

BACKYARDS FOR FROGS



EMERALD SPOTTED TREEFROG
LITORIA PERONII
JONO HOOPER

“TIME IS FUN WHEN YOU ARE HAVING FLIES”.

- KERMIT THE FROG

Frogs do not get the credit that they deserve.

Frogs are beautiful, colourful, charming, noisy, melodic, rhythmic, acrobatic destroyers of insect pests. They exist in a myriad of patterns and colours and their croakings, bleatings, buzzings and wailings help herald Spring and Summer and, if we're lucky, rain and if they're lucky, a mate. They are beautiful. They are amphibians – beautifully adapted to life in and out of water. And some of them have the most fascinating life stories.

By the way I wrote beautiful twice because I meant it.



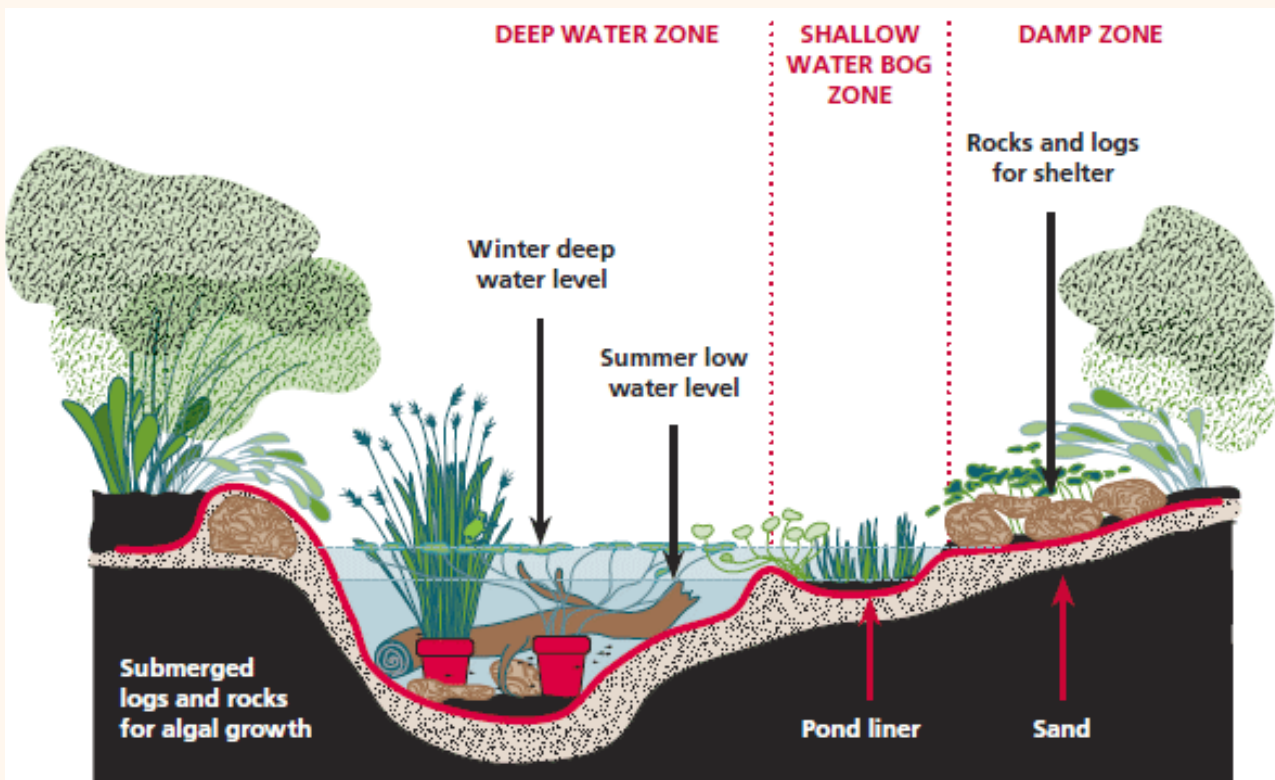
Frogs, like all of our fauna, are well worth looking for but they can be hard to find in the day time but as the sun goes down and darkness descends at the right time of the year, the frogs come out! And then they call. And each species, much like birds, calls differently. Sitting under the stars and listening to a cacophony of frog calls is a wonderful thing; a simple, affordable celebration of life and nature.

