

FROG CALL



THE FROG AND TADPOLE
STUDY GROUP OF NSW INC.
ABN 34 282 154 794

NUMBER 54 - July 2001
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OUR NEW WEB SITE

<http://www.fats.org.au>

7 PM for a 7.30 PM start, , FRIDAY

3rd August 2001 AUSTRALIAN MUSEUM, WILLIAM ST ENTRANCE

Can anyone assist with non time critical black and white photocopying? We would provide paper, cartridge costs, deliver originals and collect?.

Contact Monica 9797 6543 or Arthur 9599 1161

PROPOSED FIELD TRIPS

Diary Note: Smiths Lake - Call Arthur White and Western Sydney field trip - Call Frank Lemckert.



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Litoria peronii

MEETING FORMAT for 3rd August 2001

- 6.30 pm: - A small number of the Rescued Frogs will be available for FATS members
- 7.30 pm Arthur White
An Introduction to Australian Frogs
- 8.15 pm Science Corner. **NEW SEGMENT**
Mel Zepple discussing a recent milestone study in the link between climate change and declining amphibians.
- 8.45 pm Panel Question Time
- 9.00 pm 5 favourite frog slides or 5 minutes
- 9.15 pm Guessing competition and Auction
- 9.30 pm Any remaining rescued frogs - placed with FATS members
- 9.45 pm Finish for tea, coffee & biscuits



PRESIDENT'S REPORT 2001

It is always a pleasure to present a President's Report when an organisation is running well. FATS continues to blossom. This year we reached a membership of 500, making us the largest herpetological society in Australia. The great interest in frogs is encouraging but it also puts a lot of responsibility on to the FATS executive to provide further stimulus to this interest and to fight for frog conservation.

FATS would not flourish without the unselfish assistance of a large number of people. Tremendous thanks are due to the executive who work behind the scenes but also to the many ordinary members of FATS who give help whenever they can. All of you read FrogCall from cover to cover as I do. Monica Wangmann is in charge of the production of FrogCall and she achieved great milestone this year with the 50th issue of FrogCall being circulated. Monica is also in charge of the Frog Rescue Service and is responsible for the collection of many of the frogs that are made available to people throughout the year.

Lothar Voigt is another stalwart. Lothar does more to promote FATS than should be possible. Lothar is officially the combined Exhibitions and Publicity Officer, he does both jobs with gusto. FATS is regularly represented at Council shows, community days, special environment functions, Science Week and so on. Arranging these takes up an enormous amount of time. Add to this, that Lothar also does the lion's share of the Frog HelpLine enquiries and is in charge of the Frog Mobile Project.

Karen White is our efficient Treasurer and has kept the financial affairs of the Society in excellent shape. Steve Weir is the Membership Secretary. This job has become increasingly demanding as our membership swells. Barbara Bohdanowicz is our Chairperson and often runs the meetings to order (a difficult task considering the nature of the speakers at our meetings).

In addition, we have many other helpers who fill in whenever there is a special function, display or job to do. I will mention David Nelson in this regard as David (and Steve Weir) have been instrumental in resurrecting the FATS website. Our new web address is www.fats.org.au.

FATS is the holder of two grants: the first from the NSW National Parks and Wildlife Service for updating and creating new Frog Fact sheets; the second is a grant from Osram for the construction of the Frog Mobile trailer. This trailer will contain permanent frog displays and will be taken to community fairs, exhibitions and schools

FATS also participated in the production of the Frog Poster with NSW National Parks. We are advisors to the Scientific Committee that deliberates on threatened species listing and are parts of the Native Animal Keepers Advisory Committee. In addition we also make submissions on other matters affecting the conservation of native amphibians.

Two overnight field trips were held this year, both to Smiths Lake in the Myall Lakes National Park. One trip was in

October while the other was in February. We are hoping to have more field trips closer to Sydney in future.

Recently, FATS conducted the Frog Diseases and Hygiene Workshop at Centennial Park. This was well attended and the standards of presentations was excellent. The notes from the workshop have been prepared as a stand-alone publications and are available for those interested in purchasing a copy. In view of the constant changes in knowledge about frog diseases, it is likely that FATS will hold more disease-oriented workshops in the future.

Finally, to all the members and interested public who frequent our meeting and events, thank you for your interest and participation. FATS will continue to thrive as long as we have an interesting story to tell and people who are willing to share the workload. **Arthur White**

THE LAST MEETING & AGM 1ST June 2001

The new FATS committee wish to thank the outgoing committee members Lisa Weir and Elizabeth Pidd for their commitment and service to FATS. We welcome new committee members Wendy Grimm, Marion Anstis and Dominic Borin. The next AGM will be in August 2002.

FATS members are invited to comment on a proposal to establish a FATS student grant from our funds, for work on aspects of frog conservation biology.

A new position of Quarantine Officer was created. Dominic Borin was successfully nominated into that position.

Frog and Reptile Smuggling Video was a sobering experience. This insidious and additional threat to our native wild life should have zero tolerance. Marion Anstis displayed excellent frog slides including a "grandma" Perons, Pepper Tree Frog, Green Thighed Frog, tadpoles and magnified parts of frog pigmentation. Arthur again did a fabulous job running the auction. Congratulations to the winners of the frog teapot and Frog Call CD.

THE NEXT FATS MEETING 3rd AUGUST

Arthur White will speak about "An Introduction to Australian Frogs" Sometimes we forget about our new members and do not explain why we are interested in frogs and what appeal frogs have. This talk is aimed at our new members is an overview of Australian Frogs but touches on some of the weirder Australian frogs.

