

# FROGCALL

Newsletter No. 110  
December 2010

The Frog and Tadpole Study Group of NSW INC  
fatsgroup@hotmail.com  
PO Box 296 Rockdale NSW 2216  
www.fats.org.au  
ABN: 34282154794

**Best Frog pics**  
FATS Frogographic winners

## Horror in the Shire!

Our President reports on FATS's  
role in stopping Cane toads in the shire

## Frogging Out Back

David Nelson reports in

## Anstis in FNQ

Marion goes the extra mile  
for unique frogs and eggs

Image: *Neobatrachus centralis*, Desert trilling frog. David Nelson

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# Toads Invade the Shire



Fig 1.

## Australia needs Toads

Everyone hates Cane Toads. But why? There was a time when Cane Toads were heralded as the saviour to our sugar cane industry. The story starts back in the 1920s when cane growers in North Queensland imported short stems of cane plants from Hawaii to try improve the quality of their sugar cane crop. Little did they know that hidden away in the centre of these stems were eggs laid by the Greyback Beetle, a notorious pest of the cane plant. The stems were planted in the cane field along the Queensland coast and very quickly the beetle eggs hatched, the grubs grew, matured and multiplied, decimating large areas of sugar cane fields in their wake.

For Queensland, this was an absolute disaster; sugar production was the mainstay of the state's economy. Various methods were tried to control the beetles but nothing worked. The cane farmers petitioned the Queensland Government to do something to save their industry. Government officials knew that Hawaii had the Greyback beetle but still managed to produce sugar. How did they do it?

Contact was made with agriculturalists in Hawaii who informed their Australian counterparts that they had imported the Giant Toad (*Bufo marinus*) from Central America- as it ate almost everything, including Greyback beetles. Could this be the solution to Australia's problems?

The Queensland Government was getting desperate, The state's economy was failing and there was enormous pressure to come up with a quick fix solution. Australian scientists were

asked to assess the merits of importing cane toads, and after a short interval they gave their verdict- don't do it- it was too risky. But what option did the Queensland government have- they couldn't do nothing. Perhaps the toads would give them two or three years breathing space during which a better solution would be found.

Cane Toad were introduced into Australia in 1935 to combat the cane beetle. They were bred up of special farms in northern Queensland and released in cane field up and down the coast. Within 12 months, the authorities knew that they had made a mistake. Sure cane toads will eat Greyback beetles, but they also like to eat many other thing. There is a lot of food waiting to be eaten outside of the cane fields of northern Queensland and so the toads started a long march across Australia in search of new food resources

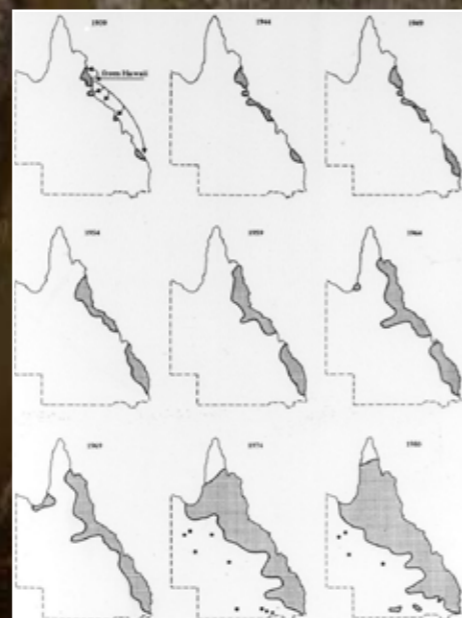


Fig 2.

## Toads on the March

Toads quickly spread from the cane fields across Queensland and moved into the Northern Territory and New South Wales (Figure 3). When they reached Brisbane they quickly became a common sight around houses and light poles at night (Figure 4). The first toads reached NSW in 1967 (at Murwillimbah). Their spread down the east coast of New South Wales has been slower than their trip down the east coast of Queensland. Toads were first reported in Sydney in 1983 and the first record for the Shire was 1986.



Fig 3.