Thanks to some very good frog call CD's and now frog apps you can easily identify the calls of the frogs in your yard and neighbourhoods. And when you learn the calls of the dozen or so common species found in your part of south east Queensland each 'crick' or 'tok' or 'waaa' you hear will conjure up a name of a frog and, with a little more study, magically its image. Imagining a frog's appearance after careful observation in one of the many frog field guides is one thing – you deserve to see it in the flesh!

So with a hand free torch strapped onto your head [available cheaply through ebay] you may follow the long drawn out 'waaaa' to find a **Graceful Treefrog** – a small four centimetre creature, rich green on its back and bright yellow on its belly with a regularly bulging throat. Look closer and note its bright orange eyes and its purple or maroon thighs. You don't need to touch it – just... look. Take it in. Now take a step back and admire the scene – the water, the damp rich vegetation and the frogs calling vociferously. The rain falling out of the sky through your torch beam. This beats the hell out of watching yet another reality show on TV surely.

Regarding the Frog App, mentioned above, it is definitely worth getting. [Named FrogID and designed by the Australian Museum it features information about every Australian species, including photos, identification, distribution and calls.](#) It also has a feature where you can use your phone to record a frog and get it identified. By recording a frog call with the FrogID app, you provide a unique, time-stamped and geo-referenced audio recording that allows scientists to understand and conserve Australia's unique frog species.

FROG PONDS



THE ABOVE IMAGE IS FROM [SUSTAINABLE GARDENING AUSTRALIA](#)

Information about distribution and numbers is essential if we hope to manage environments for the survival of frogs in the future.

All around the world frog species are in trouble with some 40% of the world's amphibian species threatened or already extinct. In Australia we are faring only slightly better with 20% of our approximate 240 species officially classified in one threatened category. These species would not be threatened without environmental damage and their declining numbers sound the alarm of our diminished natural environments.

ATTRACTING FROGS

All animals need water, perhaps none more so than frogs, our native amphibians.

What can you do to help frogs in your neighbourhood, and how can you encourage them into your backyard?

From the [Queensland Frog Society page](#): "***Frogs need insects to eat, humidity, hiding places and a suitable place to breed. Grow lots of plants of various heights in your garden. Keep the yard well-watered.***

Mulching the garden beds and keeping a compost heap will attract insects. Frogs love vegetable gardens and greenhouses. Avoid using garden chemicals, as frogs absorb chemicals through their skins easily and may eat poisoned insects".

It really is worth the small investment in time, money, and space to place a pond in your backyard. Obviously, you will create a habitat where your frogs can breed, and feed and their tadpoles can grow but a host of other species will use the water for drinking and or habitat. In addition to a pond, hiding places under logs and well positioned rocks, good amounts of mulch are worthwhile. Failing natural 'infrastructure' consider using old terra cotta pot plants, half buried pipes etc to create safe hiding places.



If you create suitable habitat even within suburbs the frogs will find you. You will not need to, nor should you need to, introduce frogs or tadpoles to your garden. **At any rate, moving frogs or tadpoles is illegal!**

Many common species of frogs found in urban areas will breed in any of a range of containers. As a child I used old bathtubs. Many people use old children's wading pools or plastic sand pits, or you can make a purpose-built pond with a black plastic pond liner. There are a number of elements to consider when building and locating a frog pond [adapted from Sunshine Coast Council website]:

- The repetitive calls of frogs during the night can be very loud during the summer mating period. Ensure you select an area that is not near a bedroom window or likely to create conflict with a neighbour.
- Ensure the pond has 75% shade for most of the day. Tadpoles are heat sensitive and will not survive if a small pond is exposed to prolonged heat and sunlight.
- Ensure any storm water run-off (from your property or adjoining properties) potentially containing pesticides, herbicides or fertilisers will not flow into your frog pond.
- Any container or plastic liners used in your frog pond should be free of chemicals or detergents.
- Place clean river sand and pebbles in the bottom of your frog pond and larger rocks around the outside.
- Incorporate an area within your frog pond with a water depth of at least 30cm.
- Not all frogs have the same breeding requirements so it is important to provide variable habitat. You may consider varying the depth in different parts of your pond and the density of your aquatic vegetation.
- Fill your pond with either rainwater or tap water that has been left in direct sunlight for 5 - 7 days to breakdown the chlorine. It is not recommended to use any chlorine neutralising chemicals.
- If establishing a frog pond in a pot or container, place rocks and logs in a way that provides adult and juvenile frogs with both a dry refuge to climb onto from within the pond and safe easy access out of the pond.
- Include some native water plants. Some native waterlilies, rushes and sedges can be planted directly into the sand or into a pot placed in the pond. Aquatic plants will help to keep the water cleaner and also provide shelter and resting opportunities for frogs and tadpoles.

