



Living with the
environment



Frogs



Frogs include some of our most interesting and best-loved creatures. Although some species are very common, some extremely vocal, and some particularly colourful and beautiful, most are not well known.

Frogs are vertebrates (animals with backbones) and belong to the Class Amphibia.

All Amphibians:

- *Have a three-chambered heart.*
- *Use the skin as a respiratory (breathing) surface to augment the function of their lungs.*
- *Spend part (or all) of their life as a larval stage living in freshwater.*

Amphibians include frogs, newts, salamanders, axolotls and caecilians.

Frogs are the only amphibians native to Australia.

Toads are frogs, but there are no true toads native to Australia. The Cane Toad is an introduced pest.

The frog family (Family Anura) is an ancient group. They may be found as fossils as old as 250 million years. This pre-dates the dinosaurs.

The region which includes South-East Queensland and North-East New South Wales has a greater variety of frog species (more than 50) than any other Australian region of similar size.

Front Cover image of *Eastern Sedgefrog* by Todd Burrows



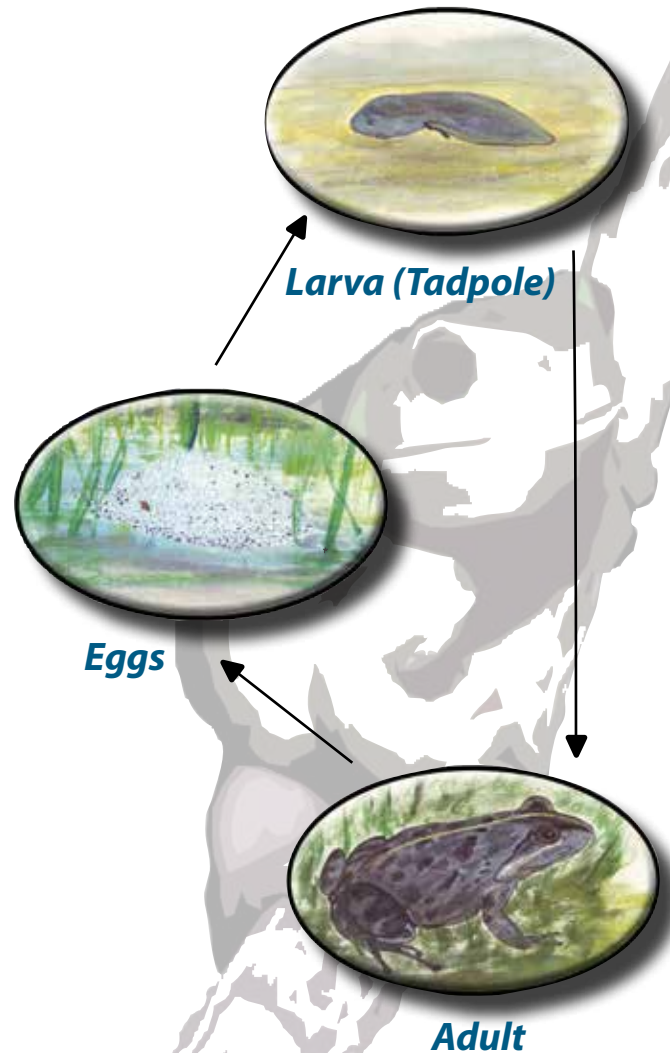
Some frogs have adapted to producing young without using water in streams, ponds or other water bodies.



A great many Australian frogs are adapted to breeding in ephemeral (short-lived) ponds, and swamps, lagoons and billabongs. Some breed in permanent ponds.

A few have adapted to produce young without using the water in streams, ponds or other water bodies (tadpoles of Gastric Brooding Frogs develop in the stomach of the female).

Typical Life Cycle of a Frog



Requirements of Frogs

Generally, frogs require:

1. SHELTER

- in daytime during breeding periods

This may be in hollows, cracks and crevices in rocks and logs, under leaf litter, in sand or gravel, or on the under-sides of shady leaves.

2. REFUGE

- during non-breeding times and during droughts

Some frogs burrow into leaf litter, soil or sand; others live in cracks, crevices and hollows in trees, logs and rocks.

3. FOOD

Many frogs eat insects, spiders and other small invertebrates. Large frogs may eat small lizards, mice or small birds. Some may eat other frogs. While they are young, tadpoles usually eat algae and other aquatic plant matter.

