

Chapter 9.

Possums and Gliders

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In Victoria, sick, injured or orphaned wildlife can only be rehabilitated by a wildlife shelter operator or foster carer who is authorised under section 28A of the Victorian *Wildlife Act 1975* (Wildlife Act). Wildlife rehabilitators are subject to strict conditions. The mandatory requirements that they must meet are set out in the Wildlife Shelter and Foster Carer Authorisation issued under the Wildlife Act. These conditions enforce the minimum standards required for the humane treatment and successful rehabilitation of wildlife in care. The Wildlife Rehabilitator Authorisation Guide: Things You Need To Know explains how wildlife rehabilitators can meet these mandatory requirements and can be found here: <https://www.vic.gov.au/wildlife-rehabilitation-shelters-and-foster-carers>.

The Victorian Wildlife Rehabilitation Guidelines have been developed to incorporate evidenced-based best practice in wildlife care and rehabilitation to equip rehabilitators to deliver positive welfare outcomes for individual animals in their care from first aid to post-release into the wild.

You must comply with the conditions of your authorisation. These guidelines must be read in conjunction with the conditions of your authorisation.

Greater gliders, yellow-bellied gliders and Leadbeater's possums are considered specialist animals and should be rehabilitated by a wildlife shelter operator experienced in their care in the region that they are found.

When possums and gliders come into care it is the responsibility of the wildlife rehabilitator to ensure that the five domains of animal welfare are satisfied. These include providing optimal nutrition and an environment appropriate to the stage of rehabilitation. The focus should be on the animal's return to health and release, which is facilitated through regular collaboration with a veterinarian. It is also important to consider the animal's mental state and ability to exhibit normal behaviours without detrimentally affecting its recovery. Welfare may be temporarily compromised by the necessity of a gradual return to normal activity, depending on its stage of rehabilitation. Further information about the five domains of animal welfare is in Part A of these guidelines.

9.1 Introduction

Squirrel gliders, southern greater gliders, yellow-bellied gliders, mountain pygmy-possums and Leadbeater's possums are listed as threatened in Victoria.



STOP – If a threatened species comes into care, please STOP and refer to your authorisation for mandatory conditions including notification and release requirements.


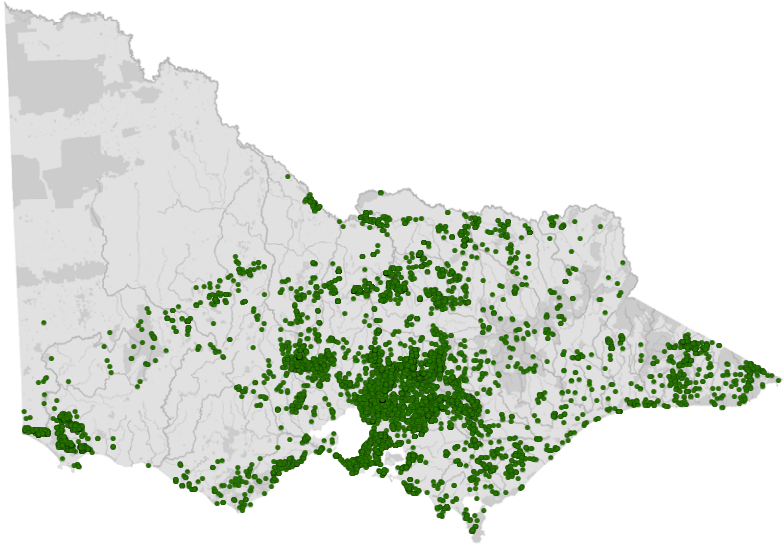
The four pygmy possums found in Victoria, the mountain pygmy-possum (*Burramys parvus*), the eastern pygmy-possum (*Cercartetus nanus*), the western pygmy-possum (*Cercartetus concinnus*) and the little pygmy-possum (*Cercartetus lepidus*) require accurate identification.

9.2 Species information


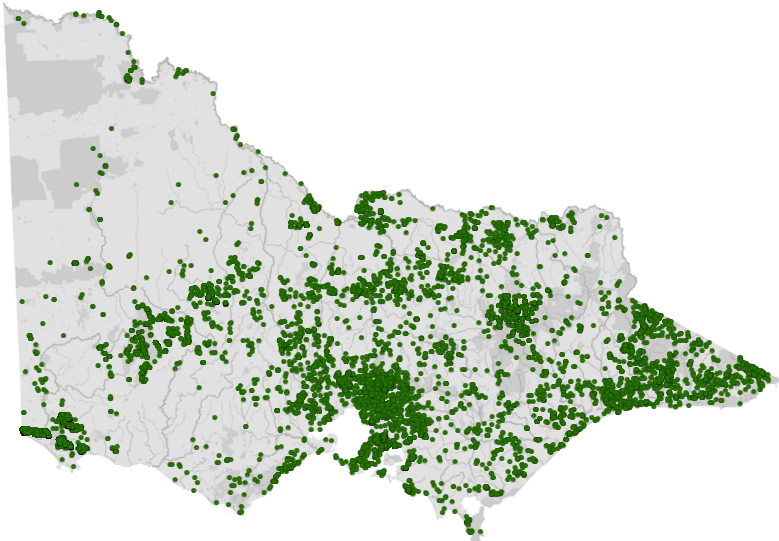


Profiles for possum and glider species found in Victoria are detailed in **Table 9.1** and **Table 9.2**. For assistance in identification of a possum or glider species, refer to the recommended reading and reference material at the end of this chapter.


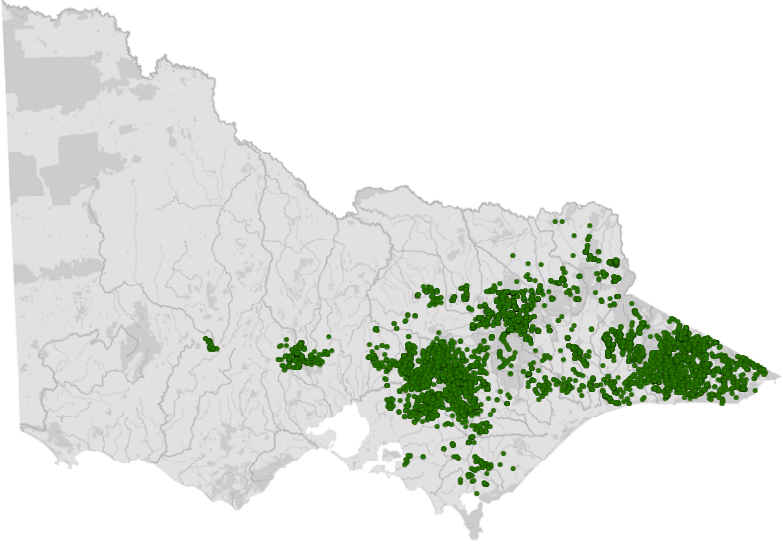
Table 9.1 Species Profiles

Species	Common ringtail possum (<i>Pseudocheirus peregrinus</i>)
 <p data-bbox="129 1048 416 1099">Photo credit: Ian R McCann, Museums Victoria</p>	<p data-bbox="560 775 772 801">Distribution map</p>  <p data-bbox="560 1391 1286 1442">Data source: Victorian Biodiversity Atlas Jan 2023 www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas</p>
<p data-bbox="129 1473 384 1500">General appearance</p>	<p data-bbox="560 1480 1369 1615">Grey/brown with black tipped fur with pale patches behind the eyes and usually a cream coloured belly. It has a thinly haired, long prehensile (meaning “to grasp”) tail with a white tip over 25% of its length, and small, curved ears (30 mm)</p>
<p data-bbox="129 1653 389 1680">Conservation status*</p>	<p data-bbox="560 1659 676 1686">Common</p>
<p data-bbox="129 1720 392 1747">Adult morphometrics</p>	<p data-bbox="560 1727 863 1753">Body weight: 650–1100 g</p> <p data-bbox="560 1776 970 1803">Head and body length: 30–35 cm</p> <p data-bbox="560 1825 823 1852">Tail length: 30–35 cm</p>
<p data-bbox="129 1899 225 1926">Habitat</p>	<p data-bbox="560 1899 1038 1926">Rainforest, forest, woodland and scrub</p>
<p data-bbox="129 1966 236 1993">Nest site</p>	<p data-bbox="560 1966 794 1993">Drey or tree hollow</p>


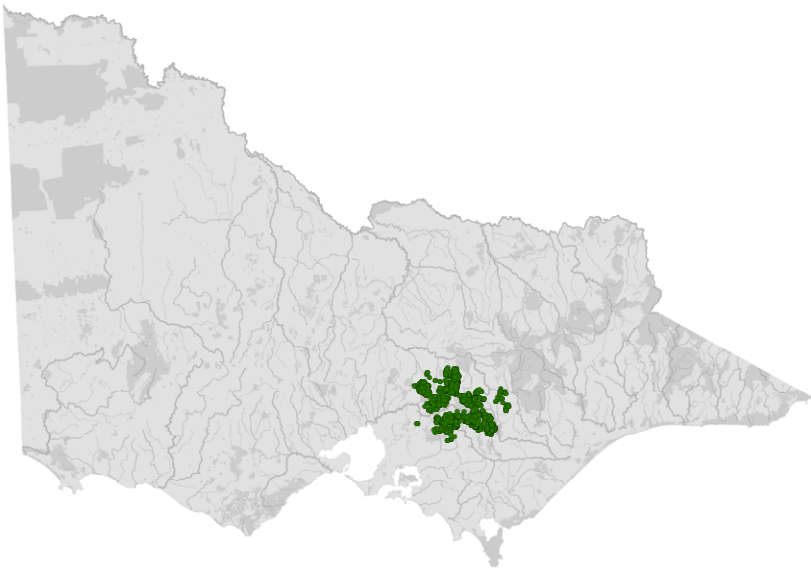
Species	Common ringtail possum (<i>Pseudocheirus peregrinus</i>)
Nest sharing	Yes
Home range	2 ha
Population density per ha	0.2–34
Behaviour	Nocturnal. Communal
Diet	Myrtaceae leaves (including eucalyptus), flowers, fruit, sap. Coprophagic during the day
Longevity	3–6 years
Sexual maturity	Male: 12 months Female: 12 months
Mating season	March to November
Gestation length	20–26 days
Litters per year	1–2 (usually 2 young)
Pouch life	120 days
Weaning age	6–7 months
Dispersal age	8–12 months

Species	Common brushtail possum (<i>Trichosurus vulpecula</i>)
 <p>Photo credit: David Paul, Museums Victoria</p>	<p>Distribution map</p>  <p>Data source: Victorian Biodiversity Atlas Jan 2023 www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas</p>

Species	Common brushtail possum (<i>Trichosurus vulpecula</i>)
General appearance	About the size of a domestic cat with pointed ears and grey fur with a buff coloured belly. The tail is bushy and black but young can have a white tip. The tail is prehensile and naked on its underside
Conservation status*	Common
Adult morphometrics	Body weight: 1.2–3.5 kg (females), 1.3– 4.5 kg (males) Head and body length: 35–55 cm Tail length: 25–40 cm
Habitat	Forests, semi-arid areas and urban areas. Occurs in most habitats except Mallee scrub
Nest site	Tree hollow
Nest sharing	Uncommon
Home range	Male: 5.4 ha Female: 2.4 ha
Population density per ha	0.2–4.0
Behaviour	Nocturnal. Solitary
Diet	Eucalypt leaves, flowers, shoots, fruits and seeds. They may also consume animal matter such as insects, birds' eggs and chicks, and other small vertebrates, though this is only occasional
Longevity	11–13 years
Sexual maturity	Male: 14 months Female: 12 months
Mating season	All year with autumn and spring peaks
Gestation length	16–18 days
Litters per year	1 (1 young)
Pouch life	145 days
Weaning age	6–7 months
Dispersal age	8–18 months Males disperse earlier than females

Species	Mountain brushtail possum (<i>Trichosurus cunninghami</i>) or Bobuck	
 <p data-bbox="204 600 491 651">Photo credit: Ian R McCann, Museums Victoria</p>	<p data-bbox="635 322 847 351">Distribution map</p>  <p data-bbox="635 938 1361 990">Data source: Victorian Biodiversity Atlas Jan 2023 www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas</p>	
<p data-bbox="204 1025 459 1055">General appearance</p>		<p data-bbox="635 1032 1453 1128">Larger than the common brushtail possum, with round, short ears (40 mm). The fur is often dark, with a black, bushy tail which is hairless underneath. The belly is cream coloured</p>
<p data-bbox="204 1167 464 1196">Conservation status*</p>	<p data-bbox="635 1173 746 1202">Common</p>	
<p data-bbox="204 1238 469 1267">Adult morphometrics</p>	<p data-bbox="635 1245 922 1274">Body weight: 2.4–4.2 kg</p> <p data-bbox="635 1294 1046 1323">Head and body length: 49–54 cm</p> <p data-bbox="635 1344 895 1373">Tail length: 34–37 cm</p>	
<p data-bbox="204 1408 300 1438">Habitat</p>	<p data-bbox="635 1415 1426 1512">Tall wet forests and rainforests, altitude above 300 m (typically). Recently found in lowland swamp coastal habitat in south-west Gippsland</p>	
<p data-bbox="204 1550 316 1579">Nest site</p>	<p data-bbox="635 1556 778 1585">Tree hollow</p>	
<p data-bbox="204 1621 363 1650">Nest sharing</p>	<p data-bbox="635 1628 683 1657">Yes</p>	
<p data-bbox="204 1693 357 1722">Home range</p>	<p data-bbox="635 1700 762 1729">5.6–6.4 ha</p>	
<p data-bbox="204 1765 523 1794">Population density per ha</p>	<p data-bbox="635 1771 719 1800">0.7–2.3</p>	
<p data-bbox="204 1836 331 1865">Behaviour</p>	<p data-bbox="635 1843 863 1872">Nocturnal. Solitary</p>	
<p data-bbox="204 1908 256 1937">Diet</p>	<p data-bbox="635 1915 1385 1966">Acacia sp, (Silver wattle preferred), fungi, lichens, bryophytes. <i>Eucalyptus</i> and tea tree (lowland)</p>	

Species	Mountain brushtail possum (<i>Trichosurus cunninghami</i>) or Bobuck
Longevity	Male: 6–15 years Female: 9–17 years
Sexual maturity	Male: 36 months Female: 22–36 months
Mating season	March to May
Gestation length	15–17 days
Litters per year	1 (1 young)
Pouch life	175–200 days
Weaning age	8–9 months
Dispersal age	18–36 months

