team using the appropriate form so the animal can be rehomed.
- 3.1.15 For all rescues of reptiles or amphibians listed as critically endangered or endangered on Schedule 1 of the Biodiversity Conservation Act (see Appendix A), wildlife rehabilitation providers must immediately notify the National Parks and Wildlife Service by contacting the wildlife licensing team at [wildlife.licensing@environment.nsw.gov.au](mailto:wildlife.licensing@environment.nsw.gov.au) to determine the best facility for rehabilitation.
- 3.1.16 If multiple animals are rescued (for example, on a fire ground) the containers in which they are placed must be labelled with a unique ID number, capture location, date and rescuer's name.

## Guidelines

- 3.1.17 Rescuers should seek professional help when rescues involve climbing to heights or confined spaces to minimise the risk of injury to the rescuer.
- 3.1.18 Adult lace monitors, Rosenberg's goannas and Gould's goannas should be rescued by at least 2 people.
- 3.1.19 While rescuing a reptile or amphibian, handling should be kept to a minimum to reduce stress to the animal.
- 3.1.20 Freshwater turtles with carapace, bridge or plastron injuries may require immediate first aid to stabilise the injury before transport (for example, using bandages to stabilise obviously mobile shell fragments).

## Notes

- When rescuing a snake that is shedding its skin (undergoing ecdysis), hold the animal above or below the point where the skin is shedding to reduce the chance of the reptile escaping capture.
- Rescuers must seek immediate medical attention for even suspected bites. If bitten, rescuers should keep still, call an ambulance and apply a pressure immobilisation bandage. Tourniquets should not be applied and the bite site should not be washed, cut or sucked. Symptoms from a venomous bite can include nausea, vomiting and headache; however, first aid should be applied regardless of whether these symptoms are present. If someone has collapsed following a snake bite start cardiopulmonary resuscitation (CPR) immediately; this can be lifesaving.

# 4. Transport

## 4.1 Moving reptiles and amphibians

### Objective

During transport, minimise further stress and injury to the animal. This section applies to all movement of reptiles and amphibians, including from the point of rescue to a veterinary surgery, between rehabilitation facilities and to a release site.

### Standards

- 4.1.1 Transport methods and container sizes must be appropriate for the species, condition, size, temperament and strength of the reptile or amphibian. For example:
- reptile eggs need to be marked with a pencil or marker by placing a dot in the centre in the position they are found and then placed in a damp substrate in same position
  - amphibians require a container with a damp sponge or paper towel to allow them to grip.
- 4.1.2 Containers must be designed and set up to prevent injuries to the reptile or amphibian. For example:
- line the base of a big container with a soft towel to cushion the reptile
  - use snake bags with a breathable non-slip, non-ingestible, tangle-free surface (no loose threads)
  - do not use mesh and wire containers
  - limit movement within the container for animals with spinal injuries (for example, place lace monitors in a PVC pipe to ensure they remain straight and do not curl around)
  - do not use shredded paper, straw, sawdust, cat litter or hay as a substrate
  - if using a snake bag or smaller container for small lizards or amphibians, place it inside a larger solid transport container to prevent crushing injuries (such as from a seatbelt)
  - secure the container to prevent movement
  - place a turtle into a plastic tub with a towel or soft padding on the bottom to provide cushioning and prevent shell damage.
- 4.1.3 Containers must be designed to prevent the reptile or amphibian from escaping, for example:
- snakes must be in a lockable container
  - the opening of a snake bag must be twisted closed, doubled over on itself and secured with an adjustable clamp or cable tie.

- 4.1.4 While in the container, the reptile or amphibian must be positioned so its breathing is not restricted and its pain or discomfort is minimised.
- 4.1.5 The container must be well-ventilated so air can circulate around the reptile or amphibian.
- 4.1.6 The container must be kept at a temperature that is appropriate for the species of the reptile or amphibian.
- 21°C is appropriate for amphibians.
  - Avoid extremes of hot and cold temperature for reptiles.
- 4.1.7 Freshwater turtles must not be transported in water.
- 4.1.8 During transport, containers holding snakes must have a clearly visible warning label that says 'DANGER – VENOMOUS LIVE SNAKE'.
- 4.1.9 The wildlife rehabilitator must minimise light, noise and vibrations (for example, cover the container with a breathable dark cloth) and prevent contact with young children, pets, cigarette smoke and strong smells.
- 4.1.10 A reptile or amphibian must not be fed during transport.
- 4.1.11 Snake bags must:
- be dark in colour to mimic a hide and reduce stress
  - have the corners sewn at an angle (blind corners) to provide a safe gripping corner to prevent accidental envenomation from touching the main body of the snake bag.
- 4.1.12 A reptile or amphibian must not be transported:
- in the back of an uncovered utility vehicle
  - in a car boot that is separate from the main cabin and which is not temperature controlled
  - on the rescuer's lap
  - on the body or under the clothing of a rescuer.
- 4.1.13 For longer transport journeys (over 2 hours) reptiles and amphibians should be monitored frequently.
- 4.1.14 Wildlife rehabilitators must consult a veterinarian to gain approval for the use of medication to facilitate transport of a reptile or amphibian.

## Guidelines

- 4.1.15 Transport of the reptile or amphibian should be the sole purpose of the trip and undertaken in the shortest possible time.

# 5. Euthanasia

## 5.1 When to euthanase

### Objective

End a reptile or amphibian's life in situations where death is imminent, full recovery is impossible, the likelihood of successful reintegration into the wild population is remote, or the animal poses an unacceptable disease risk to other animals in the wild once released.

### Standards

5.1.1 Wildlife 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 (such as sunshine virus) that may pose a health risk to other wild animals
- its ability to consume food unaided is permanently impaired due to injured jaw, teeth or fangs
- an experienced wildlife veterinarian makes that recommendation
- it has significant burns to the face, body digits, nail beds, tail or feet
- its ability to reproduce is lost due to an injury, disease or procedure
- (for freshwater turtles) an injury renders it unable to withdraw its head under the carapace
- (for freshwater turtles) it has a major crack in its carapace and/or plastron involving displaced or missing segments from which it is unlikely to heal
- it is at a stage of development where it is unlikely to be artificially reared to the point where it can be released (for example, an egg without a shell or infertile when candled).

5.1.2 A reptile or amphibian must be euthanased (unless the department has granted permission to hold it in permanent care) when:

- there is no suitable release location
- its ability to move normally (run, climb, crawl, hop or swim) is permanently impaired due to a missing or injured limb, spine or tail. For example:
  - loss of both limbs on one side
  - for freshwater turtles, both front legs above the elbow
  - significant damage to the tail for arboreal species (such as tree snakes) that use the tail to wrap around the tree trunk and branches, or species that use the tail as a lure



- its ability to sense its environment (see, hear, taste or feel) is permanently impaired due to a missing or injured organ (for example, blindness in both eyes, injured tongue or nose)
- it is a male reptile and cannot pin down a female for mating due to injury
- it is a territorial reptile that has been in care for an extended period (for example, one month for adult male eastern water dragons)
- its ability to catch or handle food is permanently impaired due to missing or injured digits, missing jaw, injury to the tongue or Jacobson’s organ
- it is an amphibian with chytrid fungus disease (chytridiomycosis) where treatment has been unsuccessful.

In certain exceptional circumstances, the department may grant permission to hold such animals in permanent care or arrange placement with an authorised animal exhibitor licensed by the Department of Primary Industries and Regional Development. See the *Rehabilitation of protected animals policy* for details.

- 5.1.3 Frog eggs and tadpoles, if captured in New South Wales, must be euthanased to prevent potential disease transmission from ranavirus and chytrid fungus.
- 5.1.4 Cane toads (*Rhinella marina*) must be euthanased as they are not a protected species and it is an offence to release them under the Biodiversity Conservation Act (see Section 2.6 ‘Liberating animals’).
- 5.1.5 The decision to euthanase species listed as critically endangered or endangered in Schedule 1 of the Biodiversity Conservation Act must not be based solely on availability of wildlife rehabilitators within the rescue group. The group must liaise with other licensed groups to facilitate care (see Standard 3.1.15).

## Guidelines

- 5.1.6 A freshwater turtle should be euthanased when rehabilitation will not be completed in one year.
- 5.1.7 A reptile’s demeanour should be carefully considered before undertaking extended rehabilitation.
- 5.1.8 Reptiles and amphibians with significant injury (for example, jaw fracture) should be continually assessed during the rehabilitation phase to ensure their ability to feed is compatible with survival and thriving post-release.

## 5.2 How to euthanase

### Objective

Minimise pain and distress to the animal when inducing death.

## Standards

5.2.1 A euthanasia method must be used which produces a rapid loss of consciousness immediately followed by death.

5.2.2 Death must be confirmed immediately following a euthanasia procedure and before disposal of the carcass. Criteria for confirming death in reptiles and amphibians include:

- no spontaneous movement or reaction to a stimulus such as firmly squeezing the tip of a limb or tail
- no corneal reflex response
- rigor mortis
- veterinary examination confirms no audible heartbeat on a Doppler monitor
- veterinary examination confirms no meaningful cardiac activity as detected by echocardiography or electrocardiography.

5.2.3 Acceptable methods for euthanasia include:

- anaesthesia followed by an intravenous (preferred) or intracardiac injection of sodium pentobarbital. This must be performed by a veterinarian
- captive bolt or gunshot to the brain for large lizards
- blunt force trauma to the base of the skull with a single blow
- destruction of the brain using a heavy ( $\geq 5$  kg) sledgehammer and a pointed chisel with a handguard for moribund or unconscious large lizards and snakes
- stunning followed by decapitation and/or destruction of the brain for small reptiles and amphibians ( $< 100$  g)

Note: once a primary accepted method has been used to initiate euthanasia and the animal is unconscious, one or more adjunctive methods may be used to ensure death. These include decapitation or pithing.