4. WATER FOR BREEDING

Most frog species have particular water requirements. Some tadpoles need shallow water, others deep water. Some prefer still water and some running water. Eggs may need to be attached to emergent or submerged plants. Eggs of some species float on the water in a kind of foam or froth. Acidity and temperature of water are important factors for some species.

There has to be sufficient water present long enough for tadpoles to complete their development.

Some frogs burrow into leaf litter, soil or sand. Others live in cracks, crevices and hollows in trees, logs and rocks.



Ornate Burrowing-frog



Most Australian frogs breed in temporary (ephemeral) ponds



In mowed open areas, water evaporates before frogs have developed

The way in which frogs lay their eggs varies with the different species and with the different genera.

Eggs may be laid singly or in small or larger groups.

They may be attached to floating or submerged vegetation. Some frogs (for example the broodfrogs) lay their eggs in nests above the water before flooding occurs. Others lay their eggs in a floating foam mass.



Photo: L. Appleby

Foam Egg Mass (froth)
of the *Striped Marshfrog*

Some specialised frogs have remarkable adaptations that decrease their dependence on water. For example, tadpoles of the Australian Marsupial Frog complete their tadpole stage in the hip pouches of the male.

5. MATES

Only male frogs call – to attract females. Females select those males that make the 'best' calls. The females are attracted to calls of only their own species. This ensures that frog species do not interbreed. Knowledge of the calls of frogs is an important tool for quick and accurate frog identification.



Great Barred-frogs
mating (amplexing)



Male Graceful
Treefrog calling

Frogs in Ecosystems

Frogs (except Cane Toads) are an essential part of Australia's natural environment. They help to control the populations of animals that they feed upon. Australian adult frogs eat only food that moves.

Frogs, in turn, become food for other predators. Animals that eat frogs include some snakes, goannas and some other lizards; freshwater turtles, egrets, bitterns, kookaburras, quolls, antechinuses and dingoes.

SOME PREDATORS OF FROGS



Great Egret



Torresian Crow



Purple Swamp Hen



Freshwater Snake
(Common Keelback)
eating a Cane Toad
The harmless Common Keelback snake is a predator of Cane Toads

The Future for Frogs

When land **development** occurs, frog habitat is usually lost – soaks, depressions, swamps, ponds, gullies and other small watercourses are levelled, drained or filled. Native vegetation is cleared, bushland leaf litter is lost, fallen logs are disposed of, and old trees with crevices and hollows are trimmed.



This was once a stream with frog habitat

When people move into new residential and industrial estates, the use of **exotic plants increases**. Extensive areas of **lawn** are established and the use of **chemicals** (fertilisers, insecticides, fungicides and herbicides, etc) increases. More **dogs and cats** arrive. **Cane Toads** are the frogs that benefit most from these changes. **We can help to ensure that during and after development, remaining natural habitats and corridors are not degraded:**

- When we live near frog habitat we should not complain about the calls of frogs during and after heavy rain – it only happens a few times a year; and what a joyous sound!
- The native reeds, rushes and grasses near streams, in low hollows and other wet areas should not be mowed to control 'vermin'. This displaces and kills bandicoots, fairy wrens, grass birds, rails, crakes, moorhens, lizards, snakes and other protected native animals and frogs.
- **Frog habitat may not be the major source of mosquitoes.** Often these mosquitoes are salt marsh varieties or ones that breed in plant pot saucers, leaves of bromeliads, old tyres or discarded containers. Leaf litter in roof gutters may cause water to collect and allow mosquitoes to breed.



Frogs need wetland areas like this, though some mosquitoes may also breed here

Attracting Frogs to our Gardens

Once suitable environments have been provided, frogs will arrive to take up residence in our gardens.

We should not bring frog eggs, tadpoles or adult frogs from elsewhere. This is against the law and it can spread frog diseases. Frogs do not normally travel large distances. Artificial movement of frogs by humans can disrupt the dynamics of breeding populations.

Striped Marshfrogs are usually the first frogs to breed in newly established ponds – they are the pioneer species able to tolerate conditions that are not suitable for other more-demanding frogs. Other kinds of frogs will begin to use the pond, as the environment becomes suited to them. **We should not take frogs from our own ponds to other places.**



Similarly, we should not take freshwater plants, soil, sand or pebbles from our own frog ponds to other people's frog ponds, or from their ponds to ours. This may also spread diseases of frogs.

Want to learn more about local native plants, natural ecosystems and our native wildlife, including frogs?