## Toads in Sydney

Toads started turning up in Sydney in 1983 and have been regularly popping up ever since. Usually they are found as solitary animals, often as hitchhikers in freight. In 1994, FATS started the Frog Rescue Service to save frogs that had been accidentally transported to Sydney from being destroyed under quarantine regulations. Once the Frog rescue Service got up and running, we were surprised at how often toads were picked up. In 1998, first calling toads found near Windsor and that small population was quickly destroyed before it had a chance to breed.



Fig 4.

On average, about 50 to 60 toads are collected in Sydney each year; normally one or two are found in the Sutherland Shire. Toads have now been collected from almost every suburb of Sydney, but there are some "hot spots" for toads (White and Shine 2009). Toads are great hitch-hikers and stow-aways. They frequently hop a ride on trucks carrying landscaping materials (such as wood chips, mulch and compost), building materials and produce. Any company that is receiving these goods from northern Australia will eventually get a free toad or two one day.

## Recent Toads Invasions of the Shire

In January 2010, Sutherland Shire Council raised the alarm over an apparent steep increase in the number of toads being found in the Shire- especially around Taren Point. Instead of single toads being found, multiples were being found or reported. In addition, the toads ranged enormously in sizes.

## The Response

Sutherland Shire Council decided to devote resources into determining the extent of the toad invasion. I was engaged to do the initial assessment of the problem and to advise on measures to stop or control the toads. Between February to April 2010, cane toad collections were commenced in the industrial areas of Taren Point (Figure 5). In addition, a community information program was started to encourage people to report toad sightings to the Council.

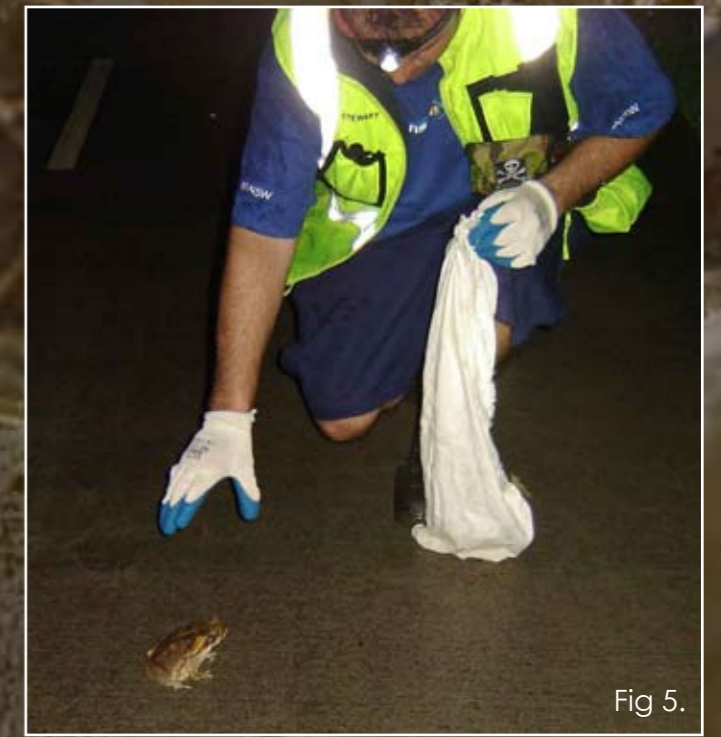


Fig 5.

Most of the toads that were collected in early 2010 came from Taren Point (a few came from the Sutherland area).

## Why do we worry about toads?

Toads have poison glands on their necks and in smaller glands across the back (Figure 6). The toxin is the toad's defence mechanism against predators that try to eat them. The toxin will kill cats dogs (and people if your are silly enough to lick one). No native animals are immune to toad toxin and so they have a dramatic impact on species that eat frogs when they first appear in an area. Toads can displace native animals, either by killing them or through the introduction of disease.



Fig 6.

Toads also carry exotic parasites that are lethal to Australian frogs. Studies conducted at Sydney University found that toads carry a lung parasite (called Rhabdias) that is highly lethal to some Australian frog. As part of our work at Taren Point we are sampling parasites (especially lungworms) in the toads that are found there (Figure 9).



