



# FROGGIE PONDS

Frogs are amongst the most endangered of our species. By creating the correct habitats to welcome them to our gardens, gardeners can play a strong role in reversing these losses.

While many of us imagine that all frogs are entirely aquatic and all they require for a noisy and blissful life is a little pond but their lifecycle requirements are not as simple as this. As with all creatures the correct habitat is important and with a variety of frog species occurring in most areas, a number of needs should be met to ensure as many as possible are catered for. The lack of ponds offered in residential gardens has a lot to do with the night time noise levels interfering with our sleep patterns but choosing the correct spot for your frog pond can alleviate these noise levels and encourage more of us to welcome them into our space. The most vocal are the Guttural Toads during mating season when groups of them join together in a raucous chorus.

One of the biggest challenges facing amphibians in urban areas is the need to travel long distances between fragmented habitat areas in order to complete their life-cycles – causing high road death rates. Gardeners can help to limit this problem by offering frog specific ponds and puddles and surrounding habitat needs.

### How frogs use ponds and adjoining systems:

Ponds are needed by most species in which to lay eggs. Certain species, like the Clicking Reed frog, prefer to lay their eggs on moist surfaces like rocks protruding slightly from the water. The stems of reeds like *Juncus* and *Cyperus* spp provide safe areas for eggs. Without the hard protection of a shell, the eggs would dry out thus they are covered in a jelly-like substance as a means of protection from the elements and laid in water to keep moist. Frogs tend to lay eggs single eggs in masses, whereas toads usually lay eggs in long chains, laying many eggs as so few reach adulthood – those eggs that die tend to turn white or opaque. Most eggs are found in calm or static waters, to prevent them from being disturbed too much.

Species like the Platannas (or Common Clawed Frogs) and the Common River Frog, are mostly aquatic spending large portions of their lives in the water, usually emerging to move to another aquatic location. Other species prefer to live their lives on dry land but still need to lay their eggs in water. The rain frogs on the other hand lay their eggs in sandy or well composted soils and



tadpoles reach young frog stage without the need for water. They often live in underground holes only emerging after heavy rains. Most wetland species need the water to be slow-moving or stagnant with a constant water level during the breeding season. They lay eggs in groups on plants or amongst a mix of plants,

while the bullfrog, Tremelo Sand Frog and Snoring Puddle Frog for example, prefer to breed in temporary rain puddles that appear after heavy rain storms. These habitats can be re-created by siting your pond close to well vegetated areas and allowing fallen leaves and sticks to remain behind to create the moist ground habitats. Small areas can be excavated to allow rain water to puddle for the bullfrogs.



*Clicking Stream Frog Eggs on moist rock*

Many species that venture onto land need trees, low branching shrubs and groundcovers through the year and in winter will search out protective decaying logs and leaf mulch under which to hide. The Bush Squeakers, who usually call as it is about to rain, live and breed in thick layers of mulch. All species though, need protective movement corridors that connect them to natural areas offering access to wetlands, rivers, streams and dams. Without them species are unable to meet other groups for mating, and so the gene pool is reduced and too much interbreeding can occur. These pathways also provide frog communities with the means to re-colonise areas after severe drought, floods or other disasters cause numbers of local populations to decrease or disappear altogether.

### The importance of frog ponds in urban gardens:

**A very small percentage of baby frogs will survive their first year, others will become urban road statistics, and many more will be poisoned or eaten by their predators.**

Poor water quality, environmental conditions and urban roads cause the highest number of fatalities, most of which can be eliminated if urban gardens provided as many of their requirements as possible. At the same time as creating your frog friendly habitats, it is vitally important to banish the use of poisons and inorganic fertilisers within your garden so you don't invite them in simply to poison.

## Where to locate your frog habitat:

For human sanity, it is best to locate the pond at the bottom of the garden away from bedroom windows, otherwise you will be making daily trips with a bucket load of frogs to your nearest stream or wetland! Place it where gravity will cause water to naturally pool – this will allow rainwater run-off to flow into the pond keeping it topped up reducing the need for tap water. Locate the pond where certain species will be able to use nearby trees and shrubs as shelter, and still have safe access to the water. Ensure there is a flat area, creating a pan-like effect, from which frogs can enter and exit the pond.

There are a number of important points with regards to this: Water quality is important to tadpole health. Chemicals and high nutrient levels like ammonia which is released by manure, or nitrogen from compost and fertilisers, can seep into ponds from adjacent lawn and flower beds most especially after a drought or a feed in which there will be a build up of these levels. Make sure run-off from these areas doesn't reach the pond, or is directed through a filter (a bed of reeds, restios, and other plants whose roots will cleanse and filter these contaminants before the water reaches the pond.) High levels of nutrients can also cause algae blooms which will affect the quality of the water.



Marble tree frog © Elaine Kool

## Plant choices:

Arum lilies  
Typha capensis -Bulrush  
Cyperus textilis  
Cyperus prolifer  
Kniphofia species  
Juncus effusus  
Juncus krausii  
Gunnera purpensia - River Pumpkin  
Thamnochortus insignis - Thatching Reed  
Wachendorfia thyrisiflora - Bloodroot  
Nymphaea nouchali - Blue Water Lily  
Nymphoides thunbergiana - Small Yellow Water Lily  
Gomphostigma virgatum - River Stars  
Elegia tectorum - Cape Thatching Reed  
Crinum species

## Pond requirements:

Don't make the pond too small as the water temperature in smaller ponds fluctuates too much. There also needs to be a certain amount of bacteria and algae on rock surfaces and on the bottom of the pond to provide food to the tadpoles and to attract insects off which adult frogs will feed. The pond should be deep enough to offer safe depths in which to hide from predators, at least 75 cm deep, and provide a rocky shelf under which they can hide from enemies and from the hot sun. Other species need slow or settled water where the water level doesn't change too much, so build a shallow shelf (between 15cm and 40cm) and plant up with thick groupings of small plants with thin flexible stems onto which the eggs can be attached. Ponds with lots of hiding places and plant cover will attract frogs and keep tadpoles safe from fish. Plant thickly at the edges of sections or the pond – this creates cover for the new froglets as they emerge from the water, as well as adult frogs. By choosing plants that attract insects will also offer a relatively safe supply of food. The pool surrounds are as important as the pool itself. Rock and log piles close to the pond also provides habitats for amphibians, and leave fallen leaf mulch to create moist areas under which frogs will live. They love hiding under rocks and bricks, pavers and even upturned broken clay pots, and placed in the undergrowth close to the water will offer safe retreats. These will also be used by hibernating species as safe spots in which to over-winter.

## Pond maintenance:

As plants grow, they will need to be trimmed and cut back, but shake them out before discarding in case there are any little frogs or eggs tucked inside the foliage and stems. Try not to do too radical a pruning as this disturbs all forms of aquatic life.

Egg clump on rock © Jeanne Tarrant

