



Chapter 1. General birds

Contents

| | | |
|-------------|---|-----------|
| 1.1 | Introduction | 05 |
| 1.2 | Species information | 06 |
| 1.2.1. | Feral species | 34 |
| 1.3 | Animal and human safety considerations | 38 |
| 1.3.1. | Human safety considerations | 38 |
| 1.3.2. | Animal safety considerations | 38 |
| 1.4 | Capture, restraint, and transport | 39 |
| 1.4.1. | Visual observations | 39 |
| 1.4.2. | Equipment | 40 |
| 1.4.3. | Technique | 41 |
| 1.4.4. | Transport | 43 |
| 1.5 | Monitoring animal health and welfare | 44 |
| 1.5.1. | Physical examination | 44 |
| 1.5.2. | Ongoing monitoring of health and welfare | 48 |
| 1.5.3. | Common presenting injuries and clinical signs of emerging health conditions | 48 |
| 1.5.4. | Administering treatment during rehabilitation | 56 |
| 1.6 | Housing | 57 |
| 1.6.1. | General housing information for birds | 57 |
| 1.6.2. | Enclosure hygiene & biosecurity | 57 |
| 1.6.3. | Housing types | 57 |
| 1.7 | Feeding and nutrition | 63 |
| 1.8 | Hand raising | 67 |
| 1.8.1. | Equipment required for hand raising | 67 |
| 1.8.2. | Growth, development and care of orphaned young | 67 |
| 1.8.3. | Imprinting | 72 |
| 1.9 | Release protocol | 73 |
| 1.9.1. | Pre-release assessment | 73 |
| 1.9.2. | At the release site | 73 |
| 1.9.3. | Release checklist | 74 |
| 1.10 | Key references and additional reading | 75 |



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.

When birds 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. For example, a bird with a fractured wing must be confined and not allowed to attempt flight until that fracture has healed. It can then be allowed a staged return to free flight. Further information about the five domains of animal welfare is in Part A of these guidelines.

1.1 Introduction

Victoria is home to 516 species of birds. Raptor, waterbird and marine bird requirements are detailed in Chapters 2 and 3. This chapter addresses the husbandry, care and welfare of some of the other bird species. Despite the incredible number and diversity in this group, which includes parrots, pigeons, honeyeaters, carnivores and insectivores, a much smaller number of species most commonly come into care. These are listed in **Table 1.1** and form the basis of this chapter.

1.2 Species information



Profiles for some of the general bird species found in Victoria are detailed in the following tables. Morphometric data was obtained from the Australian Bird Study Association Inc. website (<https://absa.asn.au/>). Wing chord is the distance from the wrist joint to the end of the longest primary feather (see **Figure 1.1**). For assistance in identification of various bird species, refer to the recommended reading and reference material at the end of this chapter.

Figure 1.1 Avian wing showing measurement of wing chord.

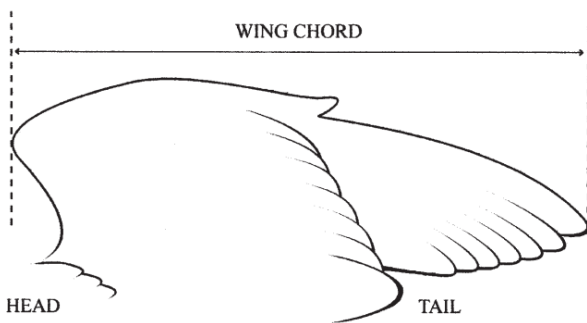

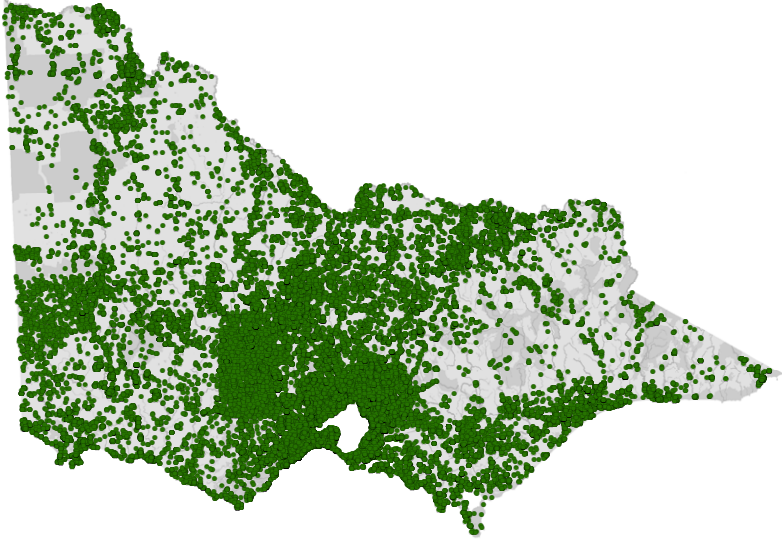


Image: Zoos Victoria

Table 1.1 Species profiles

| Species | Australian magpie (<i>Gymnorhina tibicen</i>) |
|---|--|
|  <p data-bbox="129 1637 384 1688">Photo credit: David Paul, Museums Victoria</p> | <p data-bbox="560 1391 772 1417">Distribution map</p>  <p data-bbox="560 2011 1283 2063">Data source: Victorian Biodiversity Atlas Jan 2023 www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas</p> |

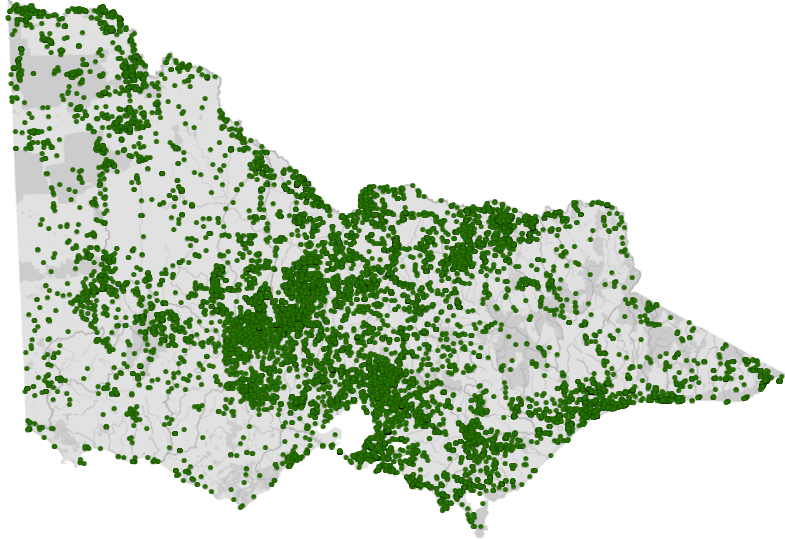
| Species | Australian magpie (<i>Gymnorhina tibicen</i>) |
|---------------------------------|--|
| General appearance | Black and white plumage at the nape, upper tail and shoulder are white in males and grey in females. The beak is white with black tip |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 250–410 g. Female: 237–372 g Head and body length: 370–430 mm Wing chord: Male: 251–290 mm. Female: 250–282 mm Tail length: Male: 138–157 mm. Female: 124–161 mm |
| Habitat | Farmland Urban: lawns, gardens, streets |
| Home range | 2–18 ha |
| Behaviour | Diurnal. Often seen in groups. Non-migratory, strongly territorial |
| Foraging Style | Feeds mostly on ground |
| Diet | Invertebrates: worms, snails, slugs, spiders, cockroaches, moths, beetles, ants, aphids, lerps, mantids, crickets, cicadas, mantids Vertebrates: frogs, lizards, small birds, mice Seeds: oat, clover, <i>Setaria</i> , pine, fruit |
| Longevity | 25 years |
| Nesting | June–December |
| Breeding season | August–November |
| Incubation length | September–December |
| Nesting location | In fork or branch of tree, sometimes in shrub |
| Developmental stage at hatching | Altricial |
| Fledgling | October–January |
| Age at dispersal | 3 months |
| Age at maturity | 1 year |

Species

Australian raven (*Corvus coronoides*)

Photo credit: NW Longmore, Museums Victoria

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023

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

General appearance

Glossy black corvid, long feathers under throat fanlike when calling

Conservation status*

Common

Adult morphometrics

Body weight: Male: 540–820 g. Female: 500–780 g

Head and body length: 460–530 mm

Wing chord: Male: 335–381 mm. Female: 323–357 mm

Tail length: Male: 191–240 mm. Female: 181–225 mm

Habitat

Woodland, forest, farmland

Home range

110 ha

Behaviour

Diurnal. Groups. Non-migratory. Territorial

Foraging Style

Feeds on the ground

Diet

Invertebrates: grasshoppers, locusts, earthworms, molluscs, beetles, ants, aphids, moths, spiders

Vertebrates: small birds, eggs, nestlings, lizards, carrion, rats, mice, frogs


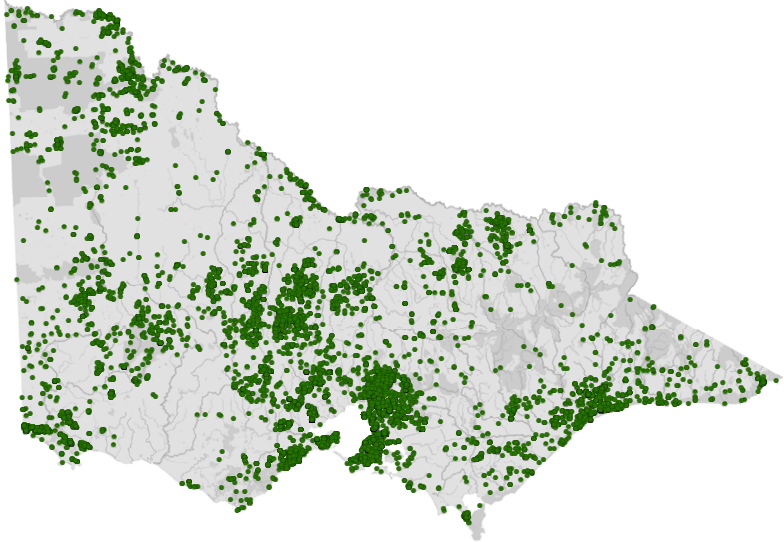
Seed: *Poa*, *Paspalum*, clovers, *Acacia* flowers of pasture weeds and native shrubs

Fruit: fig, grevillea flower

Longevity

22 years

| Species | Australian raven (<i>Corvus coronoides</i>) |
|---------------------------------|--|
| Nesting | August–November |
| Breeding season | July–September |
| Incubation length | August–October |
| Nesting location | In fork of a tree, also on artificial structures |
| Developmental stage at hatching | Altricial |
| Fledgling | August–October |
| Age at dispersal | 3 months |
| Age at maturity | 1 year |

| Species | Common bronzewing (<i>Phaps chalcoptera</i>) |
|--|---|
|  <p>Photo credit: Rodney Start, 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> |
| General appearance | Brown-backed pigeon with pale forehead |
| Conservation status* | Common |
| Adult morphometrics | <p>Body weight: Male: 330–360 g. Female: 300–330 g</p> <p>Head and body length: 300–360 mm</p> <p>Wing chord: Male: 182–217 mm. Female: 186–221 mm</p> <p>Tail length: Male: 115–138 mm. Female: 110–133 mm</p> |

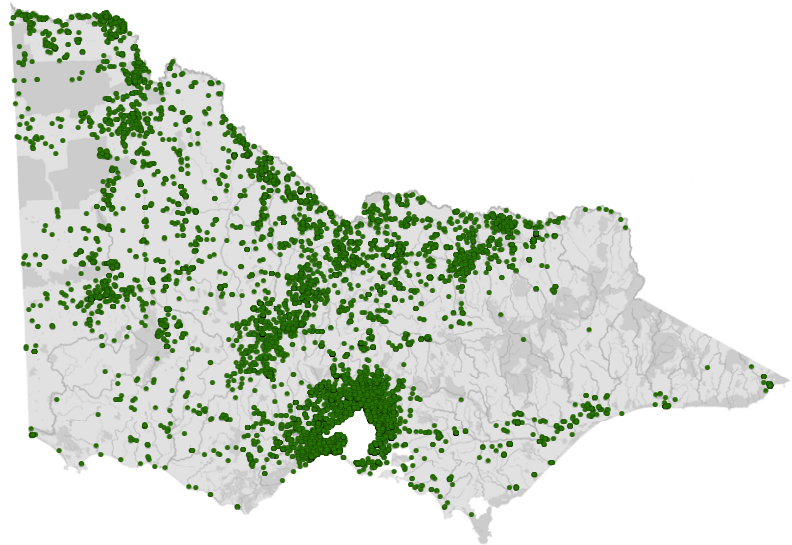
| Species | Common bronzewing (<i>Phaps chalcoptera</i>) |
|---------------------------------|--|
| Habitat | All habitats except desert and rainforest |
| Home range | 0.2 birds/ha |
| Behaviour | Diurnal. Single, pairs, flocks. Non-migratory |
| Foraging Style | Feeds on the ground |
| Diet | <p>Seeds: grasses, herbs, clovers, wattle, native and introduced grasses, thistles</p> <p>Fruit: <i>Hakea</i>, <i>Eucalyptus</i></p> <p>Invertebrates: snails, slugs, beetles</p> |
| Longevity | 25 years |
| Nesting | August–January |
| Breeding season | July–January |
| Incubation length | August–January |
| Nesting location | Usually low in a tree or bush |
| Developmental stage at hatching | Altricial |
| Fledgling | August–January |
| Age at dispersal | 1 month |
| Age at maturity | 1 year |

Species

Crested pigeon (*Ocyphaps lophotes*)

Photo credit: David Paul,
Museums Victoria


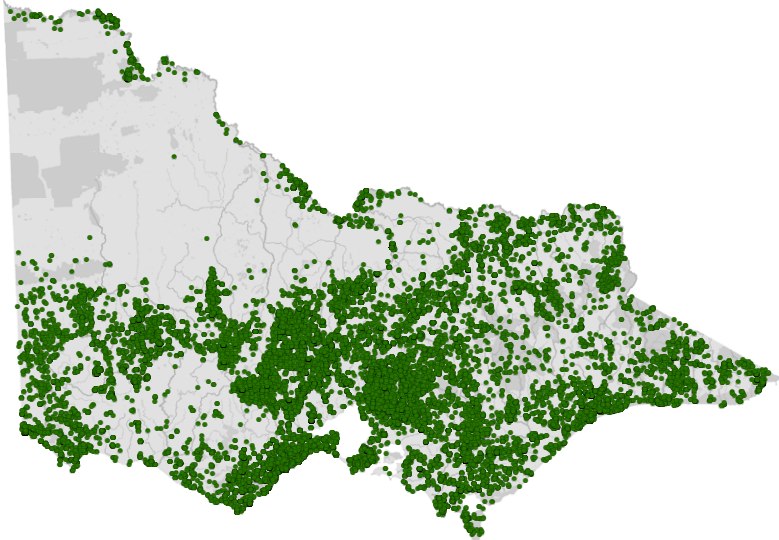
Distribution map



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

| | |
|-----------------------------|---|
| General appearance | Brownish grey pigeon with fine upright crest |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 142–260 g. Female: 150–200 g Head and body length: 300 –340 cm Wing chord: Male: 157–175 mm. Female: 152–167 mm Tail length: Male: 128–152 mm. Female: 122–150 mm |
| Habitat | Grassland Urban: park, roadside, railways, gardens |
| Home range | 0.1–1.6 birds/ha |
| Behaviour | Diurnal. Single, pairs, open flocks. Non-migratory |
| Foraging Style | Feeds on the ground |
| Diet | Annual seeds: clovers, native and introduced grasses, peas Greens: fig, eucalypt seed, manna Insects: grasshoppers, beetles, lerps |
| Longevity | 25 years |
| Nesting | Year round |
| Breeding season | Commonly spring-summer, but can be any month |

| Species | Crested pigeon (<i>Ocyphaps lophotes</i>) |
|---------------------------------|---|
| Incubation length | Year round |
| Nesting location | In shrub or tree up to 5 m |
| Developmental stage at hatching | Semi-altricial |
| Fledgling | Year round |
| Age at dispersal | 1 month |
| Age at maturity | 1 year |

| Species | Crimson rosella (<i>Platycercus elegans</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> |
| General appearance | Blue cheek, crimson body. There is a colour variation in northern Victoria where yellow feathers replace the crimson plumage Juvenile: Mostly green with a crimson patch on the forehead and throat. Blue cheek |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 115–170 g. Female: 100– 170 g Head and body length: 320–360 mm Wing chord: Male: 167–188 mm. Female: 166–178 mm Tail length: Male: 182–216 mm. Female: 167–199 mm |

| Species | Crimson rosella (<i>Platycercus elegans</i>) |
|---------------------------------|---|
| Habitat | Old, wet forests, rainforest, coastal forest |
| Home range | 0.1–6 birds/ha |
| Behaviour | Diurnal. Pairs, small flocks. Non-migratory |
| Foraging Style | Feeds in foliage and on ground |
| Diet | <p>Seeds: <i>Paspalum</i>, wallaby grass, clover, winter grass, wattles, oats</p> <p>Fruits: fig, mistletoe, pine, <i>Eucalyptus</i> nuts, flowers and nectar, <i>Callistemon</i>, <i>Grevillea</i>, <i>Banksia</i>, ferns</p> <p>Insects: aphids, moths, beetles, flies</p> |
| Longevity | 27 years |
| Nesting | September–January |
| Breeding season | October–December |
| Incubation length | November–December |
| Nesting location | In tree hollow or cavity in building |
| Developmental stage at hatching | Altricial |
| Fledgling | December–January |
| Age at dispersal | 2–3 months |
| Age at maturity | 18–24 months |