Join a Bushcare Group

Visit one of our Environment Centres

Volunteer at an Environment Centre

Join a conservation program such as Land for Wildlife

Call Council on 3205 0555 for more information.

10 practical steps to a frog friendly yard

- 1. Build a garden pond.** Permanent water is an essential element for attracting frogs to your garden.



Garden ponds can be made safe for children



Garden pond, with local native plants and micro-habitats for frogs

Photo: L. Appleby

- 2. Decrease the area under lawn.** Extensive lawns are heaven for Cane Toads.

Cane Toads love lawns, and find places nearby in which to hide



- 3. Construct rockeries** using boulders and river rocks, and provide **hilled areas of sand and gravel.** Boulders local to the area and partly buried, look more natural than rocks from elsewhere. Rockeries can be planted with small native plants such as heathland plants.



Planted rockeries with sand and gravel are great for frogs

- 4. Provide shelter and refuge** for a variety of frog species – river stones, gravel, sand, mulch and leaf litter, logs and hollows, and moist shady places with leafy local native plants.
- 5. Plant multi-layered habitats** of ground covers, shrubs and small trees.
- 6. Use local native plants.** There are suitable ones for every situation. Visit your local community nursery or call council for advice.

7. Destroy Cane Toads humanely, using stepped hypothermia (chilling followed by freezing). See page 26 for more information. Remember, young Cane Toads can be confused with some small, toad-like native frogs.



Underside of a young Cane Toad



Underside of a young Copper-backed Broodfrog

Ensure the animal is correctly identified (p 28 and 29). Young Cane Toads (left) can be confused with native frogs such as the Copper-backed Broodfrog (right)

8. Destroy Cane Toad Tadpoles (by scooping them out with a small net). Cane Toad tadpoles are small, dark and glossy, and gather in closely-packed groups in shallow water.

9. Destroy Cane Toad Egg Masses (by scooping them out of the water by using a net or forked stick). Cane Toad egg masses are long, slimy grey strings with many black dots (eggs).

10. DO NOT USE ANY CHEMICALS in the garden. Up to eighty percent of fertiliser (and other chemicals) added to farms and gardens, ends up in streams.

Pesticides kill birds, frogs, skinks and predatory insects that protect our plants. If a plant is not doing well, let it die or replace it. It is natural for leaves of plants to be chewed and eaten. Chewed leaves may mean we have butterflies. All these chemicals cause problems for frogs; and we do not need to use them.



A FEW FROG-FRIENDLY PLANTS FOR AROUND PONDS

COMMON NAME	SCIENTIFIC NAME	COMMENTS
River Lily	<i>Crinum pedunculatum</i>	Hardy, sun or shade; strap-like leaves; to 1m
Brisbane Lily	<i>Proiphys cunninghamii</i>	Hardy, part sun to shade; wide leaves; to 60cm
Mat Rushes	<i>Lomandra longifolia</i> & <i>Lomandra hystrix</i>	Hardy, sun to shade; long thin leaves; to 1m
Native Ginger	<i>Alpinia caerulea</i>	Hardy, part sun to shade; wide leaves; to 1.5m
Native Lasiandra / Blue Tongue	<i>Melastoma malabathricum</i>	Hardy, sun to part shade; pink flowers; to 1.5m
Bird's Nest Fern	<i>Asplenium australasicum</i>	Hardy, part sun to shade; wide leaves; to 1.5m wide & 60cm high

A FEW FROG-FRIENDLY PLANTS FOR IN PONDS

COMMON NAME	SCIENTIFIC NAME	COMMENTS
Swamp Lily	<i>Ottelia ovalifolia</i>	Oval leaves; cream flowers with dark bases
Water Snowflake	<i>Nymphoides indica</i>	Round leaves; white flowers with yellow centres
Wavy Marshwort	<i>Nymphoides crenata</i>	Round leaves & yellow flowers
Marsh Flower	<i>Liparophyllum exaltatum</i>	Emergent; oval erect leaves; yellow flowers
Frogsmouth	<i>Philydrum lanuginosum</i>	Emergent; erect leaves; yellow flowers

Our Local Frogs

Green-thighed Frog (*Litoria brevipalmata*)

Rich chocolate colour; dark band from snout becoming wider towards flank; green to blue in groin and behind thighs. Patchy distribution – Gympie to Sydney. First confirmed sighting in the region – 1999.