Also at the next meeting we will be starting a new segment in the meeting: Science Corner. In this segment, one of our members will present some aspects of recent science in the frog world. Our first presenter will be Mel Zeppel who will discuss a recent milestone study in the link between climate change and declining amphibians. The idea of this segment is to let members know what advances are occurring in universities and institutions in Australia and overseas. Normally this information is hard to get and is written in a fairly indigestible way. One of the main tasks of the presenters in Science Corner is to make the science understandable and explain how it is relevant to frogs. **AW**



SUCCESSFUL REPRODUCTION

Congratulations to our past secretary and present membership Secretary, Lisa and Steve Weir on successfully spawning a female human. This is their first attempt at spawning and although the clutch size was small (only one) there is encouragement for the future. The offspring, born 5:27 am on 25/7/01 at Sutherland Hospital, has no teeth, cannot focus its eyes, cant walk or catch its own food but is adored by its parents. The expected time to metamorphosis for *Natasha L'kani Weir* is 21 years (give or take 10 years). Well done. **AW** photo "only 5 minutes old"!

ADI WATCH AND SUNDAY TOUR

Around the former Australian defence industry site at St Marys 10.30 am to midday every Sunday morning. Get to know the most beautiful and most important area of remnant bushland in western Sydney. Join us in our weekly inspection and tour of the site. Come as often as you like.

1500 ha of endangered woodlands and grasslands. Home to thousands of kangaroos and mobs of emus. Home to thousands of birds, bats, lizards, frogs & possums. South Creek - a major tributary of the Hawkesbury Nepean River. Green space for education, research and quiet enjoyment. The land of the dharruk people. Real things to protect from bad planning and greed. Bring binoculars, camera, hat, water bottle and a snack.

We will bring a local guide who knows the site and can tell you all about its amazing wildlife, rare plants and other conservation values.

Help us with ADI watch - record wildlife sightings, activity on the site, breaches in the fence and vandalism. Help keep a watch on the biggest vandals of all, the John Howard and Bob Carr governments who want to bulldoze all this for yet more houses, and more houses!!! 10.30 am every Sunday. Meet at St Marys railway station, northern carpark. Ring john diamond on 9957 2284 for more details or help with transport <http://www.savetheadiseite.bmt.com.au>

ADI Residents Action Group 4722 6313
cwmals@mpx.com.au and

Sydney Bushland Action Group 0412 975 575
nplumb@idx.com.au

B. Outdoor frog lantern

Here's one frog you'll be glad to see in your garden. This lantern will create a lovely glow to enhance your entertaining. Measuring 23cm x 15cm x 16cm, it holds any tealight candle and the wrought iron frog protects the flame from breezes.

BANJO FROGS FOR ARTHRITIS?

Our Frogwatch Helpline has had its share of requests for exotic frogs with purported healing powers. In I think all cases the callers desired to grind up a few frogs from their home country into a potion to alleviate some affliction or other. It was all the more surprising when it turned out that one of our very own species appears to have achieved international recognition as a remedy.

According to a text from the 19th century, a practice was advocated to strap a Banjo Frog to one's leg, in conjunction with taking up substantial exercise. While neither arthritis nor other knee complaints were specifically mentioned, the passage did issue a curious caution that social side-effects might arise from the treatment.

The text refers to a sufferer who intended to go to Louisiana with a Banjo on his knee. He questioned why a companion of Irish descent, O'Susanna, would not accompany him, and he was given the reply: "Cause you've come from Alabama with that frog poo on your feet".

Scrape, scrape. **L.V.**

FOR YOUR COLANDER, OOPS, CALENDAR

Never been a Frog Explainer? Here's your chance! For the **FATS** stand we need volunteers, both seasoned and raw.

- Sat. 25.8. Ku-ring-gai Wildflower Festival
- Su. 26.8. Ku-ring-gai Wildflower Festival
- Sat. 8.9. Bowral Biodiversity Day (anyone going to represent FATS?)
- Su. 30.9. Woollahra People and Pets Day
- November Frogweek activities

If you'd like to spend half a day at our stand, please ring Marian (9456 1698) or me (0419 249 728 or 9371 9129). Ring us also if you can help us planning Frogweek or if you'd like to do your own thing (at your school or club or notice board or display window or local paper etc) but need a few ideas. **L.V.**

FROG DISEASES AND FROG HYGIENE BOOKLETS

At the last **FATS** meeting we sold out of "Frog Disease and Frog Hygiene", the booklet that was produced for the **Frog Disease** workshop. The booklet covers all aspects of the care of tadpoles and frogs and sells for \$15.00. It's 75 pages of facts for all frog keepers. **AW**

Code GP38 **\$19**



By Post:
 Post your order to
 Homecare Direct Shopping Pty Ltd
 Reply Pad 209, PO Box 308
 Frensham Forest NSW (640)

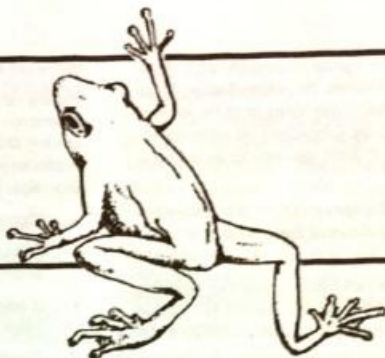
By Fax:
 (02) 9930 3788

By Telephone:
 From our priority order line
 on 1300 306 306 (local call)

Non-Fr 8.30am-5.00pm EST

FROGFACTS

No. 6



The Frog and Tadpole
FATS GROUP
a Group of NSW Inc

P.O. Box 296
Rockdale 2216

COLLECTING, RAISING AND RELEASING TADPOLES

Introduction

Most frogs produce free-swimming tadpoles when they breed. A few species of frogs can bypass this stage using a series of elaborate breeding tricks. This information sheet deals with only those species that have an aquatic tadpole. All Australian tree frogs and most Australian ground frogs follow the standard pattern of having aquatic tadpoles, and the raising requirements for them are similar. Information about frogs that do not have an aquatic tadpole stage can be found in other *FrogFacts*.