Species	Leadbeater's possum (<i>Gymnobelideus leadbeateri</i>)
 <p>Photo credit: TBD</p>	<p>Distribution map</p>  <p>Data source: Victorian Biodiversity Atlas Jan 2023 www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas</p>
General appearance	Grey with prominent mid-dorsal stripe. Tail broader at tip compared to base. No gliding membrane. Short face. Black stripe down middle of head
Conservation status*	Critically endangered

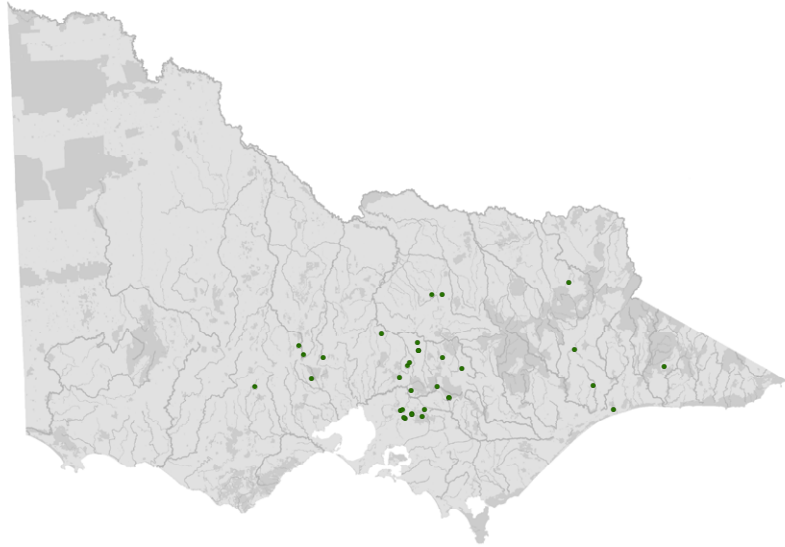
Species	Leadbeater's possum (<i>Gymnobelideus leadbeateri</i>)
Adult morphometrics	Body weight: 100–166 g Head and body length: 150–170 mm Tail length: 145–180 mm
Habitat	Mixed-age eucalypt stands with acacia mid-storey
Home range	1–3 ha
Den	Tree hollow with spherical nest of shredded bark
Behaviour	Nocturnal. Torpor: no. Territorial. Communal (groups of 1–8). Forages alone
Diet	Plant excretions (a range of wattle saps and exudates) make up 80% of their energy intake. Lerps and arthropods (spiders, crickets, termites and beetles) are also eaten
Captive lifespan	5–9 years
Sexual maturity	Male: 26 months Female: 14 months
Mating season	February–October
Gestation length	15–20 Days
Pouch life	80–93 days, March–December
Den young	May–December
Litters per year	1–2 litters of 1–2 young
Weaning	120 days
Dispersal	10–15 months

Species

Feathertail glider (*Acrobates pygmaeus*)

Photo credit: Ian R McCann,
Museums Victoria

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023

www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas

General appearance

Appearance: Smallest glider, about the size of a mouse. Flat hairs perpendicular to the tail look like a thin feather. Soft, uniform greyish brown fur, white on the belly, dark rings around the eyes, moderately large ears and there are a large number of whiskers. Gliding membrane from elbow to knee

Conservation status*

Common

Adult morphometrics

Body weight: 10–15 g
Head and body length: 65–80 mm
Tail length: 70–80 mm

Habitat

Range of forest types

Home range

0.1–2 ha

Den

Tree hollow, with nest of leaves

Behaviour

Nocturnal. Topor: yes. Territorial. Communal (groups of 4–40).
Forages alone


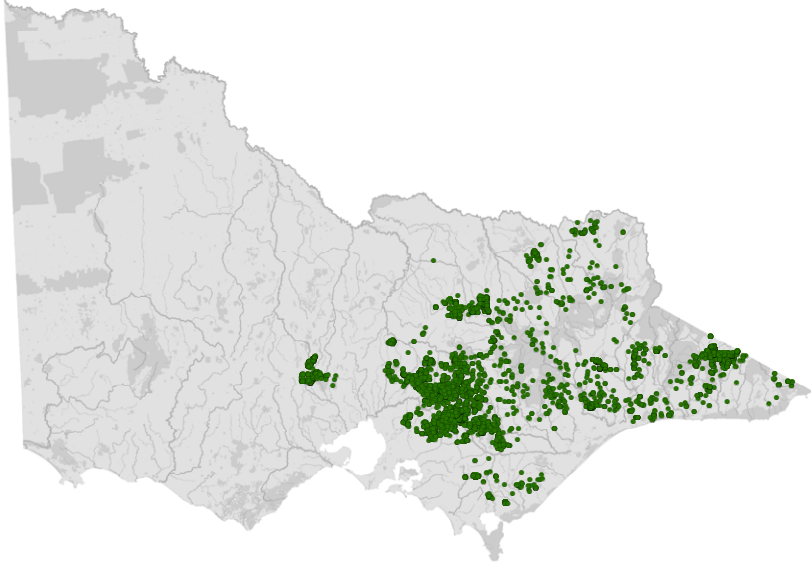

Diet

Nectar, pollen and insects such as such as moths, ants and termites

Lifespan

5 years

Species	Feathertail glider (<i>Acrobates pygmaeus</i>)
Sexual maturity	Male: 7–18 months Female: 6 months
Mating season	Most of the year (July to January commonly in Victoria)
Gestation length	First litter 15–30 days and second litter 65–100 days – this species has embryonic diapause
Pouch life	65 days, most of the year
Den young	Most of the year
Litters per year	1–2 of up to 4 young
Weaning	100 days
Dispersal	3–4 months

Species	Southern greater glider (<i>Petauroides volans</i>)
 <p>Photo credit: Colleen Wood</p>	<p>Distribution map</p>  <p>Data source: Victorian Biodiversity Atlas Jan 2023 www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas</p>
 <p>Photo credit: Doug Gimesy</p>	
General appearance	Long bushy tail, long fur, coat may be cream to black, with a pale belly. Large ears. Gliding membrane from elbow to ankle
Conservation status*	Vulnerable

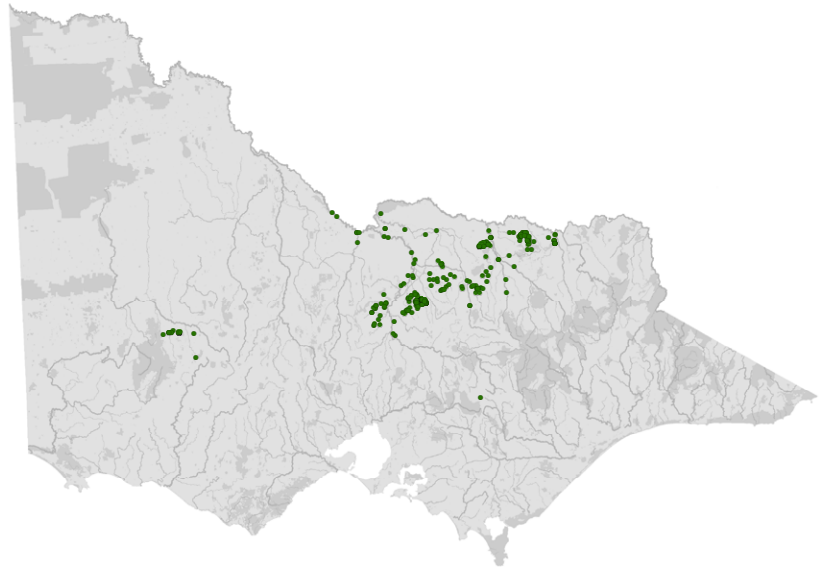
Species	Southern greater glider (<i>Petauroides volans</i>)
Adult morphometrics	Body weight: 900–1700 g Head and body length: 35–46 cm Tail length: 45–60 cm
Habitat	Mature, wet eucalypt forests
Home range	1–3 ha
Den	Tree hollows
Behaviour	Nocturnal. Topor: yes. Territorial. Solitary. Forages alone
Diet	Almost exclusively feeds on eucalypt leaves and buds
Captive lifespan	15 years
Sexual maturity	Male: 18 months Female: 24 months
Mating season	March–June
Gestation	Unknown
Pouch life	90–120 days, April–October
Den young	June–January
Litters per year	1 litter of 1 young
Weaning	240–300 days
Dispersal	12 months

Species

Squirrel glider (*Petaurus norfolcensis*)

Photo credit: David Paul,
Museums Victoria

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023
www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas

General appearance	Larger than Krefft's glider. Longer face than Krefft's glider. Longer nose. Bushy tail, thicker at base. White belly fur. Scent gland in adult situated middle of the forehead. Gliding membrane from wrist to ankle
Conservation status*	Vulnerable
Adult morphometrics	Body weight: 190–300 g Head and body length: 189 – 230 mm Tail length: 220 – 300 g
Habitat	Dry forests and woodlands
Home range	5–7 ha
Den	Tree hollows with nest of leaves
Behaviour	Nocturnal. Topor: yes. Territorial. Communal (groups of up to 10 individuals) Forages alone
Diet	Nectar, pollen, plant exudates (acacia gum, eucalypt sap), invertebrates, honeydew
Captive lifespan	3–5 years
Sexual maturity	Male: 12 months Female: 12 months

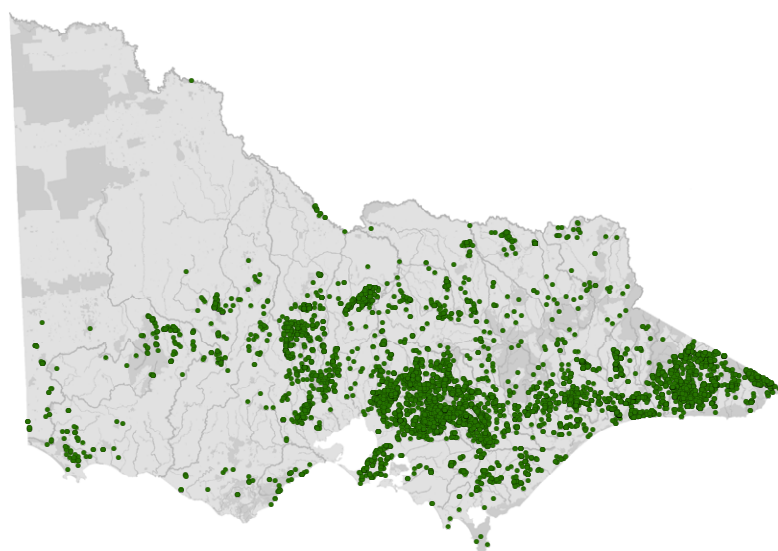
Species	Squirrel glider (<i>Petaurus norfolcensis</i>)
Mating season	June–August
Gestation length	20 days
Pouch life	August–December
Den young	120 days, October–January
Litters per year	1 litter of 1–2 young
Weaning	120 days
Dispersal	12–18 months

Species	Krefft's glider [<i>Petaurus notatus</i>] (Formerly sugar glider [<i>Petaurus breviceps</i>])
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Photo credit: Tracey-Ann Hooley, Museums Victoria

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023
www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas

General appearance	40 cm long, nose to tail. Black stripe down middle of head. Short face and ears. Sometimes white tip on tail. Gliding membrane from wrist to ankle
Conservation status*	Common
Adult morphometrics	Body weight: 115–160 g (male) 95–135 g (female) Head and body length: 160–210 mm Tail length: 165–210 mm

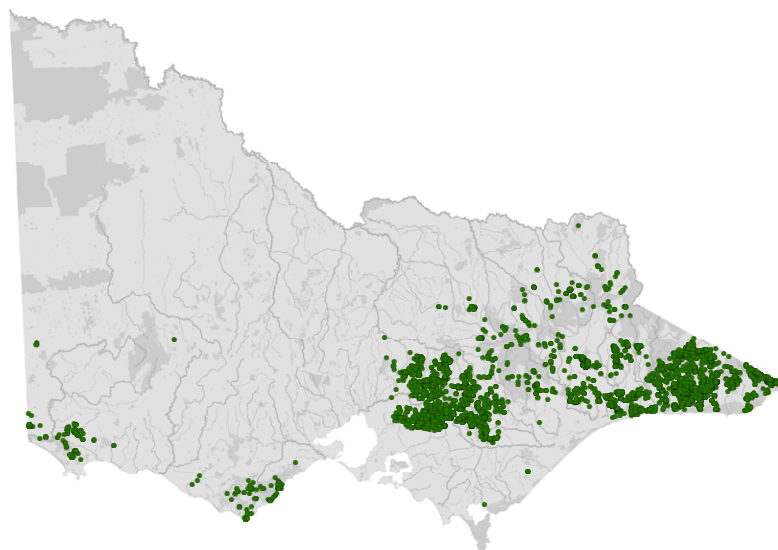
Species	Krefft's glider [<i>Petaurus notatus</i>] (Formerly sugar glider [<i>Petaurus breviceps</i>])
Habitat	Eucalupt forest with wattles
Home range	0.5–7 ha
Den	Tree hollow with nest of leaves
Behaviour	Nocturnal. Topor: yes. Territorial. Communal (groups of 2–12), forages alone
Diet	Acacia gum, nectar, pollen, eucalypt sap, invertebrates and invertebrate exudates
Captive lifespan	12–15 years (4–9 in the wild)
Sexual maturity	Male: 8 months Female: 8 months
Mating season	June–December
Gestation length	15–17 days
Pouch life	70 days, August–October
Den young	October–December
Litters per year	1 litter of 1–2 young
Weaning	120 days
Dispersal	7–10 months

Species

Yellow-bellied glider (*Petaurus australis*)

Photo credit: Geoff Sands

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023

www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas

General appearance	Fat bushy tail. Grey above and cream below. Scent gland in adults situated middle of the forehead. Gliding membrane from elbow to ankle
Conservation status*	Vulnerable
Adult morphometrics	Body weight: 470–725 g (male) 435–660 g (female) Head and body length: 24–31 cm Tail length: 38–47 cm
Habitat	Mixed mature eucalypt forest
Home range	20–85 ha
Den	Tree hollow with nest of leaves
Behaviour	Nocturnal. Torpor: yes. Territorial. Family groups (3–6 individuals), forages in a family group
Diet	Eucalypt nectar/sap (30–80% of diet), pollen, honeydew, manna, lerps, insects and spiders
Lifespan	6–10 years
Sexual maturity	Male: 24 months Female: 24 months

Species	Yellow-bellied glider (<i>Petaurus australis</i>)
Mating season	All year round (Victoria, August–December)
Gestation length	Unknown
Pouch life	100 days, year round
Den young	60 days, year round
Litters per year	1 litter of 1–2 young
Weaning	180–240 days
Dispersal	18–24 months

*From the *Flora and Fauna Guarantee Act 1988* Threatened List June 2023. This list is updated regularly throughout the year. For the most current list, please visit <https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>.