5.2.3 The following euthanasia methods must not be used on reptiles and amphibians:

- suffocation via drowning, strangulation or chest compression
- freezing or burning
- carbon dioxide or carbon monoxide in any form
- poisoning with household products
- air embolism
- exsanguination
- decapitation without prior stunning
- electrocution or microwave irradiation
- chloroform or strychnine
- neuromuscular blocking agents.

5.2.4 Shooting must be undertaken by a licensed, skilled and experienced wildlife rehabilitation provider or an appropriate agency, such as the National Parks and Wildlife Service, the Royal Society for the Prevention of Cruelty to Animals (RSPCA) or the NSW Police Force.

5.2.5 A reptile or amphibian must not be placed in a fridge or freezer before euthanasia.

## Guidelines

5.2.6 A reptile or amphibian that requires euthanasia should not be exposed to additional stressors such as large numbers of onlookers, people touching it, loud noises or extremes of temperature.

5.2.7 A trained venomous snake handler should be present to restrain a venomous snake while it is being euthanased.

## Notes

- *Australian code for the care and use of animals for scientific purposes*
- Australian Veterinary Association, Euthanasia of injured wildlife policy
- American Veterinary Medical Association, Guidelines for the euthanasia of animals (PDF, 11.8 MB)
- Firearms Act 1996, which specifies animal welfare as a genuine reason for having a firearms licence
- Veterinary Practice Act 2003, which places restrictions on the types of procedures non-veterinarians can perform on animals
- Poisons and Therapeutic Goods Act 1966, which places restrictions on the types of poisons people can possess.

## 5.3 Disposal of carcasses and animal waste

### Objective

Minimise the risk of disease transmission when disposing of waste.

### Standards

- 5.3.1 Carcasses and organic waste suspected or confirmed to be contaminated with infectious disease, or that are suspected or confirmed to have been exposed to chemicals (for example, barbiturates or rat poison), must be incinerated (under licence), taken to a licensed waste facility, or, if on private land, buried at a depth that will prevent scavengers from reaching them.
- 5.3.2 Reptiles and amphibians that have died during rescue or rehabilitation must not be fed to other animals.
- 5.3.3 Venomous snake carcasses and transport bags can cause secondary envenomation and must be handled with caution:
- provide a safe grip by having the snake bag's corners sewn at an angle ('blind corners')
  - tape around the head and lower jaw to ensure there is no possibility of the fangs penetrating the transport bag.

### Guidelines

- 5.3.4 If the cause of death is uncertain, a deceased reptile or amphibian should, whenever possible, undergo a necropsy by a veterinarian.
- 5.3.5 Once death has been unequivocally confirmed by an experienced wildlife rehabilitator or veterinarian, the carcass of a potentially gravid female reptile should be examined for the presence of viable eggs or live young.
- 5.3.6 Wildlife rehabilitators should make every effort to reduce the risk of contracting zoonoses such as salmonella, mycobacteriosis and fungal infections by:
- implementing barrier nursing techniques (such as covering all cuts and open wounds before handling, wearing personal protective equipment such as a mask, gloves and gown)
  - having vaccinations for tetanus
  - not eating, drinking or placing hands near or in their mouth until after washing hands after handling a reptile or amphibian
  - not kissing a reptile or amphibian
  - changing or washing shoes before entering the house after walking through reptile enclosures.

- 5.3.7 DNA samples should be collected from dead reptiles and amphibians and sent to the Australian Museum. Using appropriate equipment (such as gloves and sterile scissors or scalpel) obtain a 0.5 cm x 0.5 cm tissue sample, place the sample into a tube with 90–95% ethanol or dimethyl sulfoxide (DMSO) for preservation, or store dry in a freezer. Label or affix details including as a minimum: name of species, date of sample collection, location animal was found, organisation and the unique rehabilitation ID number. A deed of gift will need to be provided for all samples sent to the Australian Museum.
- 5.3.8 The Australian Museum should be contacted for all dead species listed in Schedule 1 of the Biodiversity Conservation Act, as these are of scientific significance.

## Notes

- Further information on carcass disposal, including specific information on the proper construction and location for a burial site to protect the water table, can be found in the Department of Primary Industries and Regional Development fact sheet [‘Animal carcass disposal’](#) (PDF, 249KB).
- Further information on zoonotic diseases can be found in the Wildlife Health Australia fact sheet [‘Zoonoses and Australian wild reptiles’](#) (PDF, 278KB).



# 6. Care procedures

## 6.1 Assessment

### Objective

Identify the severity of wounds, injuries or disease to determine the best course of action for a reptile or amphibian undergoing rehabilitation.

### Standards

- 6.1.1 On admission into care a reptile or amphibian must undergo assessment based on its injuries and condition. For example:
- a veterinary assessment as soon as possible and within 24 hours for all reptiles or amphibians rescued with major trauma (for example, from dog attack, vehicle strike, burns) or gravid
  - for all other reptiles and amphibians, assessment by an experienced wildlife rehabilitator within 24 hours. Upon admission the animal must also be weighed, and its stage of development (juvenile or adult) and species identified.
- 6.1.2 Upon admission a reptile or amphibian must be checked for:
- discharge or bleeding from the eyes, mouth, nostrils, cloaca or ears (lizards)
  - external wounds (for example, puncture wounds)
  - fractures or serious trauma (include jaws, tail, all limbs, and alignment of spine)
  - eye condition (dilated pupils, erratic eye movements, sunken eyes, symmetry when viewed from above, swelling, blindness and cataracts)
  - signs of shock, such as pale or blue oral mucous membranes (gums)
  - respiration (for example, rapid, noisy, raspy or irregular breathing, bubbles from the nose)
  - hydration levels (skin pinch check test, tacky saliva, dry sticky tongue, sunken eye sockets, dull eyes)
  - disease (for example, wart-like lesions, diarrhoea, red discolouration of skin and scales, softness of the plastron or carapace for a freshwater turtle, or small red dots or bleeds known as petechiae on the inside of the mouth)
  - neurological injuries (for example, walking in circles, remaining in a curled position, inability to right itself, muscle weakness [paresis], poor coordination [ataxia] or a snake continuously looking upwards [star gazing])
  - body condition by manual assessment (for example, prominent ribs for all reptiles and amphibians, prominent hip bones and thin tail base in lizards, sunken head and shoulder blades on monitors and bearded dragons, concave plastron and poor muscle mass for freshwater turtles)
  - prolapsed cloaca for reptiles and amphibians
  - injury to the digits and claws for lizards

- signs of poisoning from garden sprays or snail pellets (for example, fitting, frothing, pellet remnants in mouth)
- mobility (for example, a lizard or amphibian dragging their back legs, only the front half of a snake moving, arboreal snakes unable to grip)
- scale condition for all reptiles (for example, uneven scales, injuries and lesions)
- skin slough for amphibians
- external parasites (for example, ticks, mites, leeches and maggots)
- swelling and lumps (for example, tumour, abscess, gastrointestinal foreign body or cyst).

6.1.3 Upon admission a freshwater turtle must also be checked for:

- fractures or serious trauma to the carapace, bridge, plastron, legs or head
- body or limb reflex (gently touching the back of the neck, forward of the carapace, should cause the turtle to lift or retract its head)
- floating or buoyancy disorders (placing the turtle in water deep enough to assess if it can dive to the bottom and stay submerged, unless it has cracks or serious wounds on the carapace, plastron or shell)
- entanglement (fishing lines, rope or other debris embedded in skin, scales or around the carapace)
- ingestion of debris or fishing gear (indicated by foreign materials extending from either the cloaca or mouth).

6.1.4 Upon admission a snake must also be checked for:

- pupil dilation response (the pupils must be symmetrical)
- obstructions of the airways and gastrointestinal tract
- evidence of poor sloughing (dysecdysis).

6.1.5 All amphibians must be tested by PCR for chytridiomycosis (chytrid fungus).

6.1.6 Once identified, disease or injury must be managed according to severity, and this will generally require veterinary input. Always strive for optimal animal welfare when managing reptiles and amphibians in care. Recognition and management of pain is important.

6.1.7 Upon admission, reptiles must be provided with warmth as all their metabolic processes are intrinsically linked with body temperature. The administration of fluid and medications is likely to have minimal benefit until the animal is heated to preferred body temperature.

## Guidelines

- 6.1.8 Freshwater turtles with shell fractures should be radiographed to assess for internal injuries such as fractured bones and, in adult females, the presence of eggs.
- 6.1.9 Handling should be minimised during assessment for reptiles that have just eaten or gravid females.

## Note

- Reptiles stop seeking a heat source to drop their temperature just before going into brumation. While this is a natural occurrence, in some cases (based on veterinary advice) steps need to be taken to prevent brumation while animals are undergoing rehabilitation as it will hinder healing.

## 6.2 Monitoring

### Objective

Check the health of a reptile or amphibian 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.

### Standards

- 6.2.1 Monitoring a reptile or amphibian must include:
- visually assessing body condition
  - visually checking wounds or injuries
  - determining food and water intake levels
  - observing activity level (for example, is the animal seeking heat or moving to the colder section of the enclosure, tongue flicking, climbing, swimming)
  - noting quantity and quality of scats and urates
  - looking for changes in behaviour (for example, signs of aggression and stress)
  - noting skin and scale condition (for example, signs of skin shed)
  - checking for signs of injury, disease and parasites.
- 6.2.1 Reptiles and amphibians in intensive care must be monitored at least 4 times a day and weighed as follows:
- small lizards must be weighed daily
  - large lizards, snakes and amphibians must be weighed once a week
  - weigh at a consistent time (for example, every Monday morning at feeding time).