Fig 9.

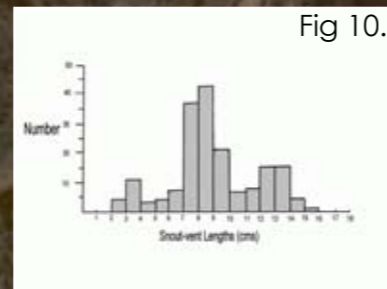


Fig 10.

**What do we know about the current outbreak of toads in the Shire?**

The current outbreak of toads is not due to a sudden arrival of toads in Sydney, some of the toads were bred here. Based on the size distributions of the captured toads (over 300 have been collected at Taren Point so far) It is likely that toads have been breeding at Taren Point for three years (Figure 10).

**We do not know how far they have dispersed yet**

Two pieces of evidence are used to determine if toads have bred: the presence of expanded but empty oviducts in female toads indicates that the female toads have ovulated recently, and enlarged testes in male toads indicates that they are also in reproductively-ready condition. So far no eggs or tadpoles have been found at Taren Point.

**The Fear**

As toads can clearly breed in Sydney, they may become established elsewhere. in the Sutherland Shire (or other parts of Sydney). While they are confined to a small area they may be contained and perhaps eliminated. But if they spread, we may not be able to get rid of. Close to Taren Point is the Towra Point Nature Reserve and the Kurnell peninsula (Figure 11), the impact on native fauna in these areas would be disastrous.

Toads have a high breeding potential and can travel widely across diverse terrains (including mangroves). A single female toad can lay up to 20,000 eggs in a season. The eggs are toxic, the tadpoles are toxic and the eggs can poison water and kill off other aquatic organism that were present there.

**Impact on Native Fauna**

Toads can kill predatory species (such as snakes, birds of prey, crocodiles and quolls) when they are attacked by these animals. The toads' defence when attacked is to exude the toxin across its skin so that attacker gets a mouthful of toxin. It tastes bad and some animals will spit it out. Unfortunately some of it may be swallowed, resulting in death



Fig 7.

Toads eat small native animals (including frogs and lizards). They are voracious feeders and grow to large sizes. They require a high mass of insects and other invertebrates to keep them going and this reduces the food available for native animals.



Fig 8.