From top to bottom - Eastern Dwarf Treefrog *Litoria fallax*, Green Treefrog *L.caerulea*, , Striped Rocket Frog *L. nasuta*, Graceful Treefrog *L.gracilentia*. [All pictures by Jono Hooper]





- Algae will grow on aquatic plants, rocks and logs within the water and will provide a food source for tadpoles. Tadpoles will also feed on decaying plant matter that falls into the pond.
- Plant a variety of local native plant species of various heights and forms and group ground covers to form dense clumps around the outside and edge of your frog pond. Include some local native shrubs and trees to provide shade, shelter and vantage points for calling.
- Flowering plants and mulch will attract insects for your frogs to feed on. Some authors encourage a small solar night nearby to attract insects.
- A dense vegetation buffer around a frog pond can also assist as a barrier to cane toads.
- Never plant exotic water plants in your pond. Exotic water plants such as water hyacinth, Salvinia, and many of the species sold from pet shops for fish tanks can choke our dams and waterways, depleting them of available oxygen and killing our native aquatic invertebrates and wildlife.
- In addition to larger rocks around the outside of your pond, place several small logs and branches in the pond with one or both ends gently sloping out of the water to allow frogs (especially ground dwelling frogs) and metamorphosing tadpoles to climb out of the water and exit the pond.
- As tadpoles begin to develop legs and start breathing air, they need safe resting places such as logs and rocks just above the water level.
- Consider introducing a few Pacific Blue eyes [a native freshwater fish] to eat mosquito larvae. They are often available from pet stores. Do not introduce exotic fish species, such as goldfish or mosquito fish, as they could eat your tadpoles.
- If your pond has a fountain arrange for it to be turned off during the night as most frogs prefer still water for breeding.

If you would like some further inspiration watch this segment from [ABC gardening](#) . Or this British video on [how to create a wildlife pond](#).

From top to bottom - Eastern Stony Creek Frog *Litoria wilcoxii*, Scarlet-sided Pobblebonk *Limnodynastes terrareginae*, Green-thighed Frog *Litoria brevipalmata* , Laughing Treefrog *L.tyleri* [All pictures by Jono Hooper]

Some suggested plants to grow in your frog pond, from south-east Queensland include:

Swamp Lily *Ottelia ovalifolia*, **Wavy**

Marshwort *Nymphoides crenata*, **Smooth**

Nardoo *Marsilea mutica*, and **Water Milfoil**

Myriophyllum crispatum.

Some suggested plants to grow adjacent to your pond include sedges, *Lomandra* species, *Dianella* species, native grasses such as Kangaroo or Barbed Wire Grass and a few flowering shrubs under one metre like Thyme Honey Myrtle, Eggs and Bacon, Dwarf Banksia, Midyim, and Twiggy Myrtle. Ground covers like Yellow Buttons, Native Violet, *Scaevola* flowers, Golden Guinea Vine, and Native Sarsaparilla will make a nice display in front of your pond, in addition to providing cover for small animals and attracting insects.

Rain Gardens offer you the opportunity to create some frog friendly habitat, to better preserve and use water rather than allow it to run quickly off, and, thirdly, to help protect the health of our waterways.

A rain garden is a specially designed and constructed garden bed that takes rainwater directly from the roof – the downpipe goes straight into it. If there is an excessive amount of water running into the raingarden bed, an overflow pipe at the top directs water into the stormwater system [or another part of the garden] to prevent water backing up and flooding.

Rain gardens' most important aspect is their effect on the health of urban waterways. Rain gardens slow stormwater dramatically, reducing flooding events and erosion. Rain Gardens filter the water before it enters our creeks and rivers.

The best plants to use in your rain garden include native plants such as native grasses, native sedges, *Dianella* [Flax Lily], and *Lomandra hystrix*. The main thing is to ensure that whatever you choose is both drought-tolerant and able to withstand heavy rain and water. Native plants tend to be lower maintenance and more suitable than introduced species. Cover your rain garden with mulch to retain moisture, such as gravel. Avoid bark or straw as they could float into storm water drains.

Check out [this webpage](#) to learn about some other Queensland aquatic life. On this page are links to a little more information about Water Striders, Giant Waterbugs, Toad Bugs, and Backswimmers.