- 6.2.2 Snakes and lace monitors in intensive care must be monitored for stress and pain (for example, a snake coiling into a tight ball and biting itself). However, observing snakes and lace monitors can increase their stress, so this risk must be considered when deciding the frequency of monitoring. For example:
- monitoring at the same time as handling the animal for treatment
  - covering the enclosure with a towel or sheet so they do not see outside movement.
- 6.2.3 A reptile or amphibian being prepared for release must initially be monitored twice daily then daily to determine if it is physically and behaviourally ready for release (see Section 9 ‘Suitability’) and weighed only when there are concerns about poor activity levels.
- 6.2.4 When multiple reptiles are in the same enclosure (this would only be hatchlings and juveniles from the same clutch) they must be monitored for signs of aggression including dominance behaviours.
- 6.2.5 Wildlife rehabilitators must monitor the ambient temperature, humidity and UV light within enclosures containing thermal support (such as blankets and electric heat mats, in-line or immersible heaters for freshwater turtles) at least once a day to ensure appropriate temperatures and light levels are maintained. Electrical heat sources must be regulated by a thermostat.
- 6.2.6 Antibiotics must be given by or under the prescription of a veterinarian and with extreme caution due to the spread of antibiotic resistance and harm to wild populations.
- 6.2.7 Egg-laying reptiles (for example, pythons and bearded dragons) and live bearers (such as blue-tongue skinks, but excluding Cunningham’s skinks) must be carefully monitored to ensure that hatchlings and newborns are not immediately eaten by the parent.

## Notes

- Placing butcher’s paper or puppy training pads on the base of an enclosure assists with monitoring for the presence of blood, pus, faeces and parasites.

## 6.3 Controlling disease transmission between animals

### Objective

Prevent the spread of diseases among reptiles and amphibians undergoing rehabilitation. Stressed animals are more susceptible to contracting and expressing infectious diseases.

## Standards

- 6.3.1 Every reptile and amphibian must be kept under strict quarantine conditions with individual enclosures throughout their rehabilitation, except for hatchling or juvenile reptiles that are confirmed to be from the same clutch or nesting event. For animals suspected or known to be carrying an infectious disease, wildlife rehabilitators must wear personal protective equipment such as a gown, mask and gloves.
- Signs of disease may include abnormal breathing sounds, swelling, discharge from eyes, nose or cloaca, diarrhoea, red discolouration of the skin, skin lesions, thickened skin, excessive keratin, abnormal righting reflexes, reluctance to move, abnormal movements of the head, body or legs for amphibians.
- 6.3.2 If a reptile or amphibian is suspected to be carrying an identifiable disease (for example, ranavirus, chytrid fungus disease) or an unusual disease or mortality event is suspected, the wildlife rehabilitator must immediately contact their species coordinator to notify the 24-hour Department of Primary Industries and Regional Development emergency animal disease hotline on 1800 675 888 for immediate assessment of emerging health threats.
- 6.3.3 Dedicated cleaning equipment must be used for enclosures housing reptiles and amphibians with a suspected or confirmed infectious disease. This equipment must not be shared.
- 6.3.4 All enclosures, transport containers, enclosure furniture, food and water containers and feeding equipment must be thoroughly cleaned and disinfected between each occupant, with an appropriate disinfectant (such as 'F10') that has both antibacterial and antiviral properties.
- 6.3.5 For reptiles, wildlife rehabilitators must wash their hands thoroughly with soap or disinfectant before and after handling each animal in care. If wearing gloves these must be changed between each animal.
- 6.3.6 For amphibians, wildlife rehabilitators must wear powder-free nitrile or latex gloves and change them between handling each animal in care.
- 6.3.7 Other species undergoing rehabilitation must not be kept in the same enclosure as a reptile or amphibian.
- 6.3.8 When handling multiple animals, rehabilitators must start with the healthiest and finish with the sickest to reduce the risks of disease transmission.
- 6.3.9 Wildlife rehabilitators must refrain from being affectionate (for example, kissing animals) or placing reptiles and amphibians inside their clothing as there is an increased risk of disease transmission such as salmonella from scratches and bites.



- 6.3.10 Wildlife rehabilitators must make every effort to reduce the risk of contracting zoonoses such as salmonella, mycobacteriosis and fungal infections by:
- implementing barrier nursing techniques (for example, covering all cuts and open wounds before handling, wearing personal protective equipment such as a mask, gloves and gown)
  - having vaccinations for tetanus
  - not eating, drinking, or placing hands near or in their mouth until after washing hands after handling a reptile or amphibian
  - changing or washing shoes after walking through reptile enclosures before entering the house.
- 6.3.11 Reptiles and amphibians undergoing rehabilitation must be kept away from domestic pets and in a separate room from other licensed captive reptiles, rescued domestic reptiles or reptiles seized by government agencies.

## Notes

- If unwell, wildlife rehabilitators should seek medical advice and advise the doctor that they are caring for a sick animal and there is a possibility of having contracted a disease.
- It is recommended that pregnant women or immunocompromised people seek medical advice before handling or caring for sick animals.

# 7. Rehabilitation care

## 7.1 Food and water

### Objective

Ensure the reptile or amphibian 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.

### Standards

- 7.1.1 Clean, fresh drinking water must be available each day and changed daily except in the case of shinglebacks and reptiles with fungal infections (see Standard 7.1.2).
- 7.1.2 Water containers must be designed and positioned to avoid spillage and contamination and must be appropriate for the size, age, condition and mobility of the reptile. For example:
- for reptiles with fungal infections (for example, scale rot), drinking water must only be available for a limited time frame each day (2 or 3 hours), and in order to maintain a reasonably dry environment the bowl must not be placed under or near a heat source
  - for shinglebacks, drinking water must only be available for a limited time frame each day (2 or 3 hours a day)
  - for species that prefer to lap water droplets (for example, some tropical and desert-adapted species), use techniques such as misting to provide water.
- 7.1.3 Food in storage must not be accessible to pets, pests and wild animals, and must be stored, frozen and thawed in a manner that prevents contamination and nutritional loss.
- 7.1.4 Food that is available in the wild or that mimics food available in the wild must form the basis of the reptile or amphibian's diet.
- 7.1.5 Reptiles and amphibians must be provided with a balanced and complete diet that supports growth and development and is appropriate for the species, size, stage of development, condition and mobility of the animal. For example:
- reptiles require a variety of foods suitable for the species (see Appendix D)
  - insectivorous reptiles being prepared for release require live insects
  - food for omnivorous and insectivorous species must be varied
  - most amphibians are generalist feeders and can be fed a range of insects and mealworms
  - insects being raised to feed reptiles (such as meal worms and crickets) must be given vitamin supplements in their diet ('gut loading')

- to avoid refeeding syndrome, reptiles and amphibians with poor body condition must not be overfed when first admitted into intensive care. Food must be introduced slowly (one-third of their energy requirement for the day) and increased as their appetite returns and they are able to tolerate extra food
  - frozen food must be thawed and served at room temperature (not heated)
  - care must be taken to ensure reptiles and amphibians maintain a healthy weight by promoting the consumption of natural foods and limiting mealworms.
- 7.1.6 Wildlife rehabilitators must employ the correct feeding techniques for the size, condition and species of reptile or amphibian. For example:
- feed a reptile only if it is within its preferred optimal temperature zone (POTZ, see Appendix C)
  - place food for lizards in the coolest section of the enclosure
  - when feeding amphibians, simulate a live animal by moving a food item with tweezers
  - when feeding freshwater turtles, interact only in the initial intensive care stage when some turtles need encouragement to feed. As soon as the turtle shows signs of self-feeding, minimise all feeding interactions.
- 7.1.7 Food for an omnivorous or insectivorous species (such as some lizard and turtle species) should be periodically enriched with vitamins and calcium. Care should be taken that an appropriate calcium/phosphorus balance is maintained to avoid overdosing. A variety of suitable liquidised and commercial formulas can be used for this purpose, as advised by a veterinarian or experienced reptile rehabilitator.
- 7.1.8 Wild caught animals must not be used as food for reptiles in care as this poses a disease and poisoning risk.
- 7.1.9 If venomous snakes require feeding assistance, this must only be undertaken by a veterinarian or experienced reptile rehabilitator trained in venomous snake handling – for instance, venomous snakes that do not actively eat food offered and need to be tube-fed or force-fed blended food.

## Notes

- The feeding of live vertebrate prey to an animal is only acceptable under certain circumstances, as set out in the NSW *Prevention of Cruelty to Animals Act 1979*. Rehabilitators are encouraged to request further information from the animal welfare branch of the Department of Primary Industries and Regional Development.
- Follow the exact measurement directions for hydration products, as modifying the amounts and adding extra product into a solution will hinder rehydration.

## 7.2 Hygiene

### Objective

Maintain clean rehabilitation facilities so diseases are prevented or contained.