9.3 Animal and human safety considerations



In general, animals in the wild have limited contact with people, pets, and the hustle and bustle of our daily lives. When sick, injured or orphaned wild animals come into care this unnaturally close contact can carry risks to the health and safety of both people and animals. For general information on biosecurity and approaches to minimise these risks see Part A of these guidelines. Specific information on enclosure hygiene and biosecurity for possums and gliders is in **Section 9.6.2**.

The following information relates to the human and animal health and safety considerations specifically for the rehabilitation of possums and gliders.

9.3.1. Human safety considerations

- If there is any doubt about the safety of approaching an animal at height, a person with the appropriate training (arborist/tradesman/climber) should be contacted.
- All possums/gliders can give a painful bite which may be deep enough to damage the underlying tendons and muscles of the handler.
- Possums/gliders may also scratch deeply and draw blood.
- Possums/gliders can climb up their own tail to turn and bite the handler.
- Possums/gliders can carry zoonotic diseases.

9.3.2. Animal safety considerations

- Rough handling of the possum/glider can result in skin and tissue trauma and fur loss.

9.4 Capture, restraint, and transport



STOP – A visual examination must be done **BEFORE** the animal is captured. This applies to the initial capture from the wild as well as prior to captures which occur during time in captive care. See Section 9.4.1 for information on what to look for when conducting a visual health assessment.

Refer to Part A of these guidelines for general advice on wildlife welfare, biosecurity and hygiene, and record requirements. The following information relates to the capture, restraint, and transport of sick, injured and orphaned possums and gliders.

9.4.1. Visual observations

Visual observations of wildlife should be conducted prior to any attempts to capture the animal. This is just as important prior to the first capture from the wild as it is before any capture conducted while an animal is in captive care. Observations should be conducted quietly, by

one person, and from a distance which provides a clear view of the animal with as little disturbance as possible. Visual observation should focus on the animal's demeanour, behaviour, movement and posture, looking for evidence of injury/severe disease or deterioration and observe their breathing as demonstrated in the following table.

Table 9.2 Visual health observations in possums

What to look for	
Demeanour	<ul style="list-style-type: none"> • Bright, alert • May freeze, but if given space should attempt to avoid capture • Brushtail possums may be vocal • Abnormal observations include: <ul style="list-style-type: none"> - No attempt to avoid capture - Slow responses
Behaviour	<ul style="list-style-type: none"> • Actively moving in a co-ordinated manner • Investigating their environment • Looking for an escape route • Ringtail possums rarely bite • Abnormal observations include: <ul style="list-style-type: none"> - No fear of humans - No attempt to escape

What to look for	
Movement and posture	<ul style="list-style-type: none"> • Normal use of all four limbs. No evidence of lameness or open wounds • Climb quickly • Abnormal observations include: <ul style="list-style-type: none"> - Favouring a limb - Lack of co-ordination - Dragging limbs and/or tail - Will not climb
Breathing	<ul style="list-style-type: none"> • Regular but may be quite rapid for stressed animals • Abnormal observations include: <ul style="list-style-type: none"> - Panting or open mouth breathing is abnormal and may indicate respiratory distress or over heating - Struggling to breathe, gasping breaths

Table 9.3 Visual health observations in gliders

What to look for	
Demeanour	<ul style="list-style-type: none"> • Vocal • Reacts to handling • Bright, alert • May freeze (especially greater gliders), but if given space should attempt to avoid capture • Abnormal observations include: <ul style="list-style-type: none"> - Curled into tight ball - No attempt to avoid capture - Slow responses
Behaviour	<ul style="list-style-type: none"> • Actively moving in a co-ordinated manner • Investigating their environment • Looking for an escape route • Greater gliders and yellow-bellied gliders rarely bite, but will scratch attempting to escape • Abnormal observations include: <ul style="list-style-type: none"> - No fear of humans - No attempt to escape

What to look for	
Movement and posture	<ul style="list-style-type: none"> • Normal use of all four limbs. No evidence of lameness or open wounds • Climb quickly • Abnormal observations include: <ul style="list-style-type: none"> - Favouring a limb - Lack of co-ordination - Dragging limbs and/or tail - Will not climb
Breathing	<ul style="list-style-type: none"> • Regular. May be quite rapid for stressed animals • Can be difficult to observe • Abnormal observations include: <ul style="list-style-type: none"> - Panting or open mouth breathing is abnormal and may indicate respiratory distress or over heating - Struggling to breathe, gasping breaths

9.4.2. Equipment

- **Towel:** A thick towel is preferred to provide protection for the handler and also to provide suitable restraint for the animal.
- **Leather gloves:** may be used for handling adult common brushtail possums if a towel is not available.
- **Trap:** (operating under authorisation) common brushtail possums may be trapped in cat treadle traps or dedicated wire possum traps. The latter use a basket design, rather than a treadle. An apple with peanut butter can be placed in the basket. Possums should not be moved inside the cage but **transferred** to a bag. Moving possums while inside the trap is very stressful. Traps, if placed outdoors, should have their rear one-third covered with non-transparent, waterproof plastic.
- **Net:** may be used to catch before transfer to a bag or transport container.
- **Catch bag:** Possums/gliders can be secured inside a thick cloth, hessian or calico bag.
- **A towel, calico bag or pillow case, and a tie:** can be used to restrain a possum or glider.
- **Transport container:** standard pet carriers are usually adequate.

Figure 9.1 a. Two different sizes of cloth nets which may be used to catch possums and gliders. b. A catch bag to restrain small possums or gliders.



Photo credits: Zoos Victoria

Figure 9.2 Leather gloves



Figure 9.3 Soft sided pet packs can be used for transport



Image: Zoos Victoria

9.4.3. Technique

It is beyond the scope of these guidelines to outline techniques for every situation that may be encountered. Examples of techniques for some specific situations are outlined in the following section.

In addition to this information, for further advice please also refer to the recommended reading list, zoological institutions, veterinarians and/or wildlife experts. Inexperienced rescuers should request assistance where possible.

9.4.3.1 Possums

Restraint of wild adult possums, particularly brushtails, can be difficult. Manual restraint is only useful for short examinations and medicating. A brief examination can be done while keeping the possum inside a bag, and only exposing parts of the possum at a time. This works reasonably well so long as the head can be kept covered and it is undertaken by an experienced handler.

Possums can also be restrained by placing a thick towel over the possum ensuring the head is covered. Use one hand to grip the possum's tail at the base (as close to the animal's body as possible) and the other hand to restrain the head and shoulders with the thumb and index finger on either side of the neck. Do not place any pressure on the throat when restraining the possum to allow it to breathe normally. Restraint time should be kept as short as possible. Note that damaging the tail is possible if held part way down the length of the tail.

Thorough examination requires general anaesthesia. Possums may be restrained in a bag for anaesthesia induction by mask or injection by a veterinarian.

Figure 9.4 a. A common ringtail possum held with one hand restraining the tail and hind-legs and the other hand around the neck and head. **b.** An adult common brushtail possum restrained in a towel.



Photo credit: Zoos Victoria

On or close to the ground

Possums may be found on the ground as a consequence of predation, heat stress or vehicle trauma. Often the animal can be approached and covered with a towel before being scooped up and placed into a suitable container or cloth bag. Debilitated animals that are still mobile may reach the low branches of shrubs and can be captured using a towel placed over their head and body.

Confined spaces

Examples of confined spaces from where possums may be captured include drains, between walls, and inside fireplaces and wood-heaters.

If possible, attempt to release the possum from the confined space without handling it. This may be suitable for possums confined in wheelie bins, dumpsters, wall spaces or water tanks. The possum may be encouraged to climb out of a confined space by securing a rope to the side of the space, allowing the animal to leave in its own time. Never damage property (for example, cutting a hole in a wall to retrieve an animal) without the owner's permission.

Animals can be retrieved or captured using a flag on a pole to give an extended reach into a narrow space. The flag can be used to direct the animal to an exit point.

Wildlife rescuers should avoid entering confined spaces due to the potential risk of becoming trapped inside.

If capture is attempted, the possum may be covered with a towel. This covers the claws and gives the animal something to bite. The possum may be restrained for a short period by holding onto the base of the tail.

Possums may also become trapped in garage roller-doors. The capture may be attempted with two people – one to control the roller door movement and the other to support the possum. Sedation may result in less struggling

and injury to the possum. If the tail is caught in the cable, slowly reversing the door may help release the tail.

Brushtail possums can be very difficult to extract from tight spaces as they strongly resist being pulled out by curling into a ball and digging in their nails. In these situations, seek veterinary assistance as sedation by a vet may be required to extract the animal.

In the roof

Common brushtail possums favour tree hollows for their dens but in urban areas they may seek the dark shelter of house roofs to sleep during the day. Common ringtail possums rarely enter house roofs.

Most possums found in roofs are capable of getting out of their own accord. Before attempting to capture the possum, check to see if the animal already has an escape route. The best way to get a possum out of a roof is to watch for the possum to emerge from the roof after dark and then block off the access point(s). One-way doors on escape routes can also be used.

Cat treadle traps, or dedicated possum traps, may be used either in the roof space or at the entrance. They should be opened in the late afternoon, checked by dawn and kept closed during the day as the roof space can become extremely hot in summer. Trapped possums should be released on the same property, in their own territory, at night, as daytime releases are very stressful, and the possum will be disorientated. It is recommended that a nest box is placed in a tree on the property to give an alternative den space for common brushtail possums.

9.4.3.2 Gliders

Restraint should occur through a calico bag or small towel. Use the index and middle finger of one hand on either side of the head. Wrap the rest of the fingers around the body of the animal. Expose each part of the body in turn for examination.

Figure 9.5 a. Restraint of a Krefft's glider within a cloth. b. The same restraint is shown without the cloth. Note that the head is restrained between the thumb and first finger.

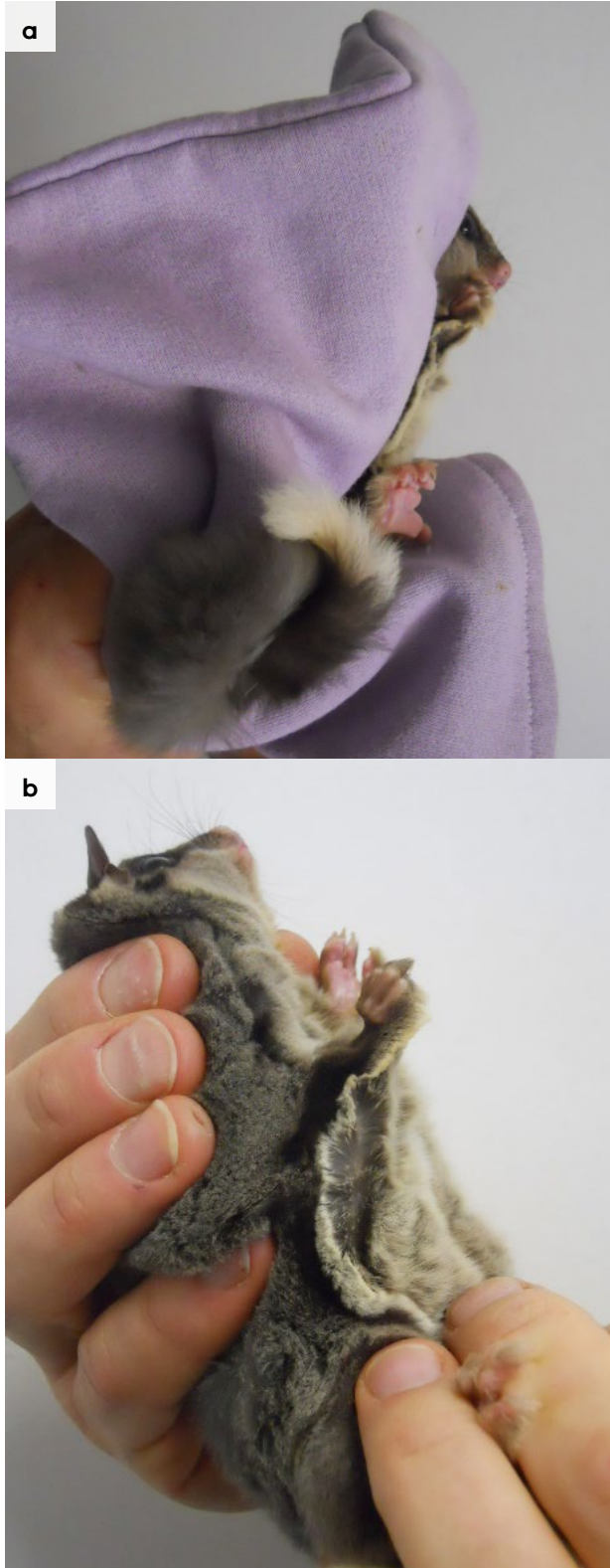


Photo credit: Zoos Victoria

On or close to the ground

Gliders may be found on the ground or on low branches after predation, when in torpor or when they have been injured. They can be captured by placing a cloth bag or towel over their head and body.

Confined spaces

Gliders may seek small spaces to nest, such as piles of firewood. Accidental injury can occur when firewood is disturbed. If in torpor and uninjured, the animal may only require repositioning. Crush injuries can be difficult to identify. If in doubt seek veterinary advice.

Do not enter confined areas (for example, building roof space) if there is a risk of becoming trapped. Property should only be modified (for example, cutting a hole in a wall) by a qualified tradesperson and only with the property owner's consent. It may be possible to allow the glider to escape from the wall cavity by providing a means of escape, such as a rope hanging in the space.

Caught in barbed wire fence

Restrain the glider in a towel, cover its head and support its body weight. It may be easier to remove the glider from the wire while it is still under tension. Releasing tension may cause the wire coils to further trap tissue. If the wire needs to be cut, obtain permission from the property owner first. Wire strainers, and potentially a wire bridge, should be used at all times when cutting barbed wire to prevent injury from the wire snapping back into the face. Protective eye wear and gloves should be worn. All barbed wire injuries to the glider should be assessed by a veterinarian. An anaesthetic will be required to remove wire that has been cut but is still embedded in the glider's skin.

9.4.4. Transport

Possums

If the possum is trapped in a dedicated animal trap (cat or possum), a large bag or hessian sack should be used to remove the animal from the trap. Approach the trap quietly and calmly. Place the front of the trap over the lower leading edge of the sack opening, while the top of the sack is taken in, so there is no gap between the cage and sack. Use one hand to lift the bar over the trap door to open the door. The sack now covers the whole opening of the trap, and one hand continues to firmly hold onto the bag. If the possum does not walk into the sack on its own, which does sometimes happen, encourage the possum to move into the sack by an escalation of the following actions: a) gently tap the back of the trap; b) give short, sharp air blows aimed at the end of the possum furthest from the sack; c) turn the trap 90 degrees, so you can see the possum without the plastic cover interfering and continue with blowing air at the possum; d) tilt the trap with the back end up and the front pointing down, while continuing to tap and blowing air. In most cases, this should get the possum into the sack.