There are many different ways of rearing tadpoles in aquariums or in garden ponds, and a few of the most successful and practical techniques are explained here. You can avoid heavy tadpole losses and reduce environmental problems if you follow these simple steps.



See how they change

Being able to witness the life cycle of frogs is one of the most rewarding nature experiences that anyone can have access to.

Successfully rearing tadpoles can be a source of achievement for young and old. Most people are content to rear species that occur in their immediate area. The knowledge gained during the rearing of frogs and tadpoles - and the contacts that you make - may well lead you to participate in forums and frog conservation initiatives including monitoring and habitat enhancement / creation.

A message for schools

Approval requirements vary from state to state and are subject to change. For example, in New South Wales the National Parks and Wildlife Service (NPWS) allows school classes of licensed schools to collect up to 20 tadpoles from one water body only. When the tadpoles turn into young frogs they must be returned and released at the original site of capture. For updates, please contact NPWS or the Frogwatch Helpline. (You will find phone numbers and websites at the end of this brochure.)

Are you permitted to collect and keep spawn or tadpoles?

In NSW (and in several other states), if you intend to keep in captivity frogs, tadpoles or spawn, you must apply for an Amphibian Keepers Licence. The Keepers Licence will allow you to obtain these from a licensed private keeper who has obtained

them legally. You must not take frogs, tadpoles or spawn from the wild. Another source of tadpoles or frogs is the FATS Frog Rescue Service. Tadpoles and frogs that have undergone quarantine may be made available to licensed FATS members to keep - in permanent captivity, NOT for release in the garden. Ring the Frogwatch Helpline for information.

You don't need a licence for tadpoles or frogs that occur naturally in your garden. Many people have established garden frog ponds and have frogs breeding in them (see *FrogFacts* No. 2). In almost all cases, these frogs have colonised the pond naturally from the surrounding areas. Do not move frogs, tadpoles or spawn from the wild to your pond: it is illegal; you could bring in undesirable or unsuitable species or a strain that hybridises with a local strain. Also, after the tadpole stage, frogs have a homing drive and are unlikely to stay. Most importantly, there is a risk that tadpoles or spawn that you have collected may be harbouring infectious diseases which you would introduce into your pond. This has recently become a serious problem in Australia.

Spawn to avoid

If you find frog spawn that has been laid in soil, under rocks or under dead leaf litter or in the entrance of yabbie burrows above the water line, do not touch it. This spawn is probably from species that are threatened and that have special requirements that you will not be able to meet. Please note the appearance of the spawn and let the Frogwatch Helpline know of your find.

Most frog species in NSW breed in spring or summer after good rains. You are much more likely to notice the white floating foam nests of Striped Marsh Frogs, Spotted Grass Frogs or of the various Banjo Frogs, but you may also spot the submerged jelly-like spawn of many of the other species. All of these are suitable to collect a sample from, with two exceptions:

- If you know or suspect that the spawn is that of a threatened frog species, or if you are in a National Park or other reserve, leave it alone.
- If you find Cane Toad spawn (very long gelatinous strands), you should remove it and leave it to dry. Should you find it outside a known Cane Toad area, please notify NPWS or the Frogwatch Helpline.

Tadpoles to avoid

Tadpoles look too much alike to be identified by most people. An identification guide is being prepared by Marion Anstis and this will be available soon. If you raise your taddies through to baby frogs, you may be able to identify the adult frogs from a field guide. This is not as easy as you may think as frogs can change their colours and vary their markings.

There are some groups of aquatic tadpoles to avoid:

- Tadpoles which you know or suspect to be of a threatened frog species, or any tadpoles in a National Park or other reserve.
- Cane Toad tadpoles. These are always small and shiny black with dark undersides and thin tails and often gather in schools.
- If you wish to obtain legally acquired local tadpoles for your garden pond, remember that a few species, such as the Bleating Tree Frog *Litoria dentata*, are particularly noisy and may cause problems with your neighbours. This is one reason why it's best to have only local frogs in your pond that have colonised it by themselves.



Spawn of the Striped Marsh Frog (*Limnodynastes peronii*, right), Common Eastern Froglet (*Crinia signifera*, below) and Cane Toad (*Bufo marinus*, left).

How to get spawn or tadpoles

For licensed school classes: Spawn or tadpoles from the wild

Take no more than 20 tadpoles or an equivalent amount of spawn. You can tease some eggs from a spawn clump without unduly disturbing the rest. They must all be from the same location.

Aquatic tadpoles can be caught with a dip net and transferred into a plastic jar or a strong, watertight plastic bag. It is less stressful for tadpoles if they are not lifted out of the water but scooped with a plastic cup from the net. Water provides buoyancy for the tadpole and prevents body organs being compressed. (Stressed tadpoles may take a while to recover and to resume normal growth.) For tadpoles, ensure that the container holds half water and half air,

that it is kept in the shade and is transported without much sloshing.