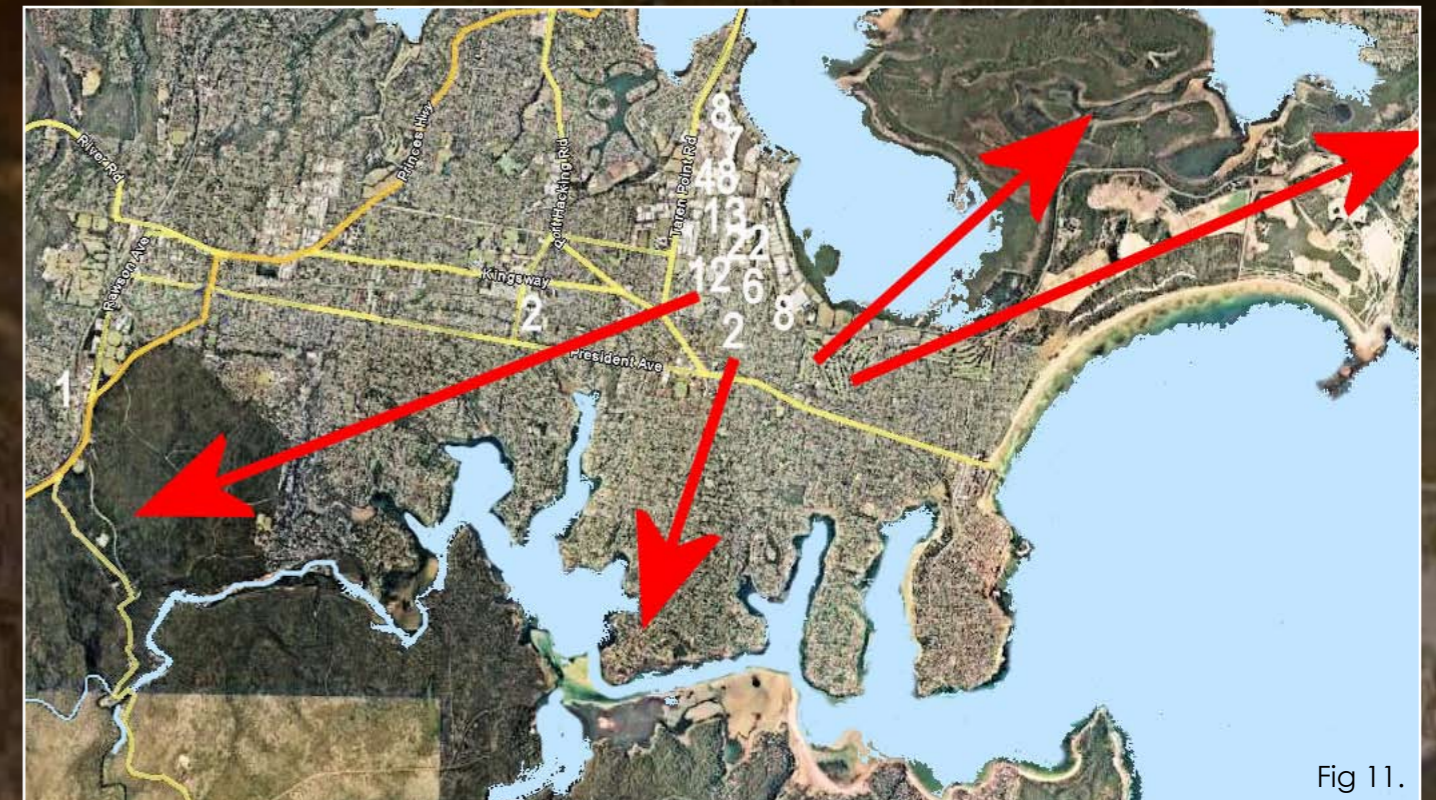


Fig 11.

**The Battle Plan**

A battle plan involving the Sutherland Shire Council., National Parks and Wildlife Service, FATS and others has been devised. To control the toad population, an assault is being launched in the upcoming spring and summer (before the toad breeding season). Toad traps and light attractants will be used at toad "hot spots" and these will be constantly monitored. Suspected toad breeding sites will be neutralised. In addition, a toad sniffer dog has been trained to help locate toads in difficult areas. Community toad musters will be held and you are all invited to join in.

**What can you do to help?**

Join a toad muster if you can (Figure 12). Always report any toad sightings- you can report them on the Frog Helpline 0419-249-728, or to your local Council or National Parks.



Fig 12.

It is very important to get up-to-date information about toad movements and activities in Sydney. FATS is maintaining a central register of toad sightings and this data has already proven useful in targeting "hot spot" areas (see White and Shine 2009). If you see or even suspect that you have found a toad, place it in a secure container with a small amount of water and ring the above numbers. DO NOT KILL THE TOAD. These animals are useful in providing more data about breeding events, age classes and parasites.

Arthur White  
Reference Cited  
White, A. W., and R. Shine. 2009. The extra-limital spread of an invasive species via "stowaway" dispersal: toad to nowhere? *Animal Conservation* 12:38-45.

- Captions for Figures  
 Figure 1: Toads are the least loved animal in Australia.  
 Figure 2: Map showing the spread of toads on Queensland after their introduction.  
 Figure 3: A Brisbane street scene with toads massing beneath light poles.  
 Figure 4: Map showing the slower spread of toads in New South Wales  
 Figure 5: Stewart Harris from Sutherland Council collecting toads at Taren Point.  
 Figure 6: Toxin being exuded from skin glands  
 Figure 7: Dead freshwater crocodile that had eaten cane toads. Riversleigh 2004.  
 Figure 8: Toad lung containing Rhabdias lungworms.  
 Figure 9: Cane toad swallowing frog  
 Figure 10: Size distribution of toads collected from Taren Point  
 Figure 11: Map showing possible dispersal routes for toads at Taren Point  
 Figure 12: Volunteers on a toad collection muster.