If this is still unsuccessful, the possum can be removed manually, with heavy duty welding gloves. However, this is the most stressful method for the possum, and has the highest risk of injury to the operator. Once the possum is in the sack, the opening needs to be firmly closed with a string. Do not let go of the sack as possums will try to run off in the sack. Also, do not place your

hand on the sack, other than the end that has been tied off, to avoid being bitten or scratched.

Travel should be as quiet as possible to reduce stress. Minimise the number of people in the car and keep the radio off. Don't slam car doors. Transport directly to the desired location with no extraneous stops.

Common brushtail possums should be held in a heavy cloth bag, or even better a hessian sack, as they can tear through a pillowcase or cardboard box. They can be transported in a pet carrier covered with a towel to reduce noise and light. Never transport possums in the trap.

Common ringtail possums can be transported in a secured cloth bag inside a solid enclosure such as a plastic tub with ventilation holes or a pet carry pack.

Animals should be housed separately during transportation.

If possible, avoid transportation on hot days (that is, above 30°C). Ideal ambient temperature range for transportation is 10–20°C.

Gliders

Gliders should be placed in a cloth bag and transported in a pet carrier covered with a towel to reduce noise and light.

Animals should be housed separately during transportation.

The ideal ambient temperature range for transportation is 10–20°C.

9.5 Monitoring animal health and welfare



The goal of wildlife rehabilitation is to address health and welfare concerns quickly and effectively so wildlife can be released back to the wild as soon as possible. Decision-making from the time of capture through to release should be guided by an accurate understanding of the animal's true state of health and welfare. Careful monitoring throughout the rehabilitation period ensures that significant issues, or deterioration in health condition, are identified immediately and rapidly addressed.

It is preferred that all sick, injured or orphaned wildlife be assessed by a veterinarian to ensure that non-obvious signs of trauma or disease can be assessed and treated as soon as practicable. No medication should be provided prior to this assessment, as this can mask clinical signs and make an accurate health assessment by the veterinarian very difficult.

Templates for record-keeping visual and physical observations and daily care can be found in Part A of these guidelines.

Please note: Carers should always aim to treat animals as efficiently as possible, so that they can be returned to the wild in the shortest possible time. This section provides guidance on assessment of health on arrival and on effective monitoring of the health and welfare of animals up to the point of release back to the wild.

9.5.1 Physical examination

Once visual observations are complete, and the animal is stable enough to withstand capture and handling, a basic physical examination should be conducted. This can be repeated when required any time the carer has the animal in the hand, such as for an enclosure change. However, if a full physical exam is not conducted, body condition and weight should be assessed every time the animal is in the hand for other reasons. Carers should make sure weighing scales are available and ready to use before capturing the animal. Physical examinations are also required

if the carer notices any changes suggestive of deteriorating health or an injury.

Always record the physical examination findings, so that you can compare findings as the animal's rehabilitation progresses. This ensures any health concerns are identified as soon as possible, and the carer can plan release as soon as appropriate. **A template for recording physical examination findings can be found in the appendices to Part A of these guidelines.**

Examinations should be conducted in a quiet location, away from any domestic animals. Only one person should handle the animal, while a second person takes notes. All other people should move away, and noise kept to a minimum. Handling should also be kept to a minimum, with careful monitoring for any signs of distress – such as panting, salivating, vocalisation, or sudden deterioration in demeanour. If these are seen, the examination should be stopped immediately, and the animal returned to its catch bag, transport box or enclosure and allowed to recover.

Species specific considerations:

- Examination of a sick or injured possum or glider is best performed under general anaesthesia by a veterinarian. Physical examination may be possible but will be extremely stressful and should be limited to a cursory examination only.
- If the possum/glider is contained within a bag or pouch, the opening is peeled back and individual body parts gently examined. This method works well for hand reared joeys that are comfortable with being handled.
- Keep the animal's eyes covered, if possible.
- **Table 9.4** and **Table 9.5** provide additional guidance on what to look for during physical examinations.

Table 9.4 Physical examination of possums

	What to look for
Body weight	<ul style="list-style-type: none"> Record body weight on arrival and at least weekly while in care. A greater than 10% change in body weight is cause for concern, and the carer should seek veterinary advice.
Body condition	<p>Body condition of possums is scored by palpation over the hips and chest.</p> <ul style="list-style-type: none"> Under condition: Ribs are obvious, abdomen appears sunken, pelvic bones are prominent. Ideal condition: Ribs covered when felt. Spine can just be felt. Points of the hips can be felt. Over condition: Ribs and rump all well covered.
Level of hydration	<ul style="list-style-type: none"> Hydration can be assessed by testing skin tent, done by pinching and lifting the skin between the shoulder blades. Dehydration can be indicated by skin remaining 'tented' or a slow return to normal position.
Eyes	<ul style="list-style-type: none"> Open, clear surface, no discharge, even pupil size. Eyes can indicate hydration status; they should be bright and shiny. Sunken eyes may indicate dehydration.
Mouth	<ul style="list-style-type: none"> Pink gums and tongue. Teeth are even. Adequate wear.
Ears	<ul style="list-style-type: none"> Erect, clean.
Limbs	<ul style="list-style-type: none"> Feet can turn backward, can walk, climb, nails sharp and intact.
Pouch	<ul style="list-style-type: none"> If young, the pouch is small. If there is a long teat and swollen mammary glands the animal has back young or nest young. A mature pouch has a scant, watery reddish-brown secretion.
Faeces	<ul style="list-style-type: none"> Formed, dark green or brown pellets, oval shaped.
Skin and fur	<ul style="list-style-type: none"> No fur loss. Few ectoparasites seen on skin. Thick fur.
Sex determination	<p>Determined by the presence of testicles (male) or a pouch (females). See Figure 9.6.</p>
Pouch	<p>Young may be present – indicated by swollen mammary gland with milk able to be expressed.</p>

Table 9.5 Physical examination of gliders

What to look for	
Body weight	<ul style="list-style-type: none"> Record body weight on arrival and at least weekly while in care. A greater than 10% change in body weight is cause for concern, and the carer should seek veterinary advice.
Body condition	<p>Body condition of gliders is scored by palpation over the hips and chest. Note that greater gliders naturally feel thin. Their thick fur gives an appearance of being rotund, however their bones are easily felt.</p> <ul style="list-style-type: none"> Under condition: Ribs are obvious, abdomen appears sunken, pelvic bones are prominent. Ideal condition: Ribs covered when felt. Spine can just be felt. Points of the hips can be felt. Over condition: Ribs and rump all well covered.
Level of hydration	<ul style="list-style-type: none"> Hydration can be assessed by testing skin tent, done by pinching and lifting the skin between the shoulder blades. Dehydration can be indicated by skin remaining 'tented' or a slow return to normal position.
Eyes	<ul style="list-style-type: none"> Clear globe with shiny smooth surface. Eyes can indicate hydration status; they should be bright and shiny. Sunken eyes may indicate dehydration.
Mouth	<ul style="list-style-type: none"> Pink gums and tongue. Teeth are even. Adequate wear.
Skin and fur	<ul style="list-style-type: none"> Furred. Few parasites. Scent glands on head and chest.
Limbs	<ul style="list-style-type: none"> Walking on all legs.
Gliding membrane	<ul style="list-style-type: none"> Intact along length.
Sex determination	<ul style="list-style-type: none"> Determined by the presence of testicles (male) or a pouch (females).
Pouch	<ul style="list-style-type: none"> Young may be present – indicated by swollen mammary gland with milk able to be expressed.

Figure 9.6 Photos of juvenile ringtail possums demonstrating the pouch and testicles.

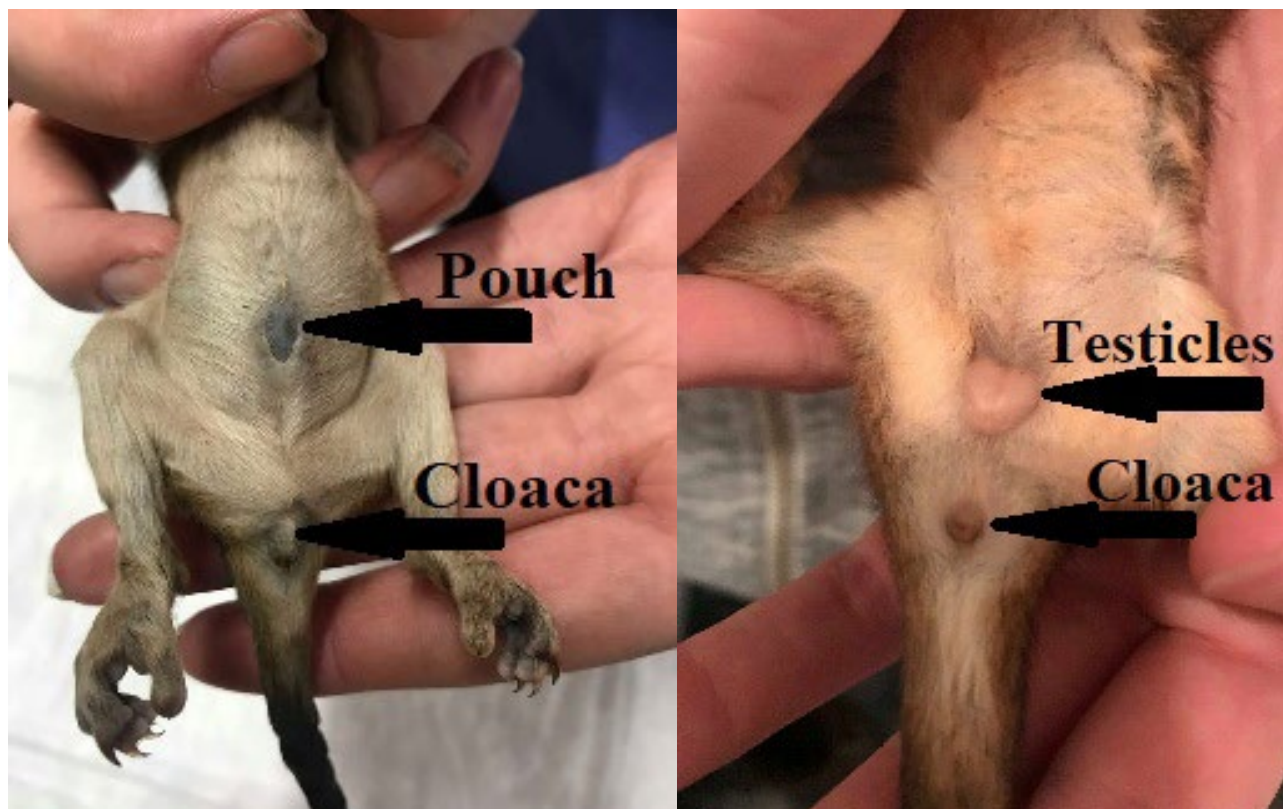


Photo credit: Megan McKay

9.5.2. Ongoing monitoring of health and welfare

The aim of wildlife rehabilitation is to ensure animals recover and can be released back to the wild as quickly as possible. Careful, daily monitoring is required to ensure that animals are responding as expected to the treatment being provided and so that any deterioration or welfare concerns can be identified and addressed as soon as possible. Rehabilitators should ensure that record-keeping is a priority to maximise positive welfare outcomes. Templates to assist wildlife rehabilitators to record and monitor wildlife health and welfare can be found in the appendices to Part A of these guidelines. These records will be valuable tools to share with veterinarians to support decision-making.

The following is recorded daily:

- demeanour
- food consumption
- faecal/urine output
- behaviour observed
- medical treatment provided
- evidence of overnight activity.

The following is recorded weekly:

- weight
- body condition.

Over time, regular monitoring will also help to develop carer skills and knowledge, as regular observations and recording will result in a deep understanding of the expected behaviour and response to treatment for the species in care.

Species specific considerations:

- The possum/glider should be observed at least daily.
- If the possum/glider is being medicated, a visual check in the morning is recommended.
- Note the animal's demeanour and behaviour every time food is introduced or taken away, the animal is medicated, or the enclosure is cleaned. Pay particular attention to any changes that have occurred since the previous day.
- Gently encourage the possum/glider to walk and climb to assess its movement and demeanour.

- Note faecal consistency daily. If diarrhoea is noticed, a faecal sample should be collected and submitted to the veterinarian for assessment as soon as possible. Do not treat on suspicion of a bacterial or parasitic infection, as this can make definitive diagnosis very difficult and potentially prolong the course of the disease.

9.5.3. Common and emerging health conditions

Clear guidance on conditions that may require euthanasia can be found in Part A of these guidelines.

Table 9.6 lists common clinical signs and possible causes of injury/disease. Carers should be aware that these are not exhaustive. Aside from first aid, carers should avoid administering medications prior to the provision of veterinary advice.

Unusual clinical signs or mass mortality events – a number of animals dying or found dead at the same time, with similar signs – may indicate an emergency animal disease, an emerging/new infectious disease or an environmental/human related toxicity which needs further investigation. Report these immediately to the Emergency Animal Disease Watch Hotline on 1800 675 888 (24 hours).

Table 9.6 Common injuries and clinical signs of emerging health conditions seen on presentation or during care

Clinical signs and possible causes	Possible causes	Rehabilitator observations and response
<p>Note: Do not provide pain relief or other medication, including antibiotics, unless under veterinary guidance and supervision, as these can have severe side effects, particularly in dehydrated/shocked animals. Use of antibiotics when not indicated can contribute to antimicrobial resistance and reduce drug efficacy.</p>		
<p>Unable to walk or move normally</p> <p>Paralysis</p> <p>Swollen limb</p> <p>Bruising</p> <p>Fractures</p> <p>Dislocation</p> <p>Abraded claws</p>	<p>Found adjacent to road/suspect motor vehicle accident,</p> <p>Caught in fence or wire</p> <p>Entrapment</p> <p>Predation injury caused by raptor, fox, cat or dog, gunshot</p> <p>Capture injury</p> <p>Injury sustained in captivity, for example fall from perch</p>	<ul style="list-style-type: none"> Urgent veterinary attention is required. Do not delay transfer to a veterinarian to apply first aid, other than to stop excessive bleeding. Do not attempt to stabilise fractures, as this is very painful, and risks making the injury worse. Fracture stabilisation should only be attempted by a veterinarian following physical examination, x-rays and under general anaesthesia. Do not provide pain relief or other medication unless under veterinary guidance and supervision, as these can have severe side effects, particularly in dehydrated/shocked animals. Move animal to a small transport box to restrict movement. Ensure temperature is appropriate for species; attempt to relieve stress. If suspected as the cause, assess the enclosure to find the source of injury. Fix loose wire/gaps or sharp edges before returning animal to enclosure. See Section 9.4 and Section 9.6 this chapter for further advice on housing and transport.