Species

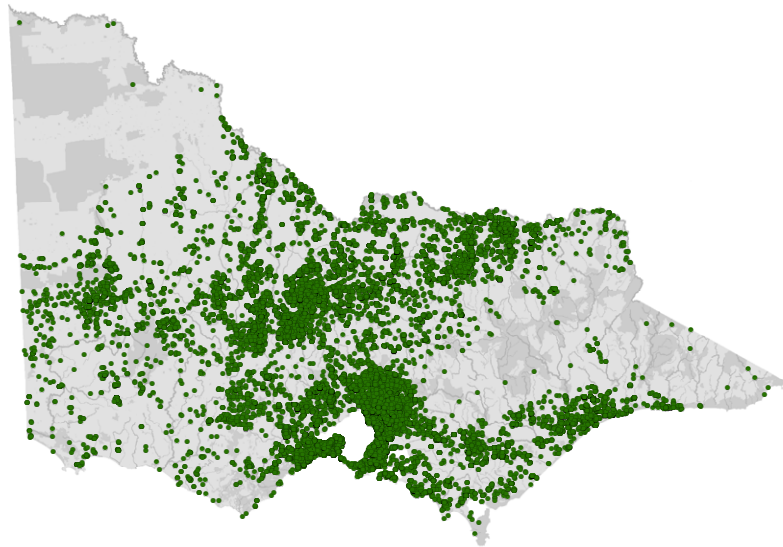
Eastern rosella (*Platycercus eximius*)

Photo credit: David Paul,
Museums Victoria



Photo credit: Imogen Warren

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023

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

General appearance

Adult: White cheek, red head and breast, yellow belly

Juvenile: Nape and crown more patchy green

Conservation status*

Common

Adult morphometrics

Body weight: Male: 100–112 g. Female: 90–122 g

Head and body length: 280–320 mm

Wing chord: Male: 152–163 mm. Female: 145–158 mm

Tail length: Male: 151–168 mm. Female: 145–165 mm

Habitat

Open forest, farmland, logged areas

Urban: parks, gardens, golf courses

Home range

0.1–5.5 birds/ha

Behaviour

Diurnal. Pairs, small flocks. Non-migratory, resident

Foraging Style

Raids fruit, nuts in orchards and gardens

Diet

Seeds: Cyprus, clovers, millets, pine, *Setaria* sp, *Eucalyptus*, wattle, sorghum, oxalis

Fruits: flowers, nectar

Insects: lerps, scale insects, beetles, fly larvae


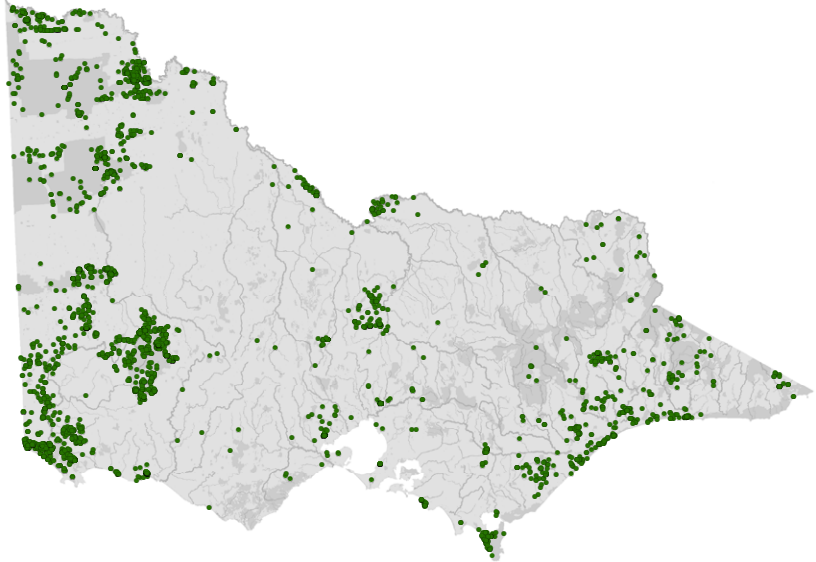
Longevity

27 years

Nesting

August–February

| Species | Eastern rosella (<i>Platycercus eximius</i>) |
|---------------------------------|---|
| Breeding season | August–January |
| Incubation length | September–February |
| Nesting location | Tree hollow, stump, fence post, burrow in bank, termite mound |
| Developmental stage at hatching | Altricial |
| Fledgling | October–March |
| Age at dispersal | 2 months |
| Age at maturity | 1 year |

| Species | Emu (<i>Dromaius novaehollandiae</i>) |
|---|--|
|  <p>Photo credit: Heath Warwick, 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> |
| General appearance | Large (1–1.3 m at the shoulder), flightless, brown to grey-brown |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: Average 31.5 kg. Female: Average 36.9 kg Head and body length: Male: Average 148.5 cm. Female: Average 156.8 cm |
| Habitat | Woodland but avoids thick forest |
| Home range | 0.1–100 ha |

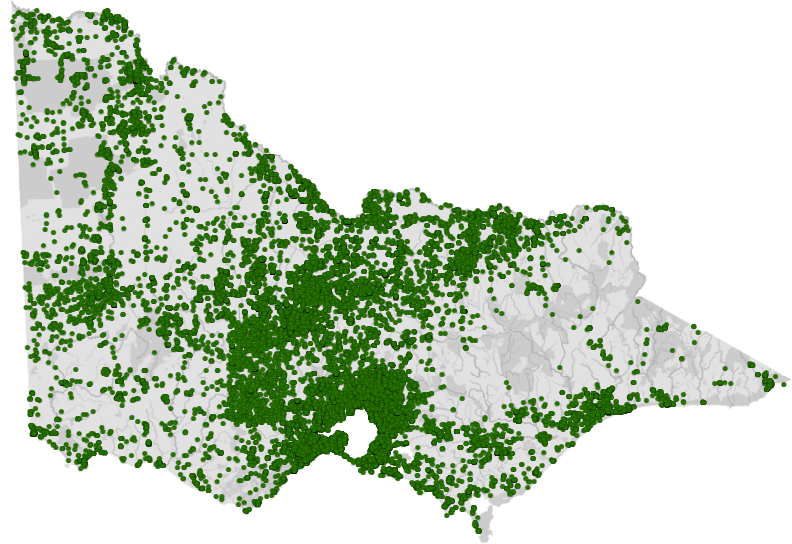
| Species | Emu (<i>Dromaius novaehollandiae</i>) |
|---------------------------------|--|
| Behaviour | Diurnal. Mostly in pairs but may form larger groups when dispersing. Resident but may be dispersive |
| Foraging Style | Feeds on the ground |
| Diet | <p>Native plants and grasses: seeds, flowers, fruits</p> <p>Invertebrates: caterpillars, beetles, grasshoppers, ants, flies, spiders, centipedes</p> <p>Vertebrates: small rodents, lizards</p> |
| Longevity | 10–20 years |
| Nesting | April–October |
| Breeding season | April–October |
| Incubation length | June–December |
| Nesting location | On the ground |
| Developmental stage at hatching | Precocial |
| Fledgling | No defined period |
| Age at dispersal | 6 months |
| Age at maturity | 2 years |

Species

Galah (*Eolophus roseicapilla*)

Photo credit: Tracey-Ann Hooley, Museums Victoria


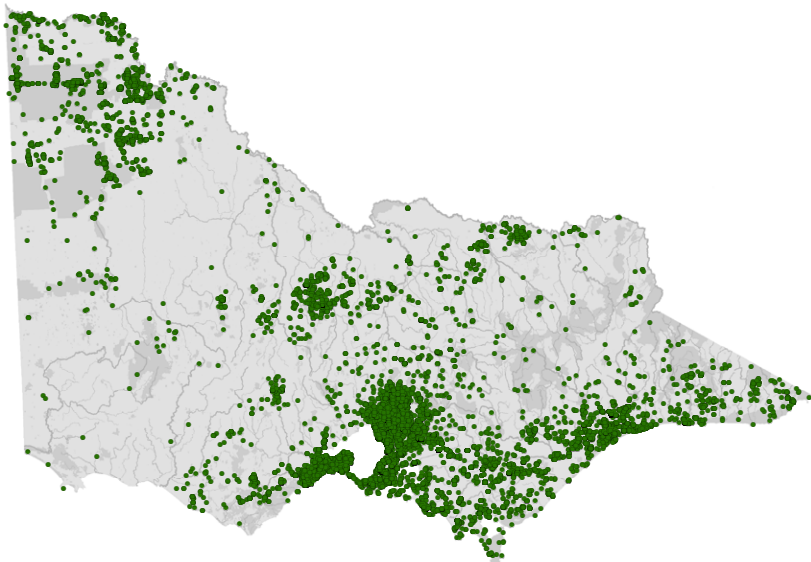
Distribution map



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

| | |
|-----------------------------|---|
| General appearance | Small pink and grey cockatoo |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 273–380 g. Female: 200–350 g Head and body length: 350–360 mm Wing chord: Male: 256–279 mm. Female: 244–274 mm Tail length: Male: 139–156 mm. Female: 136–151 mm |
| Habitat | Crops, pasture, open forest Urban: gardens, golf course, roadside |
| Home range | 0.1 birds/ha–1 bird/15 ha |
| Behaviour | Diurnal. Pairs to large noisy flocks. Resident |
| Foraging Style | Feeds in trees and shrubs |
| Diet | Seeds: grasses, herbs, clover, sorghum, wheat, thistles, onion grass bulbs, kikuyu roots, <i>Eucalyptus</i> , wattle and liquid amber nuts and flowers Insects: moths, insect larvae |
| Longevity | 30 years |
| Nesting | July–December |

| Species | Galah (<i>Eolophus roseicapilla</i>) |
|---------------------------------|---|
| Breeding season | August–October |
| Incubation length | September–November |
| Nesting location | Tree hollow, occasionally hole in cliff |
| Developmental stage at hatching | Altricial |
| Fledgling | November–January |
| Age at dispersal | 6–8 weeks |
| Age at maturity | 3–4 years |

| Species | Grey butcherbird (<i>Cracticus torquatus</i>) |
|--|--|
|  <p>Photo credit: Ian McCann, 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> |
| General appearance | Small white throated butcherbird with grey back, beak with hooked tip |
| Conservation status* | Common |
| Adult morphometrics | <p>Body weight: 73–120 g</p> <p>Head and body length: 270–300 mm</p> <p>Wing chord: Male: 139–153 mm. Female: 131–142 mm</p> <p>Tail length: Male: 101–132 mm. Female: 104–113 mm</p> |

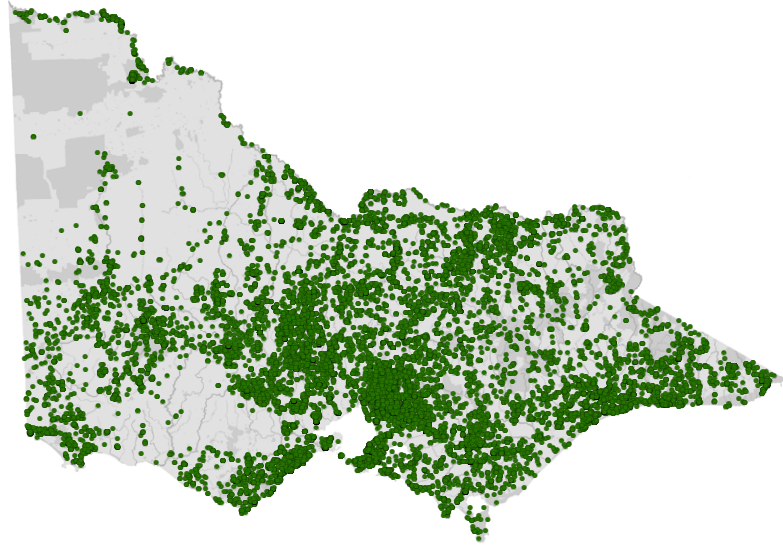
| Species | Grey butcherbird (<i>Cracticus torquatus</i>) |
|---------------------------------|--|
| Habitat | Woodland, forest, acacia shrublands, rainforest, riparian vegetation, urban areas |
| Home range | 4.5–7 ha |
| Behaviour | Diurnal. Singles, pairs, occasionally small groups. Non-migratory or resident with some local dispersal |
| Foraging Style | Attack from perch onto the ground or among branches |
| Diet | Invertebrates: spiders, beetles, moths, cicadas, earthworms, aphids, lerps, bees, ants Vertebrates: small birds (quail, honeyeater) Occasional fruit (fig, proteas), grass, seed |
| Longevity | 8–15 years |
| Nesting | August–January |
| Breeding season | August–October |
| Incubation length | August–October |
| Nesting location | In fork of tree or sapling |
| Developmental stage at hatching | Altricial |
| Fledgling | September–January |
| Age at dispersal | Up to 1 year |
| Age at maturity | 2 years |

Species

Laughing kookaburra (*Dacelo novaeguineae*)

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

Large kingfisher with dark patch around eye, little silver and blue on shoulder

Conservation status*

Common

Adult morphometrics

Body weight: Male: 200–450 g. Female: 200–465 g

Head and body length: 410–470 mm

Wing chord: Male: 188–237 mm. Female: 198–231 mm

Tail length: Male: 123–171 mm. Female: 137–170 mm

Habitat

Open forest, farmland, parks, gardens

Home range

0.04–0.8 birds/ ha

Behaviour

Diurnal. Pairs, groups of dominant pair and 'helpers'.
Non-migratory, territorial

Foraging Style

Preys on insects and reptiles, from above

Diet

Invertebrates: beetles, mealworms, moths, crickets, earwigs, ants, earthworms, snails, crayfish