# Frogging Out Back *David Nelson*

Greetings again from your travelling correspondent! Since my last installment in Cairns, the road took me north to the tip of Cape York, then across the gulf country and finally south through Western Queensland and back to Sydney for a brief interlude before I set off again.

Late November 2009 saw me out in the channel country around Windorah – I was heading out to the Simpson as a volunteer on a research trip. When rain arrested our progress, I couldn't have been happier as it allowed us to see some of the frogs in this part of the world that only emerge when good rains wake them from their resting places beneath the surface.

As night fell over the flooded land, the frogs began calling. Fabled Water-holding frogs, *Cyclorana platycephala* bellowed like cattle while floating in the water. A honking noise issued from another water-holding frog, the knife-footed *C. cultripes* which sat around the edges. A third water-holding frog – it appeared to be *C. australis* – was of great interest as the status of this species in the area is rather unclear.

After frogging these flooded areas and marvelling at these and other species which had appeared as if by magic in the usually arid land, we investigated a sandhill near Windorah. We were in luck here too, as we came upon the speckled, glandular Desert Spadefoot toad, *Notaden nicholli* hopping around the sand. One individual had set himself up next to a termite burrow entrance and had no doubt been feasting on the inhabitants.

The final froggy highlight of the trip came later, out in the sandhill country of the Simpson, where only modest rain had fallen. Enough, though, for some of the claypans to moisten, and on a spotlighting run I noticed the eyes of a solitary frog sticking up from the sucking mud. It proved to be an unusually pale coloured Desert trilling frog, *Neobatrachus centralis*. After absorbing its fill of the precious water, it would be destined to bury itself again, form a cocoon to keep moist, and wait. Waiting - like so many other denizens of the desert - for rain to again come to the harsh, arid landscape.



*Cyclorana australis*, Giant water-holding frog



*Cyclorana platycephala*, Water-holding frog



*Cyclorana cultripes*, Knife-footed water-holding frog



*Notaden nicholli*, Desert spadefoot toad at termite burrow entrance

## PRECIOUS *Val Bonner-Burrows*



This frog came into my care through the RSPCA 1300 ANIMAL rescue line. It had a badly broken and infected right leg and, unfortunately, had to have the leg amputated. It recovered from the operation really well but, of course, could not be returned to the wild and remains in my care. (NB Rescued frogs can't ever be returned to the wild or released, unless the exact location of its original home is known eg your farm or its original habitat / back yard. Ed) Shortly after recovering from the operation it developed an infection on its right shoulder, which took some time (under vet care) to heal and left a scar.

I call the photo 'Good Side' because that is what it shows, ie the 'good side' of the frog. To look at this side you would think that the frog was perfectly healthy (which she is now). She just looks a little battle worn on the other side.

As you can see from the photo, it is a very large green tree frog (whom the vet staff and I have all presumed to be a female because of its size) and I have called her 'Precious'. I called her 'Precious' because I didn't want to give her any of the stereotype names (the vet nurse, affectionately, called her 'Stumpy') and also because I thought she was pretty precious is coming through all that she had. In the end, the name was also relevant because she cost me a fortune in vet bills!

'Precious' - whom you would think would be grateful for all the help I have given her through these hard times - has now decided to confuse me and has called a number of times. Hence she now has an alternate name of 'Precious Pete' until I can decide, once the warmer weather comes, if she is just having me on or if she really is a he.

(NB Rescued frogs can't ever be returned to the wild or released, unless the exact location of its home is known eg your farm or its original habitat / back yard. Ed)

# FATS THIRD FROG-O-GRAPHIC COMPETITION RESULTS

The FATS Frog-O-Graphic competition winners of the images, do-dahs, artwork or drawings will be announced at the FATS meeting on 3 December 2010. Winning entries may be featured in Frog-Call, our web site or other FATS publications. No correspondence will be entered into, following the judges' decision. All entries will be displayed and a "people's choice" award will be judged by all those present at the December meeting. Are there prizes? Yes fabulous ones.



