
A guide to keeping Giant Tree Frogs

Litoria infrafrenata - Australia's largest amphibian

Ranging in colour from the brightest greens to red-browns, mauve, black and even metallic-blue the Giant Tree Frog is one of the most sought after species in captivity. It inhabits the northern coastal reaches of Queensland, and extends into New Guinea. A distinctive cream or white stripe along its lower lip has gained this frog its other common name the White-Lipped Tree Frog. Despite its regular arrival in the southern states on fruit shipments, it is still an uncommon pet. Laying up to 6,000 eggs at a time and reaching its adult size of 120-140mm in 6-8 months its scarcity in captivity has been largely contributed to by poor availability of husbandry information. If cared for properly this species can make a long lived and interesting pet. The following information should help facilitate a long and happy experience with your frog.

Enclosures

A variety of different containers may be used to house Giant Tree Frogs. They must be water proof and non-toxic. Glass and plastics are the best materials, but be aware that some plastics are corroded by ultra violet (U.V.) light (see discussion headed: lighting) and may crack and break in a matter of months. For visibility, longevity and aesthetic appeal a glass aquarium is best. Any enclosure must be secure and escape proof. A tight fitting wooden or aluminium frame covered with fly-mesh provides the necessary ventilation and security while allowing the valuable U.V. light to reach the frogs. Use only fibreglass fly-mesh as steel or aluminium provide abrasive surfaces on which the frogs will injure themselves. A standard 3ft (90cm) aquarium would adequately house two to three adult frogs.

Temperature / Heating

It is imperative that Giant Tree Frogs be kept warm. Prolonged exposure to temperatures below 15°C will result in the death of your animals. If you do not have a purpose built heated room the most effective way to heat your enclosure is by the use of an aquarium heater placed in the water. The water should be heated to 28-30°C and this should ensure that the air temperature remains above 20°C. A waterfall or some other form of water movement will increase evaporation and help maintain and stabilise the temperature and humidity of the air. If excessive heat loss is occurring, part of the lid may be covered with glass or plastic. Be sure however that this cover is not beneath the light fixture as it will stop the necessary U.V. light from reaching the frogs.

Lighting

Although Giant Tree Frogs are largely nocturnal they shelter during the day in areas exposed to sunlight. It has been observed that in captivity a failure to provide ultra violet light has resulted in stunted and deformed growth. Most animals with a high U.V. requirement need light in the 300nm-400nm range. To provide this light two options exist; metal halide or fluorescent. Metal halide lights are expensive (≈\$300) and are too powerful for a small tank. They do however give exceptional plant growth and provide the best approximation of the sun's natural rays. Not all metal halide lamps emit light of the correct wavelength so seek further advice before making your purchase. There are many types of fluorescent lights that are now being marketed as full-spectrum. It is important to note that most do not emit U.V. light or do so for a very short time. The most cost effective lighting solution is to use a dual fitting. Mount one side with a full-spectrum fluorescent tube (e.g. Grolux, Biolux) as a viewing light and to promote plant growth and the other side with a blacklight or UV fluorescent tube. Many types of U.V. tubes exist. Those which are white or near white when turned off and which glow a pale blue when switched on emit light in the right spectrum. DO NOT use lights which are dark blue when switched off, or which cause white colours to fluoresce, or emit no visible light when turned on. If in doubt seek advice, as finding the right light is not always easy. U.V. fluorescent tubes should be replaced every 18-24 months, even if they are still running, as their U.V. output diminishes and at this point they are no longer useful (remember to write the date on each tube when it is installed). Fluorescent fittings should always be approximately 40cm from the tank floor as the U.V. emitted will only penetrate this far. The U.V. light emitted from a metal halide has greater penetration and is better for very tall enclosures. Lights should be placed on a timer for at least 6-8 hours a day. If you wish to breed your frogs you may need to alter your day length with the seasons.