Vertebrates: lizards, snakes, birds, bird eggs, rodents, frogs, fish


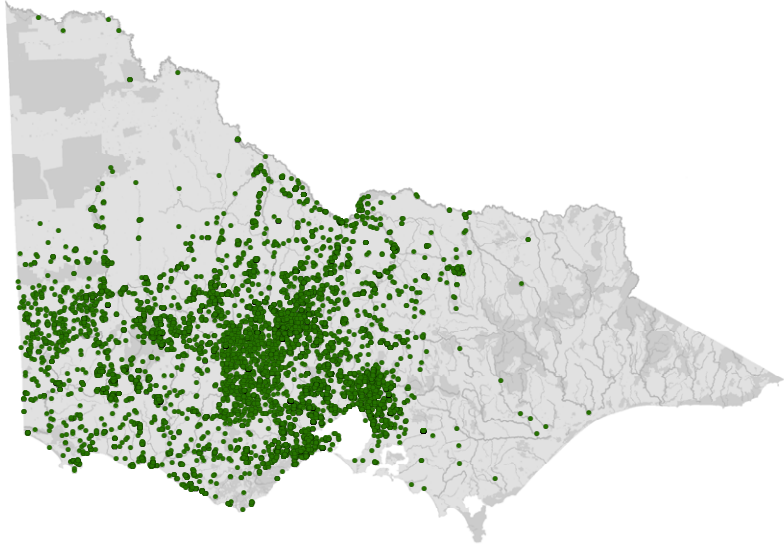
Longevity

10 years


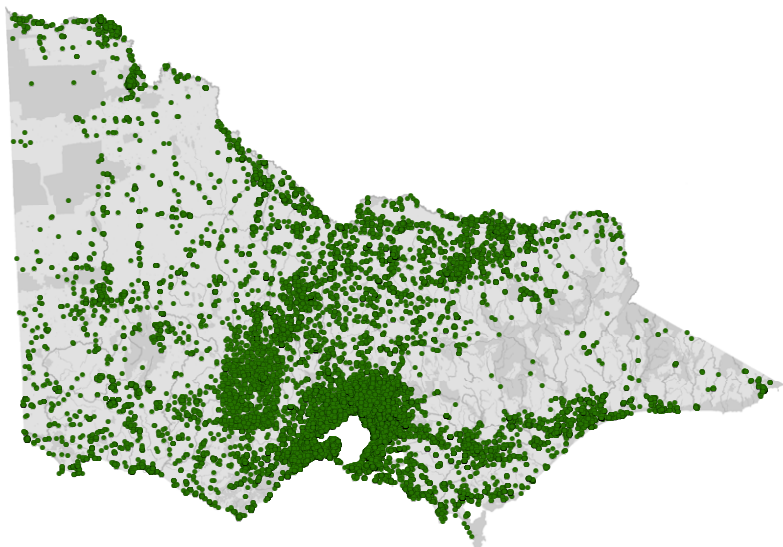
Nesting

September–January

| Species | Laughing kookaburra (<i>Dacelo novaeguineae</i>) |
|---------------------------------|--|
| Breeding season | August–December |
| Incubation length | August–January |
| Nesting location | Tree hollow, hole in bank, wall |
| Developmental stage at hatching | Altricial |
| Fledgling | October–March |
| Age at dispersal | 3–4 months |
| Age at maturity | 1 year |

| Species | Long-billed corella (<i>Cacatua tenuirostris</i>) |
|---|--|
|  <p>Photo credit: NW Longmore, 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> |
| General appearance | Large white cockatoo, long thin bill, blue around eyes, red at nostrils and throat, small white crest |
| Conservation status* | Common |
| Adult morphometrics | <p>Body weight: Male: 490–676 g. Female: 357–615 g</p> <p>Head and body length: 380–410 mm</p> <p>Wing chord: Male: 274–293 mm. Female: 260–287 mm</p> <p>Tail length: Male: 118–129 mm. Female: 116–130 mm</p> |
| Habitat | Grassland, open forest |

| Species | Long-billed corella (<i>Cacatua tenuirostris</i>) |
|---------------------------------|---|
| Behaviour | Diurnal. Singles to flocks of thousands. Resident within 3 km |
| Foraging Style | Digs for roots, corms |
| Diet | <p>Seeds of commercial crops: wheat, barley, oat, canola, sunflower</p> <p>Seeds of commercial nuts: walnut, chestnut, hazelnut, almond, apple and herbs</p> <p>Insects: beetles, moths, flies</p> |
| Longevity | 20 years |
| Nesting | July–November |
| Breeding season | July–November |
| Incubation length | August–December |
| Nesting location | On decayed debris, in tree hollow |
| Developmental stage at hatching | Altricial |
| Fledgling | January–March |
| Age at dispersal | 3–4 months |
| Age at maturity | 1 year |

| Species | Magpie lark (<i>Grallina cyanoleuca</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> |

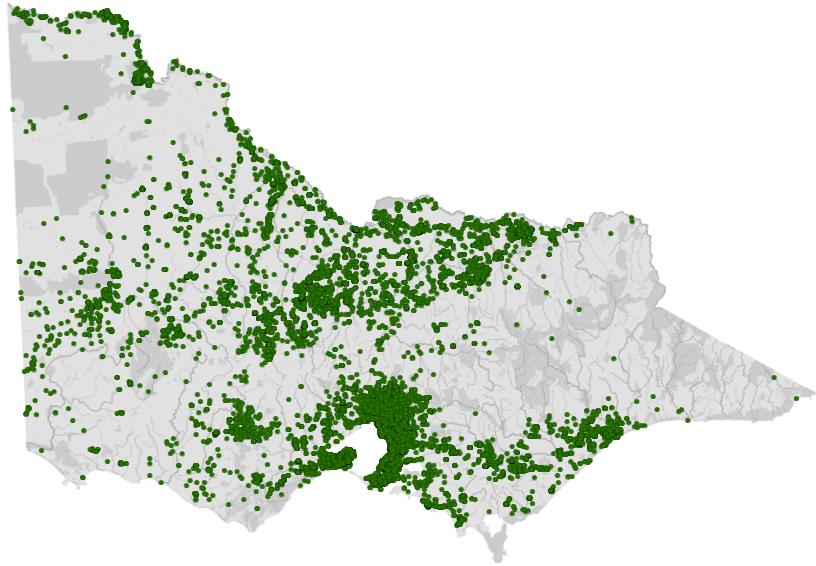
| Species | Magpie lark (<i>Gallina cyanoleuca</i>) |
|---------------------------------|---|
| General appearance | Small black and white bird. Male: black throat and white eyebrow. Female: white throat with no eyebrow |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 64–118 g. Female: 70–95 g Head and body length: 250–300 mm Wing chord: Male: 168–195 mm. Female: 162–185 mm Tail length: Male: 111–141 mm. Female: 108–136 mm |
| Habitat | Grassland with some trees, farmland Urban: park, garden, streets |
| Home range | 8–10 ha |
| Behaviour | Diurnal. Pairs, family parties. Non-migratory and defend territory through year |
| Foraging Style | Forages on ground |
| Diet | Invertebrates: cockroaches, moths, flies, crickets, ants, wasps, earthworms, snails, flat worms, termites Seeds: grasses, <i>Setaria</i> , rushes |
| Longevity | 10 years |
| Nesting | August–November |
| Breeding season | August–December |
| Incubation length | August–December |
| Nesting location | On horizontal branch, often over water, or on artificial structure |
| Developmental stage at hatching | Altricial |
| Fledgling | September–January |
| Age at dispersal | 2–4 months |
| Age at maturity | 2 years |

Species

Noisy miner (*Manorina melanocephala*)

Photo credit: Ian McCann,
Museums Victoria

Distribution map



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

General appearance

Grey brown, black crown, white forehead and yellow bill

Conservation Status*

Common

Adult morphometrics

Body weight: Male: 40–90 g. Female: 46–74 g
 Head and body length: 240–280 mm
 Wing chord: Male: 125–154 mm. Female: 119–148 mm
 Tail length: Male: 111–142 mm. Female: 108–130 mm

Habitat

Open forests – do not like understorey
 Urban: parks, gardens

Home range

0.01–10/ha

Behaviour

Diurnal. Colonial, males defend colony. Non-migratory

Foraging Style

Forages in foliage or on ground


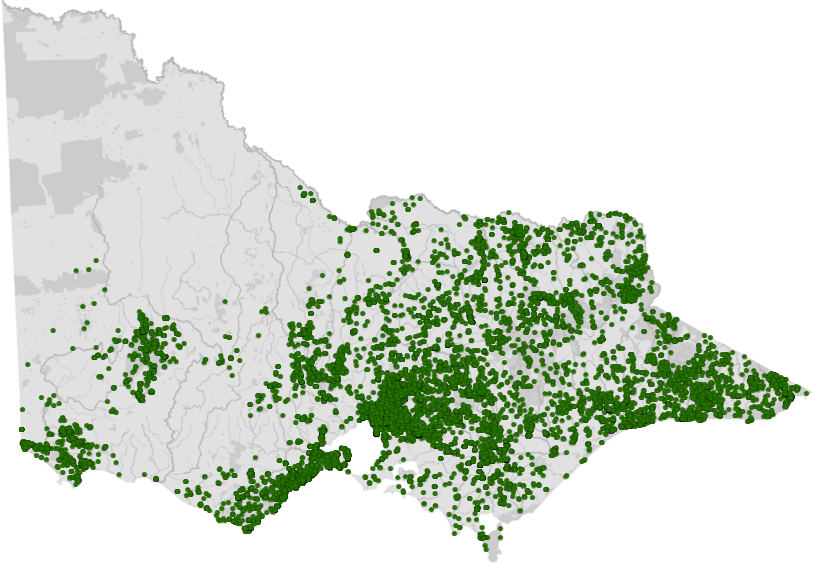
Diet

Invertebrates: spiders, butterflies, ants, crickets, flies
Fruit: wattle, eucalyptus, saltbush, fig, *Prunus*
Seeds: goosefoots, clover, figs, oats
Nectar: *Jacaranda*, *Callistemon*, *Eucalyptus*, *Melaleuca*, *Grevillea*,
Hakea, *Fuchsia*, *Banksia*

Longevity

7–9 years

| Species | Noisy miner (<i>Manorina melanocephala</i>) |
|---------------------------------|---|
| Nesting | June–December |
| Breeding season | August–January |
| Incubation length | August–February |
| Nesting location | In fork of leafy branch |
| Developmental stage at hatching | Altricial |
| Fledgling | September–March |
| Age at dispersal | 2 months |
| Age at maturity | 1 year |

| Species | Pied currawong (<i>Strepera graculina</i>) |
|--|---|
|  <p>Photo credit: Ian McCann, 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> |
| General appearance | Mainly black with white wing, rump, base and tip of tail |
| Conservation status* | Common |
| Adult morphometrics | <p>Body weight: Male: 259–385 g. Female: 243–324 g</p> <p>Head and body length: 440–500 mm</p> <p>Wing chord: Male: 257–290 mm. Female: 243–258 mm</p> <p>Tail length: Male: 196–224 mm. Female: 182–208 mm</p> |

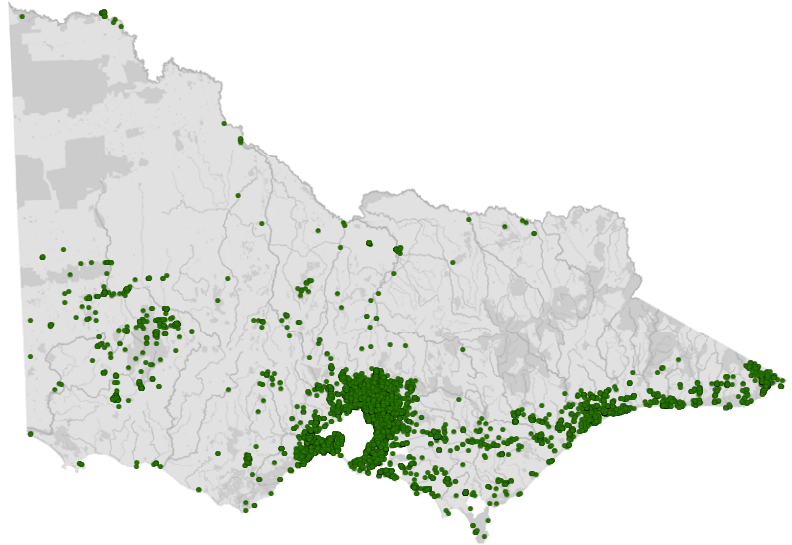
| Species | Pied currawong (<i>Strepera graculina</i>) |
|---------------------------------|---|
| Habitat | Open dry forest, farmland, logged areas Urban: town landscapes |
| Home range | 0.7–16 ha |
| Behaviour | Diurnal. Singles, pairs, flocks in autumn/winter. Resident |
| Foraging Style | Forages on ground, trunks, in foliage |
| Diet | Invertebrates: spiders, beetles, cicadas, wasps, moths, centipedes, ants, dragonflies, snails, earthworms Vertebrates: sparrows, pigeons, rosellas, wrens, skinks, crabs, mice Seeds, fruit: oat, <i>Setaria</i> , wattle, lilly pilly, figs, wide range of shrubs – native and introduced |
| Longevity | 15 years |
| Nesting | August–December |
| Breeding season | August–November |
| Incubation length | September–January |
| Nesting location | In leafy tree-fork |
| Developmental stage at hatching | Altricial |
| Fledgling | October–February |
| Age at dispersal | 2 months |
| Age at maturity | 1 year |

Species

Rainbow lorikeet (*Trichoglossus molucannus*)

Photo credit: Tracey-Ann Hooley,
Museums Victoria

Distribution map


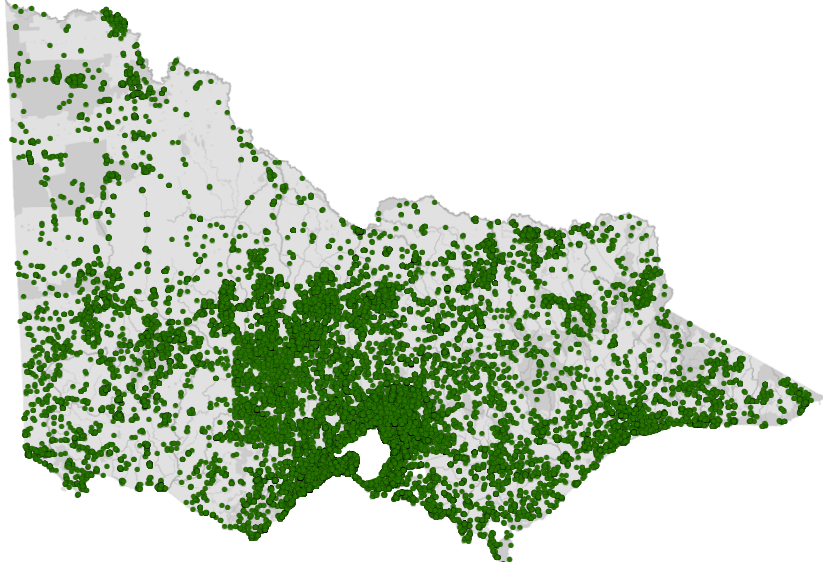


Data source: Victorian Biodiversity Atlas Jan 2023

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

| | |
|----------------------|--|
| General appearance | Large blue headed lorikeet with red breast, green wings |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 92–169 g. Female: 84–162 g Head and body length: 260–310 mm Wing chord: Male: 143–168 mm. Female: 142–156 mm Tail length: Male: 104–166 mm. Female: 121–165 mm |
| Habitat | Wet to dry forests Urban area: parks, gardens |
| Home range | 0.05–5 birds/ha |
| Behaviour | Diurnal. Pairs to flocks. Follow local flowering trees |
| Foraging Style | Feeds in foliage and blossoms; raids gardens |
| Diet | Nectar and pollen: <i>Eucalyptus</i> , <i>Melaleuca</i> , <i>Callistemon</i> , <i>Banksia</i> Fruit: camphor laurel, fig Seeds: She-oak |
| Longevity | 15 years |
| Nesting | May–February |
| Breeding season | August–November |

| Species | Rainbow lorikeet (<i>Trichoglossus molucannus</i>) |
|---------------------------------|--|
| Incubation length | August–December |
| Nesting location | On decayed debris in tree hollow |
| Developmental stage at hatching | Altricial |
| Fledgling | October–February |
| Age at dispersal | 2–3 months |
| Age at maturity | 18–24 months |

| Species | Red wattlebird (<i>Anthochaera carunculata</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> |
| General appearance | Large brown honeyeater with red wattle near ear, yellow on belly. Juvenile: lacks wattles |
| Conservation status* | Common |
| Adult morphometrics | Body weight: Male: 100–120 g. Female: 84–110 g Head and body length: 330–370 mm Wing chord: Male: 142–171 mm. Female: 140–161 mm Tail length: Male: 150–182 mm. Female: 136–160 mm |
| Habitat | Variety of forest from heath to dry Urban: parks, gardens, vineyards |