## Standards

- 7.2.1 Faeces must be removed as soon as they are observed and disposed of so they cannot be consumed by other animals (for example, in closed garbage bins).
- 7.2.2 Uneaten food must be removed and disposed of so that it cannot be consumed by other animals (for example, in closed garbage or compost bins) after:
- 20 minutes for live insects fed to reptiles and amphibians
  - one day for lace monitors
  - in the morning for nocturnal species
  - in the evening for diurnal species.
- 7.2.3 Food and drinking water containers must be cleaned daily. Cleaning involves the use of water, detergent (except for amphibians) and the physical removal of all residues.
- 7.2.4 If bathing water is required, it must be in a separate area from drinking water and changed daily or when soiled (whichever is more frequent).
- 7.2.5 Enclosure furniture must be kept clean and either replaced between each occupant or disinfected and rinsed between each occupant.
- 7.2.6 Branches, logs and porous enclosure furniture must be replaced between each occupant.
- 7.2.7 Care must be taken to ensure the residue from disinfectants is thoroughly rinsed off for amphibian enclosure furniture.
- 7.2.8 Enclosures and weighing equipment must be cleaned and disinfected between each reptile or amphibian. Tanks for amphibians and freshwater turtles must be disinfected, rinsed and have a complete change of water for each new occupant.
- 7.2.9 Transport containers, snake bags and rescue equipment (e.g. snake hooks and gloves) must be cleaned and disinfected between each reptile or amphibian. Snake bags containing traces of venom may cause secondary envenomation and must be handled with caution (e.g. by wearing nitrile gloves when cleaning, washing separately from other items).
- 7.2.10 Water quality for freshwater turtle tanks must be maintained by passing water through a mechanical filtration system or by replacing the water every day for animals in intensive care and every few days for animals in pre-release housing.
- 7.2.11 Water quality for amphibian tanks must be maintained by passing water through a mechanical filtration system or by replacing the water every day.
- 7.2.12 The water used in tanks for amphibians and freshwater turtles must be dechlorinated.
- 7.2.13 A reptile or amphibian must be cleaned when soiled with faeces, urine or uneaten food.

- 7.2.14 Food that requires thawing must be thawed in a refrigerator (less than 4°C) over 24 to 48 hours, and unused food must never be refrozen. Thawed food that has been in a fridge for 24 hours must be discarded.
- 7.2.15 Wildlife rehabilitators must wash their hands and clean all food preparation surfaces and equipment before preparing reptile or amphibian food.
- 7.2.16 Equipment used for cleaning animal enclosures, containers and furniture must be separate from equipment used domestically and must be safe to use on animals.

## Guidelines

- 7.2.17 Wildlife rehabilitators should minimise the disturbance to the reptile or amphibian when cleaning.
- 7.2.18 Water quality in tanks for amphibians and freshwater turtles should be tested prior to use, then tested daily for amphibians and every 3 days for freshwater turtles. Water quality should be within the following parameters:
- pH levels between 7.2 and 8.5
  - free chlorine levels less than 0.5 parts per million (PPM)
  - ammonia and nitrite levels between 0 and 1 PPM
  - nitrate levels between 0 and 40 PPM.
  - calcium and magnesium levels at 150 mg/L.

## 7.3 General care

### Objective

Ensure reptiles and amphibians have a care regime that encourages rapid recovery, supports growth in juveniles and assists with behaviours necessary for survival in the wild.

### Standards

- 7.3.1 Each reptile or amphibian must have a rehabilitation care plan.
- 7.3.2 Reptiles are prone to habituate to people. All care must be taken to protect natural wild behaviours and minimise social interactions with humans.
- 7.3.3 Venomous snakes must only be handled by a wildlife rehabilitator who:
- has undertaken a venomous snake handling course which includes training in venomous snake bite first aid (see section 11 'Training')
  - is carrying a first aid kit including a snakebite compression bandage.
- 7.3.4 Repairs to a major carapace, bridge or plastron injury on a freshwater turtle must:
- be undertaken by a veterinarian as sedation, anaesthesia and pain relief are often required

- avoid the use of glues or other sealants for traumatic or infected wounds as they can significantly delay healing and trap debris in the wounds
- use adhesives and sealants only to secure bridging devices to the shell.

7.3.5 Adhesives and sealants (e.g. glass ionomers) must only be used for small sterile fissures or open wounds in a carapace or plastron injury on a freshwater turtle.

7.3.6 Fibreglass must not be used to repair any carapace, bridge or plastron injury on a freshwater turtle.

## Guidelines

7.3.7 The rehabilitation of venomous snakes is difficult and complex and should only be undertaken by experienced reptile rehabilitators.

7.3.8 A snake should not be handled for 2 days after feeding to avoid regurgitation of food items.

# 8. Housing

## 8.1 General requirements

### Objective

Ensure a reptile or amphibian undergoing rehabilitation is housed in enclosures that keep it safe, secure and free from additional stress.

### Standards

- 8.1.1 Enclosures must be at least the size specified in Appendix B for the species and stage of rehabilitation.
- 8.1.2 Enclosures must be escape-proof. For example:
- secure air vents so they cannot be broken or pushed out
  - secure sliding doors with a lock
  - secure hinged doors with a latching mechanism
  - for monitors, ensure wire mesh on enclosures is strong and durable, and the mesh aperture is small enough to prevent them from using their claws to bend the wire and escape.
- 8.1.3 Venomous snake enclosures must:
- be secured (for example, lockable enclosure in a lockable escape-proof room)
  - have a clearly visible warning label that says ‘DANGER – VENOMOUS LIVE SNAKE’
  - enable the rehabilitator to determine the location of the snake prior to accessing the enclosure. This can be achieved by fitting enclosures with windows or screens.
- 8.1.4 Housing must be made safe for reptiles and amphibians to live in by excluding hazards that might harm them. For example:
- wire mesh aperture in enclosures needs to be small enough to ensure the animal cannot become trapped
  - enclosure furniture must be secured to prevent it falling and crushing or injuring the reptile or amphibian
  - water containers must be stable
  - water containers for small lizards (for example, shinglebacks and skinks) and amphibians must be small enough to prevent drowning
  - 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)
  - for freshwater turtles, shield the drains and intake pipes to prevent accidental entrapment and drowning risk



- shield electrical heat and light sources so that they are bite-proof and to prevent burns
  - remove small pebbles, non-food items or inappropriate substrate from freshwater turtle enclosures to prevent ingestion
  - exclude anything sharp, such as exposed wires, sharp edges, or sharp sticks
  - for amphibians, there must be no abrasive surfaces.
- 8.1.5 Housing must be made safe for the rehabilitator by excluding hazards that may harm them (for example, electrocution from electrical equipment near water, snake bite).
- 8.1.6 Housing must be constructed from non-toxic materials that can be easily cleaned and disinfected.
- 8.1.7 Reptiles and amphibians must have housing that is predator-proof.
- 8.1.8 Housing must be positioned so the reptile or amphibian is not exposed to strong vibrations (for example, not near household appliances such as washing machines), noxious smells (such as wood smoke) or loud noises (for example, radios and televisions, vehicles and barking dogs).
- 8.1.9 Housing must be designed and positioned to protect the reptile or amphibian from:
- extremes of temperature
  - visual or physical contact with domestic pets or captive reptiles
  - physical contact with wild animals and pests.
- 8.1.10 If bathing water is required, it must be in a separate area from drinking water and changed daily or when soiled (whichever is more frequent).
- 8.1.11 Enclosures for reptiles must:
- provide areas with different temperatures so the reptile can move from one area to another to thermoregulate (see Appendix C)
  - be regularly monitored using a thermometer.
- 8.1.12 A reptile or amphibian must experience a light–dark cycle that replicates outside conditions. Artificial light and heat sources must be able to operate separately from each other: if the light is turned off at night, the heat source can still be activated; the light globe is not linked to one off/on thermostat.
- 8.1.13 Electrical heat sources must be regulated by a thermostat.
- 8.1.14 Reptiles in care that naturally bask (diurnal lizards) must be provided with access to light (for example, housing in areas of natural light or a UV light) to meet their metabolic needs and:
- artificial UV light sources must be installed at a suitable distance from basking sites and replaced as indicated by the manufacturers’ specifications.
  - glass must not be placed between the UV light source and the reptile as it reflects UV light.

- 8.1.15 Reptiles and amphibians are prone to snout rub if constantly trying to escape from their enclosures. Wildlife rehabilitators must monitor for signs of stress (such as rubbing against mesh or repeatedly pushing against enclosure walls) and take steps to reduce stress when this is observed by:
- immediately placing a cover over transparent areas of the enclosure
  - providing suitable enclosure enrichment (for example, extra hides)
  - changing the enclosure type and moving the animal to a new plastic or opaque enclosure.
- 8.1.16 When multiple reptiles are housed together (which is only permissible for social species or juveniles from the same nest or clutch), care must be taken to observe for aggressive interactions including dominance behaviours. Reptiles showing signs of aggression should not be co-housed.

## Guidelines

- 8.1.17 Enclosures listed for each stage of rehabilitation (see Appendix B) are suitable for an average-sized adult. Smaller individuals may not require the space specified and larger individuals may require more space.

## Notes

- The failure to recognise domestic pet species as predators will preclude rehabilitated reptiles from being released into the wild.
- If sand is used as a substrate, care must be taken to ensure it remains clean and free of contaminants.

## 8.2 Intensive care housing

### Objective

Facilitate frequent monitoring, treatment, feeding and rehydration during the period immediately after coming into care and until the reptile or amphibian is stabilised.

### Standards

- 8.2.1 Intensive care housing must provide sufficient space for the reptile or amphibian to maintain normal posture and for reptiles to move to thermoregulate (see Standard 8.1.11).
- 8.2.2 Intensive care housing must be designed for the condition of the reptile or amphibian. For example:
- limiting access to water for reptiles with bandages to avoid the bandage becoming wet
  - dry docking freshwater turtles with a carapace or plastron injury to keep them warm and dry to assist healing. When the injury is on the carapace the turtle can be placed on a damp towel or in a tub with a small layer of water for 1 to 2 hours each day to prevent dehydration.