Bog Gardens differ from Rain Gardens in that Rain Gardens are inundated only when it rains, where as, a Bog garden can be kept damp all of the time.

So, a bog is an almost permanently wet place in the garden that is filled with water tolerant plants. To make a bog fill either a purchased shell or hole with a pond liner with soil, sand, and stones. Then, fill with water. Plants are specially selected but would include such sedge species as **Swamp Foxtails, Jointed Twigrush, Twigrush, Tussock Sedge, Knobbly Club Rush, and Tassel Sedge**. Other plants to consider include *Bacopa monnieri*, *Hygrophila augustifolia* [known as either *Hygrophilia* or **Karamat**], *Lilaeopsis brisbanica* [**Brisbane River Grasswort** – a rare mat forming herb], *Ludwigia peploides ssp montevidensis* [**Water Primrose**], and, lastly if you have a large bog pond area, *Lythrum salicaria* [**Purple Loosestrife**], and *Philydrum lanuginosum* [**Frogsmouth**]. Your frog bog could be located quite near your frog pond. If possible, consider locating near your pond overflow point. You can view, from your ABC, [How to create a Frog Bog Habitat](#).



Backyard frog pond - picture supplied by [One Earth Landscaping](#).

A Frog Hotel is ideal for small spaces, like a courtyard, or can be added to enhance your pond surrounds or frog bog.

The hotel is made from offcuts of PVC pipes of varying widths and lengths [although the minimum length should be about 30 - 40 cm]. The idea is that they are placed in shallow water or adjacent and they are established firmly vertical so they will not fall. Frogs, tree frogs specifically, will climb into them and hide down in their depths. The coolness combined with the humidity and the obvious shelter the pipes provide make them a great 'roosting' location for frogs.



Above - Frog Hotel [Rachel Phomsouvanh]. Right - Australian Emerald Dragonfly *Hemicordulia australiae* [T. Eales]. Below - Aurora Bluetail *Ischnura aurora* [T.Eales]

You have built your pond and while you are waiting for the frogs to appear I suggest beginning to study up some of the other pond critters that we can find in south east Queensland.

Check out some local Dragonflies and Mayflies.

Dragonflies need still water [or slow flowing] water to breed. Your frog pond will supply this. Different Dragonfly species have particular habitat preferences so if you want a variety of dragonflies you must try to put in a little diversity with your pond. Many dragonflies need a good vantage point from which they will scan their surrounds and look for prey. So your pond will need at least one large sedge. It is a good idea to have some branches in the water coming to a point on which a dragonfly can perch. Aquatic plants within your pond are essential and some species will perch on the weed at the water line. Some dragonflies prefer perching on rocks, some on sand, so ensure your pond has these materials as well. Still others will prefer your bog garden.



CANE TOADS

Cane Toads were introduced into Australia in a vain hope to control cane beetle in sugar cane. As an intended biological control cane toads were worthless. As a pest they have been excellent. In Australia the cane toad will eat any animal smaller than itself that it can catch. And almost every native animal that tries to eat it is poisoned, often with deadly consequences. Ridding Cane Toads from our continent would have untold benefits to our biodiversity - sadly there are not too many great solutions. Encouraging **Common Keelbacks**, our only snake that can safely eat Cane Toads, is, sadly, only part of the solution. Lately there has been some work examining whether toads can be controlled within local areas by the use of tadpole traps.

Trapping Cane Toad Tadpoles
A news item adapted from Sunshine Coast Council website by Danielle Outram [September 2021]:

University of Queensland researchers have devised a special bait that uses the toad's own toxins to lure cane toad tadpoles by the thousands into a trap where they can be removed and euthanised humanely.

Scientists discovered that cane toad eggs release an attractant which draws in other cane toad tadpoles who predate on the eggs (yes, cane toads are cannibals). Researchers were then able to replicate the 'smell' of the eggs into baits which are placed in a simple funnel-type trap.



[Common Keelback by J. Gursanscky]

The cane toads swim into the trap and can't swim out. Tadpoles are then euthanised by putting into the fridge for 12 hours, then putting into the freezer. Cane toad tadpoles can stay in tadpole form for a long time, between 3 - 20 weeks. For this reason trapping tadpoles before they metamorphose can be an extremely effective way of removing an entire generation of toads from your property. Ongoing efforts can reduce the toad population in your local area.