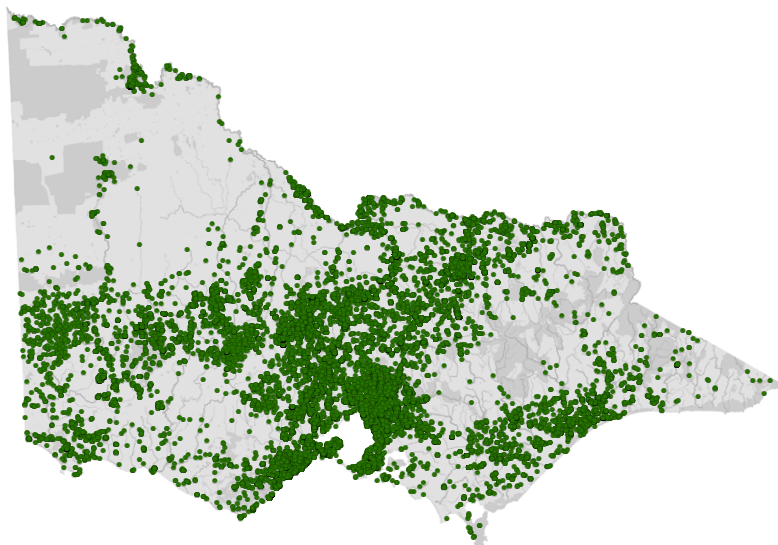
| Species | Red wattlebird (<i>Anthochaera carunculata</i>) |
|---------------------------------|---|
| Home range | 0.05–3/ha |
| Behaviour | Diurnal. Singles, pairs, nomadic flocks. Nest territory 50–200 m diameter |
| Foraging Style | Takes insects in flight |
| Diet | Nectar and manna from over 30 <i>Eucalyptus</i> spp., <i>Callistemon</i> , <i>Banksia</i> , <i>Melaleuca</i> , <i>Grevillea</i> Invertebrates: beetles, moths, spiders, cicadas, honeydew, ants, mantids, wasps, lerps |
| Longevity | 5–7 years |
| Nesting | July–November |
| Breeding season | July–December |
| Incubation length | July–December |
| Nesting location | In tree fork or on bark against trunk |
| Developmental stage at hatching | Altricial |
| Fledgling | August–January |
| Age at dispersal | 2 months |
| Age at maturity | 1 year |

Species

Sulphur-crested cockatoo (*Cacatua galerita*)

Photo credit: Nick Talbot

Distribution map



Data source: Victorian Biodiversity Atlas Jan 2023

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

General appearance

Large white cockatoo with long yellow crest

Conservation status*

Common

Adult morphometrics

Body weight: Male: 815–980 g. Female: 815–915 g

Head and body length: 450–500 mm

Wing chord: Male: 302–391 mm. Female: 310–385 mm

Tail length: Male: 161–218 mm. Female: 151–199 mm

Habitat

Wet and dry forest, grassland, farmland

Urban: gardens, golf courses, pine plantation

Home range

0.28 birds/ha–1 bird/153 ha

Behaviour

Diurnal. Flocks can number in hundreds. Resident, mainly non-migratory

Foraging Style

Feeds on ground in grassland, or in trees

Diet

Seeds of commercial crops: wheat, barley, oat, maize, sorghum, sunflower, canola

Nuts: walnut, almond, hazelnut, pistachio


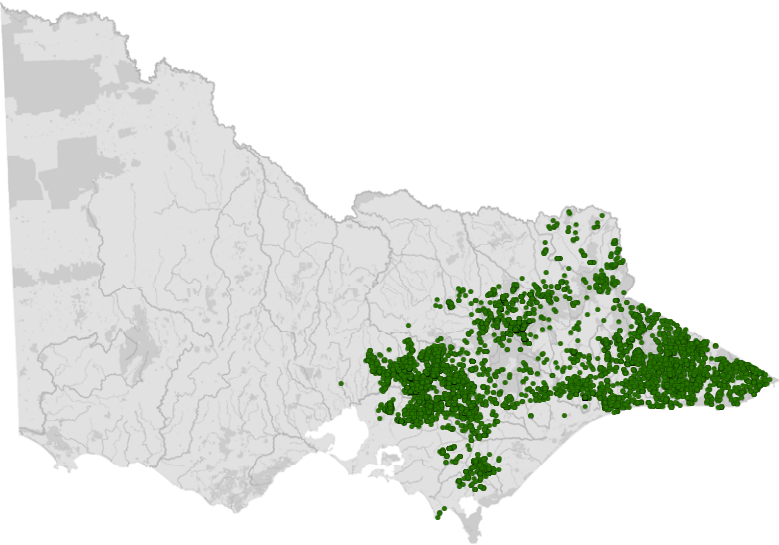
Native grass seeds, eucalyptus seeds

Bark, green leaves, onion grass

Fruits: native plum, figs

Insects: moths, flies, ant eggs, crickets, beetles

| Species | Sulphur-crested cockatoo (<i>Cacatua galerita</i>) |
|---------------------------------|--|
| Longevity | 20–40 years |
| Nesting | August–January |
| Breeding season | July–December |
| Incubation length | August–December |
| Nesting location | On decayed debris in tree hollow |
| Developmental stage at hatching | Altricial |
| Fledgling | September–January |
| Age at dispersal | 3 months |
| Age at maturity | 1 year |

| Species | Superb lyrebird (<i>Menura novaehollandiae</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> |
| General appearance | Large greyish-brown bird. Male has lyre shaped outer tail feathers |
| Conservation status* | Common |

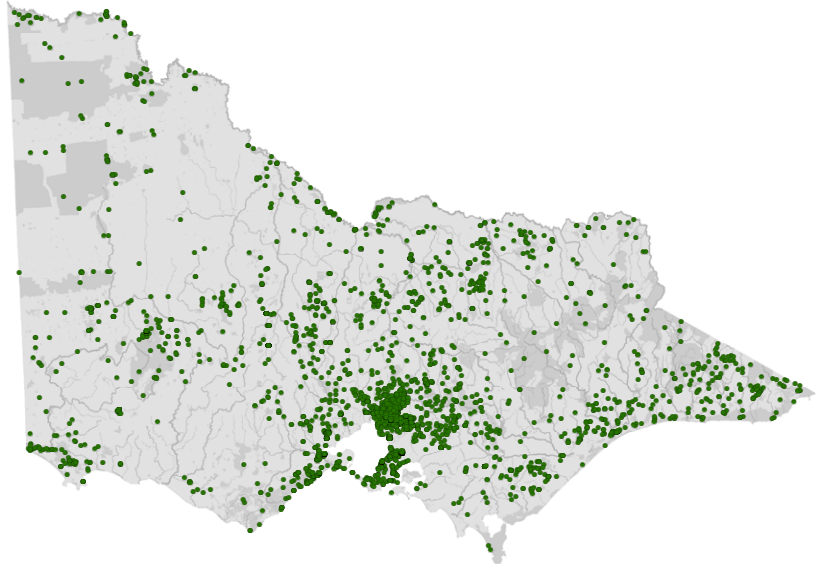
| Species | Superb lyrebird (<i>Menura novaeollandiae</i>) |
|---------------------------------|---|
| Adult morphometrics | <p>Body weight: Male: 1.0–1.1 kg. Female: 880–890 g</p> <p>Head and body length: Male: 800–980 mm. Female: 740–840 mm</p> <p>Wing chord: Male: 270–301 mm. Female: 231–270 mm</p> <p>Tail length:</p> <p>Male:</p> <p>Longest Median: 645–800 mm</p> <p>Longest Filamentary: 486–750 mm</p> <p>Longest Lyrate: 542–713 mm</p> <p>Female:</p> <p>Longest Median: 290–505 mm</p> <p>Longest Filamentary: 377–396 mm</p> <p>Longest Lyrate: 289–473 mm</p> |
| Habitat | Moist forest |
| Home range | 0.1–0.5 birds/ha |
| Behaviour | Diurnal. Solitary. Non-migratory, territorial |
| Foraging Style | Feeds on the ground, roosts in trees at night |
| Diet | <p>Invertebrates: cockroaches, beetles, earwigs, fly larvae, moths, centipedes, spiders and earthworms</p> <p>Vertebrates: occasional lizards and frogs</p> <p>Seeds</p> |
| Longevity | 20 years |
| Nesting | June–October |
| Breeding season | June–October |
| Incubation length | June–October |
| Nesting location | On or near the ground, hidden in vegetation |
| Developmental stage at hatching | Altricial |
| Fledgling | September–November |
| Age at dispersal | 8–9 months |
| Age at maturity | Males 6–9 years |

Species

Tawny frogmouth (*Podargus strigoides*)

Photo credit: Zoos Victoria

Distribution map



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

| | |
|-----------------------------|---|
| General appearance | Yellow eyes, male mainly grey with black streaks, female more brown |
| Conservation status* | Common |
| Adult morphometrics | <p>Body weight: Male: 180–520 g</p> <p>Female: 157–555 g</p> <p>Head and body length: 340–530 mm</p> <p>Wing chord: Male: 250–295 mm</p> <p>Female: 220–280 mm</p> <p>Tail length: Male: 183–229 mm</p> <p>Female: 167–225 mm</p> |
| Habitat | <p>Open forest, pasture, roadsides</p> <p>Urban: parks, gardens</p> |
| Home range | 0.1–0.2 birds/ha |
| Behaviour | Most active at dusk. Pairs, family parties. Non-migratory, small territory |
| Foraging Style | Glides from above to catch prey |
| Diet | <p>Invertebrates: moths, beetles, cockroaches, earthworms, molluscs, crustaceans, spiders</p> <p>Vertebrates: mice, frogs, sparrows, small birds</p> |


| Species | Tawny frogmouth (<i>Podargus strigoides</i>) |
|---------------------------------|---|
| Longevity | 14 years |
| Nesting | August–December |
| Breeding season | August–December |
| Incubation length | August–December |
| Nesting location | On horizontal fork, or uses old nest of other species |
| Developmental stage at hatching | Semi-altricial |
| Fledgling | January–February |
| Age at dispersal | 2 months |
| Age at maturity | 1 year |



*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>.



1.2.1. Feral species

Occasionally, feral bird species, such as those listed in **Table 1.2**, come into care. They must be euthanised as they are a pest and pose a threat to many native species.

Table 1.2 Introduced species commonly found in Victoria

| Introduced species | Common blackbird (<i>Turdus merula</i>) |
|--|--|
| General appearance  <p>Photo credit: David Paul, Museums Victoria</p> | <p>Adult male: Glossy black plumage, blackish-brown legs, a yellow eye-ring and an orange-yellow bill</p> <p>Adult female: Sooty-brown with a dull yellowish-brownish bill, a brownish-white throat and some weak mottling on the breast</p> |
| Adult morphometrics | <p>Body weight: Male: 81–120 g. Female: 88–111 g</p> <p>Head and body length: 240–290 mm</p> <p>Wing chord: Male: 126–132 mm. Female: 118–119 mm</p> <p>Tail length: Male: 103–110 mm. Female: 92–107 mm</p> |

| Introduced species | Common myna (<i>Acridotheres tristis</i>) |
|--|---|
| <p>General appearance</p>  <p>Photo credit: David Paul, Museums Victoria</p> | <p>Brown body, black hooded head and a bare yellow patch behind the eye</p> |
| <p>Adult morphometrics</p> | <p>Body weight: 115–145 g</p> <p>Head and body length: 220–260 mm</p> <p>Wing chord: Male: 130–141 mm. Female: 125–138 mm</p> <p>Tail length: Male: 82–87 mm. Female: 78–88 mm</p> |
| Introduced species | Common starling (<i>Sturnus vulgaris</i>) |
| <p>General appearance</p>  <p>Photo credit: David Paul, Museums Victoria</p> | <p>Glossy black, with a purple and green shine. The tips of the body feathers have large white spots</p> |
| <p>Adult morphometrics</p> | <p>Body weight: Male: 75–98 g. Female: 76–94 g</p> <p>Head and body length: 190–230 mm</p> <p>Wing chord: Male: 119–130 mm. Female: 115–127 mm</p> <p>Tail length: Male: 60–68 mm. Female: 59–65 mm</p> |

| Introduced species | House sparrow (<i>Passer domesticus</i>) |
|--|---|
| <p>General appearance</p>  <p>Photo credit: Ian McCann, Museums Victoria</p> | <p>Small, compact bird. The female is mostly buff coloured, while the male has boldly coloured head markings, a reddish back and grey underparts</p> |
| <p>Adult morphometrics</p> | <p>Body weight: Male: 23–33 g. Female: 25–33 g</p> <p>Head and body length: 140–180 mm</p> <p>Wing chord: Male: 73–82 mm. Female: 70–77 mm</p> <p>Tail length: Male: 50–60 mm. Female: 50–58 mm</p> |
| Introduced species | Rock dove (<i>Columba livia</i>) |
| <p>General appearance</p>  <p>Photo credit: David Paul, Museums Victoria</p> | <p>Dark bluish-grey head, neck, and chest with glossy yellowish, greenish, and reddish-purple iridescence along its neck and wing feathers</p> |
| <p>Adult morphometrics</p> | <p>Body weight: 238–380 g</p> <p>Head and body length: 290–370 mm</p> <p>Wing chord: Average 223 mm</p> <p>Tail length: 95–110 mm</p> |

Introduced species**Spotted turtle-dove (*Spilopelia chinensis*)****General appearance**

Photo credit: David Paul,
Museums Victoria

Rosy buff below shading into grey on the head and belly. A black half collar on the back and sides of the neck with white spots at the two tips

Adult morphometrics

Body weight: Male: 110–205 g. Female: 110–192 g

Head and body length: 280–320 mm

Wing chord: Male: 139–167 mm. Female: 139–164 mm

Tail length: Male: 115–192 mm. Female: 119–162 mm

1.3 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 birds is in **Section 1.6.2**.

The following information relates to some of the human and animal health and safety considerations specifically related to the rehabilitation of birds.

1.3.1. Human safety considerations

- Parrot species have strong beaks that can inflict serious bite injuries that bruise or break the skin. Kookaburras, magpies and corvids also have sharp beaks to be mindful of. Additionally, magpies, parrots, wattlebirds and currawongs have sharp claws that can puncture and scratch the skin.
- Care is required with adult emus. They have extremely powerful legs with sharp claws that can inflict significant injury. Emu handling should only be attempted by those who are trained to do so safely.
- Some birds can carry diseases that are transmissible to people (zoonoses). Psittacosis is a common zoonosis, caused by *Chlamydia psittaci*, and frequently diagnosed in crimson rosellas and other parrot species. See **Table 1.5** for more information.

1.3.2. Animal safety considerations

- Honeyeaters and other small birds can be suffocated by compression of their chest if held too tightly in the hand.
- Pigeons and some other species may drop feathers as a defence mechanism, this can make them challenging to restrain in a firm grip.
- It is not acceptable to place birds into stockings due to the risk of suffocation and feather damage. A dark coloured pillowcase is a more suitable tool to assist with restraining small birds. Ensure the pillowcase is turned inside out so nails do not get snagged on thread.

1.4 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 1.4.1 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 bird species.

1.4.1 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.

It is important to understand that because avian species are flock animals, they mask signs of illness and injury so as not to appear weak in the flock and vulnerable to predators. This is why it is very important to take visual observations from a distance, to view the actual state of the animals, as they are likely to appear healthy on initial visual assessment. A bird showing obvious signs of illness should be considered extremely unwell and in need of immediate veterinary attention.

Table 1.3 Visual health observations in birds

| What to look for | |
|-----------------------------|--|
| Demeanour | <ul style="list-style-type: none"> Bright, alert Responds to humans with threat display or avoidance Upright posture |
| Behaviour | <ul style="list-style-type: none"> Interested in surroundings Exhibiting natural species behaviour such as hopping from branch to branch Feeding or flight |
| Movement and posture | <ul style="list-style-type: none"> Stands and/or perches on both legs. Some species may stand on one leg from time to time, reinforcing the need for time spent observing Wings are held against the body and do not droop Head is in a normal position |
| Breathing | <ul style="list-style-type: none"> Regular pattern No open mouth or noisy breathing (birds may open mouth breathe when hot or stressed) |

1.4.2. Equipment

- **A cloth** can be used to cover the bird during capture. The cloth may vary from a blanket, bath towel to tea-towel depending on the species and size of the bird.
- **Leather gloves** can be used to protect the hands during capture of the bird. Care must be taken not to squeeze the bird too tightly as leather gloves can reduce the ability of the handler to feel the amount of restraint they are applying.
- **A pillowcase** can be used to contain the bird for a short period. This must be turned inside out to ensure the bird does not get caught in loose thread.
- **Handheld nets and fishing nets** may be useful for capturing birds. Choose the appropriate gauge of the net for the species being captured.
- **A transport container** such as a pet carry cage, cardboard box or ventilated plastic tub can be used to transport the bird once it has been caught. Cardboard boxes are ideal, except for parrots which can potentially chew their way out. Soft canvas pet carriers work well as the birds are less likely to damage themselves or their flight feathers. Wire cages should not be used, unless the interior is lined with shade-cloth or cardboard, due to the risk of feather damage. Transport containers should allow the bird to stand, turn around and stretch its wings but not gain lift. Towels or cotton sheets may be used for flooring. Ensure that there are no loose threads present that could entangle the feet.

