

AEC STANDARD OPERATING PROCEDURES

SOP No:	01
SOP	Green Tree Frog
Scientific Name:	<i>Litoria caerulea</i>
Category:	2 or 3
Approval Level:	Category 2: School Principal may delegate Category 3: School Principal may NOT delegate
Authority:	Government Schools – Department for Education and Childhood Development Animal Ethics Committee Independent and Catholic Schools – Non-Government Schools Animal Ethics Committee
Authority Approval Date:	1 August 2010
Last Update:	17 December 2018
Disclaimer:	<i>This document may be updated at any time. You should check the web site regularly to ensure that you are meeting the most recent recommendations. If you note any concerns with the information provided (inadequate, incorrect) please contact the relevant AEC.</i>
Licensing Requirement:	Not applicable
Compliance Requirement:	The keeping of this species requires approval from the School Principal. It is recommended that this Standard Operating Procedure be followed as a minimum in the provision of appropriate care and housing for this species.

General Information:

Green tree frogs are common across the top of Australia and down the east coast as far south as Sydney. Small numbers are also encountered in the far northeast corner of South Australia. They live in a wide variety of habitats provided a permanent supply of fresh water is nearby. They are often found in outhouses and along roadsides following rain. The frogs appear to be attracted to artificial lighting where their flying and crawling prey gathers.

Frogs must not be collected from the wild. They can be obtained from pet stores.

They are cold-blooded amphibians. To warm themselves they may bask in the sun or lie on heated surfaces. To cool they may burrow, hide under vegetation or enter water. Amphibians can live on both land and in water. As an amphibian they go through a lifecycle change – eggs – tadpoles – frogs. Green tree frogs are common across the top of Australia and down the east coast as far south as Sydney. Small numbers are also encountered in the far northeast corner of South Australia. They live in a wide variety of habitats provided a permanent supply of fresh water is nearby. They are often found in outhouses and along roadsides following rain. The frogs appear to be attracted to artificial lighting where their flying and crawling prey gathers.

Physical Attributes:

- **Size (adult):** 6-7cm for females and 6-11cm for males.
- **Weight (adult):** Varies with size.
- **Life span:** 10-20 years
- **Gestation period:** Generally breed in Nov – Feb. Lay eggs, which go from tadpoles to frogs in 6 weeks.
- **Number of offspring:** between 200 – 2,000 eggs

Behaviour:

- **Normal:** Frogs should not be placed with other species in terrariums. They are nocturnal and therefore more active during the night.
- **Socialisation:** They can be cannibalistic when different sizes of frogs are grouped together or if they are underfed.
- **Activity levels (hibernation etc):** They will be slow and sluggish during the day and tend to rest away from the daylight.

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Environment:

- **Space:** The following list of equipment is required to provide basic housing for one or two green tree frogs.
 - all glass or plastic aquarium/terrarium - tall enough to grow plants (minimum 600mm x 400mm)
 - 20mm layer rocks or coarse gravel for drainage
 - 20mm layer crushed coarse charcoal to absorb odours
 - 50+mm potting soil for the plants
 - plants suitable for terraria
 - stones/pebbles/logs to create habitat
 - water dish or small pond
 - steep-sided dish or plastic lid for live food
 - light eg Grolux or incandescent for plant growth
 - close-fitting, well-ventilated lid
 - heat source ie aquarium heater or light globe.
 - A layer of leaf litter, rocks or gravel on top of the potting mix will prevent it from adhering to the frog's skin.
 - Remember over-crowded terraria only placed undue stress on its occupants.
- **Movement:** Frogs will succour to the glass, plants and items in the terrarium. They will tend to spend long periods in the same spot.
- **Water:** Green tree frogs occur near permanent water in some of the driest parts of arid Australia. It is therefore not important to maintain a high humidity. A fresh bowl of clean water and enough moisture in the soil to keep the plants alive is all that is required. Allow water to stand for ½ day to allow chlorine to evaporate before use.
- **Temperature:** There are many different approaches to designing terraria for frogs, many of which are suitable. There are however a few important factors that must be considered. Under normal conditions an absolute minimum daytime temperature of 27°C is required. However, short periods of cooler temperatures, such as overnight, are tolerated. Longer periods of low temperatures can also be endured if the frogs are not fed or disturbed and a recess site is provided during this time. This does however, place the frogs under stress and unhealthy frogs may succumb to disease.