- ensuring enclosure furniture (for example, a hide or shelter) can be easily accessed and will not trap a reptile or adult amphibian with mobility issues.
- 8.2.3 Substrate must be a soft, absorbent, non-slip material that can be easily cleaned or replaced. If a particle substrate is used (for example, newspaper pellets, cat litter, wood shavings), the reptile must be monitored to ensure they are not eating the substrate.
- 8.2.4 Particle substrates must not be used for animals with wounds and bandaging.
- 8.2.5 Intensive care housing must be designed and positioned so that visual and auditory stimuli are reduced (e.g. by covering with a natural fibre towel and placing in a quiet room).
- 8.2.6 Intensive care housing must be adequately ventilated but without excessive draughts.
- 8.2.7 Intensive care housing must be kept at an ambient temperature which is appropriate for a reptile or amphibian, for example:
- reptiles have a preferred optimal temperature zone (POTZ, see Appendix C)
  - 21°C is appropriate for amphibians
  - artificial heat sources (such as a heat pad) may be required and must not be positioned in contact with the reptile
  - house all reptiles and amphibians indoors except for lace monitors
  - provide a heated hide for a lace monitor in an outside enclosure to help them achieve POTZ.

## 8.3 Pre-release housing

### Objective

Give the reptile or amphibian the opportunity to regain its physical condition, acclimatise to current weather conditions and practise natural behaviour. At this stage of rehabilitation, interactions between the animal and humans will be greatly reduced.

### Standards

- 8.3.1 Pre-release housing must provide sufficient space for the reptile or amphibian to move about freely and express a range of natural behaviours.
- 8.3.2 Outside housing must provide areas where the reptile or amphibian can gain exposure to current weather conditions and areas where it can shelter.
- 8.3.3 Pre-release housing must contain habitat elements that enable the reptile or amphibian to perform a range of natural behaviours. For example:
- a shelter that facilitates natural hiding behaviour (for example, a hide, big horizontal branches for pythons, sphagnum moss for burrowing species)

- a place to bask and lighting appropriate to the species' needs (for example, UV light) or exposure to natural warm sunlight for reptiles and amphibians that naturally bask
- climbing opportunities for arboreal species such as tree snakes, monitors and amphibians
- swimming opportunities for aquatic species
- freshwater turtles require sufficient depth for both swimming and diving.

8.3.4 Pre-release housing must be designed and positioned so that exposure to humans is kept to the minimum required for monitoring, feeding and cleaning.

8.3.5 Substrate must be easily cleanable and suitable for the species' requirements. For example:

- newspaper, paper towels or a soft rubber mat that can be easily cleaned or replaced
- if a natural (for example, bark, sand or wood shavings) or particle (for example, newspaper pellets, cat litter) substrate is used, the reptile must be monitored to ensure they are not eating the substrate.

# 9. Suitability for release

## 9.1 Preparations for release

### Objective

Ensure the reptile or amphibian 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.

### Standards

9.1.1 A reptile or amphibian must not be released until it is physically ready. This status has been achieved when:

- it has recovered from any injury or disease
- its weight and body condition are within the appropriate range for the species, stage of development and sex
- it has appropriate mobility and fitness levels as determined by observation, for example:
  - o swims, jumps, climbs, slithers or runs normally
  - o a freshwater turtle dives and submerges for an extended time
  - o a freshwater turtle is able to retract its head under the carapace
  - o reptiles recovering from neurological and spinal injuries must be able to right themselves when placed on their back
- its scales, carapace or skin is adequate for survival in its natural habitat (no retained shedding for reptiles, reptiles with injuries and stitches must complete a shed before release)
- it has acclimatised to prevailing climatic conditions (for example, heating units turned off for at least 48 hours before release).

9.1.2 A reptile or amphibian must not be released until it is behaviourally ready. This status has been achieved when:

- it can recognise, catch and consume appropriate naturally available food or food that mimics its natural diet (excluding bandy-bandys or snakes that have been in short-term care)
- it can recognise and avoid predators, including pets (it has not been allowed to associate with domestic animals during rehabilitation so its natural instinct to avoid predators has remained intact)
- it is not attracted to humans or to sights, sounds or smells that are specific to captivity (not habituated or imprinted)
- it can navigate effectively through its natural environment. For example, move between different temperature areas in the enclosure, hide or shelter.

- 9.1.3 A reptile or amphibian's readiness for release must be confirmed by an experienced reptile or amphibian rehabilitator.
- 9.1.4 For reptile or amphibian species listed as critically endangered or endangered on Schedule 1 of the Biodiversity Conservation Act (see Appendix A), their readiness for release must be determined in consultation with the local National Parks and Wildlife Service area office or a veterinarian experienced in reptile care.
- 9.1.5 An amphibian that has tested positive for chytridiomycosis (chytrid fungus disease) must not be released unless it has completed treatment and returned 3 negative PCR tests at least a week apart starting the week after the last treatment.
- 9.1.6 If the reptile or amphibian is suspected or confirmed to be an escaped pet, it must not be released, and the wildlife rehabilitation provider must:
- make reasonable efforts to locate the owner and return it – for example, by taking the animal to a veterinarian to determine if it is microchipped or by calling the local herpetology group
  - otherwise, notify the National Parks and Wildlife Service (NPWS) Wildlife Team, so the animal can be rehomed.
- 9.1.7 In cases where an animal is determined to be non-releasable, the wildlife rehabilitation provider must:
- consider euthanasia (see Section 5 'Euthanasia')
  - if euthanasia is not considered appropriate, contact the NPWS Wildlife Team and apply for permanent care
  - notify the NPWS Wildlife Team to arrange placement with an authorised animal exhibitor licensed by Department of Primary Industries and Regional Development
  - notify the NPWS Wildlife Team for all seized, surrendered and displaced animals.

## Notes

- Contact details for the National Parks and Wildlife Service (NPWS) Wildlife Team: [wildlife.licensing@environment.nsw.gov.au](mailto:wildlife.licensing@environment.nsw.gov.au).

# 10. Release considerations

## 10.1 Timing of release

### Objective

Ensure a reptile or amphibian 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.

### Standards

- 10.1.1 Once a native reptile or amphibian is deemed ready for release, it must be released as soon as conditions are suitable (see below for suitable conditions).
- 10.1.2 Reptiles must be released when weather conditions encourage high activity levels. They must not be released:
- immediately prior to or during a storm or major weather event
  - when the river is flooding for freshwater turtles
  - during a cold snap (less than 10°C night temperature).
- 10.1.3 A reptile or amphibian must be released at a time of day that enables it to immediately investigate its environment. The optimal release time for most diurnal reptiles is the middle of the morning and for most nocturnal reptiles (for example, bandy-bandy snake, golden-crowned snake) approximately one hour after dark.

### Guidelines

- 10.1.4 Gravid female reptiles should be released before they are due so they can find a safe place to lay their eggs naturally.
- 10.1.5 Monitors and eastern water dragons are very prone to captive stress; once recovered and cleared for release they should be released as soon as possible.
- 10.1.6 If a social species (for example, Cunningham's skink) is absent from its family group for too long, it may not be recognised when it returns and be treated as an intruder (i.e. attacked). Such species should be released before this can occur. The average time for this to occur varies between species.
- 10.1.7 Territorial species (such as eastern water dragons) may have occupied a territory before coming into care. Time in care should be limited for adults of these species, otherwise their territory may become occupied by a competitor. The average time for this to occur varies between species and geographic location – for example, if habitat is more densely occupied it will happen faster.



## 10.2 Release site selection

### Objective

Ensure the wild reptile and amphibian populations and natural environment are not negatively impacted by the release of a native reptile or amphibian, and the released animal has the highest likelihood of survival.

### Standards

10.2.1 If the exact location where the reptile or amphibian was found is known and it has been assessed as a suitable environment for release, it must be released there.

10.2.2 A suitable environment for release is one that:

- contains their preferred habitat and adequate food resources
  - a water source for marsh snakes and red-bellied black snakes
  - logs and areas with ground cover (for example, leaf litter) for golden-crowned snakes, blue-tongue lizards and lace monitors
  - trees to climb for arboreal species such as lace monitors, tree snakes and pythons
  - logs, rocks or dry grassy area for yellow-faced whip snakes
  - dry ridge lines or flat grassy plains for eastern brown snakes
  - dense low plant coverage and plenty of leaf litter for death adders
  - tree hollows in summer and sandstone in winter for broad-headed snakes
  - fresh water for turtles
- is occupied by members of the same species (except for territorial species, such as male water dragons)
- is within the natural range of the species
- does not place the animal at a high risk of injury (e.g. not near a busy road, an off-leash dog area or a busy boat ramp)
- if recovering from bushfire, the site shows signs of regeneration (for example, return of wildlife and insects, ground not covered in soft ash).

10.2.3 If the location where the reptile or amphibian was found is assessed as an unsuitable environment for release, the reptile or amphibian 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 – for example, no further than:

- 20 m from rescue location for amphibians
- 200 m from rescue location for death adders

- 1 km from rescue location in non-urban locations and 5 km in urban locations for lace monitors
- 2 km from rescue location for large venomous snakes
- within the same valley as the rescue location for python species
- 20 m for small lizards and skinks
- 200 m for large skinks (for example, eastern blue-tongue lizard)
- within the closest water site to the rescue location for freshwater turtles.

If there is no suitable environment within an appropriate distance from the rescue location, the animal must not be released.

10.2.4 If only the general location where the reptile or amphibian was found is known, and it contains or adjoins a suitable environment for release, the animal must be released there without transporting it across a physical boundary that it would not normally cross or further than it would normally move (see Standard 10.2.3).

10.2.5 If there is no information about where the reptile or amphibian was found, it must not be released.

10.2.6 In cases where there is no suitable release site, the wildlife rehabilitation provider must:

- consider euthanasia (see Section 5 ‘Euthanasia’)
- contact the National Parks and Wildlife Service (NPWS) Wildlife Team and apply for permanent care (email [wildlife.licensing@environment.nsw.gov.au](mailto:wildlife.licensing@environment.nsw.gov.au))
- notify NPWS to arrange placement with an authorised animal exhibitor licensed by the Department of Primary Industries and Regional Development.