Having no shells, frog eggs and tadpoles are easily damaged by water movement during transport. Foam nests are therefore best transported in very little water, and submerged eggs should be transported in a container nearly filled with water and with very little air. Also, take four other items home with you - all from the same site:

- If possible, at least two litres of water.
- A handful of detritus ("muck" on the bottom of the pond) from below the water, but don't transport that together with spawn.
- If possible, a handful of fine-leaved water plants from below the water surface.
- A note for yourself of the site location, because you will later need to release the animals at the same place.

As soon as you return, put the water that you collected into an aquarium and place the spawn or tadpoles into it. Gradually (over at least 30 minutes) add "conditioned" tap water (see page 3 under "water quality") of the same temperature - a finger test is sufficient - until the water is at least several centimetres deep. Add the detritus and water plants and place the aquarium in a bright place in the classroom but where it will not overheat. Over the next days, add more conditioned water, but no more than one third of the current volume at a time.

An ice cream container is much too small to hatch spawn in. The disintegrating egg jelly would cause oxygen deficiency and also pollute the water. If you have no aquarium at this stage, use a polystyrene broccoli box from your greengrocer, or a very large clean plastic bowl.

Spawn and tadpoles from a garden pond

For controlling mosquito larvae, it is important that you keep small tadpole-compatible fish in your frog pond (such as the Pacific Blue Eyes, see *FrogFacts* No. 2 - Keeping Frogs in Your Garden). While the tadpoles are still very small, some of them will be eaten by even the most peaceful of fish. If you wish to prevent this, you can remove spawn from the pond, place it into a broccoli box with pond water, and in a semi-shaded position in the garden if in mid-summer. Add water plants and a handful of detritus from the bottom of the pond. Place the broccoli box lid, with large fly-screened cutouts, over the box to exclude mosquitoes and predatory beetles. Feed the tadpoles once they are free-swimming and release them into the pond when they are 15 mm long (which is usually after 2-3 weeks).

While the tadpoles are being held in a container, do two partial water changes each week. To do this, punch a few holes through the broccoli box, one third of the height down from the top, loosely stuff some water plants or rolled-up fly-screen into the holes to prevent tadpoles from getting through, and add water so that the excess flows out of the side holes in the container. If your pond has a circulating water pump, you can direct a small part of that water into the broccoli box. The box should then have a hole near the top through which a short fly-screened pipe or hose is silicon-glued, to allow the water to flow back into the pond. Even without a pump, you could stand the box - weighed down with bricks inside - into the pond, at a level where pond water can flow through fly-screened cutouts in the sides of the box. *FrogFacts* No. 3 (Establishing Frog Habitats on Your Property) describes a similar system.

Spawn from the water bowl in a frog cage

Only very few frog species spawn readily in a water bowl in captivity, one of these is the Striped Marsh Frog. After you have observed their spawning behaviour (and perhaps recorded it with a video camera), remove the spawn with most of the water, place it into a larger container and gradually add conditioned water.

Even without filtration or aeration, you will still be able to hatch most of the eggs and raise healthy tadpoles if you:

- Use a water container with a large surface area - for a large spawn clump of 1000 eggs you need at very least the size of a laundry tub or of three broccoli boxes.
- Add fast-growing water plants to help keep the water clean. These should be sterilised against the Amphibian Chytrid fungus beforehand (fully submerged for 1 hour in a 1% salt solution is thought to be effective).
- Provide plenty of partial water changes with conditioned water - change one third of the water at a time. Draw the water from near the surface and leave the detritus and tadpole droppings; they browse through them, which is good for the tadpoles.

Spawn in a filtered aqua-terrarium

If you have captive frogs in a reasonably large cage that is suitable for your species (perhaps with rainbar, circulating water, biological filtration and temperature control), your frogs are more likely to breed than otherwise. The White-lipped Tree Frog (*Litoria infrafrenata*) and the Green Tree Frog (*Litoria caerulea*) are two species that breed under those conditions.

You may need to ensure that the spawn does not get sucked into the circulating pump. The adult frogs should be taken out, so they cannot eat the tadpoles or the young froglets. If the tank is suitable, raise the water level to give the emerging tadpoles as much water volume as possible. Young froglets must be able to crawl out of water by themselves (they are developing lungs and so they can drown). Before the first tadpoles turn into frogs, make sure that the land area has plenty of hiding places and that it can be easily reached, especially by frogs that are poor climbers.

You can keep large tadpoles together with some kinds of small and peaceful aquarium fish, but keep a close eye on them at first. Separate them at the first sign of the tadpoles' tails being damaged. Tadpoles are good scavengers of uneaten fish food and keep algae down in aquariums.

Tadpoles on a breeder or your local frog society

Local frog groups may sometimes be able to provide you with tadpoles or put you in touch with a licensed breeder. These tadpoles (and the frogs that develop) must not be released into backyard ponds or the wild because of the risk of disease. It is often difficult to tell whether tadpoles are infected. Do not make the mistake of releasing tadpoles or frogs in this manner as it may have disastrous consequences for wild frogs. Frogs that you have grown in captivity need to be kept permanently in captivity (for which you need a licence in NSW and some other states).

Quarantine

Little is known at present about effectively quarantining and disinfecting tadpoles, although there is a great need for it. In many parts of Australia, widespread frog deaths are occurring because of the Amphibian Chytrid fungus that has been introduced into Australia. Tadpoles can be carriers of Chytrid fungus, even if they look healthy. If you can, transport and hatch the spawn in water to which an aquarium fish fungicide has been added. Methylene blue - or a mixture of methylene blue, malachite green and acriflavine (marketed as Alive-O Aqua-Remedy) - may be effective at the dosages recommended for fish on the label of these products.