Figure 1.2 A box suitable for transporting small (under approximately 100 g) birds



Photo credit: Zoos Victoria

1.4.3. 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.

The appropriate method of restraint varies for different bird species. When handling birds, it is important to restrain the head and confine the wings.

Restraint of parrots

Place a towel over the hand that will be used to capture the parrot. Restrain the bird's head using the 'pistol' grip. This is done by placing the index finger and thumb on either side of the head through the towel. Alternatively, the three-fingered grip can be used where the middle finger and thumb are placed on either side of the bird's head and the index finger is placed on top of the head for more stability. Be mindful that once the head is restrained, the wings may flap in an attempt to escape. It is vital the handler works quickly to restrain the wings to prevent injury. Use the towel to wrap the bird while maintaining the grip on the head. The towel wrap is also used to restrain the legs and tail to prevent clawing of the handler. The bird can then be lifted and the towel edges folded around the bird to restrain the wings within the bulk of the towel (see **Figure 1.4**).

Restraint of magpies, kookaburras and tawny frogmouths

These bird species can be restrained in a towel as described for parrots.

Restraint of pigeons and doves

Place one hand underneath the bird. The thumb and little finger can then be used to restrain the wings and tail while the other fingers secure the legs.

A towel may also be used to wrap around the whole bird to prevent flapping (see **Figure 1.4**).

Restraint of small birds

A 'ringers' grip can be used with fingers either side of the head. The body of the bird is supported in the palm of one hand (See helmeted honeyeater **Figure 1.3**).

Restraint of emus

Manual restraint of adult emus should only be attempted by experienced rehabilitators and should be avoided if possible. Juvenile emus, up to about 8 kg, can be restrained by approaching from behind to avoid being kicked and holding the bird around the body.

Figure 1.3 a. Restraint of a large parrot demonstrating the three-fingered grip. The feet and wings are restrained in the other hand. **b.** A helmeted honeyeater restrained with fingers either side of the head.

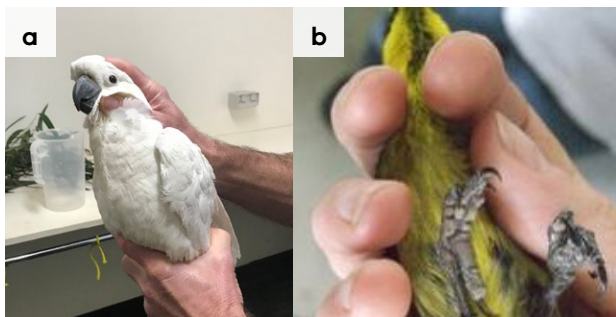


Photo credit: Zoos Victoria and Anne Fowler

Figure 1.4 A cockatoo is restrained with a towel.



Photo credit: Zoos Victoria

Figure 1.5 Restraint of a juvenile crimson rosella demonstrating the three-fingered grip.



Photo credit: Zoos Victoria

Capture next to a road

- The capture should be planned to avoid chasing the bird into oncoming traffic. Although it may not be able to fly, it may still be able to run quickly.
- It is important to remember wildlife rehabilitator safety when rescuing birds that are next to roads. Birds may still be mobile and the capture may need to be planned with more than one person to keep the animal, wildlife rehabilitators and the public from harm. Where appropriate, use signage to warn oncoming traffic.
- Throw a large towel or net over the bird to confine it and pick it up.
- If the bird is a fledgling it may have landed on the ground after its first flight and could take some time to fly back up onto a branch. Before 'rescuing' the bird, scan the area for adults or a nest. In many instances the parents will be nearby and will return to assist their chick. Some fledglings may spend two to three days on the ground being assist fed by parents before flying. However, fledglings can be injured falling from nests or during their initial flight. Always assess the bird for injuries before leaving it for the parents.
- To avoid a fledgling being predated or being exposed to the elements there is an option to place the fledgling in a fake nest (for example hanging basket or bucket with nesting material and holes in the bottom to allow water drainage) to enable the parents to care for the fledgling until it is ready to fledge. See **Section 1.9.3** for more details.

Entanglement

- This includes entanglement in netting over fruit trees, barbed wire and fishing line. Usually two operators are required to free these birds. One holds the bird to avoid unnecessary struggling, while the other cuts the net, line or wire. For entanglements where the bird can be restrained appropriately and removed in less than five minutes, cut the bird free with scissors or wire cutters. Wear eye and hand protection if cutting wire.
- For entanglements that may take longer than five minutes or where the line has cut through the skin, free the bird by cutting the material around the bird. It can then be transported to a veterinarian with the remaining line

attached. Removal of entangling material can occur under anaesthesia to avoid further damage to skin and feathers. Ask the person who reported the strike to keep cats, dogs, children and other dangers away from the bird to give it sufficient time to recover by itself. Alternatively, ask them to scoop the bird up in a towel and place it in a container. If the bird cannot fly off normally after an hour or shows signs of neurological impairment it should be taken to a vet for assessment.

- Prolonged conscious handling of birds when they are struggling can lead to capture myopathy and death.

Window strike

- Ask the person who reported the strike to keep cats, dogs, children and other dangers away from the bird to give it sufficient time to recover by itself. Alternatively, ask them to scoop the bird up in a towel and place it in a container. If the bird cannot fly off normally after an hour or shows signs of neurological impairment it should be taken to a vet for assessment.

Luring birds that can still fly

- Birds with leg or eye injuries may still be able to fly. In such cases it may be possible to use food to lure them into a confined area before capture with a net.
- When attempting capture of birds that can fly, it is important to make a clear plan before attempting capture as often you will only get one chance.

Emu capture

- Emus are particularly sensitive to capture myopathy during capture attempts.
- Emu captures will require several people to herd the bird into a horse-float or similar vehicle.
- An emu that is caught in a fence may require sedation before removal.
- Emus can inflict serious damage to humans when they strike with their feet. They cannot kick backwards so should be approached from that direction.

1.4.4. Transport

- Birds should be transported individually. Clutches of chicks are the exception and should be transported together.
- Ensure that the transport container has adequate ventilation and is not exposed to direct sunlight during travel.
- A towel or sheet may be used as a cage cover to reduce visual stress, while ensuring ventilation is not impacted. (See **Figure 1.6**)
- The interior of the vehicle should be below 25°C.
- Food and water are not required for travel times of less than two hours.
- Noise during transport (for example voices and music) should be kept to a minimum.
- Domestic animals should not be present in the vehicle.
- Disinfect transport carriers with a suitable disinfectant, such as F10SC or Virkon S, at the recommended concentration and contact time between birds. Virkon S must be rinsed after disinfection.

Figure 1.6 Transport box is covered with a towel to minimise visual stress, noting the towel has allowed room for ventilation.



Photo credit: Zoos Victoria

1.5 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 must 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. An example of the importance of this is that bird bones heal much faster than mammal bones. Delay in veterinary assessment may render a bird unsuitable for rehabilitation because the fracture was not diagnosed and treated soon enough.

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

This section provides guidance on health assessment on arrival and on effective monitoring of the health and welfare of individuals in care – minimising human-animal interactions and stress to the animal maximises successful release back to the wild.

1.5.1 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 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. Depending on the species, one or two people should conduct the handling, while a second or third 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:

Physical examination is stressful for a conscious bird and should be conducted as efficiently as possible. Parrots, in particular, will likely vocalise while being examined.

Limit handling to five minutes.

- Return the bird to its cage if it starts open mouth breathing, closes its eyes or becomes weak in the hand.
- Two people will be required to examine larger birds. One person restrains the bird, while the second person examines the wings and legs for any abnormalities.

- Feathers should be checked for damage or absence. A bird that has been on the ground will often have broken tail feathers that may be stained with dirt and faeces.
- The cloaca should be checked to ensure it is clean.

Bird identification manuals can be used to check the feathering to determine if the bird is a juvenile or adult. For example juvenile crimson rosellas have a variable number of green feathers.

Table 1.4 Physical examination of birds

| What to look for | |
|-------------------------|---|
| Body weight | <ul style="list-style-type: none"> • Record body weight on arrival and at least weekly while in care. • Be aware of what is normal for the species. Birds that are underweight or emaciated should trigger a veterinary assessment. • In most species, a greater than 10% change in body weight is cause for concern, and the carer should seek veterinary advice. It is important to understand what is normal for species in care – smaller species are less likely to tolerate weight loss. |
| Body condition | <p>Body condition of the bird can be scored by palpating the amount of muscle over the keel (See Figure 1.7)</p> <ul style="list-style-type: none"> • Under condition: The keel bone is easily felt and the pectoral muscles are concave. • Ideal condition: The keel bone can be felt and the pectoral muscles are rounded. • Over condition: Difficult to feel the keel bone as the pectoral muscles rise above it. |
| Hydration status | <p>Assessment:</p> <ul style="list-style-type: none"> • Skin in featherless areas returns to normal position in less than 1 second, when pinched. • Skin slides easily across the pectoral muscles. • If the eyes are sunken, skin doesn't slide easily over pectoral muscles, or skin tenting occurs then assume the bird to be moderately to severely dehydrated. |
| Eyes | <ul style="list-style-type: none"> • Normal eyes should both be open, shiny and clear, with no discharge. • Basic internal structures of eyes (e.g. pupil, iris) appear symmetrical. |
| Beak | <ul style="list-style-type: none"> • Normal shape for the species. • Not overgrown, flaky or fractured. • Upper and lower beak align when closed. |

| What to look for | |
|--------------------------|---|
| Mouth | <ul style="list-style-type: none"> • Normal colouration for the species. • No blood present. • No evidence of foreign materials. • No discharge. |
| Nostrils | <ul style="list-style-type: none"> • Clean and clear. • No discharge, for example blood. |
| Skin | <ul style="list-style-type: none"> • Not dry, flaky or cut/injured. • No bruising. |
| Feathers | <ul style="list-style-type: none"> • Free from parasites. • Clean, sleek, shiny. • Not damaged, broken or missing. • Powder down present in parrots. • Preen gland present on upper side of the base of the tail feather in many species. |
| Vent/cloaca | <ul style="list-style-type: none"> • Clean, free of faeces or urates (not caked on). |
| Legs | <ul style="list-style-type: none"> • Legs appear symmetrical and are not deviated. • Animal can stand normally. • Animal can grip with both feet normally. • No wounds, swelling or exposed bone or muscle present. • Bottom surface of feet has no evidence of wounds or disease. • Nails not broken or missing. |
| Wings | <ul style="list-style-type: none"> • Capable of normal flight. • Able to manually extend wings fully, without resistance, each wing extends equally. • No wounds, swelling, bruising or exposed bone or muscle present. |
| Sex determination | <ul style="list-style-type: none"> • Plumage colour may vary between the sexes of some bird species. • Body weight/size may vary between the sexes (see Table 1.1). |

Figure 1.7 a. Reduced muscle mass next to the keel in an emaciated (under conditioned) king parrot. b. A sulphur-crested cockatoo in ideal body condition.

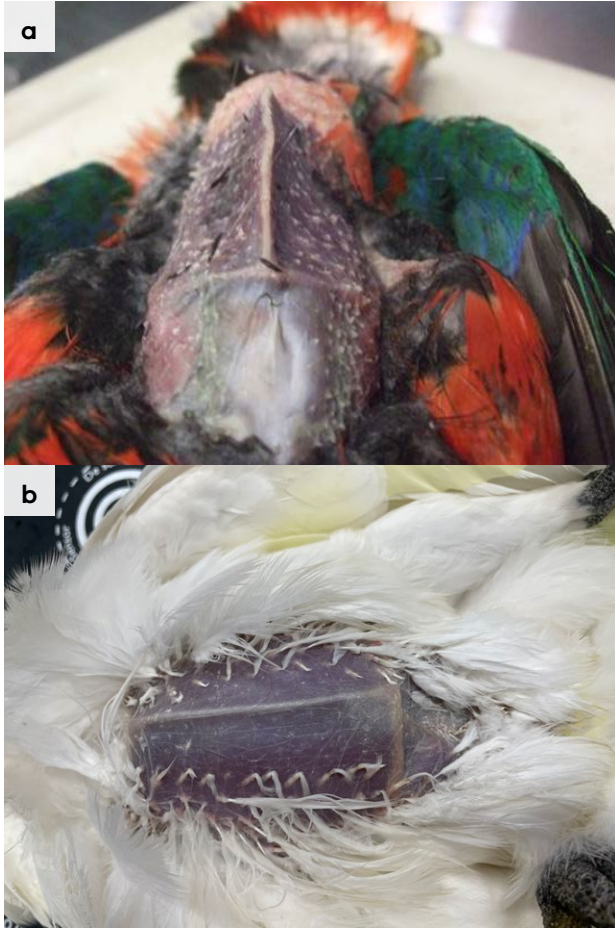


Photo credit: Anne Fowler and Zoos Victoria

Figure 1.8 Keel photo of ideal body condition in a tawny frogmouth.



Photo credit: Zoos Victoria

Figure 1.9 An overweight (over conditioned) tawny frogmouth with bulging pectoral muscles.



Photo credit: Anne Fowler

1.5.2. 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:

- A visual check in the morning is recommended, when the cage is cleaned and food and water are changed.
- Note the bird'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.

- Note faecal consistency daily and ensure it is normal for the species. Most bird species should pass solid faeces, pasty white urates and liquid urine, which may not be detectable if it has soaked into the substrate. This will be passed at the same time, as one excretion. If diarrhoea is noticed, a faecal sample should be collected and submitted to the veterinarian for assessment as soon as possible to determine the cause. 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.