Call: A repeated series of 'quacks' that begin slowly and increase in tempo.

Length: To 40mm.

Tadpoles: Entirely brown, with high tail fins.



Green-thighed Frog
a frog rarely seen in the region

Green Treefrog (*Litoria caerulea*)

Light to dark green; white underparts; dark eyes.

Call: A deep repeated 'croak' – the only local frog that croaks.

Length: To 100mm.

Tadpoles: Dark green/grey-green and become very large.



Green Treefrog
our best-known frog

Southern Orange-eyed Treefrog

(*Litoria chloris*)

Green above, white to yellow under; reddish-orange eyes. Green lips distinguish it from the Graceful Treefrog (p 17).

Call: A series of rising, wailing 'arks', followed by trills.

Length: To 65mm.

Tadpoles: Dark and large.



Southern Orange-eyed Treefrog

Cooloola Sedgefrog (*Litoria cooloolensis*)

Not yet discovered in our region, but has been found on coastal sand islands where perched lakes occur. A small, slender, green frog with spotted body; cream underparts; back of thighs purplish brown; associated with wallum habitat, lowland rainforest and sandy lakes; calls from vegetation in or near water.

Call: A series of highly pitched "reek...pip pips".

Length: To 25mm.

Tadpoles: Dark tailed with pale body.



Cooloola Sedgefrog
a rare species

Wallum Rocketfrog (*Litoria freycineti*)

A pale grey-brown frog with large raised bumps over head, back and legs; pointy snout; dark, broken stripe from nose tip, through eye area to arm; darker brown irregular blotches over body; an 'acid frog' - occurs in lowland sandy swamps in wallum habitat, eg, Bribie Island.

Call: A fast and accelerating quacking.

Length: To 50mm.

Tadpoles: Medium sized grey-brown with a copper sheen.



Wallum Rocketfrog

Bleating Treefrog (*Litoria dentata*)

Overall brownish with a three-lobed darker patch down middle of back.

Call: Repeated long high-pitched quivering 'eeeeeeat' – eardrum-shattering up close.

Length: To 45mm.

Tadpoles: Entirely brown.



Bleating Treefrog

Graceful Treefrog (*Litoria gracilentia*)

Bright-green upper surface; yellow underparts; orange eyes and yellow lips.

Call: Drawn-out, rising snore-like 'aaaaaaah'.

Length: To 45mm.

Tadpoles: Dark, fairly uniform and tinged yellowish.



Graceful Treefrog

Eastern Sedgefrog (*Litoria fallax*)

Small size; overall green to pale-brown; black stripe from the nostril through eye, and white stripe from jaw to shoulder.

Call: 'Tweek-up' followed by short 'kips'.

Length: To 25mm.

Tadpoles: Pale or very patterned body, dark tail.



Eastern Sedgefrog

Broad-palmed Rocketfrog (*Litoria latopal mata*)

Streamlined; pointed nose; long back legs. Upper parts grey to dark brown (without the lengthwise skin-folds or stripes of the Striped Rocketfrog); back of thighs yellow with darker markings.

Call: Series of 'quacks' becoming faster and unequally spaced.

Length: Female to 45mm, males to 35mm.

Tadpoles: Dark brown; high tail fins; to medium size.



Broad-palmed Rocketfrog

Stony-creek Frog (*Litoria wilcoxii*)

Light grey to brown (male lemon-yellow when breeding); under surface white; thin dark line from nostril to arm; groin yellow with black patches.

Call: Soft whirring heard only up close.

Length: Female to 70mm; males to 45mm.

Tadpoles: Dark; low tail fins.



Stony-creek Frog - male non-breeding colours

Cascade Treefrog (*Litoria pearsoniana*)

Green to brownish; gold stripe from nose through eye; groin and back of thighs dull red.

Call: Rising quivering drawn-out 'eeeeek', then 'chik, chik'.

Length: To 40mm.

Tadpoles: Dark; high tail fins; small.



Cascade Treefrog

Striped Rocketfrog (*Litoria nasuta*)

Very streamlined; pointed nose; long back legs. Light grey to dark brown; longitudinal stripes and skin-folds down middle of back; dark stripe from nostril to behind ear disk with pale narrow rim; back of thigh yellow with black stripes.

Call: High pitched intermittent 'chirps' becoming more frequent and followed by evenly-spaced 'quacks', and then slow 'chirps'.