Clinical signs and possible causes	Possible causes	Rehabilitator observations and response
<p>Head trauma</p> <p>Bleeding from nose, mouth or eyes</p> <p>Swollen eye lids, Blood present in eye</p> <p>Abnormal behaviour</p> <p>Mouth swelling, missing teeth</p> <p>Lethargy</p>	<p>Cranial trauma, concussion</p> <p>Found adjacent to road/suspect motor vehicle accident,</p> <p>Caught in fence or wire</p> <p>Predation injury caused by raptor, fox, cat or dog,</p> <p>Gunshot</p> <p>Capture injury</p> <p>Injury sustained in captivity, for example fall from perch</p>	<ul style="list-style-type: none"> • Urgent veterinary attention is required. Do not delay transfer to a veterinarian to apply first aid, other than to stop excessive bleeding. • Do not provide pain relief or other medication unless under veterinary guidance and supervision, as these can have severe side effects, particularly in dehydrated/shocked or head trauma animals. • Move animal to a small transport box to restrict movement. Ensure temperature is appropriate for species; attempt to relieve stress. • If suspected as the cause, assess the enclosure to find the source of injury. Fix loose wire/gaps or sharp edges before returning animal to enclosure. See Section 9.4 and Section 9.6 this chapter for further advice on housing and transport.
<p>Bleeding</p> <p>Puncture wounds</p> <p>Bruising</p> <p>Fur loss</p>	<p>Conspecific aggression, breeding season injuries</p> <p>Found adjacent to road/suspect motor vehicle accident,</p> <p>Predation injury caused by raptor, fox, cat or dog</p> <p>Poorly designed transport box/ enclosure</p> <p>Capture injury</p> <p>Injury sustained in captivity, for example, fall from perch</p>	<ul style="list-style-type: none"> • Seek prompt veterinary assessment. • Euthanasia may be the most humane response if the wounds are extensive. • Do not provide pain relief or other medication unless under veterinary guidance and supervision, as these can have severe side effects, particularly in dehydrated/shocked animals. • The severity of bite wounds/scratches may not be immediately obvious, look for clumps of dried fur stuck together with saliva. • Check, particularly if it is a ringtail, for puncture wounds or saliva, which are commonly found around the neck and shoulders but may be obscured by fur. • Check gliders for punctures/tears in gliding membrane. • If suspected as the cause, assess the enclosure to find the source of injury. Fix loose wire/gaps or sharp edges before returning animal to enclosure. See Section 9.4 and Section 9.6 this chapter for further advice on housing and transport.

Clinical signs and possible causes	Possible causes	Rehabilitator observations and response
Burns	Recent bushfire, campfire injury, chemical burn, electrocution, hot surface burn, for example tar roads on a hot day	<ul style="list-style-type: none"> • Seek urgent veterinary attention. • Burn injuries are extremely painful, treatment and bandage changes must only occur under anaesthesia and with adequate pain management. • Do not provide pain relief or other medication unless under veterinary guidance and supervision, as these can have severe side effects, particularly in dehydrated/shocked animals. • Burn injuries to paws may result in nail damage, digit bone damage and tendon damage, due to the complexity of these injuries, veterinary management is required. • To ensure good welfare, animals must be returned to a veterinarian for ongoing bandage changes. • Burnt possums or gliders may need supplemental nutrition as metabolic demands are high when healing burns.
Depression, lameness, weakness, sudden death, neurological signs	Undetermined infectious disease for example toxoplasmosis, Tyzzer's disease	<ul style="list-style-type: none"> • Seek veterinary attention as soon as possible to determine the cause.
Skin ulcers/scabs, fur loss, reddened or crusty skin, swollen paws	Undetermined infectious disease, for example <i>Mycobacterium ulcerans</i> infection (Bairnsdale ulcer/Buruli ulcer), ectoparasites, swollen paw syndrome, bacterial infection, stress dermatitis, electrocution, photosensitisation, plant toxins, unknown	<ul style="list-style-type: none"> • Seek veterinary attention as soon as possible to determine the cause. • Some fur loss/minor skin lesions are commonly seen due to fighting and may not require any intervention. • A small number of parasites can be normal, and do not require treatment or removal. However, if there are large numbers of parasites, the animal is scratching/irritated, or the skin is red and inflamed the animals must be assessed by a veterinarian. A heavy burden of parasites may indicate an underlying disease process. • Swollen paw syndrome is only seen in ringtail possums. • <i>Mycobacterium ulcerans</i> is zoonotic, refer to Part A, Chapter 4, of these guidelines for additional information on Biosecurity & Hygiene including zoonoses and minimising disease risks to animals and carers.
Neurological signs/salivation/bleeding without trauma	Undetermined disease, toxicity, for example 1080 poisoning, rodenticide	<ul style="list-style-type: none"> • Seek veterinary attention as soon as possible to determine the cause.

Clinical signs and possible causes	Possible causes	Rehabilitator observations and response
<p>Diarrhoea</p> <p>Loose, smelly faeces</p> <p>Cloacal prolapse</p> <p>Bloat</p>	<p>Gastrointestinal disease</p> <p>inappropriate diet, infectious disease, alteration of microbiome, stress, internal parasites, antibiotic treatment</p>	<ul style="list-style-type: none"> • Seek veterinary attention as soon as possible to determine the cause. • Seek urgent veterinary advice if diarrhoea does not resolve rapidly (e.g. within 24–36 hours), or if there is any evidence of dehydration, blood in faeces or change in demeanour. • Do not treat on assumption of infectious disease (for example, coccidia or bacterial infection) as this can make veterinary diagnosis more difficult if the animal does not improve. • Chronic diarrhoea may lead to cloacal prolapse. If this occurs, keep the prolapse moist with KY jelly and seek urgent veterinary attention. • Some causes of diarrhoea are transmissible to people. Refer to Part A, Chapter 4, of these guidelines for additional information on Biosecurity & Hygiene including zoonoses and minimising disease risks. • Ensure excellent hygiene standards to prevent spread and isolate this animal from any others in care if possible. • Seek species expert advice, ensure diet and husbandry practices are correct. • Offer appropriate food items. Restrict fruit, as this can impact caecal bacteria. • Diarrhoea may result if inappropriate milk is fed, for example cow's milk. • Consider any recent changes, which may have led to diarrhoea and remove the inciting cause where possible – for example rapid change in diet, unusual levels of sound/intervention or handling, contact with recently arrived animals. • If milk was recently changed, switch back to the previous milk, wait until diarrhoea has resolved and then implement a slower diet change. • Diarrhoea can occur due to over feeding. • Do not mix oral rehydration fluids with milk as it changes the digestibility of the milk. Oral rehydration fluids/water can be provided in between milk feeds. • Orphaned joeys may lack normal gut bacteria. Place a faecal scat from a healthy possum in a bottle of boiled water that has cooled but is still warm. Mix the faeces with the water and allow it to stand for ten minutes. Drain off the liquid and mix it into the joey's next feed at a rate of 20–30% of the milk volume. Repeat the process 12 hours later. • Offer gum tips rather than <i>callistemon</i> and <i>grevillea</i> when starting orphan possums onto solids as the high sugar and low-fibre content of flowers may prevent the gut from developing normally. • High-fibre supplements such as Oxbow Critical Care and Vetafarm Crittacare* may prevent the condition, as they offer a high-fibre source of nutrition.

Clinical signs and possible causes	Possible causes	Rehabilitator observations and response
<p>Possums (usually ringtail) found uninjured on the ground, weak, dull demeanour/ poorly or non-responsive</p>	<p>Heat stress, torpor, undetermined infectious disease, toxicity</p>	<ul style="list-style-type: none"> • Seek veterinary assessment to determine the cause. • Urgent veterinary attention is required to assess a heat impacted animal, to determine hydration status, and whether heat stress has led to more significant underlying organ damage. • To transport, place the animal in a cool environment and wrap the animal in a cold wet towel. • Be mindful of actively cooling small animals, with a small surface area, hypothermia (low body temperature) is a risk. • Seek species expert advice. Poorly responsive animals may present in a very similar manner regardless of the underlying cause, an assessment of environmental factors may help to understand whether the clinical signs seen are a response to thermal range or may indicate an underlying health condition. • Torpor normally occurs in gliders during cold weather. • The glider may be found in its nest in a tree that has been cut down or possibly on the ground, cold and inactive with or without visible wounds. • Offer warmth at 25–28°C and assess response. Gliders are sensitive to high temperatures and should be monitored for panting, increased respiratory rate and wet forelimbs. • Nectar or an electrolyte solution (for greater gliders) may be offered into the glider’s mouth. • If the glider has not responded within 24 hours, veterinary advice should be sought.

*Please note: Food suppliers and specific products mentioned in the Victorian Wildlife Rehabilitation Guidelines are intended as examples only. Other suitable products may also be available.

Figure 9.7 A common ringtail possum with extensive predation wounds over the shoulders.



Photo credit: Zoos Victoria

Figure 9.8 Common ringtail possums with swollen paw syndrome.



Photo credit: Zoos Victoria

Figure 9.9 A common brushtail possum with a prolapse of the cloaca.



Photo credit: Anne Fowler

Figure 9.10 Trauma to the gliding membrane of a glider, likely caused by being caught in a barbed wire fence.



Photo credit: Zoos Victoria

Figure 9.11 Common ringtail possum with burnt feet.



Photo credit: Zoos Victoria

Figure 9.12 Ringtail possum with deep Buruli ulcer lesions on right hind paw, revealing bone, and scrotum.



Photo credit: Jean Lee, Doherty Institute

9.5.4. Administering treatment during rehabilitation

- Oral medications can be delivered in a syringe directed into the side of the mouth while the animal is restrained. Care is required to avoid being bitten.
- Injectable medications can be administered under the skin, between the shoulder blades. Only experienced carers should give injections.
- Fluids (Lectade or Hydralyte) are best administered orally to address dehydration. If the animal voluntarily takes the fluid, it indicates that it is thirsty, that it can swallow and does not require subcutaneous fluids.
- Subcutaneous fluids should only be given under anaesthetic by a vet as the administration is painful. Possums and gliders do not have a good subcutaneous space, so multiple sites may need to be used.

9.6 Housing

Below are several key considerations when housing adults in care.

9.6.1. General housing information for possums and gliders

There are no national standards regarding enclosure size for possums and gliders during rehabilitation. Each state has a different set of guidelines which contain a variety of recommended enclosure sizes. The dimensions recommended in this chapter are suggestions based on Healesville Sanctuary enclosure sizes. There is no 'one size fits all' and it is important to continually assess the welfare of the possum or glider and tailor enclosures and enclosure size to suit the requirements of the individual.

Please note: specific products mentioned in these guidelines are intended as examples only. Other suitable products may also be available.

9.6.2. Enclosure hygiene & biosecurity

General information about hygiene and biosecurity can be found in Part A of these guidelines. New diseases emerge frequently and sick and injured animals in care are often more susceptible to picking up pathogens from the environment. It is important to maintain excellent levels of hygiene to avoid inadvertently transferring diseases between animals, and from humans, and to protect the wild population where the animal will eventually return to.

Species specific considerations:

- Wash hands with soap and water after handling dogs and cats to minimise the risk of transferring disease agents such as *Toxoplasma gondii*, which can be found in cat faeces.
- Ideally, examination gloves should be worn and changed between animals.

- Left-over food and faecal matter should be spot cleaned from enclosures daily to ensure good levels of hygiene are maintained.
- Any wet/sodden or soiled organic furnishings, substrate or enrichment items should be removed as soon as possible and replaced with a clean/dry alternative.
- Enclosures should be cleaned and disinfected between inhabitants. Substrate should be completely replaced and furniture, such as branches or boxes made of unsealed wood, should be discarded as they cannot be effectively disinfected.
- Enclosures should be cleaned with hot soapy water and then disinfected with products such as F10SC or bleach at the recommended concentration and contact time. Bleach must be rinsed.
- Ringtail possums may develop skin infections caused by *Mycobacterium ulcerans*. This infection is transmissible to people and can cause similar skin ulcers. If the veterinarian has diagnosed this disease, the enclosure should be cleaned with hydrogen peroxide or vinegar at the recommended concentration and contact times, as these agents have been shown to kill these particular bacteria.

9.6.3. Housing types

Different set ups are required for animals at different stages of treatment and care. **Tables 9.7–9.10** describe the housing type, suggested housing and nest box dimensions and requirements at each stage of care. For information on housing animals during hand raising see **Section 9.8**.

Table 9.7 Rehabilitation housing for adult possums

Intensive care housing		
Indications for use	Suggested min. dimensions	Suggested requirements
<p>Short term critical care (<48 hours)</p> <p>Intensive veterinary treatment – frequent medication, oxygen supplementation, temperature control</p> <p>Longer periods under veterinary supervision where strict cage rest/ confinement is indicated</p>	<p>Enclosure: 45–60 cm(L) x 30–40 cm (W) x 30–40 cm (H)</p>	<p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> • A cat carry pack, Rio basket or Vetario makes a suitable intensive care enclosure. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> • Newspaper may be used as substrate for intensive care enclosures. Towels or thin blankets add warmth and padding. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> • Sick adult possums are kept on a heat gradient with the warm end at 28°C. Heating pads are commonly used. All heating should be monitored with a thermometer and layers of towel placed between the possum and the heating unit to provide the correct level of heat. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> • Water should be available in a shallow bowl. • Food and water may need to be syringe/bottle fed during this intensive period of care.

Intermediate housing (treatment/cage rest)

Indications for use	Suggested min. dimensions	Suggested requirements
<p>Provision of daily medication, close monitoring once animal is stabilised and no longer requires intensive care</p> <p>The increased size of this stage of housing provides the opportunity to explore. This is when a nest box is introduced for the first time</p> <p>As for the intensive care housing, adult possums should be housed individually unless they arrive with young</p>	<p>Enclosure:</p> <ul style="list-style-type: none"> Suggested dimensions of the enclosure are 1 m (L) x 1 m (W) x 1–2 m (H) 	<p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> A small aviary is a suitable size. Large wire bird enclosures can be used. Line the enclosure with shade-cloth or fly wire to provide a visual barrier and prevent escape. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> Newspaper may be used as a substrate for this enclosure. Nest box constructed of timber, with a hinged lid to enable cleaning and placement of bedding material. A hole on the side of a size that will allow easy entry and exit by the possum. Recommended dimensions and construction details of nest boxes for each species are given below, under Pre-release housing. The nest box should be mounted high in the enclosure with branches positioned to give access to the entry hole. It should be easily removable so that it may be cleaned regularly as possums may defaecate and urinate inside. Bedding such as dried leaves or towels/ small blankets should be provided in the box. The pouch can be hung inside or placed inside a nest box. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> Animals housed in these should be able to cope with ambient temperatures. Nest boxes should be positioned out of direct sun and offer protection from rain and wind. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> Browse is kept in containers with water that is changed daily. Plastic cups, stainless-steel or ceramic bowls can be used as food and water bowls.