10.2.7 A reptile or amphibian can only be released in a park if:

- it was originally encountered 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*) or relevant marine park manager
- the release complies with the relevant departmental policies on translocation.

These 3 conditions also apply to the release of a reptile or amphibian in a location where it might reasonably be expected to immediately enter a park (for example, on a road or property adjoining a park).

10.2.8 Wildlife rehabilitators who propose to release a reptile or amphibian outside these standards and guidelines require additional approval. Contact the NPWS Wildlife Team at [wildlife.licensing@environment.nsw.gov.au](mailto:wildlife.licensing@environment.nsw.gov.au).

## Guidelines

10.2.9 A reptile or amphibian should be released in an area that is connected to other suitable habitat.

## Notes

- Find your local National Parks and Wildlife Service area manager.

## 10.3 Release techniques

### Objective

Use release techniques that ensure the reptile or amphibian has the highest likelihood of survival, and information is collected regarding the rehabilitated animal's fate after release so the relative merits of different rehabilitation and release techniques can be compared.

### Standards

- 10.3.1 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. For example:
- no more than one mature male water dragon per site per year
  - juvenile reptiles from the same clutch can be released together.
- 10.3.2 A large freshwater turtle must be released by holding the front and back of the carapace and gently lowering the turtle onto the ground or into the water.
- 10.3.3 Wildlife rehabilitators must wait one day after feeding before releasing lizards and monitors.
- 10.3.4 Wildlife rehabilitators must release a snake within a week of feeding to ensure the snake focuses on finding a place to hide and not attempting to feed.
- 10.3.5 Venomous snakes must only be released by wildlife rehabilitators who:
- have undertaken a venomous snake handling course which includes training in venomous snake bite first aid (see Section 11 'Training')
  - are carrying a first aid kit including a snakebite compression bandage.

### Guidelines

- 10.3.6 Social species (such as Cunningham's skink) should be released with members of the same species or next to a family group.
- 10.3.7 Venomous snakes should be released away from places of human occupation (for example, residences, schools, business, playing fields or playgrounds) and out of sight of the public.
- 10.3.8 Wildlife rehabilitators should arrange for reptiles to be banded, micro-chipped or marked as appropriate for individual identification before release. Wildlife rehabilitation providers and zoological parks are encouraged to participate in post-release monitoring programs to determine survivorship.

## Notes

- All research involving protected animals requires a licence issued under the Biodiversity Conservation Act, and an ethics approval issued under the *Animal Research Act 1985*.

# 11. Training

## 11.1 Requirements

### Objective

Ensure reptile and amphibian rehabilitators have appropriate knowledge and skills to ensure the welfare of reptiles and amphibians in their care.

### Standards

- 11.1.1 New wildlife rehabilitators must undertake an introductory training course.
- 11.1.2 Before undertaking reptile and amphibian rehabilitation, a person must undertake specialist training.
- 11.1.3 A specialist training course must:
  - teach the standards and guidelines described in this code
  - be competency-based: focus on what a person will be able to do as a result of completing the course
  - teach health and safety issues associated with reptile and amphibian rehabilitation (for example, disease transmission, envenomation and operating in hazardous locations)
  - have a written assessment component
  - teach how to keep accurate records.
- 11.1.4 Training for snakes must cover all snakes (both venomous and non-venomous) to reduce the risk of misidentification.
- 11.1.5 Venomous snakes must only be handled by wildlife rehabilitators who have undertaken a venomous snake handling course which includes training in venomous snakebite first aid. This must be refreshed every 3 years.
- 11.1.6 Wildlife rehabilitators must have an understanding of:
  - the objectives of reptile and amphibian rehabilitation
  - wildlife ecology (for example, population dynamics, habitat selection, competition, distribution and predator–prey interactions)
  - reptile and amphibian behaviour (for example, feeding, predator avoidance, age-appropriate behaviour and social interactions).
- 11.1.7 Wildlife rehabilitators must be proficient in:
  - species identification
  - reptile and amphibian handling techniques
  - first aid for injured reptiles and amphibians
  - recognising the signs of disease, pain and stress
  - animal rehabilitation care

- reptile and amphibian anatomy and physiology.
- 11.1.8 Wildlife rehabilitators must be assessed as competent in the relevant areas before undertaking rescue, rehabilitation or release of reptiles and amphibians.
- 11.1.9 Training must be accompanied by ongoing in-field support from experienced reptile and amphibian rehabilitators.
- 11.1.10 All wildlife rehabilitators must undertake professional development and refresh their training for reptiles and amphibians every 3 years (for example, refresher or advanced training courses, attendance at reptile or amphibian conferences or seminars).

## Guidelines

- 11.1.11 Wildlife rehabilitators should continue their professional development by keeping up to date with the latest findings from scientific papers on reptiles and amphibians and developing a relationship with their local veterinary hospital.
- 11.1.12 Wildlife rehabilitators should undertake nationally accredited microchip training (such as an RSPCA training course) before microchipping a reptile.

## Notes

- To ensure volunteers are trained to be competent in the implementation of this code, the department has prepared *Reptile and amphibian rehabilitation: training standards for the wildlife rehabilitation sector* and *Reptile and amphibian rehabilitation: trainers' guide for the wildlife rehabilitation sector*.
- Attendance at reptile and amphibian conferences or seminars may require pre-approval from a wildlife rehabilitator's group training coordinator to be eligible for consideration.
- RSPCA microchip implant training course

# 12. Record keeping

## 12.1 Keeping a register

### Objective

Maintain a database of reptiles and amphibians that have been reported to wildlife rehabilitation providers, to inform improved rehabilitation outcomes for individual animals and contribute to our knowledge of the ecological viability of reptile and amphibian species.

### Standards

12.1.1 Licensed wildlife rehabilitation providers, zoological parks and individuals must maintain a current register of all protected reptiles and amphibians reported or rescued.

The register must contain the following information on each animal:

- encounter details (date, location, encounter circumstances, the animal's condition and unique ID number)
- species data (species name, sex, stage of development and initial weight)
- rehabilitation provider details (name and address of the initial assessor, name and address of the reptile or amphibian rehabilitator)
- fate details (date, final disposition, location and any permanent marking).

These records must be submitted to the National Parks and Wildlife Service Wildlife Team ([wildlife.licensing@environment.nsw.gov.au](mailto:wildlife.licensing@environment.nsw.gov.au)) once a year using an approved electronic template.

12.1.2 Wildlife rehabilitators must record the weight of the reptile in their care so changes can be identified quickly (weighing frequency will depend on the type of care provided; see Section 6.2 'Monitoring').

12.1.3 When a reptile or amphibian is transferred to another wildlife rehabilitator or organisation for any reason, copies of its records must be transferred with it.

12.1.4 If the death of a reptile or amphibian is suspected to be the result of a serious disease outbreak, the wildlife rehabilitator must immediately contact their species coordinator. The 24-hour Department of Primary Industries and Regional Development emergency animal disease hotline must be notified immediately on 1800 675 888.

12.1.5 Upon receiving knowledge of the location or capture of a non-indigenous animal listed in Schedule 3 of the *Biosecurity Act 2015*, the wildlife rehabilitation provider must immediately notify the Department of Primary Industries and Regional Development by calling 1800 680 244 or completing the reporting form on their webpage.



12.1.6 In cases where the reptile or amphibian is an escaped pet, displaced, or has been seized, wildlife rehabilitators must:

- notify the National Parks and Wildlife Service Wildlife Team ([wildlife.licensing@environment.nsw.gov.au](mailto:wildlife.licensing@environment.nsw.gov.au)) when it is ready to be rehomed
- keep the details of the responsible officer handling the case for reptiles and amphibians that have been seized.

Note: a displaced animal is a species that is very far from their natural habitat, for example, a frog that has travelled south in a banana box.

## Guidelines

12.1.7 Wildlife rehabilitators should record the following additional information at the time of rescue:

- who discovered the reptile or amphibian (name and contact details)
- when the reptile or amphibian was discovered (including time of day)
- any treatment provided before transport.

12.1.8 Wildlife rehabilitators should record the following additional information at the time of assessment by a veterinarian or experienced reptile or amphibian rehabilitator:

- details of wounds, injuries, diseases and parasites
- standard length measurements, including for freshwater turtles: curved carapace length (CCL) and head width; for snakes: total length and snout to vent length
- details of mobility
- details of abnormal behaviour
- recommended management (for example, euthanasia or prescribed treatment).

12.1.9 Wildlife rehabilitators should record the following additional information at the time of entry into a rehabilitation facility:

- identifying features if the reptile or amphibian is to be housed communally
- housing (for example, intensive care or pre-release) (see Section 8 'Housing').

12.1.10 Wildlife rehabilitators should record details of the following daily care information:

- the type and quantity of food ingested
- frequency of liquid ingested
- treatment (for example, medication, therapy, pathology results)
- instructions from veterinarians and species coordinators
- changes to general fitness and behaviour
- enclosure cleaning (for example, quality of faeces and urine).

12.1.11 Wildlife rehabilitators should record the following additional information regarding fate:

- if released, details regarding the condition of the animal
  - tag number or microchip number.
- 12.1.12 Wildlife rehabilitators should keep duplicates or backups of records to avoid information being lost.
- 12.1.13 Sightings of reptiles and amphibians that are not in need of rescue should be uploaded to [NSW BioNet](#) and should contain encounter details (date, location, encounter circumstances and a unique ID number) as well as whether the animal was alive or dead.
- 12.1.14 Wildlife rehabilitators should record the following information for dead reptiles and amphibians:
- cause of death
  - necropsy notes
  - disease testing
  - care records of previous rehabilitation.