Length: Females to 50mm, males to 40mm.

Tadpoles: Dark brown; high tail fins; to medium size.



Striped Rocketfrog

Emerald-spotted Treefrog (*Litoria peronii*)

Light grey to brown; rough skin; dark mottling and iridescent green spots on back; under surface yellowish with dark specks on throat; groin yellow with black mottling; eye pupil with cross.

Call: Loud stuttering or rattling wail.

Length: To 65mm.

Tadpoles: Bright green; arched tail fins; large jaws.



Emerald-spotted Treefrog

Wallum Sedgefrog (*Litoria olongburensis*)

Small, bright green to light brown frog; pointy snout; dark stripe from nostril to flank, and below this, a cream stripe from eye to flank; brown speckled throat; cream underparts; an 'acid frog' - occurs in lowland sandy swamps in wallum habitat, eg, Bribie Island.

Call: A "creek...crik".

Length: To 25mm.

Tadpoles: Small, dark purple-brown with mottling.



Wallum Sedgefrog

Naked Treefrog (*Litoria rubella*)

Colour varies – white, grey, pink, or fleshy brown.

Call: Loud 'creeeek' rising slightly in pitch, repeated regularly.

Length: To 40mm.

Tadpoles: Entirely brown.



Naked Treefrog

Laughing Treefrog (*Litoria tyleri*)

Off-white to brown; skin rough; few iridescent green spots on back; yellowish white underneath; groin and back of thighs yellow with dark mottling.

Call: Several 'acks' falling in pitch.

Length: To 60mm.

Tadpoles: Bright green; arched tail fins; large jaws. Often rests at 45° in the water.



Laughing Treefrog

Australian Marsupial Frog (*Assa darlingtoni*)

Grey to pinkish brown. An inverted V-marking between the eyes and one on the middle of the back; dark wide stripe on sides; white beneath; throat with brown mottling. Male with a pouch with slit openings on each hip where tadpoles live.

Call: Series of high-pitched 'chits'.

Length: To 25mm.

Tadpoles: White; without tail fins. After hatching, are carried in hip-pouches of male.



Australian Marsupial Frog

Green-striped Frog (*Cyclorana alboguttata*)

Not yet discovered in our region, but occurs close by and may occur here. Large greenish-brown frog with a green stripe down middle of back. Back lumpy and with length-wise folds. Back of thighs dark and spotted yellow and white. Curved dark stripe from mouth, across eye and ear-disc, and past forearm – immediately below this stripe is green. Underneath body white. Eats other frogs.

Call: 'quack' repeated.

Length: To 80mm.

Tadpoles: Entirely brown.



Green-striped Frog

Beeping Froglet (*Crinia parinsignifera*)

Variable colouring but usually brown to grey; patterned on back or plain; back smooth or bumpy. Underneath whitish with fine dark speckling. Base of arm with a pale patch. Toes and fingers long.

Call: Repeated short 'eek'; occasionally repeated quickly like a laugh.

Length: To 25mm.

Tadpoles: Fat body; short tail with low tail fins.



Beeping Froglet

Tusked Frog (*Adelotus brevis*)

Greenish brown to dark grey above, often with irregular patterns; cross bars on limbs; skin rough with low lumps and ridges. Underside smooth and mottled black and white; throat grey with white specks. Red in groin; red spots at back of hind legs. Head of male large and with a pair of tusks at front of lower jaw.

Call: A short, two-syllabled 'tl-uck', repeated at about 5 second intervals.

Length: Female to 50mm; Male to 40mm.

Tadpoles: Dark grey; become large.



Tusked Frog

Clicking Froglet (*Crinia signifera*)

Colour very variable, but usually brown to grey; patterned on back or plain, smooth or warty. Pale patch near where arm is attached. Underneath with dark marbling on white.

Call: Repeated two syllabled crik- it'.

Length: To 30mm.

Tadpoles: Fat body; short tail with low tail fins.



Clicking Froglet
a winter caller

Photo: Donna Flynn

Wallum Froglet (*Crinia tinnula*)

Very variable, but usually brown to grey. Underneath whitish with fine dark speckling, and usually with a fine white line from under the chin to the belly, and a line across the throat.

Call: Repeated 'tink'; sometimes repeated quickly like a laugh.

Length: To 20mm.

Tadpoles: Fat body; short tail with low tail fins.