Pre-release		
Indications for use	Suggested min. dimensions	Suggested requirements
<p>No longer require regular handling/medication</p> <p>Development of fitness/strength prior to release</p> <p>Pre-release housing aims to provide sufficient space to develop a reasonable level of fitness for climbing and jumping</p> <p>As for the intensive care housing, adult possums should be housed individually unless they arrive with young</p>	<p>Enclosure: 3 m (L) x 2 m (W) x 2 m (H)</p> <p>Increased floor area for each additional possum: 3 m². Larger dimensions than this are preferred as they give more opportunities for possums to gain fitness.</p> <p>Nest box: Common ringtail possum: 20 cm x 25 cm. Height 43 cm. Entrance hole diameter: 3.2 cm. Diameter of tree: 0.20–1.43 m</p> <p>Common brushtail possum: 25 cm x 30 cm. Height 55 cm. Entrance hole diameter: 8.5 cm. Diameter of tree: 0.55–1.43 m</p> <p>Mountain brushtail possum: 25 cm x 30 cm. Height 55 cm. Entrance hole diameter: 12–25 cm. Diameter of tree: >1.40 m</p>	<p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> Galvanised wire with a diameter of 10 mm can be used for possums. Shade-cloth on the walls of the enclosure will provide a visual barrier from predators. Nest box made from marine ply with drainage holes in the bottom and painted with non-toxic paint in subdued colours (See Figure 9.14). Use metal hinges for the lid as Velcro and rubber deteriorate over time. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> Mulch is recommended for flooring. This is replaced when soiled. Sand and gravel can be placed under the mulch to create a floor that does not trap moisture. Ropes of varying diameter and tension are placed in the aviary to encourage climbing. The nest box that the possum will be released with should be hung in the aviary with a branch near the entry hole for easy access. The possum needs to spend between a week to a month in the nest box if it is to use it after release. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> Branches with leaves may be placed in the aviary as furniture, separate from food leaves. The branches are changed weekly to create a varied environment. They are held in place by octopus straps, cable ties or wire. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> Browse pots (for example sealed at the bottom PVC pipes) can be used to hold the food browse in water and are placed at a height so that the tops of the leaves are close to the roof of the aviary. The water in the browse pots is changed daily. Do not leave pots containing water without browse as the possum may drown if it falls into the pot. Food leaves are replaced daily. Supplementary food may be placed in small containers suspended on the wire of the enclosure to encourage movement. Do not place food containers on the floor. Insects such as mealworms may be placed under pieces of bark on the branches.

Figure 9.13 a. A young common ringtail possum in a pouch in a Rio basket. It is being fed using bicycle tubing attached to a syringe. b. A large pet carry pack is used as intermediate housing for a young mountain brushtail possum.



Photo credit: Anne Fowler

Figure 9.14 a. Short-term housing for a ringtail possum. Note the presence of a nest-box and branches to encourage climbing. b. An aviary set up as a pre-release enclosure for possums.



Photo credit: Zoos Victoria

Table 9.8 Rehabilitation housing for adult gliders

Intensive care housing		
Indications for use	Suggested min. dimensions	Suggested requirements
<p>Short term critical care (<48 hours)</p> <p>This type of housing is suitable for sick or injured adults during their first week in care. Adults are housed individually unless they arrive as part of a colony, in which case they are kept together</p>	45cm (L) x 30cm (W) x 30 cm (H)	<p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> • A Rio basket, Vetario, Rcom intensive care unit, Kimani incubator or small pet carry cage can be used. The basket should be lined with fly wire to prevent the escape of small gliders. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> • Adult gliders should be offered a nest box in their intensive care enclosure. This may be a wooden or cardboard box. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> • Heating pads or incubators, set between 25–28°C, can be used to provide heating. • A thermometer should be used to monitor the heat provided. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> • Use drink bottle lids to provide nectar. Small containers help prevent the animal walking in the nectar and matting their coats. • Fresh water should be provided with food in shallow water dishes.

Intermediate housing (treatment/cage rest)

Indications for use	Suggested min. dimensions	Suggested requirements
<p>This stage of housing is suitable for the injured adult glider or juvenile and sub-adult gliders that are old enough to be moving around. It provides the glider with some space and is small enough to allow easy capture.</p> <p>As for the intensive care housing, adult gliders should be housed individually unless they arrive as a colony.</p>	<p>Feathertail glider</p> <p>Enclosure: 0.45 m (L) x 0.30 m (W) H: 0.25 m</p>	<p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> A small aviary or modified wardrobe is suitable. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> Newspaper may be used as a substrate for the intermediate enclosure. Branches are placed in the enclosure to encourage the glider to exercise. Provide a nest box of cardboard or wood. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> A heat mat covered with towels to provide the correct temperature may be placed under half of the nest box during weaning, particularly where there are few animals in the enclosure. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> Change water in browse containers daily. Keep food containers off the floor. Use small food bowls so that the glider's fur does not drag through nectar mixes. Examples include drink lids, sipper bottles or bird seed containers. For yellow-bellied gliders a fresh eucalypt limb should be offered every second day to enable the glider to have access to sap.
	<p>Greater glider, yellow-bellied glider</p> <p>Enclosure: 1 m (L) x 1 m (W) (1 m²) H: 1 m</p>	
	<p>Leadbeater's possum, squirrel glider, Krefft's glider</p> <p>Enclosure: 0.5 m (L) x 0.5 m (W) (0.25 m²) H: 1 m</p>	

Pre-release		
Indications for use	Suggested min. dimensions	Suggested requirements
<p>No longer require regular handling/ medication</p> <p>This stage of housing is suitable for adult gliders that have recovered from their injuries and juvenile gliders that are being prepared for release. The housing needs to be large enough to allow the glider opportunities to glide and jump from branch to branch to develop gliding fitness prior to release. A long and high aviary works well.</p>	<p>Feathertail glider</p> <p>Floor area for one animal: 1 m (L) x 1 m (W) (1 m²) H: 1 m</p> <p>Increased floor area for each additional animal: 0.5 m²</p> <p>Nest box: 14 cm x 12 cm. Height: 10 cm. Entrance hole diameter: 3.2 cm. Max colony size: 6</p>	<p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> Galvanised wire with a mesh diameter of no more than 10 mm can be used to line the aviary. Cover the wire with fly mesh to prevent escape. Use shade-cloth or fly wire on the walls of the enclosure to provide a visual barrier from humans and predators. Nest box made from marine plywood, thick hardwood or thick recycled plastic. Paint with non-toxic paint in subdued colours like green or brown. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> Use a leaf litter floor that is changed when soiled. A substrate of sand or gravel under the mulch will help to reduce the build-up of moisture. Place ropes and leafy branches in the aviary as furniture. Be sparing. Leave sufficient free space for the glider to glide. Offer bark from stringy-bark trees as nesting material. Encourage climbing with branches that run vertically. Place nest boxes under a covered area. Offer more than one nest box to mimic the natural use of multiple nest boxes by gliders in the wild. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> Temperature should be ambient at this stage of rehabilitation. Adequate shelter from rain and wind should be available. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> If applicable offer fruit and vegetables on kebab skewers placed in the aviary. Food bowls should be offered at height (not on the ground). Containers, such as lengths of PVC, can be used to hold fresh browse for food. The water should be changed daily. Ensure that gliders cannot get into the browse containers and drown. Supplementary food may be placed in small containers suspended on the wire of the enclosure at various locations to encourage movement. Sap branches can be hung in the enclosure.
	<p>Greater glider</p> <p>Floor area for one animal: 10 m (L) x 2 m (W) (20 m²) H: 2 m–4 m</p> <p>Increased floor area for each additional animal: 10 m²</p> <p>Nest box: 25 cm x 30 cm. Height: 55 cm. Entrance hole diameter: 8.5 cm. Max colony size: Solitary</p>	
	<p>Leadbeater's possum, squirrel glider, Krefft's glider</p> <p>Floor area for one animal: 2 m (L) x 1 m (W) (2 m²) H: 2 m</p> <p>Increased floor area for each additional animal: 1 m²</p> <p>Nest box: 17 cm x 20 cm. Height: 11 cm. Entrance hole diameter: 5.0 cm. Max colony size: 1 adult, breeding pair or family group</p>	
	<p>Yellow-bellied glider</p> <p>Floor area for one animal: 10 m (L) x 2 m (W) (20.00 m²) H: 2 m</p> <p>Increased floor area for each additional animal: 10 m²</p> <p>Nest box: 20 cm x 25 cm. Height: 43 cm. Entrance hole diameter: 6.5 cm. Max colony size: 3–6</p>	

Figure 9.15 A Vetario set up for an injured Krefft's glider. Note the nest box, some browse and small, shallow bowls.



Photo credit: Zoos Victoria

Figure 9.16 A pre-release aviary for gliders is shown under construction. Note the height required to permit gliders to be able to glide. Thin bird wire and shade-cloth are then used to cover the aviary.



Photo credit: Anne Fowler

9.7 Feeding and nutrition

Keeping daily records of food offered (item and volume fed) and food consumed is good practice and will allow the rehabilitator to observe how an animal is responding to food on offer and inform future choices.

Please note: Food suppliers and specific products mentioned in these guidelines are intended as examples only. Other suitable products may also be available.

This section refers to feeding and nutrition of possums and gliders in rehabilitation. Information on feeding orphaned individuals can be found under **Section 9.8 Hand raising**.

Possums

- A council permit may be required to lop or prune native trees.
 - Browse should be placed in containers filled with water, which is changed daily.
 - Fresh leaf is provided daily. It is preferable to pick leaf in the late afternoon to ensure that it has a high water content when consumed.
 - Do not collect from within 5 m of roads or where herbicidal sprays have been applied.
 - Do not enter a resident's property to collect foliage unless authorised.
- Clippings should not be taken repeatedly from the same trees as they can build up toxins which may be harmful if fed to possums.
 - Suitable tree species for each possum species are listed at **Table 9.9 – Table 9.11**. An alternative approach is to visit the release area at night and look for possums, noting the trees in which they are sitting/feeding.
 - Common brushtail possums should be offered a minimum of seven to 10 branches, approximately 1 m long, of five to eight species of browse daily (see **Table 9.9**). Species that are offered should be from the local area. Common brushtail possums in the wild also eat insects (such as caterpillars, beetles and grasshoppers) and small birds and their eggs.
 - Offer fresh water daily in bowls hung on the sides of the aviary or on the ground.

Table 9.9 Tree species eaten by common brushtail possums

Common name	Scientific name	Common name	Scientific name
Acacia sp, silver wattle	<i>Acacia dealbata</i>	Hazel pomaderris	<i>Pomaderris aspera</i>
Blackwood	<i>Acacia melanoxylon</i>	Myrtle beech	<i>Nothofagus cunninghamii</i>
Eucalyptus spp.	<i>Eucalyptus maculata</i> , <i>E. viminalis</i> , <i>E. tereticornis</i> , <i>E. ovata</i> , <i>E. radiata</i> , <i>E. obliqua</i>	Satin wood	<i>Nematolepis squamea</i>
Mountain gum	<i>E. dalrympleana</i>	Mistletoe	<i>Lysiana exocarpi</i>
Alpine ash	<i>E. delegatensis</i>	Wild tobacco	<i>Solanum mauritianum</i>
Native plum	<i>Davidsonia species</i>	Ferns, mosses	
Lilly pilly	<i>Syzygium oleosum</i>	Fruits: figs	<i>Ficus species</i>
Leatherwood spp.	<i>Eucryphia species</i>	Weeds: Dandelion dock, e.g.: ruby dock, fireweed groundsel	<i>Taraxacum species</i> <i>Acetosa vesicaria</i> <i>Senecio linearifolius</i>
Southern sassafrass	<i>Atherosperma species</i>	Introduced plants: Pine needles and cones Purple prunus leaves Apricot leaves and fruit Oak Peppercorn tree	<i>Pinus radiata</i> <i>Prunus species</i> <i>Prunus armeniaca</i> <i>Quercus palustris</i> <i>Schinus molle</i>

An adult common ringtail possum eats 130–180 g of leaf tips daily from a variety of species (see **Table 9.10**). This may be found in 20 branches, 30–50 cm long that are at least half tip and half mature leaf. Three tree species should be offered daily as a minimum, however, five to eight different species is preferable. This is broken down into three gum species, one *Callistemon/Grevillea* and one *Melaleuca/Leptospermum* species.

Table 9.10 Tree species eaten by common ringtail possums

Name of species	Latin name	Name of species	Latin name
Broad-leaved peppermint	<i>Eucalyptus dives</i>	Narrow leaved wattle	<i>Acacia muronata</i>
Narrow-leaved peppermint	<i>E. radiata</i>	Silver wattle	<i>Acacia dealbata</i>
River red gum	<i>E. camaldulensis</i>	Blackwood	<i>Acacia melanoxylon</i>
Spotted gum	<i>E. maculata</i>	Coastal tea tree	<i>Leptospermum laevigatum</i>
Manna gum – rough bark	<i>E. cygnetensis</i>	Swamp paperbark	<i>Melaleuca ericifolia</i>
Manna gum – ribbon gum	<i>E. viminalis</i>	Scented paperbark	<i>Melaleuca squarrosa</i>
Swamp gum	<i>E. ovata</i>	Hazel pomaderris	<i>Pomaderris aspera</i>
Messmate stringy-bark	<i>E. obliqua</i>	Shining cassinia	<i>Cassinia longifolia</i>
Forest red gum	<i>E. tereticornis</i>	Willow myrtle	<i>Agonis flexuosa</i>
Southern mahogany	<i>E. goniocalyx</i>	Lilly pilly	<i>Syzygium oleosum</i>
Mountain ash	<i>E. regnans</i>	Acorn oak	<i>Quercus robur</i>
Lemon-scented gum	<i>Corymbia citriodora</i>	Pussy willow	<i>Salix caprea</i>
Japonica	<i>Chaenomeles sp.</i>	Musk daisy bush	<i>Olearia argophylla</i>
Bottlebrush	<i>Calistemon sp.</i>	Grevillea	<i>Grevillea sp.</i>

Mountain brushtail possums are offered a diet similar to common brushtail possums (as per [Table 9.11](#)).