More quarantine recommendations are in *FrogFacts* No. 8.

Water quality

Another *FrogFacts* issue will discuss water quality, and here only the most urgent basics are presented.

Conditioning water

Tap water contains chloramine (mostly in metropolitan areas) or chlorine. This must be removed because it kills small tadpoles and damages larger ones. Chloramine cannot be removed by letting water stand in the open for a day or two. The easiest and most effective solution is to add water conditioner (from aquarium shops, but check that it removes chloramine as well as chlorine). Tap water that was under pressure may at first still hold supersaturated gases. They won't harm tadpoles if you never change more than one third of their water at a time - which is also good practice or other reasons.

Waste products

In a bare tank, waste matter builds up that releases substances that are poisonous to tadpoles. Remedies include:

- Adding fast-growing water plants, provided the tank is well-lit and provided the plants were first disinfected (one hour in 1% salt solution).
- An aquarium with biological filtration, such as an under-gravel filter with a circulating pump. The aquarium and gravel should first be disinfected. Beneficial nitrification bacteria must then be introduced, either from a bottle from pet shops (approx. \$15) or by adding a spoonful of garden soil that was thoroughly dried at room temperature (which kills any Chytrid fungus spores but not the useful bacteria).
- Twice weekly partial water changes; less often if you have either: (a) growing plants, (b) biological filtration once it has been established for at least two weeks, or (c) only a few tadpoles.

Factors affecting growth

Tadpole growth depends greatly on the species, but also on temperature, water quality and food availability. It depends also on crowding and in some cases on the presence of other species, both of which can have an inhibiting effect on their growth. Once tadpoles are about 35 mm long (including their tails), you should provide at least one litre of water per tadpole.

Room temperature is suitable for most species, but they will grow faster if you use an aquarium heater/thermostat at 25 - 30°C. A higher temperature will also help combat Chytrid fungus.

Feeding tadpoles

Tadpoles are omnivores to varying degrees. Most of their food intake consists of vegetation, decaying vegetation and the micro-organisms thereon, but they also eat animal matter when available. They are ineffective at controlling mosquito larvae, but they can clear minor algal blooms.

Captive tadpoles are best fed with items that don't pollute the water too much: tropical fish food (very sparingly) and soft boiled lettuce. Avoid overfeeding; remove any uneaten lettuce by the next day.

Tadpoles in well-planted ponds generally find their own food, and they will also eat some of the food you provide for pond fish.

Getting out of the pond

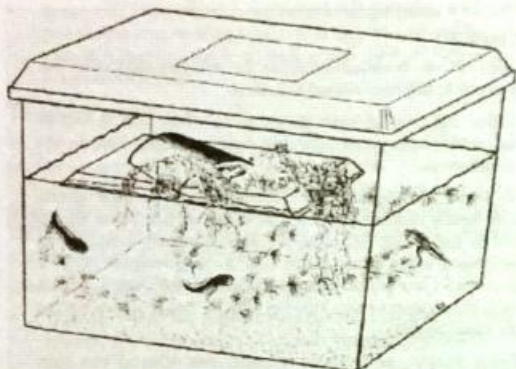
Unless the pond has gently sloping sides at surface level, the young frogs that the tadpoles have turned into may not be able to get out and will drown or starve. See the *FrogFacts* publications on ponds.

Getting out of the aquarium

An aquarium is not only ideal for observing the metamorphosis of tadpoles into frogs, it also helps you determine the right time to remove the young metamorphs individually. The hind legs grow outside the body, then the arms grow initially inside the body and then pop out. Thereafter (amongst many other changes) the

metamorphs will need to breathe air, the tail begins to shrink, and they are likely to drown if they can't get out.

As the first of your tadpoles begin to metamorphose (and they won't all do this during the same week), close up any escape holes in the aquarium lid. Remove daily those metamorphs whose arms have come through, even if they still have a full - or almost full - tail. Place them in very shallow water (e.g. in a saucer) in your frog rearing tank. They will need to eat (small, live, moving insects) as soon as the tail is fully resorbed.



As tadpoles begin to turn into frogs in containers with steep sides, provide them with an island so they will not drown. The island should contain hiding places. A floating polystyrene island with sloping sides can be covered in Sphagnum Moss or live Java Moss.

Releasing the young frogs

If the spawn or tadpoles came from the wild, remember to release the baby frogs (and any of the tadpoles that have not yet turned into frogs) at the same location. Put the frogs, even if they still have some tail, into a plastic jar or strong lightly inflated plastic bag, with a spoonful of water added. Release the frogs - without their transport water - amongst damp dense greenery at the water's edge.

Releasing tadpoles

It is good practice to release tadpoles without releasing any of the aquarium water as well. Transfer them gradually (over at least 15 minutes) from their aquarium water into conditioned tap water. Take care that no water plants get into their transport bag. Transport them - again without excessive sloshing - to the correct release site. Equalise the water composition and temperature in their bag (by gradually mixing with the pond water over at least 15 minutes). Then pour them into a fine-meshed net - at least 10 m

away from the pond, rinse the net quickly with pond water and gently drop the tadpoles into the pond.