Wallum Froglet
our smallest frog

Salmon-striped Frog (*Limnodynastes salmini*)

Not yet discovered in our region, but may occur here. A brownish, greyish large frog with three length-wise red, pink or salmon stripes and dark blotches on back. Curved dark band through eye to ear-disc. Underside white with dark mottling on inner thighs and throat.

Call: 'wok', repeated every couple of seconds.

Length: To 70mm.

Tadpoles: Pale and mottled.



Salmon-striped Frog

Photo: QM

Ornate Burrowing-frog (*Platyplectrum ornatum*)

Rounded frog with high protruding eyes. Very variable in colour with mottles and meandering dark stripes and blotches on a grey or yellowish light brown background; underside white; narrow or broad dark bars on legs.

Call: A throaty gulp - like 'uhnck'.

Length: To 45mm.

Tadpoles: Dark; tail mottled; small.



Ornate Burrowing-frog

Spotted Marshfrog (*Limnodynastes tasmaniensis*)

Light grey, with blotches and spots of brown; curved dark band from mouth through eye and ear-disc to above arm; white underneath. Males with yellowish throat.

Call: A nasal stutter of several syllables like 'ah-ah-ah'.

Length: To 45mm.

Tadpoles: Entirely brown.



Spotted Marshfrog

Striped Marshfrog (*Limnodynastes peronii*)

Light brown to grey-brown with length-wise continuous or broken dark bands. One dark band with a yellowish stripe down its centre runs down the centre of the back; and there are two narrow bands either side of this.

A dark band runs from the snout, through each eye and to above the shoulder. Underside white. Males yellow under throat.

Call: 'tok' repeated every 4 or 5 seconds.

Length: To 45mm.

Tadpoles: Entirely brown.



Striped Marshfrog

Scarlet-sided Pobblebonk

(*Limnodynastes terraereginae*)

Dark grey sides; upper thigh and upper arm yellowish orange; groin and back of thigh scarlet.

Likes sandy gravelly soils; leaf-litter near ponds.

Call: 'bonk', repeated every 4 – 5 seconds.

Length: To 75mm.

Tadpoles: Dark with mottled tail.



Scarlet-sided Pobblebonk

Great Barred-frog (*Mixophyes fasciolatus*)

Large, brown to fawn frog with a wide head and large dark eyes. Narrow dark stripe from nostril, through eye to ear-disc. Thin dark lines across legs.

Call: Occasional low 'wark'.

Length: To 80mm.

Tadpoles: Brown and mottled; low tail fins; very large.



Great Barred-frog

Copper-backed Broodfrog (*Pseudophryne raveni*)

Copper pink-red on back; dark red sides with black band. Upper arm grey to copper-pink; marbled black and white underneath.

Call: A low creak like 'eeaaark' lasting about a second.

Length: To 35mm.

Tadpoles: Dark brown; tail mottled.



Copper-backed Broodfrog

Giant Barred-frog (*Mixophyes iteratus*)

A large frog with big golden eyes; olive brown body with irregular blotches; dark stripes (bars) on legs and arms; small yellow spots on inner thighs; calls from leaf litter along the banks of creeks and streams.

Call: A deep guttural grunt.

Length: To 115mm.

Tadpoles: Large golden brown with prominent eyes; found in flowing water.



Giant Barred-frog
an endangered species

Southern Dayfrog (*Taudactylus diurnus*)

Extinct. Common in D'Aguilar Range until late 1970s. Brown to grey small frog with dark bar between eyes, and dark H-shaped mark between shoulders; underneath cream to bluish, sometimes with grey spots.

Call: Very soft clucking sounds.

Length: To 30mm.

Tadpoles: Snout and end of tail rounded.



Southern Dayfrog

Great Brown Broodfrog (*Pseudophryne major*)

Reddish back, brighter towards the sides. Sides dark to black. Black and white marbling underneath, pinkish upper arm.

Call: A short, grunt-like 'eak' lasting about a second.

Length: To 35mm.

Tadpoles: Dark brown; tail mottled.



Great Brown Broodfrog

Sandy Gungan (*Uperoleia fusca*)

Small frog with dark grey to brown lumpy back, sometimes with dark blotches. Large glands on shoulders. Dark undersurface. **Groin and back of thigh yellow to orange** – distinguishes them (and other gunguns) from small Cane Toads; upper surface of arm fawn to yellow.

Call: A trilled 'eeeeek'.

Length: To 30mm.

Tadpoles: Dark brown; high tail fins; small.