Table 9.11 Tree species eaten by the mountain brushtail possum

Common name	Latin name	Common name	Latin name
Myrtle Beech	<i>Nothofagus cunninghamii</i>	Montane wattle	<i>Acacia nigrescens</i>
Silver wattle	<i>Acacia dealbata</i>	Victorian Christmas bush	<i>Prostanthera lasianthos</i>
Hazel Pomaderris	<i>Pomaderris aspera</i>	Fungi, both above/ below ground species	
Blackberry	<i>Rubus allegheniensis</i>	Tree ferns	
Bidgee-widgee	<i>Aceana novae-zelandiae</i>	Pine cones (male), bark	<i>Pinus radiata</i>

Figure 9.17 a. The minimum amount of leaf to offer a common ringtail possum over 24 hours is shown. The leaf in the left hand shows the amount to feed, with the amount left after consumption shown in the right hand. b. Leaf offered to a common brushtail possum. There are three *Eucalyptus*, two wattle and three shrubs.



Photo credit: Zoos Victoria (a) Anne Fowler (b)

Gliders

- A variety of food items can be offered:
- Offer fresh water daily in bowls hung on the sides of the aviary. In the wild, gliders drink from small pools of water that form in hollows on eucalypt trees. They do not come down to the ground to drink water.
- Fresh leaves and native flowers:
 - Offer fresh browse daily, including insect galls. Select browse at least 50 cm long with insect activity on it (live insects, galls).
- Offer pollen daily. Trees and shrubs with bee activity are likely to have a high pollen content.
- Change the water in pots holding browse daily.
- Contact the local council as permission may be required to lop or prune native trees.
- Squirrel gliders prefer insects to sap and gum from plants.
- Greater gliders solely eat eucalypts such as silvertop (*Eucalyptus sieberi*), manna (*E. viminalis*) and blue gum (*E. globulus*).
- Fruit mixes:
 - A range of fruits should be offered to feathertail, yellow-bellied, squirrel and sugar gliders, including apple, pear, banana, stone fruit, watermelon, fig, kiwi fruit and berries.
 - All fruit should be mixed with Wombaroo High Protein supplement at a rate of 2 g supplement mixed into 20 g fruit.
 - Fruit should be chopped into 0.5–1 cm cubes.
- Vegetables:
 - A range of vegetables can be offered. These include pumpkin, zucchini, sweet potato, spinach and corn for feathertail gliders and greens (kale, endive, spinach, silverbeet, bok choy), peas, corn, sweet potato, carrot and pumpkin for squirrel and sugar gliders.
- Insects:
 - Insects such as moths, mealworms, crickets, and fly pupae may be placed under pieces of bark. Mealworms should be raised in bran and Wombaroo Insect booster or can be fed Vetafarm InsectaPro for 24 hours prior to being fed to gliders.

- Wild insects may be harvested from around the house.
- Look for aphids, mealy bugs, thrips, mites and gall-forming insects on native branches to offer as food.
- Nectar mixes:
 - Nectar mix is made by mixing 30 g Wombaroo Lorikeet/Honeyeater mix with 80 mL warm water.
- The natural diet of the gliders is based on insects and substances found on eucalypt trees:
 - **Manna** is a white carbohydrate-rich crystal substance on eucalypt leaves.
 - **Honeydew** is a carbohydrate-rich secretion from sap-feeding, lerp-forming insects.
 - **Pollen** from flowers is a source of dietary protein.

Table 9.12 Captive diets for gliders

Species	Captive diet offered daily per animal	Examples of browse offered daily
Feathertail glider	8 mL Wombaroo Lorikeet and Honeyeater mix, 15 g fruit and vegetables, 1 g invertebrates	<i>Grevillea, Eucalyptus, Banksia, Kunzia, Acacia</i>
Greater glider	50 g of leaf: 10–15, 1 m lengths of gum tips with young leaves	<i>Eucalyptus</i> : see Table 9.13
Leadbeater's possum	25 mL Wombaroo Lorikeet and Honeyeater mix, 2 g invertebrates	<i>Acacia</i>
Squirrel glider	12 mL Wombaroo Lorikeet and Honeyeater mix, 5 g Wombaroo Small Carnivore Food, 20 g fruit and vegetables, 2 g invertebrates	<i>Eucalyptus, Acacia, Banksia,</i> Spotted gum, Grey ironbark
Sugar glider	10 mL Wombaroo Lorikeet and Honeyeater mix, 1 g Wombaroo Small Carnivore Food, 12 g fruit and vegetables, 2 g invertebrates	Cut <i>Acacia</i> to produce sap Flowers of <i>Eucalyptus</i> , <i>Grevillea, Banksia</i>
Yellow-bellied glider	30 mL Wombaroo Lorikeet and Honeyeater mix, 15 g fruit and vegetables, 5 g invertebrates	<i>Eucalyptus</i> and – thick trunks so they can chew and tear bark, and suck sap

Figure 9.18 a. Nectar provided to a feathertail glider outside its nest box in a small plastic lid. b. Browse offered to a greater glider. Note the green PVC pipe filled with water that is used to hold the browse.



Photo credit: Zoos Victoria

Greater gliders need to be offered three to five species of *Eucalyptus* daily. Twenty branches, each about 50–60 cm long, are offered fresh daily. The gum is offered in PVC pipes containing water to prevent the leaves dehydrating.

Table 9.13 Tree species eaten by the greater glider

Common name	Scientific name	Time of the year when eaten
Narrow-leaved peppermint	<i>Eucalyptus radiata</i>	All
Manna gum	<i>Eucalyptus viminalis</i>	All
Brown barrel	<i>Eucalyptus fastigata</i>	All
Blue gum	<i>Eucalyptus globulus</i>	All
Silvertop gum	<i>Eucalyptus sieberi</i>	All
Mountain grey gum	<i>Eucalyptus cypellocarpa</i>	All
Messmate	<i>Eucalyptus obliqua</i>	All
Swamp gum	<i>Eucalyptus ovata</i>	All
White stringybark	<i>Eucalyptus globoidea</i>	All
Young cones of pines	<i>Pinus radiata</i>	Winter, spring
Mistletoe leaves	<i>Lysiana exocarpis</i>	Occasionally

9.8 Hand raising

Hand raising record templates for growth, development, feeding and other observations can be found in the appendices to Part A of these guidelines.

Wildlife rehabilitators are not recommended to hand rear possums or gliders that have not reached certain stages of development due to low survival rates associated with hand-rearing of very young animals and the risks of imprinting. Animals that are unfurred, with eyes closed and ears down should be euthanised.

A summary of the exercise, housing and feeding requirements for possums at various levels of development can be seen in **Tables 9.18–9.20** and for gliders in **Tables 9.21–9.24**. The Krefft's glider table can be used for Leadbeater's possums and the greater glider table can be used as a guide for yellow-bellied gliders.

9.8.1. Equipment required for hand raising possums and gliders

- Milk: Wombaroo or Biolac
- Pouch: An inner lining of natural fibre, such as cotton is recommended. An outer lining is made from knitted wool, microfibre fleece or similar fabrics. Pouches should have rounded edges at the bottom to prevent suffocation.
- Intensive care unit or box containing a heat pad with thermostat
- Thermometer
- Scales
- Record Charts
- **Teats** for hand-rearing orphan possums and gliders that have been used include:
 - Wombaroo teats
 - Miki kitten teats
- IV catheters
- Bicycle tubing
- Paint-brushes
- Eye-droppers.

9.8.2. Growth, development and care of orphaned young

Possums

- Suitable milks to rear possums include Wombaroo Possum milk and Biolac.
- Do not add human infant multivitamins to milk formula.
- Wombaroo Impact colostrum supplement may assist with immune function.
- Although fruit and vegetables can be offered as part of the diet of brushtail possums, it is recommended that these make up less than 10% of the diet of a growing possum. The remainder of the diet must be browse with the occasional native flower.
- Ringtail possums should not be fed any fruit or vegetables and must only be given browse with the occasional native flower.
- Lilly pilli leaf can be used to stimulate young and rescue possums to start eating as they find it extremely appetising.
- Provide 100% natural food from the proposed release area for the two weeks prior to release.

Gliders

- Suitable milks to rear gliders include Wombaroo Possum milk >0.8 and Biolac M100.
- Add Wombaroo High Protein supplement as 2 teaspoons mixed into 100 g of fruit and vegetables.
- Do not add human infant multivitamins to milk formula.
- It can be difficult to provide 100% natural foods such as manna and pollen leading up to release, but at least 50% of the diet should be insects and native browse. Branches with insect damage and activity should be offered.

Prevent imprinting

- Minimise handling by promoting drinking milk from a bowl as soon as possible.
- Common ringtail possums should be doing this by 100 g and common brushtail possums from 150 g. This will reduce the association between humans and the provision of food.
- Place food leaves in the aviary in the early afternoon before possums/gliders emerge from the nest box.
- Do not permit possums to climb on your body. Do not carry possums inside your clothes.
- Buddying will reduce imprinting onto humans and teach natural social behaviour. See **Table 9.14**.
- Possums that have been buddied to teach normal behaviour will not need to be released together. Research has shown that possums which have been hand-reared together separate within a few days after release.

Table 9.14 Guidelines for the introduction of young possums for buddying

Species	Recommended size for introductions	Number of animals for each nest box or enclosure
Common ringtail possum	<ul style="list-style-type: none"> • Buddy upon arrival. • Can be paired at any weight. • When pairing, pair similar sized possums. 	Maximum of 4
Common brushtail possum	<ul style="list-style-type: none"> • Need to be a similar size. • Pair up around 350 g. • Monitor back-riding and separate if it occurs. • May benefit from housing adjacent to, but not with, other common brushtail possums. 	Maximum of 2
Mountain brushtail possum	<ul style="list-style-type: none"> • Unlikely to be more than one in care at any one time. 	Maximum of 2

- Like possums, minimise handling of gliders by promoting milk drinking from a bowl as soon as possible. This will reduce the association between humans and the provision of food.
- Buddying will reduce imprinting onto humans and teach social behaviour. See **Table 9.15**. For gliders, buddying can be done throughout their pouch life. To introduce a new glider, leave each glider in their inner pouch lining but in the same nest box during the day before removing one pouch in the afternoon.
- Older gliders that normally live communally (feathertail, yellow-bellied, Krefft's and squirrel gliders and Leadbeater's possums), can be introduced into a group by providing them with their own nest box in the aviary. The new nest box and glider should be placed in the aviary during the day, which may accustom the resident group to the smell of the new glider before the main period of activity at night.

Table 9.15 Recommended numbers for buddying young gliders

Species	Buddying recommended numbers
Feathertail glider	2–6
Greater glider	Not required
Leadbeater's possum	2–8
Squirrel glider	2
Krefft's glider	2–7
Yellow-bellied glider	2–6

- Hand-reared possums and gliders must have attained their minimum release weight before being returned to the wild.
- Recommended release weights for orphaned possums and gliders are listed in [Table 9.16](#) and [Table 9.17](#).
- There is no distinct juvenile dispersal time, so young possums/gliders can be released at any time of the year.

Table 9.16 Recommended release weights for possums

Species	Weight at release (kg)
Common ringtail possums	0.5–0.6
Common brushtail possums	1.0–1.5
Mountain brushtail possum	>2

Table 9.17 Recommended weights and ages for release of hand-reared gliders

Species	Approx. Weight (g)	Age (months)
Feathertail glider	8	6
Greater glider	900	10–12
Leadbeater's possum	100	10–15
Squirrel glider	150	7–10
Krefft's glider	100	7
Yellow-bellied glider	450	12

Table 9.18 Stages of development for the common ringtail possum (Used with permission from Wombaroo)

Milk	Age (d)	Weight (g)	Head (mm)	Tail (mm)	Appearance	Feed frequency	Feeding (mL/day)	Housing	
<0.8	90	52	35	120	Eyes open at ~50 g	Milk every 3 hours	12	Intensive stage: Incubator or cat carry pack with heating 30–32°C	
	Transition	92	54	35					123
Transition	95	57	36	128	Fine soft fur	Milk every 4 hours	9 mL <0.8 + 3 mL >0.8	Cat carry pack with heating to 30°C	
	98	60	37	132			6 mL <0.8 + 6 mL >0.8		
							3 mL <0.8 + 9 mL >0.8		
>0.8	100	62	38	135			12	Cat carry pack with heating 28–30°C Toileting by itself May start to explore enclosure	
							Offer gum tips, no flowers		
	110	74	41	150			Emerging from pouch	12	
	120	90	45	165			Short fur, begin to pellet	14	Exploring confidently in enclosure
	130	110	48	180			Fully out of pouch	Milk every 5 hours	16
140	135	51	195	Back rider age	Milk every 6 hours	18	Nest-box inside an enclosure housed inside room Heating no longer required if kept in a group or pair. Offer heat on cool nights.		