1.5.3. Common presenting injuries and clinical signs of emerging health conditions

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

Table 1.5 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 1.5 Common injuries and clinical signs of emerging health conditions seen on presentation or during care

| Injury or clinical signs | Possible causes | Carer 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 fly normally Drooping wing Swollen wing Bruising over wing Fractures Dislocation</p> | <p>Found adjacent to road/suspect motor vehicle accident</p> <p>Window strike</p> <p>Caught in wire or netting</p> <p>Predation injury caused by raptor, fox, cat or dog</p> <p>Gunshot</p> | <ul style="list-style-type: none"> • Seek urgent veterinary attention. Do not delay transfer to a veterinarian to apply first aid, other than to stop excessive bleeding. • Place the bird in a small transport box to restrict movement. • If the wing is dragging on the ground a light bandage can be wrapped around the bird's wing and body to provide some support and relief from pain and discomfort. • Collision injuries may result in fractures within the pectoral girdle (the bones that support the wings). On observation the bird may still be able to fly but be unable to sustain flight or get normal lift. • Assessment by a veterinarian is required to determine whether surgery or splinting is needed in order for the injury or fracture to heal. Bird bones heal faster than mammal bones. To ensure the best welfare outcomes it is important to seek veterinary assessment as soon as possible. Medication for pain is required for fractures as prescribed by the veterinarian. • Euthanasia may be required for the welfare of the animal. • Give prescribed medication. • Birds with wing injuries will need initial confinement. • The animal should be reassessed throughout rehabilitation to ensure healing is progressing as expected and is tolerating the time in care. • Once the fracture has healed, fitness is regained by slowly increasing the amount of flight exercise that the bird receives over one to two weeks (refer to Section 1.9 for more detail). |

| Injury or clinical signs | Possible causes | Carer observations and response |
|--|--|---|
| Unable to stand normally Swollen leg, foot or toe Bruising over leg Wounds present Nail injuries Fractures Dislocation Hip injury | Found adjacent to road/suspect motor vehicle accident Window strike Caught in wire or netting Predation injury caused by raptor, fox, cat or dog Gunshot | <ul style="list-style-type: none"> • Seek urgent veterinary attention. Do not delay transfer to a veterinarian to apply first aid, other than to stop excessive bleeding. • Place the bird in a small transport box to restrict movement. • Assessment by a veterinarian is required to determine whether surgery or splinting is needed in order for the injury or fracture to heal. Bird bones heal faster than mammal bones. To ensure the best welfare outcomes it is important to seek veterinary assessment as soon as possible. Medication for pain is required for fractures as prescribed by the veterinarian. • Euthanasia may be required for the welfare of the animal. • Give prescribed medication. • Birds with leg injuries will need initial confinement, and perhaps modified/low perching. • The animal should be reassessed throughout rehabilitation to ensure healing is progressing as expected and is tolerating the time in care. • Once the injury is healed, fitness is regained by slowly increasing the amount of flight exercise that the bird receives over one to two weeks (refer to Section 1.9 for more detail). |
| Head trauma Eye injuries/blood in eye Eyelid swelling Beak injuries Blood in mouth Lethargy, sleepy Response to stimulus slow Head hanging down Fluffed feathers | Found adjacent to road/suspect motor vehicle accident Window strike Predation injury caused by raptor, fox, cat or dog Gunshot | <ul style="list-style-type: none"> • Seek urgent veterinary attention. Do not delay transfer to a veterinarian to apply first aid, other than to stop excessive bleeding. • Place the bird in a small transport box to restrict movement. • Birds with head trauma should be housed in a dark, quiet enclosure for 48 hours. If the bird does not improve or deteriorates over this time it may need to be euthanised. |

| Injury or clinical signs | Possible causes | Carer observations and response |
|---|--|---|
| <p>Bleeding</p> <p>Puncture wounds</p> <p>Bruising</p> | <p>Found adjacent to road/suspect motor vehicle accident</p> <p>Window strike</p> <p>Predation injury caused by raptor, fox, cat or dog</p> <p>Gunshot</p> | <ul style="list-style-type: none"> • Seek urgent veterinary attention. Do not delay transfer to a veterinarian to apply first aid, other than to stop excessive bleeding. • Place the bird in a small transport box to restrict movement. • Assessment by a veterinarian is required to determine whether surgery or suturing is needed in order for the injury to heal and to assess for other injuries such as fractures. Medication for pain or infection may be required as prescribed by the veterinarian. • Euthanasia may be required for the welfare of the animal. • Give prescribed medication. • Monitor wounds to ensure that they are healing. Ongoing re-assessment during rehabilitation is required to ensure healing is progressing as expected and the animal is tolerating time in care. |
| <p>Poor body condition</p> <p>Emaciation</p> | <p>Undetermined disease process</p> <p>Failure to thrive</p> <p>Old injury present, such as a fracture</p> | <ul style="list-style-type: none"> • Assessment by a veterinarian is required to determine if there is a disease present and to assess for other injuries such as old fractures. • Generally, animals presenting in poor body condition have likely been suffering for some time and prognosis is poor. • Wild population health should be a consideration when determining the animal as a candidate for rehabilitation. • Shelter biosecurity practices should also be considered. • The degree of condition loss can determine whether the animal is a candidate for rehabilitation. • Carers should consider the risks of zoonotic disease and act accordingly, refer to Part A, Chapter 4 Biosecurity & Hygiene. • Where a disease is suspected anything coming in contact with the infected or suspect bird should be discarded or disinfected. See Section 1.6.2 Enclosure hygiene & biosecurity. As a precaution, wear gloves and a face mask to avoid inhaling any aerosols. |

| Injury or clinical signs | Possible causes | Carer observations and response |
|--|---|--|
| <p>Poor body condition</p> <p>Emaciation</p> <p>Respiratory signs</p> <p>Open mouth breathing</p> <p>Raspy breathing</p> <p>Gurgly breathing</p> <p>Discharge from eyes</p> <p>Discharge from nares</p> <p>Warty growths on the bare skin of the face and legs</p> <p>White cheesy material in the mouth</p> | <p>Undetermined disease process</p> <p>Psittacosis</p> <p>Aspergillosis</p> <p>Poxvirus</p> <p>Gape worm and/or throat worm</p> <p>Trichomoniasis</p> | <ul style="list-style-type: none"> • Assessment by a veterinarian is required to determine if there is a disease present. The veterinarian will prescribe treatment if indicated. • Euthanasia may be required for the welfare of the animal. • Wild population health should be a consideration when determining the animal as a candidate for rehabilitation. • Shelter biosecurity practices should also be considered if treatment is indicated. • Carers should consider the risks of zoonotic disease and act accordingly, refer to Part A, Chapter 4 Biosecurity & Hygiene. • Psittacosis – euthanasia is usually indicated due to the human health risk. • Aspergillosis – Aspergillosis is caused by an environmental fungus that is present in all indoor and outdoor environments as part of normal microbiological ecosystems. Birds become infected by inhaling fungal spores. Stress secondary to captivity, trauma, parasites or malnutrition makes disease more likely. Once clinical signs develop treatment is rarely successful. • Poxvirus – Common in magpies, magpie larks and currawongs. Treatment as prescribed by a veterinarian. Keep birds in an insect screened enclosure or inside a building to avoid transmission by mosquitoes to other birds. • Gape worm and/or throat worm – Common in magpies. Birds become infected by ingesting the invertebrate intermediate host. Both can be treated with parasiticides. Consult a veterinarian. • Trichomoniasis – A protozoan disease commonly seen in pigeons but has been diagnosed in other species as well. Seek veterinary attention for diagnosis and possible treatment. Give medication as prescribed. Following treatment, recheck the mouth of birds at an interval determined by the attending veterinarian. Crop feeding may be required if the bird cannot feed itself. |

| Injury or clinical signs | Possible causes | Carer observations and response |
|---|--|--|
| <p>Missing, abnormal and/or broken feathers particularly on the head</p> <p>Overgrown and/or fractured beak</p> <p>Lack of powder down in cockatoos</p> <p>Abnormally coloured feathers</p> | <p>Psittacine beak and feather disease (Pbfd)</p> | <ul style="list-style-type: none"> • Caused by a virus. • The disease is progressive and there is no treatment. • Affected birds are euthanized. • Anything coming in contact with the infected bird should ideally be discarded, or disinfected. Refer to Part A, Chapter 4 Biosecurity & Hygiene. |
| <p>Damaged feathers</p> <p>Increased grooming behaviour</p> <p>Warty growths on the bare skin of the face and legs</p> | <p>External parasites – mites, flat flies and lice</p> | <ul style="list-style-type: none"> • Assessment by a veterinarian is required to determine if there is a disease present. The veterinarian will prescribe treatment if indicated. • Wild population health should be a consideration when determining the animal as a candidate for rehabilitation. • Shelter biosecurity practices should also be considered if treatment is indicated. • Feather mites are found in the vane of the feathers. • <i>Cnemidocoptes</i> is the scaly leg or scaly face mite and causes similar lesions to poxvirus infections. It is commonly seen in currawongs, parrots and lyrebirds. • Lice will crawl onto human skin when the bird is handled but will not survive. |
| <p>Diarrhoea</p> | <p>Bacteria, viruses, protozoa, internal parasites</p> | <ul style="list-style-type: none"> • Assessment by a veterinarian is required to determine if there is a disease present. The veterinarian will prescribe treatment if indicated. • Submit a fresh faecal sample to a veterinarian for diagnosis. • Give medication as directed. • Bacteria such as <i>Salmonella</i> will also cause diarrhoea in people. Wash hands with soap and water after handling birds. • <i>Spironucleus</i> is a protozoan commonly seen in juvenile king parrots and galahs in autumn and winter. Affected birds are frequently emaciated. Prognosis is poor. • Assist feeding using crop tubes may be indicated until the bird is eating by itself. • Ensure a high level of hygiene and remove all faeces every 24 hours to break the life cycle of the parasites. |

| Injury or clinical signs | Possible causes | Carer observations and response |
|---|----------------------------------|---|
| <p>Unable to fly and/or stand</p> <p>Soft rubbery bones and/or beak</p> <p>Multiple fractures with no obvious signs of trauma</p> | Metabolic bone disease (rickets) | <ul style="list-style-type: none"> Assessment by a veterinarian is required to determine if there is a disease present. The veterinarian will prescribe treatment if indicated. Common in young carnivorous birds such as kookaburras, currawongs and magpies that have been fed a boneless meat diet such as mince or chicken hearts. Immediately correct the diet. See Table 1.8. Provide access to natural sunshine for at least an hour each day. Give oral calcium as prescribed. Severely affected birds will need to be euthanised. |

Figure 1.10 A tawny frogmouth with head trauma. Note the presence of blood in the bird's left eye.



Photo credit: Anne Fowler

Figure 1.11 Various manifestations of PBF. D.

a. A sulphur-crested cockatoo with an overly long beak and feather loss on the head. b. The rump feathers of a sulphur-crested cockatoo showing pinched and bleeding dander feather follicles (arrow). c. A rainbow lorikeet with a loss of primary wing feathers and tail feathers. d. an Australian king parrot with abnormal yellow feathers amongst the normal green feathers. Note the loss of tail feathers.

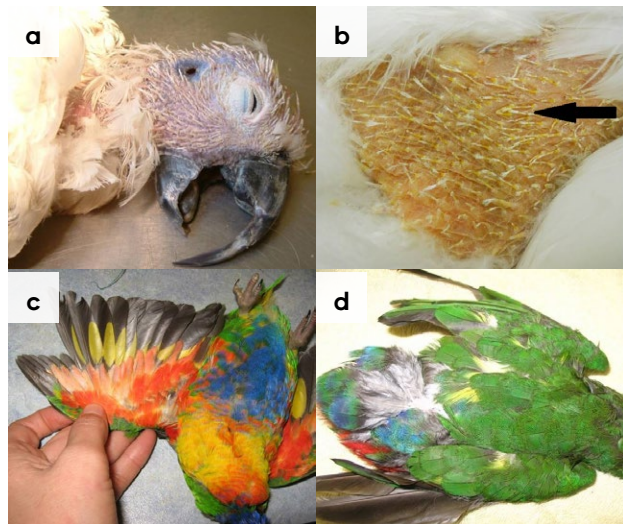


Photo credit: Anne Fowler

Figure 1.12 a. Gapeworm protruding from the larynx of a magpie (arrow). b. Throat worm nodules in the mouth of a magpie (arrow).

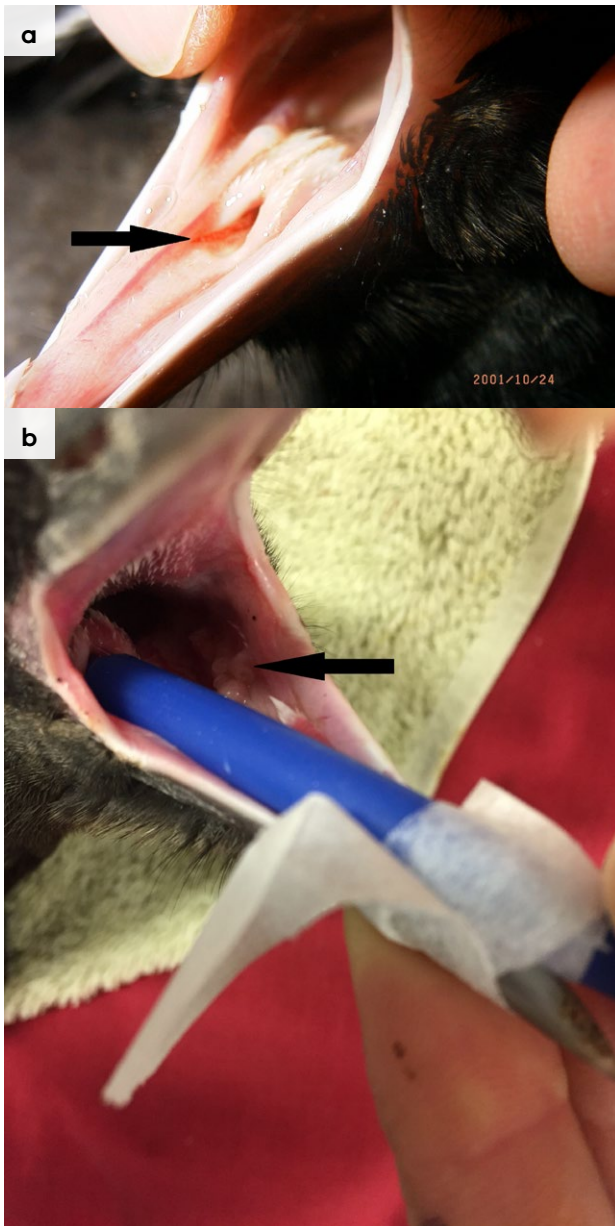


Photo credit: Zoos Victoria

Figure 1.13 a. Severe pox lesion on the 3rd toe of a juvenile magpie. b. Severe pox lesion on the foot of a juvenile magpie.

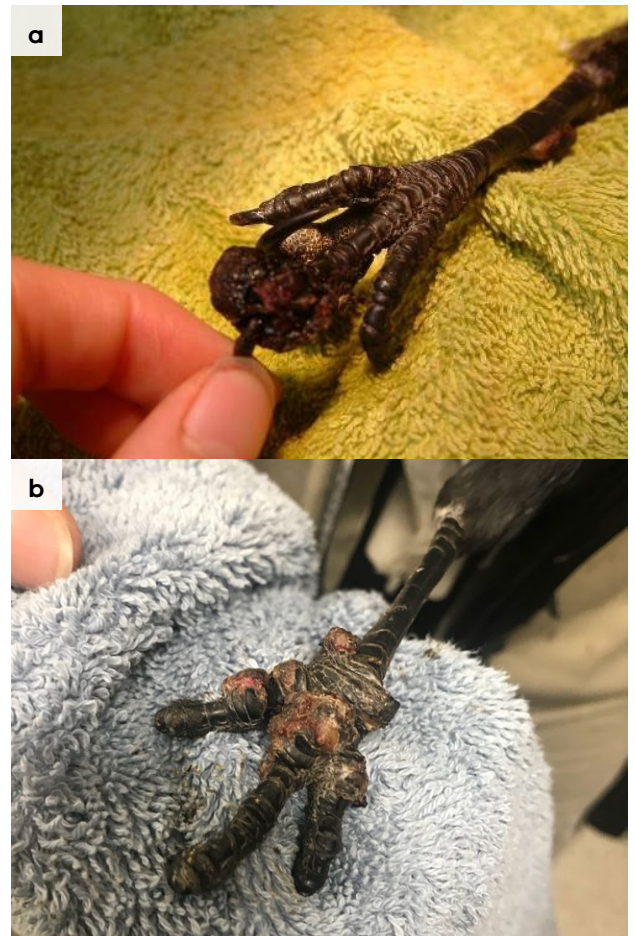


Photo credit: Anne Fowler and Jenny Steele

Figure 1.14 A magpie with a soft, rubbery beak, caused by metabolic bone disease.



Photo credit: Zoos Victoria

1.5.4. Administering treatment during rehabilitation

- Oral medication can be placed in a food item for carnivorous birds, such as kookaburras and ravens. If the bird does not eat the item, it may need to be force fed or dosed directly orally.
- Oral medication can be delivered into the mouth via syringe or directly into the crop using a crop needle. Only experienced carers that have been trained in the technique should use a crop needle as it is possible to inadvertently deliver the medication into the trachea or damage or rupture the crop.
- If giving medication into the mouth, ensure that the bird swallows the dose and does not aspirate the medication.
- Most medications can be delivered orally. In the rare instance where a veterinarian has prescribed an injectable drug, the drug should be injected either side of the keel, into the pectoral muscles.

1.6 Housing

Below are several key considerations when housing adult birds in care. Other parameters that can be just as important as enclosure size include availability of sunlight, wind protection, sunshade and type of perches. The dimensions recommended in this chapter are suggestions based on Healesville Sanctuary aviary sizes. There is no 'one size fits all' rule and it is important to continually assess the welfare of the bird and tailor aviaries and aviary size to suit the requirements of the bird.

1.6.1. General housing information for birds

- Birds should be housed out of sight, sound or smell of domestic animals as these are common predators. Change out of clothes that have been worn around dogs or cats to minimise exposure to pet scent.
- Throughout rehabilitation, depending on the injury, birds should be housed individually in intensive care holding and progress to intermediate and pre-release enclosures. It is important to support the progression of rehabilitation to release through changes to enclosure as fitness increases.