Cane toads are poisonous at all life cycle stages. For this reason, it is important to dispose of the euthanised tadpoles in a place where they can't be ingested by other animals. Cane toads can be distinguished from other tadpoles (see image right) by being big and black, active in the heat of the day, swarming in the open and almost a diamond shape. Alternatively native tadpoles have a round, oval or irregular body shape, are independent (not swarming), and shelter under leaves or near the bottom.

One trap per 15-20m² of water surface area is considered optimum. The water should come up to just above the funnel as you don't want to completely submerge the trap.



CANE TOADS

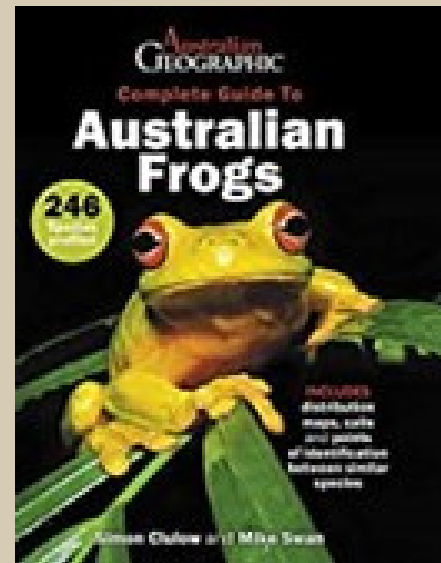
Regarding adult toads there are a few methods that people have thought of to kill them, however, a RSPCA [Royal Society for the Prevention of Cruelty to Animals] recommends two methods:

The following method is the most humane currently available to the general public: Cooling and then freezing - one study has shown that this method may be more humane than other methods. It involves placing the toad in a plastic bag or container in the fridge at 4°C for 12 hours, and then after ensuring the toad is not moving (it is effectively anaesthetised), transferring it to a freezer (-20°C) for at least 24 hours to painlessly kill the toad.

Gloves must always be worn when handling toads. Toads must be confirmed dead before a deep backyard burial.

Read more about trapping toad tadpoles [here](#).

RESOURCES

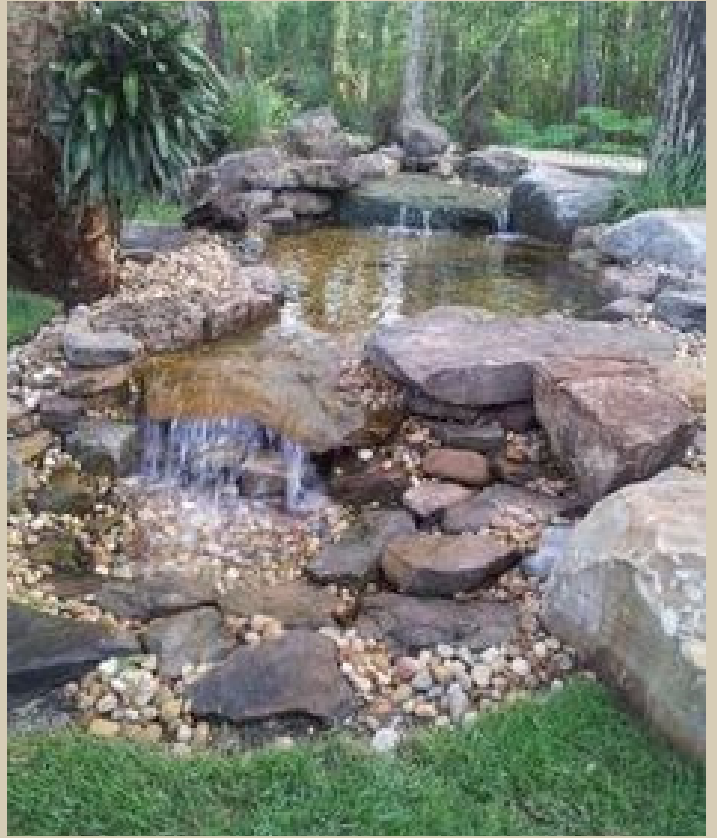


Please consider joining the [Queensland Frog Society](#) to continue to pursue an interest in frogs and to help give voice to frog conservation efforts. They have produced a variety of resources including this:

[Be Toadally Sure brochure](#).



Above: Southern Orange-eyed Treefrog *Litoria chloris* enjoying a backyard frog pond. [K. Cross]



Above - examples of frog ponds and hotels from SEQ.