What you shouldn't release

- Don't release tadpoles or frogs which you think might be sick or which have been in contact with sick-looking ones. Ring the Frogwatch Helpline for advice.
- Don't release them if the site has completely dried up and if there is no other suitable place close by. If in doubt, ring the Frogwatch Helpline.
- Don't release non-local frogs into your garden. You could bring serious frog diseases into your suburb, and you could unwittingly change the genetic mix in your area. In any case, frogs are unlikely to stay in a strange garden. In most states they are also protected, and you can't take a frog that you find with you.
- Don't release captive-bred tadpoles in your garden (or anywhere else for that matter) unless there is a good reason and you have special permission. Stick to the species and the local strain that already occurs in your suburb.
- Don't release aquarium water into the wild or into the stormwater system, and not into the garden. Pour it down the sink or toilet.

Further information

- The postal address of the FATS Group is: P.O. Box 296, Rockdale NSW 2216. When requesting *FrogFacts*, please send a small donation for photocopying and postage.
- FATS Group meetings: Every first Friday of every even month, 7 pm for a 7:30 start, at the Australian Museum (William St. entrance).
- FATS Group Web site (with links to other frog groups): www.fats.org.au
- Frogwatch Helpline: 0419 249 728, (02)9599 1161, (02)9371 9129
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Funding grant: NSW Department of Land & Water Conservation /
Natural Heritage Trust

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ISSN 1037-0617

July 2001

CLAUDE DESIGNS A FROGMOBILE

CLAUDE! Where have you been, Claude, all this time?

Who, me? Ici, I mean right 'ere, all along. I am trying to become a dinkum Aussie now, but it is très difficile. No more pommes frites, no more champagne, ...

And no more frogs?

Frogs? 'ow did you know? I 'ave nothing but fondness for frogs. In fact, I am designing a mobile 'ome for one of them.

For one frog!

Et alors, I am talking about Stage One.

Is that what this giant box full of papers is about? Are you building it out of paper?

I think I could, by now. It is a box trailer after all, 3.6 meters long and 2 m wide, but then it goes up and up and - oh, it's going to be magnifique, and it will have énorme panels hanging down from the top, and more panels underneath those, and then other things fold out, and then awnings come out and then cannons, no not cannons, but a pond pulls out with somebody in it, and flags and ...

Claude, are you alright? Haha, next you'll be telling me there's going to be a naked frog in a skirt! A frog in a frock, hahaha!

Stop! I must write this down. You think this folding out is funny, but I'm sure the exhibitions organisers will not. When we arrive with a modest trailer and when they turn around there stands a whole tent city, where we can charge admission fees and conduct guides tours and slide shows and workshops and ...

Haha, you're funny! Do you like your froggy cooked? Do you know how hot it would get in there?

But this is Stage One. We have ice cubes, of course. In Stage Two, the Frogmobile will be full of frogs, and then they will stay in there day and night, summer and winter. Then ice cubes won't be good enough, it all has to be automatic. With a freezer full of ice bottles. Each of the five main cages will then have an air pipe running through the freezer and back again, each one separate so the cages can never infect each other, and with separate draining and thermostats and non-return valves of course.

Oh, of course. And of course you don't use an air conditioner like everybody else does?

Would you like me to design a Frogmobile full of lights and waterfalls and heaters that needs an air conditioner as well? That blows a fuse wherever you plug it in? Our hosts at the festivals would take a very dim view, I think. Whenever we turn up, it would be their darkest hour. And unattended running with frogs inside would be right out of the window, with the fuse popping whenever it's needed the most. In fact, the trailer is running unattended almost the entire time, so natural air circulation with a bit of help from some fans from time to time is much more economical.

And when it gets really hot, I mean really really hot?

The cages themselves get cooled then, each one separately as needed, first with evaporative cooling when the rainbars and spray jets start up, then with the cage air - and only the cage air - going

through the ice that was made in the freezer overnight. You see, the cages are ruggedised and thickwalled anyway, and because they are frog-hygienic they don't have open air spaces, so the temperature elsewhere in the Frogmobile is not going to worry the little frog very much.

I was hoping you'd blast ice-cold air straight at your frog and snap-freeze it into a frogcicle.

I have that one licked, I think. It is much trickier 'eating my frog.

Whaaat? You cannibal!

Heating, I said, you hocker! That's where most of the electricity is used up, if we are not careful. And we can't take dozens of solar panels and batteries with us; there must also be space for the frog. But there are some diffused sunshine coming in from skylights above the cages. And because we're trying to grow live mosses and ferns all over the artificial rockwork, we need some reasonable illumination. We need that anyway for exhibiting our froggy, so we might as well use lights as the main source of warmth as well. All the cage lights are on thermostats that cut in and out at various temperatures, and the air flow goes from the light boxes into the cages to warm them up, or it goes the other way when warm enough. There are even night lights for the frog that give it dark periods and still some warmth.

I didn't know that frogs had to be kept all that warm. What temperatures should one keep them at?

Maybe the more tropical ones between 18 and 32, at the top end of the range hopefully only for a week at a time to help prevent or to help treat a chytrid fungus infection. If it dips down to about 16 on the odd night, that's ok too, but below that the frogs can't digest their food and the plants and filter bacteria get a setback.

And you're really going to keep frogs in there all year round? All on automatic?

After Stage One, yes, that's where they stay. The cages will still need a visual check every day, but they shouldn't need much intervention other than dropping food in and cleaning the filters and the glass once in a while.

And what can you do then?

We can then exhibit at powered or unpowered sites in summer or winter, for many days on end, without any prior packing and with almost no setting up when we get there. If we want to run a workshop in the countryside, we can flyscreen the enclosed space around it and get all the folding chairs out. If we want to do a frog survey in a certain area, we can get the local media excited and maybe recruit on the spot and leave a few data loggers behind with some of the schools or farmers. And we are going to make Osram famous. And there are quite frightening possibilities that we have barely thought of yet.