## Note

- Using field guides will assist in ensuring that the correct species identification is obtained for record keeping. There are a range of suitable resources listed in Section 13 'Further reading'.

## 13. Further reading

Anstis M (2018) *Tadpoles and frogs of Australia*, 2nd edition, New Holland Publishers, Sydney.

Anstis M (2007) *Tadpoles of south-eastern Australia: a guide with keys*, 2nd edition, New Holland Publishers, Sydney.

Carmel B and Johnson R (2014) *A guide to health and disease in reptiles and amphibians*, ABK/Reptile Publications, Burleigh.

Cogger HG (2018) *Reptiles and amphibians of Australia*, 7th edition, CSIRO Publishing, Collingwood.

Doneley RT, Monks D, Johnson RSP and Carmel BP (eds) (2018) *Reptile medicine and surgery in clinical practice*, John Wiley & Sons, Oxford.

Hedley J, Johnson R and Yeates J (2018) 'Reptiles (Reptilia)' in Yeates J (ed) *Companion animal care and welfare: The UFAW companion animal handbook*, Universities Federation for Animal Welfare, John Wiley & Sons.

Swan G, Sadler R and Shea G (2017) *A field guide to reptiles of New South Wales*, 3rd edition, New Holland Publishers, Sydney.

Wilson S and Swan G (2021) *A complete guide to reptiles of Australia*, 6th edition, New Holland Publishers, Sydney.

### Guidelines

- American Veterinary Medical Association, [Guidelines for the euthanasia of animals \(PDF, 11.8 MB\)](#)
- Australian Registry of Wildlife Health, [Common diseases of urban wildlife – reptiles \(PDF, 5.3 MB\)](#)
- Australian Registry of Wildlife Health, [Common diseases of urban wildlife – amphibians \(PDF, 1.7 MB\)](#)
- Department of Primary Industries and Regional Development, [Animal carcass disposal \(PDF, 249KB\)](#)
- [Hand washing fact sheet \(PDF, 102KB\)](#)
- [Hygiene protocol for the control of disease in captive snakes \(PDF, 793 KB\)](#)
- Wildlife Health Australia, [Chytrid fungus in Australian frogs \(PDF, 425 KB\)](#)
- Wildlife Health Australia, [Mycobacterial disease in wild Australian native reptiles \(PDF, 294 KB\)](#)
- Wildlife Health Australia, [Ranaviral disease in wild Australian amphibians \(PDF, 428 KB\)](#)
- Wildlife Health Australia, [Ranaviruses in wild reptiles in Australia \(PDF, 356 KB\)](#)

- Wildlife Health Australia, [Salmonella infection and Australian reptiles \(PDF, 345 KB\)](#)
- Wildlife Health Australia, [Snake mite \(Ophionyssus natricis\) \(PDF, 272 KB\)](#)
- Wildlife Health Australia, [Zoonoses and Australian wild reptiles \(PDF, 278KB\)](#)

## Codes and policies

- [Australian code for the care and use of animals for scientific purposes](#)
- [Australian Veterinary Association, Euthanasia of injured wildlife policy](#)
- DCCEEW, [Code of practice for injured and sick sea turtles and sea snakes](#)
- DCCEEW, [Initial treatment and care guidelines for rescued reptiles](#)
- DCCEEW, [Reptile and amphibian rehabilitation: training standards for the wildlife rehabilitation sector](#)
- DCCEEW, [Rehabilitation of protected animals policy](#)
- DCCEEW, [People and wildlife policy](#)
- DCCEEW, [Translocation operational policy](#)

## Legislation

- [Animal Research Act 1985](#)
- [Biodiversity Conservation Act 2016](#)
- [Biodiversity Conservation Act 2016 Schedule 5](#)
- [Biodiversity Conservation Act 2016 Schedule 1](#)
- [Biodiversity Conservation Regulation 2017](#)
- [Biosecurity Act 2015](#)
- [Environment Protection and Biodiversity Conservation Act 1999](#)
- [Firearms Act 1996](#)
- [Fisheries Management Act 1994](#)
- [Local Government Act 1993](#)
- [Marine Estate Management Act 2014](#)
- [National Parks and Wildlife Act 1974](#)
- [National Parks and Wildlife Regulation 2019](#)
- [Prevention of Cruelty to Animals Act 1979](#)
- [Poisons and Therapeutic Goods Act 1966](#)
- [Veterinary Practice Act 2003](#)

## Other resources

- Department of Primary Industries and Regional Development, [Animal welfare](#)
- Department of Primary Industries and Regional Development, [Emergency animal disease hotline](#)
- Department of Primary Industries and Regional Development, [Exhibited licensing and complaints](#)
- [NSW BioNet Atlas](#)

# Appendix A: Reptile and amphibian species listed in Schedule 1 of the NSW *Biodiversity Conservation Act 2016*

| Species code                        | Scientific name                  | Common name   | BC Act NSW listing    | EPBC Act federal listing |
|-------------------------------------|----------------------------------|---|-----------------------|--------------------------|
| <b>Amphibians – frogs and toads</b> |                                  |   |                       |                          |
| 3007                                | <i>Assa darlingtonia</i>         | Pouched frog  | Vulnerable            | -                        |
| 3135                                | <i>Crinia sloanei</i>            | Sloane's froglet  | Vulnerable            | Endangered               |
| 3137                                | <i>Crinia tinnula</i>            | Wallum froglet  | Vulnerable            | -                        |
| 3073                                | <i>Mixophyes balbus</i>          | Stuttering frog   | Endangered            | Vulnerable               |
| 3008                                | <i>Mixophyes fleayi</i>          | Fleay's barred frog   | Endangered            | Endangered               |
| 3075                                | <i>Mixophyes iteratus</i>        | Giant barred frog   | Endangered            | Endangered               |
| 3116                                | <i>Pseudophryne australis</i>    | Red-crowned toadlet   | Vulnerable            | -                        |
| 3119                                | <i>Pseudophryne corroboree</i>   | Southern corroboree frog  | Critically endangered | Critically endangered    |
| 3306                                | <i>Pseudophryne pengilleyi</i>   | Northern corroboree frog  | Critically endangered | Critically endangered    |
| 3932                                | <i>Uperoleia mahonyi</i>         | Mahony's toadlet  | Endangered            | Endangered               |
| 3001                                | <i>Adelotus brevis</i>           | Tusked frog population in the Nandewar and New England Tableland bioregions | Endangered population | -                        |
| 3042                                | <i>Heleioporus australiacus</i>  | Giant burrowing frog  | Vulnerable            | Vulnerable               |
| 3085                                | <i>Neobatrachus pictus</i>       | Painted burrowing frog  | Endangered            | -                        |
| 3107                                | <i>Phyllorhina kundagungan</i>   | Mountain frog   | Endangered            | Endangered               |
| 3108                                | <i>Phyllorhina loveridgei</i>    | Loveridge's frog  | Endangered            | -                        |
| 3311                                | <i>Phyllorhina pughi</i>         |   | Endangered            | -                        |
| 3312                                | <i>Phyllorhina richmondensis</i> | Richmond Range sphagnum frog  | Endangered            | Endangered               |
| 3109                                | <i>Phyllorhina sphagnicolus</i>  | Sphagnum frog   | Vulnerable            | -                        |
| 3166                                | <i>Litoria aurea</i>             | Green and golden bell frog  | Endangered            | Vulnerable               |

|  |                                  |   |                       |                       |
|--|----------------------------------|---|-----------------------|-----------------------|
| 3168   | <i>Litoria booroolongensis</i>   | Booroolong frog                               | Endangered            | Endangered            |
| 3169   | <i>Litoria brevipalmata</i>      | Green-thighed frog                            | Vulnerable            | -                     |
| 3172   | <i>Litoria castanea</i>          | Yellow-spotted tree frog                      | Critically endangered | Critically endangered |
| 3303   | <i>Litoria daviesae</i>          | Davies' tree frog                             | Vulnerable            | -                     |
| 3039   | <i>Litoria littlejohni</i>       | Littlejohn's tree frog                        | Endangered            | Endangered            |
| 3202   | <i>Litoria olongburensis</i>     | Olongburra frog                               | Vulnerable            | Vulnerable            |
| 3217   | <i>Litoria piperata</i>          | Peppered tree frog                            | Critically endangered | Vulnerable            |
| 3207   | <i>Litoria raniformis</i>        | Southern bell frog                            | Endangered            | Vulnerable            |
| 3195   | <i>Litoria spenceri</i>          | Spotted tree frog                             | Critically endangered | Critically endangered |
| 3186   | <i>Litoria subglandulosa</i>     | Glandular frog                                | Vulnerable            | -                     |
| 3907   | <i>Litoria verreauxii alpina</i> | Alpine tree frog                              | Endangered            | Vulnerable            |
| T1122  | <i>Litoria watsoni</i>           | Watson's tree frog                            | Endangered            | Endangered            |
| <b>Reptiles – lizards, snakes and freshwater turtles</b> |                                  |   |                       |                       |
| 2825   | <i>Myuchelys bellii</i>          | Western sawshelled turtle, Bell's turtle      | Endangered            | Vulnerable            |
| T390   | <i>Myuchelys georgesii</i>       | Bellinger river snapping turtle               | Critically endangered | Critically endangered |
| T399   | <i>Myuchelys purvisi</i>         | Manning River helmeted turtle, Purvis' turtle | Endangered            | -                     |
| 2139   | <i>Uvidicolus sphyrurus</i>      | Border thick-tailed gecko                     | Vulnerable            | Vulnerable            |
| 2122   | <i>Amalosia rhombifer</i>        | Zigzag velvet gecko                           | Endangered            | -                     |
| 5288   | <i>Diplodactylus platyurus</i>   | Eastern fat-tailed gecko                      | Endangered            |                       |
| 2072   | <i>Lucasium stenodactylum</i>    | Crowned gecko                                 | Vulnerable            | -                     |
| 2055   | <i>Strophurus elderi</i>         | Jewelled gecko                                | Vulnerable            | -                     |
| 2125   | <i>Christinus guentheri</i>      | Lord Howe Island southern gecko               | Vulnerable            | Vulnerable            |
| 2143   | <i>Aprasia inaurita</i>          | Mallee worm-lizard                            | Endangered            | -                     |
| 2144   | <i>Aprasia parapulchella</i>     | Pink-tailed legless lizard                    | Vulnerable            | Vulnerable            |
| 2154   | <i>Delma australis</i>           | Marble-faced delma                            | Endangered            | -                     |
| 2159   | <i>Delma impar</i>               | Striped legless lizard                        | Vulnerable            | Vulnerable            |
| 2042   | <i>Anomalopus mackayi</i>        | Five-clawed worm-skink                        | Endangered            | Vulnerable            |