There are a number of ways to maintain a warm environment for the frogs. A plain incandescent globe mounted on the inside of the terrarium is an effective source of heat and light. A false back in a terrarium filled with water and heated with an aquarium heater can also be effective. Fixing sheets of polystyrene or thick cardboard on the back and sides of the terraria helps to retain heat and the warm glass provides a suitable position for the frog to rest. A wire cover should protect high wattage globes, over 60W.
- **Ventilation:** Adequate ventilation is important to maintain healthy frogs. Build up of harmful gasses from decomposing faeces can be very rapid in a poorly ventilated cage. A balance needs to be obtained to allow adequate ventilation while maintaining warmth and at the same time preventing the terrarium from becoming saturated from excess moisture.
- **Lighting:** A source of light, which includes some ultra violet (UV) light, is important in maintaining plants and healthy frogs. Incandescent light globes provide only a small amount of UV light. Some of the commercially available UV lights are considered to be very good when used in conjunction with an incandescent globe. However, by far the best source of UV light is natural sunlight. Placing the terraria near a well-lit window can be beneficial to the frogs and the plants, however do not leave them directly in front of glass doors or windows as overheating may occur. Glass is an efficient filter of UV light so any artificial sources of light should be mounted directly in the terraria.
- **Covering:** There must be a cover over the terrarium to protect frogs from external harms and to prevent them from escaping. Mesh top or

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part solid/ part mesh are good and help with ventilation and moisture control.

- **Shelter:** The aquarium should provide an area for refuge from lights, action and other frogs. This can be created with plants and rocky overhangs.
- **Cleaning:** A well-established and maintained terrarium will need little disruption for cleaning. If plants die they should be removed and replaced. Water dishes must be cleaned and refilled daily. A larger water source is necessary for weekend and holiday periods to allow for every second day checks. Uneaten food or dead insects should be removed. Any filters fitted should be cleaned regularly.

Feeding:

- **Diet:** Small mice, cockroaches, grasshoppers, mealworms, slaters, moths and worms are all suitable foods. Most frogs prefer live food, however, you may be able to coax a frog into taking non-living food by simply wriggling it on the end of a pair of blunt ended forceps. A varied diet is very important so a breeding culture of some of the above need to be kept.
- **Daily requirements:** Feeding response in green tree frogs tends to be stimulated by movement. This can be used to your advantage as particularly fussy frogs can sometimes be persuaded to eat by supplying them with fast moving or flying food. Green tree frogs are nocturnal, consequently they are more likely to eat if fed in the late afternoon. Feeding should occur 2-3 times a week. Tadpoles would need daily feeding. Remember green tree frogs will eat anything that is small enough to fit into their mouth, including other frogs and tadpoles.
- **Supplementary feeding:** There are excellent reptile supplements available in a powder form, which can be used to dust mealworms to help ensure that the frog is getting all the correct requirements. Most types of frogs relish flies and it can be entertaining to watch the frogs trying to catch them. They may be purchased from a fishing bait shop as maggots or, alternatively, you can breed your own. About two weeks later, depending on temperature, flies may emerge and crawl through holes in the containers lid to be eagerly gobbled up by the waiting frogs. Never use insects that have been killed with insecticide spray.
- **Equipment:** Blunt ended tweezers can be used to hold food if required.

Breeding:

- **Mating:** Males can usually be identified by dark pads on the insides of their thumbs. Green tree frogs are difficult to breed in captivity.
- **Pregnancy:** Females lay 1,000 of eggs at a time.
- **Fate planning:** Breeding stock must be re homed. They must NEVER be released into the environment.