Water

Maintaining water quality is an important part of amphibian husbandry. Fortunately Melbourne's water supply is suitable for Giant Tree Frogs, and only requires the removal of chlorine before it can be used. This can be done in two ways. Either leave the water in a bucket in the sun for a day or two (the chlorine will evaporate away) or use one of the chlorine-neutralising chemicals available from most major aquariums. If you are outside Melbourne consult a reputable aquarium dealer as to local water supply conditions. They may not be knowledgeable about frogs but will be able to advise you on making your water safe for aquarium fish, and this will be suitable for your frogs. Water should be changed regularly; the frequency of changes will be dictated by the amount of water, the number and size of the frogs the presence/absence of aquatic plants and the presence/absence or type of filtration provided. A standard 3ft aquarium with 15cm of water over half its area, three adult frogs and no plants or filtration may require changing weekly. When changing 100% of the water in a tank it is best to allow for the temperature change. Be sure that your heater is powerful enough to heat the water up to the required temperature quickly so as not to cause the tank's temperature to drop for extended periods. Do not use hot water from the tap as it will contain copper which is toxic to frogs. If hot water is needed heat some cold water in a stainless steel saucepan. Conditioning salts from your local aquarium may be added at half the directed rate to the water, this will provide better growing conditions for your aquatic plants and help prevent fungal infections in tadpoles or fish. A healthy growth of plants will help keep the water healthy and water changes will be needed less regularly. Filtration may be provided and this too will reduce the frequency of water changes. Most types of filtration may be used but it is important to ensure that the water is not too turbulent as this will trap tadpoles and possibly drown young frogs. Although Giant Tree Frogs can easily climb glass, it is important to provide numerous escapes from the water especially in the corners where young frogs tend to get trapped. Small frogs are often too weak to break the surface tension of the water when they have nothing but slippery glass to cling to. Part of or all of your tank may be covered in water. Giant Tree Frogs will successfully spawn in as little as 15cm of water.

Plants and substrates

If you wish to have a land area for plants in your tank, it is important to ensure that it is well drained. Soil in aquariums tends to get waterlogged, and will both drown your plants and provide an ideal breeding ground for bacteria that produce wastes that can be harmful to your frogs. It is best to get a hole drilled in the land area of your tank, cover it over with mesh or an under gravel filter plate and place crushed rock or gravel then soil as you would in a pot-plant. Place a bucket under the hole to collect any water that drains through the soil. The best plants for your enclosure are those which will survive hot, humid, low light conditions. These are usually understorey plants from tropical rainforests. Species of *Ficus*, *Spathophyllum*, and some orchids and bromeliads will do well as will most indoor plants. If you wash the soil off the roots of *Spathophyllum* species they will actually grow in the water.

Feeding

In nature most frogs are almost totally insectivorous. In captivity the tendency to use substitute foods is one which must be avoided. The most common dietary problems seen in frogs are related to lack of calcium or too much protein in the diet. Calcium powders are available at many pet stores and should be mixed in equal quantities with a multivitamin powder then dusted on food before feeding. Place your insects in a plastic bag with a pinch of calcium/multivitamin powder and shake it till the food is well coated. By doing this about 1/3-1/2 the times you feed your frogs, calcium deficiency will be avoided. Do not mix large quantities of this mixture at a time. It does not store well after mixing as the calcium can denature the vitamins (refrigeration will slow this process). Most frogs have not evolved to cope with a diet high in protein and the tendency to feed them young mice or strips of meat on tweezers will put extra strain on the frogs' organs, particularly the kidneys. If these foods are used regularly they will lead to gout, irreversible kidney damage and ultimately death. Variety is the spice of life and even a frog knows it! Feed your frog a variety of insects and invertebrates and you should have few diet related problems. Juveniles will happily eat flies, moths, small crickets and cockroaches, and should have food available to them AT ALL TIMES. If young frogs are kept warm and offered plentiful food they will reach breeding size in about 6-8 months. Adults will eat almost anything that moves and fits in their mouth, they should be offered about 10-20% of their own body size in food over 2-3 feeds each week. Remove drowned insects so as not to foul the water, or feed your frogs individually by holding the insects on tweezers.

Licensing and legal matters

Almost all of Australia's frogs are currently, or are soon to be, protected. In Victoria it is an offence to remove from the wild, or interfere with, any frog, tadpole or spawn (frogs' eggs). It is also necessary to have a licence to keep most frogs and it is a condition of the licence that such frogs must be obtained from a legal source (usually captive breeding). To keep Giant Tree Frogs requires a Private Wildlife Basic Licence. The licence application forms are available from the Department of Sustainability and Environment. The forms are available online - you can find links from the Licensing section of the ARC website. [<http://frogs.org.au/arc/>]. It is necessary to purchase your licence before obtaining your frogs.