1.6.2. 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 before and after handling birds, and between animals in care, to minimise the spread of disease.
- Ideally examination gloves should be worn and changed between each animal.
- Left-over food and faecal matter and casts should be removed daily from enclosures.
- When an animal vacates an enclosure, it must be cleaned and disinfected. 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 disinfected with products such as F10 SC or bleach at the recommended concentrations and contact times. If Psittacine Beak and Feather Disease Virus (PBFDV) is diagnosed, Virkon S must be used to kill the virus, at the recommended concentration and contact time. Virkon S and bleach must be rinsed off following the appropriate disinfection times.

1.6.3. Housing types

Different set ups are required for animals at different stages of treatment and care. **Table 1.6** describes the housing type, suggested dimensions and requirements at each stage of care. For information on housing birds during hand raising see **Section 1.8**.

Table 1.6 Rehabilitation housing for adult birds

| Intensive care housing | | | |
|---|---|--|---|
| Indications for use | Suggested min. dimensions | Suggested requirements | |
| Sick and injured birds should be placed initially in intensive care housing. Housing must be large enough for a bird to stand up, turn around and spread its wings. | Finches | Floor area: 0.3x 0.3 m (0.09 m ²) H: 0.4 m | <p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> Human humidicrib, veterinary incubator (Rcom, Vetario, Kimani), cat or dog carrier cage or melamine hot box. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> Newspaper, thin cotton sheets or towelling can be used as flooring. Birds that are unable to stand can be supported by rolling a towel into a U-shape or donut and placing it around the bird. Alternatively the bird can be placed in a food bowl lined with a towel or paper. A low natural horizontal branch/perch can be used for perching birds that is approximately 2/3 of the circumference of their feet when clasping a branch. Perching made of dowel or smooth surfaces should be avoided. In the beginning, when the bird is still very weak, the perch does not need to be high but should allow the bird to perch on the floor/ground with its tail feathers clearing the floor/ground to avoid feather damage. When the patient is more stable, the perch must be high enough that the tail feathers will not become contaminated with faeces. The cage may be covered with a towel or sheet to provide privacy. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> Ideal temperature for sick and injured adult birds is 28°C. The temperature should be monitored with a thermometer. If necessary, provide heat with a ceramic or incandescent light suspended from above the bird at one end of the enclosure. Heat could also be supplied with a heat pad below or beside the bird. It is important to clean and disinfect with F10SC or Virkon S between birds. The bird should be able to experience normal daylight patterns, even if housed inside (e.g. indoor lights go on at dawn and off at dusk). |
| | Neophemas, lorikeets (except rainbow) | Floor area: 0.4 x 0.4 m (0.16 m ²) H: 0.3 m | |
| | Rosellas, cockatiels, rainbow lorikeets, bronzewing pigeons | Floor area: 0.4 x 0.4 m (0.16 m ²) H: 0.3 m | |
| | King parrots, kookaburras, galahs, corellas | Floor area: 0.5 x 0.5 m (0.25 m ²) H: 0.5 m | |
| | Sulphur-crested cockatoos | Floor area: 0.5 x 0.5 m (0.25 m ²) H: 0.5 m | |

Intensive care housing

| Indications for use | Suggested min. dimensions | | Suggested requirements |
|--|----------------------------------|---|---|
| <p>Sick and injured birds should be placed initially in intensive care housing. Housing must be large enough for a bird to stand up, turn around and spread its wings.</p> | <p>Sulphur-crested cockatoos</p> | <p>Floor area: 0.5 x 0.5 m (0.25 m²) H: 0.5 m</p> | <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> • A shallow water bowl is provided for drinking water and to provide humidity. • Food and water bowls should be readily accessible to birds unable to move around the enclosure. • Bowls must not be placed under perches or where the bowls may be contaminated with faeces. |

Intermediate housing (treatment/cage rest)

| Indications for use | Suggested min. dimensions | | Suggested requirements |
|--|---|--|---|
| <p>This type of housing is used for birds that no longer require heating but still need to be confined post-surgery or to facilitate the delivery of medication.</p> | Finches | Floor area: 0.5 x 0.5 m (0.25 m ²) H: 0.5 m | <p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> • Dog carrier cage or powder-coated bird cage large enough that the bird can move around, but not so large as to permit flight. • Adult birds are housed individually. • Parrots can destroy thin wire and wooden cages. • Galvanised wire is not recommended due to the risk of heavy metal poisoning if the bird chews the wire. <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> • Newspaper can be used as flooring. • If the bird is able to perch, wire floors are suitable. • Use perches made from natural wood where the bird's foot covers 2/3 of the perch circumference. • If the perch is too wide the sole will develop excessive wear. • If the perch is too narrow the nails may puncture the pad. • Place the perch perpendicular to the cage door. • Birds perceive a frontal approach as typical of predators. • A side-to-side approach is less stressful. • The inside of the cage should be lined with shade-cloth to prevent damage to feathers. • Towels placed over the cage will provide privacy. • Native branches with leaves placed inside the cage at the front will give a sense of security and provide the opportunity for foraging. <p>ENVIRONMENTAL VARIABLES</p> <ul style="list-style-type: none"> • It is important to clean and disinfect with F10SC or Virkon S between birds. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> • Food bowls should be shallow with a diameter at least one to two times beak length. • Birds imprint onto coloured bowls. Clear glass or natural colours are preferable. |
| | Neophemas, lorikeets (except rainbow) | Floor area: 0.5 x 0.6 m (0.30 m ²) H: 0.6 m | |
| | Rosellas, cockatiels, rainbow lorikeets, bronzewing pigeons | Floor area: 0.5 x 0.6 m (0.30 m ²) H: 0.6 m | |
| | King parrots, kookaburras, galahs, corellas | Floor area: 0.5 x 0.6 m (0.30 m ²) H: 0.6 m | |
| | Sulphur-crested cockatoos | 0.5 x 0.6 m (0.30 m ²) H: 0.6 m | |

| Pre-release | | |
|--|--|--|
| Indications for use | Suggested min. dimensions | Suggested requirements |
| <p>A pre-release aviary needs to be large enough for the bird to regain flight fitness and become acclimatised to the weather. The bird needs to be able to flap its wings at least ten times before the end of the flight. For example, an aviary 2 m long is the minimum for a bird weighing up to 300 g. Aviary width should be at least twice the width of the bird's extended wingspan.</p> | <p>Finches</p> | <p>Floor area: 3 x 2 m (6 m²)</p> <p>H: 2 m</p> <p>Increased floor area per additional bird: 3 m²</p> <p>ENCLOSURE CONSTRUCTION</p> <ul style="list-style-type: none"> • A double door, or aviary with an airlock, is useful to prevent accidental escapes. • Under floor wire and solid sides are required to stop vermin and predators. • At least one third of the aviary should be covered and at least three quarters of the area of one wall should be open weave mesh. This provides the bird with protection from the weather and access to natural sunlight. • Galvanised wire is not recommended due to the potential for heavy metal poisoning. • If there is no alternative, ensure the galvanised wire has been outdoors for at least 6 months and, after assembling the aviary, sprinkle it with vinegar and brush with a metal brush. • A false roof made of bird netting can be placed 20–30 cm below the roof of the aviary. This may prevent head trauma if birds are startled and fly upwards. |
| | <p>Neophemas, lorikeets (except rainbow)</p> | <p>Floor area: 4 x 2 m (8 m²)</p> <p>H: 2 m</p> <p>Increased floor area per additional bird: 4 m²</p> <p>ENCLOSURE FURNISHING</p> <ul style="list-style-type: none"> • A concrete floor is ideal for perching species, as it is easy to clean. • This can be covered with a layer of leaf mulch for ground dwelling species to avoid foot damage. This is replaced each time a new bird enters the aviary. • Provide perches of varying diameter. • Pots of shrubs can be moved in or out, depending upon species housed in the aviary. Parrots will chew shrubs. |
| | <p>Rosellas, cockatiels, rainbow lorikeets, bronzewing pigeons</p> | <p>Floor area: 4 x 3 m (12 m²)</p> <p>H: 3 m</p> <p>Increased floor area per additional bird: 6 m²</p> <ul style="list-style-type: none"> • Pots of seeding grasses can be used to encourage natural feeding for appropriate species. • Branches with leaves can be used to provide the bird with a place to hide. • A bowl of water of a sufficient size for bathing can be placed in the aviary and changed daily. • Native vines can be trained over the aviary to provide screening. |

| Pre-release | | | |
|--|--|---|--|
| Indications for use | Suggested min. dimensions | | Suggested requirements |
| <p>A pre-release aviary needs to be large enough for the bird to regain flight fitness and become acclimatised to the weather. The bird needs to be able to flap its wings at least ten times before the end of the flight. For example, an aviary 2 m long is the minimum for a bird weighing up to 300 g. Aviary width should be at least twice the width of the bird's extended wingspan.</p> | <p>King parrots, kookaburras, galahs, corellas</p> | <p>Floor area: 5 x 3 m (15 m²) H: 3 m Increased floor area per additional bird: 7.5 m²</p> | <p>SPECIES</p> <ul style="list-style-type: none"> Birds are housed individually but flock birds can be housed with others of the same species if they originate from the same area, to reduce the risk of disease transmission. Do not house predator (e.g. currawongs, kookaburras, magpies) and prey species in the same enclosure and avoid visual contact, even if in different aviaries. <p>PROVISION OF FOOD/WATER</p> <ul style="list-style-type: none"> Food items may be scattered in the mulch or placed on spiky short branches or perches. Provide multiple feeding stations and perches for each bird in the aviary. |
| | <p>Sulphur-crested cockatoos</p> | <p>Floor area: 5 x 5 m (25 m²) H: 3 m Increased floor area per additional bird: 12.5 m²</p> | |

Figure 1.15 A veterinary incubator used as intensive care housing for a magpie.

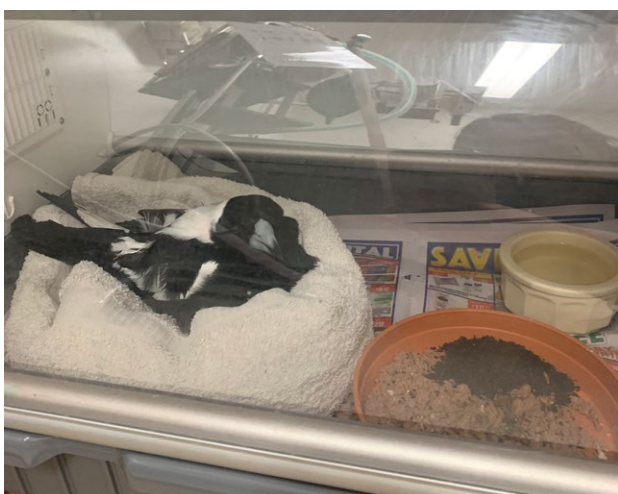


Photo credit: Zoos Victoria

Figure 1.16 a. A pre-release aviary suitable for large insectivorous birds, such as lyrebirds. Note the mulch floor for foraging and provision of branches for hides and perches. **b.** A pre-release aviary suitable for medium sized birds, such as parrots, magpies or kookaburras. Note the concrete floor for easy cleaning.



Photo credit: Zoos Victoria

1.7 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.

Diets for a range of bird species are listed in **Table 1.7** and **Table 1.8**. Birds should be weighed weekly unless there are concerns about food consumption, in which case birds should be weighed daily.

Table 1.7 Captive diets for parrots, nectarivorous birds and insectivorous birds

| Species | Captive diet fed daily | Species | Captive diet fed daily |
|------------------------|--|----------------------------|--|
| Crimson rosella | 15 g parrot pellets/small seed 20 g sprouted seed (recipe in Table 1.9) 20 g fruit/vegetables ¹ 30 g greens, grasses ² 5 g insects | Long-billed corella | 40 g parrot pellets/medium seed 20 g sprouted seed 10 g nuts 30 g fruit/vegetables 5 g mealworms, moths |
| Eastern rosella | 15 g parrot pellets/small seed 20 g sprouted seed 20 g fruit/vegetables 30 g greens, grasses 5 g insects | Red wattlebird | 35 ml lorikeet and honeyeater food ⁴ 3–5 flowering branches ³ 20 g crickets, mealworms 30 g fruit/vegetables Native insects on branches ⁵ |
| Galah | 25 g parrot pellets/small seed 20 g sprouted seed 3–5 seeding grasses 3 tree branches ³ 10 g mealworms, moths | Noisy miner | 25 ml lorikeet and honeyeater food 30 g fruit/vegetables 10 g small seeds 20 g cricket, mealworms |

| Species | Captive diet fed daily |
|---------------------------------|--|
| Sulphur-crested cockatoo | 40 g parrot pellets/medium seed 20 g sprouted seed 10 g nuts 3–5 seeding grasses 5 tree branches 40 g fruit/vegetables 5 g mealworms |
| Magpie lark | 20 g crickets, fly pupae, mealworms, earthworms 40 g egg or meat and insectivore mix |

| Species | Captive diet fed daily |
|-------------------------|--|
| Rainbow lorikeet | 40 ml lorikeet and honeyeater mix 30 g fruit/vegetables 2 g mealworms 3 flowers (1 gum, 1 <i>Callistemon</i> , 1 other) |
| Superb lyrebird | 500 g earthworms 10 g fly pupae, mealworms, maggots 150 g egg or meat and insectivore mix |

- 1 Fruits include chopped melons, grapes, berries, banana, pears and occasionally apple. Vegetables include sweet potato, peas, beans, corn, carrot, zucchini and capsicum.
- 2 Select grasses from areas that have not been sprayed with herbicides. Rinse all items well before offering them. Green food suitable for parrots and pigeons includes sow thistle, millet, winter grass, chick weed, silver beet, spinach, Chinese vegetables, endive, dark green lettuces and dandelion.
- 3 Branches with flowers or fruits from species such as *Banksia*, *Hakea*, *Casuarina* and wattles for parrots and *Grevillea*, *Callistemon*, *Melaleuca* and *Eucalyptus* for nectarivorous birds. Place in water to maintain freshness.
- 4 Commercially available lorikeet and honeyeater mix. Home-made nectar mixes should not be used. Commercial wet mixes are preferable to dry forms. If the ambient temperature is more than 25°C the nectar offered in the morning should be removed and replaced with fresh nectar in the middle of the day to avoid bacterial overgrowth. If this is not possible an alternative is to offer nectar in the morning then remove and replace in the afternoon, ensuring that there are alternative food items available during the day when nectar is not available.
- 5 Insects including crickets, mealworms, moths and fly pupae must make up 30–50 per cent of the diet for honeyeaters.

Figure 1.17 A wide, shallow food bowl with greens, soaked seed and chopped fruit and vegetables for a parrot.



Photo credit: Zoos Victoria

Figure 1.18 a. A bowl of feed suitable for honeyeaters. **b.** Suitable feed for finches.

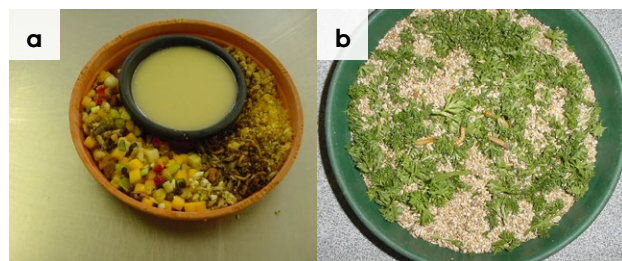


Photo credit: Zoos Victoria

Table 1.8 Captive diets for omnivorous birds and native pigeons

| Common name | Daily captive diet | Common name | Daily captive diet |
|----------------------------|---|--------------------------|---|
| Laughing kookaburra | 30 g thawed frozen mice or thawed frozen day-old chicks 50 g crickets, mealworms, earthworms | Pied currawong | 30 g thawed frozen mice 50 g crickets, mealworms, earthworms 50 g fruit and veg 10 g small seeds 100 g meat mix |
| Tawny frogmouth | 40 g thawed frozen mice 50 g crickets, mealworms | Grey butcherbird | 40 g egg or meat and insectivore mix 10–20 g crickets, mealworms, earthworms |
| Australian raven | 30 g thawed frozen mice, or 1-day old chicks 50 g crickets, mealworms, earthworms 50 g chopped vegetables coated with insectivore mix | Crested pigeon | 100 g seed* 50 g sprouted seed 3 seeding grasses 50 g fruit/vegetables 2 g mealworms |
| Australian magpie | 30 g chopped mice 50 g crickets, mealworms, earthworms 100 g meat mix | Common bronzewing | 100 g seed 50 g sprouted seed 100 g fruit/vegetables 3 seeding grasses 2 g mealworms |

* Pigeon seed (contains millet, panicum, cracked maize, wheat, dun peas and sorghum). It is important to include some legumes (for example peas) in the diet.