Have you thought of which frog will go in there for Stage One?

Oui. I am afraid le frog c'est moi! L.V.

D. Fantastic swimming frog

Hours of entertainment for the whole family!

Powered by 1 AA battery, our frog will float and move around with a realistic swimming action. It has a life like, soft-touch back, on-off switch and measures 30cm long - perfect for the fish pond.

swimming pool, or even the bath! A great novelty, it would make a very amusing gift.

Code BO52
\$29



WEEKEND STAY AT CAMP YARRAMUNDI

Frank Lemckert is looking to see if there is enough interest in organising a frog weekend at Camp Yarramundi, near Agnes Banks (Western Sydney) in November/December. The cost will be \$30-\$40 per person for the weekend staying from Friday evening to Sunday afternoon. This includes meals from Friday supper to Sunday lunch and the accommodation (need your own bedding and pillow).

The camp has tennis courts, a playing field, volley ball, table tennis and a nice swimming pool and in a partly rural partly forested surrounds. So there will be plenty of opportunity to relax and do whatever you want to do and lots for any kids.

More importantly, there is a river running next to the camp that had a number of species calling on it last year (eg, *Litoria lesueurii* and *Litoria peronii*) and a number of good frog ponds nearby (we got 8 species at a course held there in January).

There will probably need to be a minimum booking of at least 20 people and maybe at least 30, hence my asking what interest there is. If enough interest is shown, I'll organise a weekend and get final numbers and payments from people. This will also mean that late inclusions may not be possible. Please call **Frank on 9872-0159 (work)** or **Email him at frank@sf.nsw.gov.au**

ANTHROPOPLEXOMORPHOSIS?

Show a frog to the public and they want to stroke it. "Oooh, it looks just like a little human!" and "Googoogoo, how cute!", as they rub their fingers down its back. Now, a fellow mammal might comprehend such tactile desperation, but a frog?? From its experience, all it could think is that you're trying to mate with it. And that you haven't got a clue how to do it.

Ah, but wouldn't it be so nice to have a pet frog? One that sits on your knee and looks adoringly up at you? If you're yearning for unrequited love, you're not the only one. The frog world itself is full of cases. Mike Archer's Cane Toad movie even showed one amplexing with a road kill, and love-crazed Banjo Frogs are legendary, grabbing goldfish in a vice lock that leaves them gasping.

Even people have been known to seek medical help to get the wretched things off them again, which means in country areas having to travel often considerable distances despite their embarrassing predicament. One frog fancier went all the way to Louisiana with a Banjo on his knee...L.V.

SYDNEY ALTERNATIVE TECHNOLOGY ASSOCIATION & DWELLING PLACE

Present PV Systems & Energy seminar, 9.30 to 16.30 Saturday 18th August 2001 EarthCare, Uni of Western Sydney Richmond. Sustainable Design, Renewable Energy, PV System Installation, Dollarizing your PV system, Energy Saving Strategies, Insulation, Grants and Rebates. \$30 concession, \$50 non members **Contact Jenny 02 45791136 or Ken 0438224491**

A cross section demonstrating the workings of the Centennial Parklands' new Gross Pollutant Trap (GPT).

SPECIES MORE ENDANGERED AS RESCUE PLAN FUNDS CUT

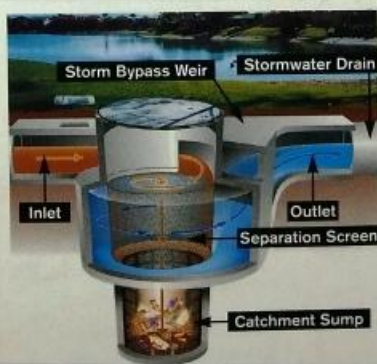
The recovery plans for hundreds of endangered species in NSW are in jeopardy after a decision by the Carr Government to slash its funding for threatened animals and plants, warns a confidential NSW National Parks and Wildlife Service document.

As at March 16, NSW had 338 endangered species and 373 vulnerable species, all of which are in need of recovery plans. The parks service has been arguing for more than five years that it needs at least \$10 million a year to fund programs to bring endangered animals back from the brink of extinction. The total allocation, however, has been \$6.5 million and that has now been cut nearly 40 per cent.

The service has a statutory obligation to prepare recovery plans for plants and animals listed under the Threatened Species Act but has so far been able to complete a mere 11. Another 21 recovery plans are in draft form and conservationists say the slow pace is an appalling failure on the part of the Government. Another 140 are currently under way. "Treasury intend to cease the threatened species recovery funding enhancement of \$2.5 million in 2001-02," says a leaked document, Contentious Issues. "This will result in many recovery plans and recovery actions not being implemented. Given the high profile and high level of community involvement in many of these recovery actions, the public and media reaction is likely to be severe."

A spokeswoman for the parks service said the issues paper was an internal working document and had not been "verified or authorised by the executive". "[The \$2.5 million that was cut] was additional funding fixed for a set period - an additional boost to base funding over a three-year period," she said. But the director of the Humane Society International, Mr Michael Kennedy, said that even before the cut the amount allocated to endangered species was "totally paltry". "If the Government cannot provide the resources to match these increasing lists of threatened species then what use is the legislation?" Mr Kennedy said. "I don't see how Bob Carr can sit back and let this funding decrease."