|      |  |   |                       |                       |
|------|--|---|-----------------------|-----------------------|
| 2293 | <i>Coeranoscincus reticulatus</i>        | Three-toed snake-tooth skink                                  | Vulnerable            | Vulnerable            |
| 2343 | <i>Ctenotus brooksi</i>                  | Wedgesnout ctenotus   | Vulnerable            | -                     |
| 2993 | <i>Ctenotus pantherinus ocellifer</i>    | Leopard ctenotus  | Endangered            | -                     |
| 5003 | <i>Cyclodomorphus melanops elongatus</i> | Mallee slender blue-tongue lizard                             | Endangered            | -                     |
| 2867 | <i>Cyclodomorphus praealtus</i>          | Alpine she-oak skink  | Endangered            | Endangered            |
| 2868 | <i>Cyclodomorphus venustus</i>           | Saltbush slender blue-tongue lizard                           | Endangered            | -                     |
| 5347 | <i>Egernia roomi</i>                     | Kaputar rock skink  | Critically endangered | Critically endangered |
| 2424 | <i>Egernia rugosa</i>                    | Yakka skink   | -                     | Vulnerable            |
| 2215 | <i>Eulamprus leuraensis</i>              | Blue Mountains water skink                                    | Endangered            | Endangered            |
| 2506 | <i>Lerista xanthura</i>                  | Yellow-tailed plain slider                                    | Vulnerable            | -                     |
| 2916 | <i>Liopholis guthega</i>                 | Guthega skink   | Endangered            | Endangered            |
| 2917 | <i>Liopholis montana</i>                 | Mountain skink  | -                     | Endangered            |
| 2430 | <i>Liopholis whitii</i>                  | White's skink population in the Broken Hill complex bioregion | Endangered population | -                     |
| 2461 | <i>Oligosoma lichenigera</i>             | Lord Howe island skink  | Vulnerable            | Vulnerable            |
| 2577 | <i>Tiliqua multifasciata</i>             | Centralian blue-tongued lizard                                | Vulnerable            | -                     |
| 2579 | <i>Tiliqua occipitalis</i>               | Western blue-tongued lizard                                   | Vulnerable            | -                     |
| 5243 | <i>Ctenophorus mirrityana</i>            | Barrier Range dragon  | Endangered            | -                     |
| 2255 | <i>Tympanocryptis lineata</i>            | Canberra grassland earless dragon                             | Critically endangered | Endangered            |
| 5345 | <i>Tympanocryptis mccartneyi</i>         | Bathurst grassland earless dragon                             | Critically endangered | -                     |
| 5344 | <i>Tympanocryptis osbornei</i>           | Monaro grassland earless dragon                               | Endangered            | -                     |
| 2824 | <i>Tympanocryptis pinguicolla</i>        | Grassland earless dragon                                      | -                     | Endangered            |
| 2287 | <i>Varanus rosenbergi</i>                | Rosenberg's goanna  | Vulnerable            | -                     |

|      |                                  |                        |            |            |
|------|----------------------------------|------------------------|------------|------------|
| 2592 | <i>Ramphotyphlops endoterus</i>  | Interior blind snake   | Endangered | -          |
| 2819 | <i>Antaresia stimsoni</i>        | Stimson's python       | Vulnerable | -          |
| 2613 | <i>Aspidites ramsayi</i>         | Woma                   | Vulnerable | -          |
| 2645 | <i>Cacophis harriettae</i>       | White-crowned snake    | Vulnerable |            |
| 5139 | <i>Demansia rimicola</i>         | Soil-crack whip snake  | Vulnerable | -          |
| 2667 | <i>Echiopsis curta</i>           | Bardick                | Endangered | -          |
| 2671 | <i>Furina dunmalli</i>           | Dunmall's snake        | -          | Vulnerable |
| 2673 | <i>Hemiaspis damelii</i>         | Grey snake             | -          | Endangered |
| 2675 | <i>Hoplocephalus bitorquatus</i> | Pale-headed snake      | Vulnerable | -          |
| 2676 | <i>Hoplocephalus bungaroides</i> | Broad-headed snake     | Endangered | Vulnerable |
| 2677 | <i>Hoplocephalus stephensii</i>  | Stephens' banded snake | Vulnerable | -          |
| 2697 | <i>Pseudonaja modesta</i>        | Ringed Brown snake     | Endangered | -          |
| 2713 | <i>Simoselaps fasciolatus</i>    | Narrow-banded snake    | Vulnerable | -          |

## Appendix B: Minimum enclosure size standards

| Type of reptile  | Intensive care<br>L x W (m) | Pre-release care<br>L x W X H (m) | No. of animals pre-release |
|--|-----------------------------|-----------------------------------|----------------------------|
| Geckos and small skinks<br>(e.g. garden skinks)  | 0.2 x 0.1                   | 0.6 x 0.6 x 0.6                   | 2                          |
| Large skinks<br>(e.g. blue-tongue lizards)   | 0.6 x 0.6                   | 1.2 x 0.6 x 0.5                   | 1                          |
| Small dragons<br>(e.g. jacky dragons)  | 0.6 x 0.4                   | 0.6 x 0.6 x 0.6                   | 1                          |
| Large dragons and small monitors (e.g. bearded dragon, water dragon, freckled monitor) | 0.9 x 0.6                   | 1.2 x 0.9 x 0.5                   |                            |
| Large monitors (e.g. lace monitors)  | 2 x 1                       | 4 x 3 x 2                         | 1                          |
| Small venomous snakes<br>(e.g. juvenile snakes, golden-crowned snake, marsh snake)     | 0.5 x 0.3                   | 0.6 x 0.6 x 0.5                   | 1                          |
| Large venomous snakes<br>(e.g. eastern brown snakes)                                   | 1 x 0.5                     | 1.2 x 1 x 0.5                     | 1                          |
| Small nonvenomous snakes<br>(e.g. spotted pythons, blind snakes, common tree snakes)   | 0.5 x 0.2                   | 0.6 x 0.6 x 0.5                   | 1                          |
| Large non-venomous snakes and pythons  | 1 x 0.5                     | 1.3 x 1.2 x 1.8                   | 1                          |

---

(e.g. carpet  
pythons, diamond  
pythons)

Small freshwater  
turtles

0.5 x 0.3

1.8 x 0.6 x 0.6

2

(e.g. eastern snake-  
necked turtles)

Large freshwater  
turtles

1 x 0.6

2 x 1.2 x 0.9

2

(e.g. broad-shelled  
turtles)

Amphibians

0.4 x 0.4

0.6 x 0.4 x 0.4

2

**Note:** L is length, W is width and H is height.

## Appendix C: Preferred optimal temperature zones (POTZ)

Reptiles require a range of temperatures to be able to thermoregulate (known as the preferred optimal temperature zone or POTZ), which is specific to each species. Many species also spend time basking at a higher temperature.

| Species                    | POTZ (°C) | Basking temperature (°C) |
|----------------------------|-----------|--------------------------|
| Eastern blue-tongue lizard | 27–32     | 33–38                    |
| Eastern water dragon       | 27–33     | 32–40                    |
| Lace monitor               | 34–36     | 45–55                    |
| Coastal carpet python      | 28–30     | 32–34                    |
| Diamond python             | 26–29     | 30–33                    |
| Red-bellied black snake    | 28–31     | 32–34                    |
| Eastern brown snake        | 29–32     | 33–35                    |
| Common tree snake          | 30–33     | 36–38                    |
| Eastern long-neck turtle   | 22–26     | 29–31                    |

## Appendix D: Preferred diet of commonly rescued reptile species in New South Wales

| Species                         | Diet  |
|---------------------------------|---|
| Eastern blue-tongue lizard      | Omnivorous:<br>mixed vegetables and fruit; insects and snails |
| Eastern water dragon (adult)    | Omnivorous:<br>mixed vegetables; insects                      |
| Eastern water dragon (juvenile) | Insectivorous:<br>insects                                     |
| Geckos and small skinks         | Omnivorous:<br>mixed vegetables and fruit; insects and snails |
| Lace monitor                    | Carnivorous:<br>rodents, day old chicks, eggs                 |
| Coastal carpet python           | Carnivorous:<br>rodents, day old chicks                       |
| Diamond python                  | Carnivorous:<br>rodents, day old chicks                       |
| Red-bellied black snake         | Carnivorous:<br>rodents, fish                                 |
| Eastern brown snake             | Carnivorous:<br>rodents                                       |
| Common tree snake               | Carnivorous:<br>fish  |
| Eastern snake-necked turtle     | Carnivorous:<br>fish, mussels, prawns, yabbies, earthworms    |
| Amphibians                      | Insectivorous:<br>live insects                                |