Sandy Gungan

Eastern Gungan (*Uperoleia laevis*)

Small bumpy brown to dark grey frog. Large gland above shoulder has a curved dark stripe above it; purplish-brown underneath; yellow on upper arm; orange behind thigh and in groin.

Call: A rasped 'e-e-e-k' with the hint of an echo.

Length: To 30mm.

Tadpoles: Dark brown; high tail fins; small.



Eastern Gungan

Chubby Gungan (*Uperoleia rugosa*)

Overall grey-brown with darker small patches; grey underneath; yellow to red behind thigh and in groin; grey underneath. Large gland behind eye, and a small one behind this.

Call: Short grunt-like 'ek'.

Length: To 30mm.

Tadpoles: Dark brown; high tail fins; small.



Chubby Gungan

Cane Toad (*Rhinella marina*)

An exotic pest. The largest frog found in our region. Cane Toads, even small ones, can be **distinguished from all other frogs by the bony ridge that overhangs each eye and extends to above the nostrils**. Behind each eardrum is a very large poison gland. The back is lumpy, and brown to orange-brown.

Underneath is white to off-white, sometimes with dark marbling (often in very young ones).

Call: A continuing, motor-like, 'tudle-udle-udle-'.

Length: To 200mm.

Tadpoles: Small and black, always in groups, in shallow water.

Cane Toad
another unfortunate
introduction of an
exotic species



Humane euthanasia of cane toads

Stepped hypothermia (chilling followed by freezing) is the most practical, humane cane toad disposal technique. Disinfectant must **NEVER** be used – it is painful and does not kill cane toads.

Step 1

Wear rubber gloves or place your hands inside a large plastic bag to pick up the toad.

Step 2

First chill them in a refrigerator for an hour to induce a state of unconsciousness. Cane toads are cold-blooded creatures so in the refrigerator their metabolism will slow down and they will 'go to sleep'. Direct freezing of cane toads is painful due to ice crystals forming on their skin and in the organs.

Step 3

Place them in a freezer for a minimum of 16 hours where they will die. Then, remove them and bury deeply in a well-contained compost heap where pets cannot get in. Cane toads are a good natural fertiliser.

Step 4

Thoroughly wash your hands after touching cane toads.

Important: When handling toads ensure you protect your eyes as toads can squirt venom from their glands (although this is rare).

THE DIFFERENCE BETWEEN TOADS AND NATIVE FROGS



LIFE STAGE	CANE TOADS	NATIVE FROGS (TYPICALLY BUT NOT ALWAYS)
<i>Eggs</i>	Eggs are laid in long strings of transparent jelly. Can be made up of pairs of eggs.	Eggs are in a single mass, chain or in jelly or foam. Laid individually.
<i>Tadpoles</i>	Body is uniform black. Tail muscle is black. Tail has clear fins. Tail is no more than 1 ½ times body length. Has a dark belly. Often in large swarms in shallow water.	Body is variable (dark, light, clear or mottled). Tails muscle is pale or dark brown or blotchy. Tail has very dark or mostly clear fins. Tail is approx 2 times body length. Has a pale or translucent belly.
<i>Juvenile</i> <i>This is the hardest stage to tell a toad from a frog</i>	Are black or dark grey. Usually have numerous small orange dots and black bands across the limbs. Can be day or night active. No disc pads on toes – can look ‘claw-like’. Look for the bony ridge and poison gland as the juvenile matures (see below).	Highly variable. Only active at night. Often have disc pads on toes
<i>Adult</i>	Sit upright, almost vertical. Have toxic swollen glands behind shoulders. Have a bony ridge running over each eye and down to nostrils. Have a call like a motor boat.	Low posture No swollen glands No bony ridge Variable calls – none like a motor boat

USEFUL CONTACTS

Queensland Frog Society

This organisation provides biology and identification assistance for newcomers to the world of frogs, as well as education through field trips, lectures, slide nights and regular newsletters.

www.qldfrogs.asn.au

Further frog information (including call sounds and habitat information) may be found on the **Frogs of Australia** website at <https://frogs.org.au/frogs>

Thanks to **Steve Wilson** for the majority of frog photos used in this brochure.





This brochure is one in the series, *Living with the Environment*, produced by Moreton Bay Regional Council. These brochures feature the many marvellous plants, animals and other natural features of the region. They are designed to help residents know, understand, love and conserve our unique natural heritage.



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