Milk	Age (d)	Weight (g)	Head (mm)	Tail (mm)	Appearance	Feed frequency	Feeding (mL/day)	Housing	
Weaning	160	Growth rate about 3–6 g/day			Back rider age	Milk every 12 hours	12 Offer wide variety of leaf Start to wean	Pre-release stage: Earliest age to enter aviary with nest-box	
	180				Independent		Stop milk	Finish weaning (approx. 310 g)	Pre-release stage: Large aviary, native browse changed daily, nest-box
	210				Small adult in appearance			Completely weaned (approx. 490 g). Offer food from release site	

Table 9.19 Stages of development for the common brushtail possum (Used with permission from Wombaroo)

Milk	Age (d)	Weight (g)	Head (mm)	Tail (mm)	Appearance	Feed frequency	Feeding (mL/day)	Housing
<0.8	100	80	45	98	Eyes open	4 hourly around clock	17	Intensive stage: Incubator or cat carry pack with heating to 30–32°C
	110	105	49	116	Starting to emerge from pouch. Fine fur begins		20	Pouch inside cat carry pack 28–30°C
Transition	112	112	50	120		15 mL <0.8 + 5 mL >0.8		
	115	125	51	125		10 mL <0.8 + 10 mL >0.8		
	118	140	53	131		5 mL <0.8 + 15 mL >0.8		

Milk	Age (d)	Weight (g)	Head (mm)	Tail (mm)	Appearance	Feed frequency	Feeding (mL/day)	Housing
>0.8	120	150	54	135	Emerging from pouch Fine soft fur over body	5 hourly feeds, starts to lap	20 Start to offer tips of native trees	Pouch inside cat carry pack with heating to 28°C. May explore outside pouch for short periods
	130	210	58	155	Fully furred		26 Start to offer gum tips	Intermediate stage: Large enclosure inside with pouch inside nest box Can maintain body temperature
	140	290	61	168	Short dense fur	6 hourly feeds	32 Offer gum tips	No longer requires heating Toileting by self from this age
	150	390	64	181	Fully emerged from pouch	8 hourly feeds	40 Offer gum tips and insects	Buddying can be attempted at 350 g

Milk	Age (d)	Weight (g)	Head (mm)	Tail (mm)	Appearance	Feed frequency	Feeding (mL/day)	Housing
Weaning	160	Growth rate about 7–15 g/day			Dense fully furred	Feed every 12 hours	40 Offer wider variety of leaf, grass, vegetables	Large enclosure housed inside with nest-box, active at night
	180					Feed milk once daily in evening	20 Begin weaning, finished by 700–800 g	Pre-release stage: Large aviary, native browse changed daily, nest-box
	200				Adult in appearance. Becoming independent	Food offered in evening	Weaned off milk	Large aviary, native browse changed daily, nest-box only. Pouch removed
	250							Release age

Table 9.20 Stages of development for the mountain brushtail possum (Used with permission from Wombaroo)

Milk	Age (d)	Weight (g)	Head (mm)	Foot (mm)	Appearance	Feed frequency	Feeding/day	Housing
<0.8	120	90	48	31	Eyes open	4 hourly around clock	18 mL	Intensive stage: Incubator or cat carry pack with heating to 30–32°C
	130	105	51	35	Starting to emerge from pouch.		21 mL	
	140	130	54	39			24 mL	
Transition	142	136	55	40	Fine fur begins	4 hourly around clock	18 mL <0.8 + 6 mL >0.8	Pouch inside cat carry pack 28–30°C
	145	145	56	41			12 mL <0.8 + 12 mL >0.8	
	148	156	57	42			6 mL <0.8 + 12 mL >0.8	

Milk	Age (d)	Weight (g)	Head (mm)	Foot (mm)	Appearance	Feed frequency	Feeding/day	Housing
>0.8	150	165	58	43	Emerging from pouch Fine soft fur over body	5 hourly feeds, starts to lap	24 mL Start to offer tips of native trees	Pouch inside cat carry pack with heating to 28°C May explore outside pouch for short periods
	160	215	61	48	Fully furred		26 mL Start to offer gum tips	Intermediate stage: Large enclosure inside with pouch inside nest box Can maintain body temperature
	170	275	64	53	Short dense fur	6 hourly feeds	31 mL Offer gum tips	No longer requires heating Toileting by self from this age
	180	360	68	56	Fully emerged from pouch	8 hourly feeds	38 mL Offer gum tips & insects	Buddying can be attempted at 350 g

Milk	Age (d)	Weight (g)	Head (mm)	Foot (mm)	Appearance	Feed frequency	Feeding/day	Housing
Weaning	200	Growth rate about 8 g/day			Dense fully furred	Feed every 12 hours	40 mL Offer wider variety of leaf, grass, vegetables	Large enclosure housed inside with nest-box, active at night
	220					Feed milk once daily in evening	20 mL Begin weaning, finished by 700–800 g	Pre-release stage: Large aviary, native browse changed daily, nest-box
	240				Adult in appearance. Becoming independent	Food offered in evening	Weaned off milk	Large aviary, native browse changed daily, nest-box only. Pouch removed
	300							Release age

Table 9.21 Stages of development of the feathertail glider (used with permission from Wombaroo)

Milk	Age (d)	Weight (g)	Head length (mm)	Appearance	Feeding frequency	Housing
>0.8	70	3.0	15	Eyes open, light fur Emerging from pouch	Feed milk every 3–4 hours, 1.0 mL/day	Intensive stage (in nest): Secure pouch at 32–34°C
	75	3.6	16	Fringe hairs on tail 0–1 mm		
	80	4.3	17		Feed milk every 4–5 hours, 1.4 mL/day Start weaning onto solids	Small hops, back-rider Use small fish tank Heat gradient to 28–32°C
	90	5.7	19	Fully furred Fringe hairs on tail 1–2 mm	Feed milk every 12 hours, 1.7 mL/day Offer insects, fruit and nuts	
Weaning	100	7.0	20	Small adult in size Adult size	Fully weaned Feed insects, fruit/nut mix	Needs to be in a group from this age Inside enclosure with fly-wire Branches and nest box offered
	110	7.5			Native browse in aviary	
	115	8				
	120	10				Release

Table 9.22 Stages of development of the greater glider (used with permission from Wombaroo and Colleen Wood)

Milk	Age (d)	Weight (g)	Appearance	Activity	Feeding frequency	Housing
>0.8	90	95–150	Eyes open Short fur Cutting teeth	Poking head out of pouch	6 feeds/day	Intensive stage: In pouch heated to 28–30°C
	120	150–200	Short thick fur Tail furred flat, not fluffy Teeth more prominent	Emerging from pouch	4–5 feeds/day Offer gum tips and flowers	Heated to 28°C Starting to explore Use short furred surrogate mother (short furred washable toy)
	150	200–300	Fur longer, tail fluffier	Mostly out of pouch Final pouch exit around 170 days	3–4 feeds/day Start drinking milk from a bowl Increase amount of foliage offered	Intermediate stage: Ambient temperature In cage 1 m (L) x 1 m (W) x 1 m (H) Toy strapped to the side of the cage for glider to climb onto
	180	400–500		Exploring enclosure more	2 feeds/day Drinking milk from a bowl Continue offering foliage	
Weaning	210–270	500–800	Small adult size		1 feed/day Weaned 210–270 days	Pre-release stage: Outdoor aviary with nest box
	300	800			Release	

Table 9.23 Stages of development of Krefft's glider (used with permission from Wombaroo)

Milk	Age (d)	Weight (g)	Head length (mm)	Appearance	Activity	Feeding frequency	Amount milk fed in 24 hours (mL)	Housing
>0.8	70	22	26	Eyes opening Fur beginning on legs	In nest, may back-ride	Milk each 4–5 hours	4	Secure pouch becoming more open Heat pouch at 30–32°C
	80	33	29	Flat furred	Buddy as soon as possible, starting to hop. Out of pouch	Milk each 6 hour, start lapping	6	Heat pouch at 28–30°C in carry basket
	90	44	32	Thicker fur Fur thickening on tail		Milk each 6 hours	7	Intermediate stage: Nest box in 1 m (L) x 1 m (W) x 1 m (H) cage housed inside
	100	54	35	Fully furred	Emerging from nest	Milk each 12 hour, offer fruit mix	7–8	housed inside No longer requires heating

Milk	Age (d)	Weight (g)	Head length (mm)	Appearance	Activity	Feeding frequency	Amount milk fed in 24 hours (mL)	Housing
Weaning	110	Growth rate around 1 g/day		Small adult in size	Becoming mobile Offer opportunity to glide	Weaning begins Offer food in evening	8	Pre-release stage: Move to outside aviary Nest box present Outside aviary large enough to glide in
	120			Small adult in size	Weaning off milk Start to buddy if not already done	Milk once daily Weaning ends Food left in cage at night	9	
	210			Adult size	Pairing up for release occurs between 3–7 months Release at 100–110 g	More native food of insects, leaf, fruit mix offered	0	

Table 9.24 Stages of development of the squirrel glider (used with permission from Wombaroo)

Milk	Age (d)	Weight (g)	Head length (mm)	Appearance	Activity	Feeding frequency	Amount milk fed in 24 hours (mL)	Housing
>0.8	70	25	27	Fine fur starts on legs Eyes open	Emerging from pouch In nest, may back-ride	4 hours milk	5	Intensive stage: In pouch heated to 32–34°C
	80	40	30	Furred on stomach Eyes open	Starting to hump Back-rider Starts to lap	5 hours milk	8	In pouch, heated to 28–30°C
	90	55	33	Fur thickening on tail and starting on belly	Explores and begin to glide Begins solid foods in evening	6 hours milk	10	In pouch, heated to 28–30°C Open pouch for 2 hours in evening, then close
	100	71	36	Fully furred	Exploring enclosure more Begins to be active at night	8 hours milk	11	In pouch, heated to 24–28°C Pouch open for longer time
	110	85	39	Small adult size	Begin to leave nest	12 hours milk	13	Intermediate stage

Milk	Age (d)	Weight (g)	Head length (mm)	Appearance	Activity	Feeding frequency	Amount milk fed in 24 hours (mL)	Housing
Weaning	120	Growth rate 1–3 g/day		Small adult size	Offer native branches with insects, insects and fruit	1 milk feed	Milk volume depends on other food consumed	In nest box in 1 m (L) x 1 m (w) x 1 m (H) with fine wire
	130			Small adult size	Offer native branches with insects, insects and fruit Wean off milk			Pre-release aviary with nest box
	210–300			Adult in size	Release. Diet of native insects, leaf, flowers	1 daily, at night		

9.9 Release protocol



Ideally, wild animals will be rehabilitated and released in a short timeframe. If this is not possible and the animal is in care for significant extended periods, ensure that the animal is regularly assessed against the welfare domains to support decision-making. Animals in care for extended periods may have a reduced ability to survive in the wild. Talk to your veterinarian and consider whether euthanasia will provide the best welfare outcome for the animal.

9.9.1. Pre-release assessment

Pre-release assessment of animals in care is essential to support improved outcomes once back in the wild. Animals should be assessed based on body condition, fitness and the ability to engage in natural species-specific behaviours prior to release. The following is a check list to guide your decision-making regarding release suitability for possums and gliders:

- ☑ Individual is in a state of good health – presenting injury/sickness is completely resolved (consider a pre-release veterinary check). A glider presented with a membrane tear can glide satisfactorily.
- ☑ Individual is within a healthy weight range and appropriate body condition (refer to **Table 9.2**).
- ☑ Individual displays ability to actively forage and consume natural foods.
- ☑ Juvenile common ringtail possums may begin to demonstrate the ability to construct a drey from branches and leaves but do not need to demonstrate that they can completely construct a drey before release.
- ☑ Possums and gliders should instinctively avoid domestic pets. Once in the aviary, the animal should startle when humans approach.

9.9.2. At the release site

Post release survival will be maximised by ensuring that both the release site and the way in which the animal is released are carefully considered.



STOP – please refer to the conditions of your authorisation on release location requirements.

It is important to ensure that the site remains suitable for release of the animal. Important site factors to consider before releasing a possum or glider include:

- Place a nest box in a tall tree that does not already have nest hollows.
- Select an elevated site to attach the box. See **Table 9.25**.
- Face the nest box away from prevailing winds. This may be north to north-east depending upon the region.
- Attach the nest box to the tree by placing wire around the trunk. Protect the tree from the wire by covering it in plastic tubing, such as a length of garden hose or the Habisure system, which allows room for tree growth.
- Common ringtail possums are more likely to use dreys in heath and shrubby areas and nest in hollows in forests.

- Successful release of gliders is likely to be dependent upon providing more than one nest box, particularly for Leadbeater's possums, yellow-bellied gliders, Krefft's gliders and squirrel gliders, which prefer nesting in family groups. This provides the glider with other nesting sites in case it is ejected after a social dispute and a greater chance to avoid predation.
- Nest boxes should not be placed in food tree species but in nearby trees. Gliders do not nest in their food trees to reduce the risk of predation.
- Common ringtail possums should be released into an area that has dense undergrowth. Canopy connectivity is important to reduce the risk of predation, which occurs when this species travels across the ground. The presence of other common ringtail possums at the original location does not preclude release as they are a communal species.
- For more information on the ecological characteristics and requirements of possums that may help with their release, please refer to **Table 9.1**.
- Krefft's gliders require an understorey of *Acacia* with a forest of iron-bark, eucalypt, box or stringy-bark with mature trees with nest hollows. Look for wattles with tooth marks where sap has been taken.
- Squirrel gliders and Krefft's gliders both inhabit drier forests.
- Feathertail gliders can use smaller tree hollows than larger gliders.
- Greater gliders prefer forests with peppermint, manna gum, mountain ash and brown barrel species. They require high nutrient eucalypt leaves to survive. High hollows in large, old trees are also required.
- Yellow-bellied gliders require old, mature trees, with stags for nest hollows.
- Leadbeater's possums live in predominantly ash forests with dense understorey and dead hollow bearing trees, but they can also use lowland swamp forest and snow gum woodlands.

Table 9.25 Nest box position for possums and gliders

Species	Height above ground
Common ringtail possum	>6 m
Common brushtail possum	3–6 m
Mountain brushtail possum	5–6 m
Feathertail glider	2–4 m
Greater glider	>6 m
Leadbeater's possum	4–8 m
Squirrel glider	4–6 m
Krefft's glider	>6 m
Yellow-bellied glider	>6 m

9.9.3. Release checklist

Check all of the requirements of your authorisation are being met, and consider the following:

Release location

- ☑ Approximate release where animal was found (where suitable, or within home range).
- ☑ Away from major roads, fences and dams.
- ☑ Suitable vegetation is available, including tall trees and dense lower storey vegetation.
- ☑ Ample food trees close to dense vegetation.
- ☑ Dense vegetation for nest building.

Release Procedure

- ☑ Limit the number of people at the release.
- ☑ Avoid times when heavy rain and strong winds are forecast.
- ☑ Avoid release when temperatures are expected to be greater than 30°C.

Release with a nest box

- ☑ Hand raised possums and gliders should be released with a nest box as this increases release success.
- ☑ Permission of the landowner or manager is required prior to erecting a nest box.
- ☑ Likelihood of success is increased if the possum has spent at least a month in the nest box at the shelter prior to release.
- ☑ Closed nest boxes are placed in a suitable tree at the original location during the day to allow the animal to acclimatise.
- ☑ Open the nest box just prior to dusk.
- ☑ Ideally, the site should be monitored post release to ensure the animal disperses.

Release without a nest box

- ☑ Release at the original location without a nest box is acceptable for adult possums/gliders as these individuals already have an established territory. Loss of territory is minimised if the possum/glider is released within two weeks of coming into care.

Reuniting orphaned young with their mother

- ☑ It may be possible to reunite orphaned back riding common ringtail (65–120 g) and common brushtail (100–200 g) possums with their mothers.
- ☑ Place the young possum near its mother with a hot water bottle. If the young possum starts calling, the mother may come and collect it.

Staged release of possums using a temporary aviary at the original location

- ☑ This technique is used for the release of hand-reared young.
- ☑ A temporary aviary is made on a box trailer, which is left in the release area for two weeks.
- ☑ Situate under trees that touch the roof of the aviary, providing an avenue out of the aviary.
- ☑ Feed the possum browse from the location during this time to familiarise it with local food trees.
- ☑ At the end of two weeks, open the aviary to allow the possum to leave.
- ☑ The nest-box from inside the aviary is moved to a tree nearby and the box trailer is removed from the site.

9.10 Key references and additional reading

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