Handling:

- **Human:** Always wash and wet hands before picking up frogs (do not use soaps or chemicals), as their skin is sensitive. If showing to a class, try grasping the frog by straightening the back legs and enclosing them in the palm of your hand. Only apply as much pressure as is necessary and prevent the frog from tipping backwards by tilting the fist slightly forward. Once the legs are held straight and firm, the frog usually stops struggling and can sometimes be encouraged to croak. Handling should be kept to a minimum as it only places extra stress on the frogs. Always wash your hands after handling a frog as they secrete a number of chemicals from their skin that may be harmful to some people.
- **Equipment:** Wet hands free from soaps or chemicals.
- **Transporting:** Use small moist and ventilated containers. Do not leave for long periods in heat or cold conditions. Do not transport on days that are over 32 degrees.
- **Children:** Should not handle frogs only touching a frog when hands are clean and wet. Observation only.

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Hygiene:	Thoroughly wash hands with soap and running water for at least 10-15 seconds after working or handling any animals. Dry hands with clean paper, cloth towel or air dryer. Turn off the tap with the paper towel if possible.
Signs of Illness:	<p>Indicators: General – not eating, listless, sores, trouble moving, colour changes</p> <ul style="list-style-type: none">• Small white spots on the frog's skin are normal but a change from green to brown can be a sign of distress from diseases, handling, or a poor environment (although camouflage can also play a role in colour changes). A clean supply of fresh water must be available at all times. In hot weather frogs can desiccate in less than 24 hours without access to water.• Polluted water can often lead to an infection of the eye. This appears as a cloudy haze over the pupil. It can be overcome by bathing the eye twice daily in a saline eye wash solution and keep them in a warm environment (+33°C).• If temperatures are too low for a day or two after frogs have been fed a large meal, they may regurgitate what they have eaten.• Red Leg (<i>Aeromonas sp.</i>) is probably the most common disease encountered in captive frogs. It can be fatal, however, if symptoms are recognised early many frogs recover with no ill effects. Red Leg is generally caused by some type of stress – Over-crowding, poor hygiene, extended periods at low temperatures while frogs are active and being fed, all cause stress that can lead to the onset of Red Leg symptoms. Red Leg in green tree frogs appears as a reddening of the inner thighs, a dull lustre to the skin, often remaining inactive on the bottom of the cage, refusing food with a dirty brownish colour to the belly. Individuals with Red Leg should be isolated immediately and placed in a small container with half a centimetre of water in the bottom. The lid should have a few small holes for ventilation. Place the container in an area that provides a constant temperature of about 33°C. Change the water regularly and do not feed (frogs can survive long periods without food). It may take a few weeks for the frog to respond and while this is not always successful there is a high rate of success with even serious cases.• Rickets is a bone disease that is also a common problem, particularly when frogs have not been maintained under the right conditions from a small age. It can easily be recognised by the posture of a frog. The rear legs become soft and bowed, they lose the ability to jump large distances and struggle to climb vertical surfaces. A poor diet and a lack of UV light are the primary causes. The faster a frog grows the more susceptible it becomes to rickets and the more important it becomes that the correct resources be maintained.
Treatments:	Assistance from a veterinarian should be sought for confirmation of conditions and treatment options. Treatments must be documented in the appropriate records.
Euthanasia:	When an illness or injury is such that recovery is unlikely then the animal must be euthanised by a veterinarian. Any death must be reported to the Animal Ethics Committee using the appropriate form (see section relating to ADVERSE EVENTS). Forms are available on the relevant websites.
Disposal/fate planning:	When no longer required frogs must be re homed. They must NEVER be released into the environment and waterways. Bodies must be disposed of correctly in accordance with local council regulations.

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Holiday and weekend care:

As they require specific conditions they would not cope well with being rostered to family carers. They need to be checked daily and fed over weekends and holiday periods.

An established terrarium with adequate light will be self-contained for several weeks. A single frog may need little attention during short holiday breaks. Like many cold-blooded creatures, green tree frogs can survive for extended periods without food. But, **remember**, a single day without access to water can be detrimental so they must be checked daily.

Approved activities:
Resources:

Observation

www.frogs.org.au

www.FATS.org.au

<http://nswschoolanimals.com/australian-native-animals/natives-frogs/>