Today the Environment Minister, Mr Debus, will approve a further 14 recovery plans for species including the southern corroboree frog, Mitchell's rainforest snail and the spotted tree frog. He will also announce \$2 million on critical habitats and recovery plans for aquatic species. He says a total of \$13.1 million will be spent on biodiversity. **James Woodford SMH 29/6/01**





Frog & Tadpole Study Group Statement of Income & Expenditure For Year 31/05/00 – 31/05/01



	31/05/01	31/05/00
Opening balance	\$ 9516.13	\$16066.22
Income		
Interest	\$ 434.10	\$ 45.89
Sundry income	\$ 780.06	\$ 761.00
Workshop income	\$ 1200.00	---
Membership	\$ 9914.00	\$ 8286.30
Donation	\$ 365.00	\$ 100.00
Grants	\$29250.00	---
Sales – t.shirts, cards, c.d.'s, tapes	\$ 1400.03	\$ 1203.60
Auction/raffle – meetings	\$ 1216.00	\$ 1108.00
Frog Sales	\$ 2719.00	\$ 1963.00
Field Trip income	<u>\$ 663.00</u>	<u>\$ 825.00</u>
	<u>\$47941.46</u>	<u>\$14292.79</u>
	\$57457.59	\$30359.01

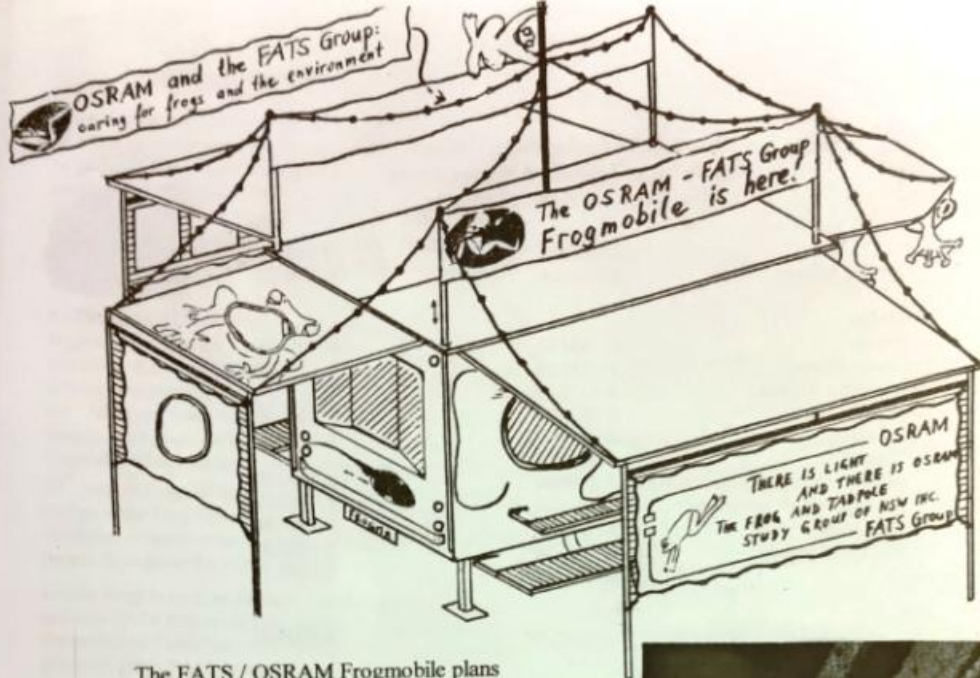
Expenditure

Bank Charges	\$ 54.54	\$ 51.36
Insurance	\$ 400.95	\$ 308.75
Workshop expenses	\$ 875.57	-----
Postage – Frogcall	\$ 1422.12	\$ 1350.05
Postage – sundry	\$ 213.30	\$ 304.05
Venue/Field/Post Office Hire	\$ 1203.20	\$ 1569.98
Printing – Frogcall	\$ 1947.59	\$ 1605.78
Printing – sundry	\$ 77.00	\$ 772.72
Herpetofauna	\$ 1400.00	\$ 1802.50
T-Shirts, cards, frog C.D.'s & tapes	\$ 722.70	\$ 1653.40
Subs & Donations	\$ 255.00	\$ 55.00
Frog Rescue equipment	\$ 1599.55	\$ 667.32
Mobile Phone	\$ 986.60	\$ 427.95
Term Deposit – transfer of funds	\$ 5000.00	\$10000.00
Fair Trading	\$ 37.00	\$ 35.00
Stationery	<u>\$ 45.64</u>	<u>\$ 201.47</u>
	<u>\$16240.76</u>	<u>\$20842.88</u>
Closing balance	\$41216.83	\$ 9516.13

Total FATS assets

Working Capital	
Cash in bank	\$11966.83
Grants monies received -	\$29250.00
Total in bank	<u>\$41216.83</u>
Investments held	
Term Deposits	\$15000.00





The FATS / OSRAM Frogmobile plans

L.V.
23.6.09

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LEAF GREEN TREE FROG

Litoria phyllanthus

Frogs and reptiles of The Sydney Region
Ken Griffiths

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Vacant	Editorial Panel		

We hold six informative, informal, topical and practical meetings each year at the Australian Museum, Sydney (William Street entrance).

Meetings are held on the first Friday of every **even month** (February, April, June, August, October and December) at 6.30 pm for a 7.30pm start. **NO MEETINGS ARE HELD ON GOOD FRIDAY so check newsletter for alternate dates.** Visitors are welcome. We are actively involved in monitoring frog populations and in other frog studies, and we produce the newsletter *FROGCALL* and *FROGFACTS* information sheets.

All expressions of opinion and information are published on the basis that they are not to be regarded as an official opinion of the Frog and Tadpole Study Group Committee unless expressly so stated.

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