Table 1.9 Sprouted seed recipe

Note: it is important to follow this recipe carefully. Sprouted seed if not carefully managed may grow bacteria and make animals sick.

| | |
|-----------------------|---|
| Suitable seeds | Millet, panicum, canary, wheat, sunflower, barley, oats, mung beans. |
| Step 1 | Place required amount of seed into a container and cover with warm water. |
| Step 2 | Add an antibacterial agent such as chlorhexidine (Aviclen) at a rate of 5ml Aviclen to 10L water and soak overnight. |
| Step 3 | Rinse the soaked seeds with cold water. |
| Step 4 | Drain off the water and put the seeds in a tray. |
| Step 5 | Continue rinsing the seeds at 4–6-hour intervals until the tips of the roots appear. This usually takes 24 to 48 hours depending on temperature. |
| Step 6 | Give the seeds a final rinse before soaking them for 10 minutes in Aviclen. |
| Step 7 | Rinse and drain the seeds and they are ready for use. Sprouted seeds keep for up to two days in the refrigerator. If any mould is detected (black spots, grey filaments, mouldy odour), discard the whole batch and clean trays thoroughly with bleach (3 ml per litre of water). |

1.8 Hand raising

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

1.8.1. Equipment required for hand raising

- Hand raising utensils. See **Table 1.10**.
- Hand raising diet. See **Table 1.11**.
- Artificial nest in an intensive care unit or box containing a heat lamp/heat pad and thermometer. See **Table 1.13**.
- Tissues/wipes for cleaning the bird.
- Scales.
- Record charts.

1.8.2. Growth, development and care of orphaned young

Table 1.10 describes different techniques used to feed orphaned birds. **Table 1.11** lists a range of diets used to feed different bird groups. Feeding frequency and the ambient temperature required by birds at different stages of development are listed in **Table 1.12**.

Diets for growing birds need to provide adequate nutrients for normal growth. If unsure of the species, the bird should be fed as if it is an insectivore. An emergency diet for young birds is to mix Wombaroo Insectivore mix with a boiled egg. Young birds should be fed 15–20 per cent of their bodyweight in divided feeds daily.

Table 1.10 Methods of feeding orphaned birds

| | |
|----------------------------|--|
| Crop needle | Used for birds with crops (e.g. parrots, pigeons). A crop needle is attached to a syringe containing the food. It is passed down the oesophagus until it reaches the crop. Rehabilitators need to be trained in the use of a crop needle so that it is not inadvertently passed into the trachea or damages the delicate lining of the crop. This training can be provided by other experienced rehabilitators, aviculturists or veterinary staff. |
| Rubber feeding tube | Used for pigeons. It should never be used for parrots as they can bite through it. The tube is passed into the mouth and oesophagus until it reaches the crop or the bottom of the neck. Rehabilitators need to be trained in its use so that it is not inadvertently passed into the trachea. |
| Spoon feeding | Either via a purpose-built spoon feeder or a bent teaspoon. The food is placed onto the spoon and then placed at the opening of the beak. The bird should scoop food into its mouth using the top beak. It is likely to bob its head during feeding. |
| Tweezers | The food item is held in the tweezers. The side of the beak is tapped with the tweezers, which should stimulate the bird to open its mouth. The food is placed towards the back of the mouth. |
| Syringe feeding | Food is placed into the open beak using a syringe. This method carries a risk of the bird aspirating food material so is seldom recommended. |

Figure 1.19 Crop feeding a rainbow lorikeet with a crop needle and syringe.



Photo credit: Zoos Victoria

Table 1.11 Diets for orphaned young of various bird groups

| Type of bird | Example | Examples of diets to feed |
|-----------------------|--|--|
| Omnivorous birds | Laughing kookaburra, magpie | 10 g meat with 2 teaspoons Wombaroo Insectivore mix, pinkie mice, insects |
| Granivorous birds | Pigeons, galahs, rosellas, cockatoos | Wombaroo Granivore mix, Passwells handrearing mix or Vetafarm handrearing mix |
| Nectarivorous parrots | Rainbow lorikeet | Wombaroo Lorikeet/Honeyeater mix |
| Nectarivorous birds | Honeyeaters, red wattlebird | Equal parts Wombaroo Insectivore mix and Wombaroo Lorikeet/Honeyeater mixed into a paste |
| Insectivorous birds | Silvereye, wrens, swallows, magpie larks | 5 teaspoons Wombaroo Insectivore mix or 1 teaspoon Wombaroo Granivore mixed with mashed boiled egg and fed as a crumble, insects |

Table 1.12 Feeding frequency and ambient temperature requirements for young altricial* birds

| Type of bird | Example | Unfeathered (35°C) | Feathered (32°C) | Fledgling (28°C) |
|--|--------------------------------|----------------------------|------------------|------------------|
| Small insectivores and nectarivores | Swallows, silvereye | 15 minutes during daylight | 20 minutes | 30 minutes |
| Medium insectivores and nectarivores | Magpie lark Red wattlebird | 30 minutes | 1 hour | 6 hours |
| Large insectivores, omnivores and nectarivores | Kookaburra Rainbow lorikeet | 30 minutes | 6 hours | 6 hours |
| Granivores | Galah Pigeons Doves | 2 hours | 4 hours | 12 hours |

*Precocial birds are offered food continuously

It is important to weigh the chicks daily and record the amount of food fed. After feeding, the chicks should be cleaned around the mouth to avoid a build-up of excess food that can lead to skin disease.

Intensive care housing is also suitable for nestlings, which may be kept in nests in heated enclosures. See **Table 1.6** and **Table 1.3** and **Figure 1.20** and **Figure 1.21**. This will differ with the type of orphan and its stage of development.

Precocial birds, such as emus, must be housed with other juvenile birds of the same species to prevent imprinting. Their heating requirements are the same as altricial birds that are at a similar stage of development. They may be self-feeding and active from an early age. They should be moved to an outside aviary once they are feathered.

Altricial birds should be housed with other juveniles of the same species wherever possible. They are born naked and require heating via an incubator or other heated enclosure. When unfeathered, place these birds in a substitute nest. Once feathered they no longer require heat. Move to an aviary when fledging. Provide young birds a minimum of one hour of sunshine daily. See **Table 1.14** for the development stages of various bird species.

Table 1.13 Nest types suitable for orphans

| Species | Type of nest | Captive housing |
|---|---------------------------|--|
| Tawny frogmouth | Sparse, open, stick nests | Branches to perch on |
| Magpie, currawong, raven, red wattlebird | Formed, open stick nests | Plastic basket or tub, esky, cardboard box |
| Magpie lark | Formed, cup nests | Margarine or ice-cream container covered with a light cloth |
| Swallow | Enclosed mud nests | Cardboard box with hole |
| Eastern rosella, galah, sulphur-crested cockatoo, rainbow lorikeet, laughing kookaburra | Cavity | Cardboard box (shoebox, wine cask) with lid and small hole opening |

Figure 1.20 a. An ice-cream container used as a nest for a clutch of nestling rainbow lorikeets. b. A cat carry cage with a heat pad below the paper is used for rearing fledglings. The young birds are sitting in plastic food containers.

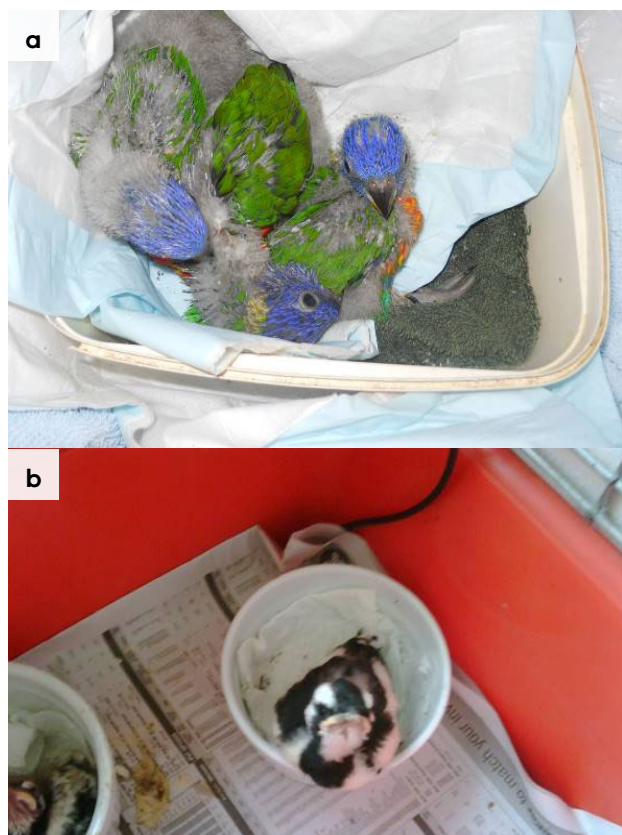


Photo credit: Anne Fowler

Figure 1.21 Juvenile magpie in a veterinary incubator.



Photo credit: Zoos Victoria

Table 1.14 Development stages for a range of bird species

| Common name | Eyes open | Age at fledging (weeks) | Age at release (weeks) | Release weight (g) |
|--------------------------|------------|-------------------------|------------------------|--------------------|
| Australian magpie | 7–10 days | 6–7 | 10–16 | 250–280 |
| Australian raven | By 12 days | 5 – 6 | 16 – 20 | 460–500 |
| Crested pigeon | 3 days | 2 | 4 | 150–180 |
| Crimson rosella | 4 days | 4–5 | 8 | 115–140 |
| Eastern rosella | 4 days | 5 | 8 | 85–110 |
| Galah | 15–18 days | 7 | 11–14 | 250–280 |
| Laughing kookaburra | 14 days | 5 | 12 | > 330 |
| Long-billed corella | 7 days | 6–8 | 8–11 | 380–410 |
| Magpie lark | 8 days | 3 | 7–10 | 55–90 |
| Noisy miner | 3–4 days | 2 | 4–7 | 45–60 |
| Pied currawong | 14 days | 4–5 | 11–12 | 250–280 |
| Rainbow lorikeet | 14 days | 7 | 8–9 | 75–100 |
| Red wattlebird | 7 days | 2–3 | 6 | 80–100 |
| Sulphur-crested cockatoo | 8 days | 10 | 16 | 580–600 |
| Tawny frogmouth | 10 days | 4 | 6–8 | 180–200 |

1.8.3. Imprinting

Imprinting is a common problem with hand-reared orphan birds. Some suggestions to prevent this include:

- Raising birds with other birds of the same species and a similar age. The maximum number of birds to group together should reflect normal clutches when young, for example up to six for rosella species and two to three for magpies.
- Raise young birds in the presence of older birds of the same species.
- Have the bird face a mirror while it is fed.
- Use hand puppets placed over the human hand during feeding of young birds.
- Avoid being affectionate or talking to birds and avoid any non-essential handling or physical contact.
- Avoid raising birds within sight or smell of domestic animals.
- Offer wild and native food from a young age so that the bird learns to feed itself and does not rely on humans for food.
- Once fledged, raise young birds outside so that they can see and hear other birds of the same species that are found in the local area.

Fostering involves non-related birds of the same species taking over the care of orphaned individuals. This has been shown to work well with white-winged choughs (within the first month of fledging), laughing kookaburras and magpies. As parents of the species provide not only food but education, every effort to foster an individual in the wild should be made when possible in preference to rearing in captivity. Once the adult birds have been shown to feed the young, fostering is deemed to be successful.

1.9 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.

1.9.1. Pre-release assessment

Pre-release assessment of animals in care is essential to support better 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 information should be used to guide decision-making regarding release suitability for birds:

- ☑ Individual is in a state of good health – presenting injury/sickness is completely resolved.
- ☑ For birds that have had fractured bones or head trauma, a pre-release examination by a veterinarian is recommended to determine that the original injury has healed. This may involve radiographs of the fracture site to determine the extent of healing.
- ☑ Flight should be critically observed, if possible, with an experienced rehabilitator. The ability to gain lift, negotiate the environment and land are required for successful release.
- ☑ The feathers and feet should be checked for damage sustained during care prior to release.
- ☑ Birds take 10–14 days without exercise to lose fitness. Whenever possible, they should be released before this time.
- ☑ Birds should be able to fly strongly upwards to avoid predation. A bird should be able to gain 2 m in height within 2–4 m in distance.
- ☑ The bird should be able to fly for 2–3 minutes or 10 laps of the pre-release aviary and should not be open-mouth breathing for longer than 30 seconds after the end of the process.

- ☑ The bird should be able to demonstrate agility in moving around the aviary by changing direction and avoiding branches and perches.
- ☑ The bird should be able to land well on a perch.
- ☑ Individual is within a healthy weight range and appropriate body condition (see **Table 1.1**).
- ☑ Individual displays ability to actively forage and consume natural foods.
- ☑ Individual displays appropriate predator avoidance behaviour and is not imprinted on people.

1.9.2. 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.

- Orphaned birds should be released when they reach their release age/weight as outlined in **Table 1.14**. Adult birds should be released as soon as possible.
- Diurnal birds should be released in the morning, after dawn and before midday.
- Nocturnal birds should be released 1–2 hours after dark.
- The time of release should consider the fact that birds need sufficient time to orient themselves in their territory. They need time to find a safe roost before their natural resting time.

- Although most birds are non-migratory in their lifestyles, some species may move large distances to follow food. The rehabilitator needs to be aware that holding a bird for a long period of time may preclude it from being able to access sufficient seasonal food. If this occurs the bird must be euthanised to prevent it from starving.
- Unless natural nesting sites have been destroyed, the provision of nest-boxes is not necessary.
- Avoid release of birds when the forecast is for strong winds or storms for the following three days.

1.9.3. Release checklist

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

Release of adults and orphaned birds that have reached their release age/weight

- ☑ Take the bird as close as possible to the point-of-encounter and open the cage door. Allow the bird to fly away.

Return juvenile bird with artificial nest

- ☑ In situations where the nest has been destroyed, a young bird can be returned to the location where it was found using an artificial nest.
- ☑ This must be done within 24–48 hours of the destruction of the original nest.
- ☑ The artificial nest may be as simple as a small plastic bucket, with holes in the bottom for drainage, suspended in the branches of a tree.
- ☑ A stick should be placed from the bottom to the top of the bucket, on an angle to allow the chick or parents to move in and out of the bucket easily.
- ☑ The young bird is fed and then placed in the nest.
- ☑ The nest is monitored to ensure that the parents return to the young bird.
- ☑ If the parents have not returned to feed the bird in 4–6 hours the young bird is returned to care.
- ☑ This may be repeated on the following day and is suitable for nestlings of any species.

Return juvenile bird without a nest

- ☑ This technique can be used for tawny frogmouths and magpies.
- ☑ Juvenile tawny frogmouths can be returned to the tree where the original nest was found.
- ☑ The adult should be identified to be close by before the young bird is left.
- ☑ Magpies leave their young in different trees within their territory once the young are partly feathered.
- ☑ Juvenile magpies are returned to the location where they were found in their parent's territory and placed into branches of a shrub or tree.
- ☑ The young are observed until the parent's return, which may take some hours, and should be seen to be fed by the parent before they are left.

1.10 Key references and additional reading

Cameron, M. 2007. Cockatoos. CSIRO Publishing, Clayton South.

Duer, R.S. and Gage, L.J. 2020. Hand-Rearing Birds, 2nd Edition. John Wiley & Sons Inc., Hoboken.

Handbook of Australian, New Zealand and Antarctic Birds. 1990 – 2006. 7 volumes. Oxford University Press, Oxford.

Kaplan, G. 2018. Tawny Frogmouth, 2nd Edition. CSIRO Publishing, Clayton South.

Kaplan, G. 2019. Australian Magpie: biology and behaviour of an unusual songbird, 2nd Edition. CSIRO Publishing, Clayton South.

Legge, S. 2004. Kookaburra: king of the bush. CSIRO Publishing, Clayton South.

Parsons, H. 2007. Caring for Australian native birds, 2nd Edition. Kangaroo Press, Pymble.

Readers' Digest: Complete Book of Australian birds. 2007. Reader's Digest, Sydney.

Simpson, K. and Day, N. 2019. Field guide to the birds of Australia, 8th Edition. Penguin Australia, Melbourne.