Best Junior Artwork Frog Drawing  
by Joel Cassar



Best Snr Artwork Frog Painting  
by Vicky Deluca



Best Snr Photo *Litoria microbelos* by Aaron Payne

## Two Most Interesting Seniors winners



Tomato Frog Jill Stret



Striped Marsh frog in pond Kim McCaffrey

## Six other photos for the FATS calendar are:



*Litoria gracilentata* on lily John Pompurs



*Litoria bicolor* Aaron Payne



White-lipped Tree Frog Marie Collins



*Litoria jervisiensis* by Wendy Grimm



Frog montage Frog painting Karen Russell



Blue Mountain Tree frogs in amplexus  
Brad McCaffrey

## The Best Way to Spend a Long Weekend... Grant Webster

Spring spells the start of the frogging season for most, and the October long weekend seemed like the perfect excuse to get away for the weekend and go looking for some frogs. Returning to northern NSW, which is probably the highest species density area for frogs in NSW, marked the first official frogging trip for me for the season.

The first stop on the trip, Point Lookout, near Ebor, is one of the highest elevations in the New England tablelands, and on a clear day apparently you can see the ocean from the lookout. Having come to this same spot last year and having found a large array of species, I was hoping to repeat that success, and maybe finding something new as well... Point Lookout, being at a high elevation (about 1500m) generally receives a lot of rainfall, certainly at this site last year creeks were flowing rapidly and bogs were soaked, however having been very dry for the previous two months I didn't really know what to expect. When we arrived at the site things were not looking promising, the creeks were reduced to trickles and the bogs were dry. None the less I wasn't ready to give up hope, as dry conditions don't always mean no frogs. Fortunately for us, temperature was on our side, in an area where night temperatures can often drop into the negatives even in summer, it stayed above 10C during the night, which is "warm" on New England standards.



*Litoria subglandulosa*

The first site we had a look at was within New England National Park, a large sphagnum bog and an associated stream, in dense forest where every tree, rock and bare patch of ground is covered in thick moss. The site seemed like perfect habitat for the Sphagnum Frog (*Philoria spahgnicolus*), although, not a frog was to be heard. However, after rolling a couple rocks I was lucky enough to find a large

female Sphagnum Frog, normally not such an easy to find species it made for a good start to the trip. Having a look in the creek next to the bog, one species of frog was still keen enough to call, the New England Tree Frog (*Litoria subglandulosa*), this species had historically declined in the area so hearing them calling was definitely good to hear. It didn't take long to locate the frog which was sitting on a branch adjacent to the stream. Having never seen this species before it suddenly made the 7hr drive to get there seem worth it. Moving on to some other sites around Point Lookout, we managed to pick up a few more species including the Whistling Tree Frog (*Litoria verreauxii*) and the Beeping Froglet (*Crinia parinsignifera*), surprisingly we found *Litoria subglandulosa* in almost every stream we looked in, which were seemingly absent from the same streams one year ago.



*Litoria barringtonensis*



*Philoria sphagnicolus*

Leaving early on the next morning to get to our next stop, Richmond Range National Park near Casino, a good 5hr drive from Ebor. The day was hot, and the country side was bone dry, most areas were shrouded in smoke, and it was looking even more ominous than the previous day. Having had our luck with *Philoria sphagnicolus* we were hoping to find a closely related species, *Philoria richmondensis*, which is restricted to a small area of rainforest in the Richmond Range, with an extremely small distribution it is one of the least recorded frogs in NSW, and is somewhat of a grail to most froggers.

Arriving early in the night at Richmond Range after a fairly unproductive afternoon look at the nearby Yabbra National Park we were quick to start searching for frogs. Like Point Lookout, the sites were we largely dry, streams were trickles and the large Great Barred Frog (*Mixophyes fasciolatus*) tadpoles looked as if they were chocking the small pools of water that remained in the stream. We could hear no frogs calling at first, just the sound of the odd Stoney Creek Frog (*Litoria wilcoxii*) jumping in

the leaf litter. However something got my attention, a large Carpet Python (*Morelia spilota*) wrapped around a branch. Once I went to photograph the snake something else caught my attention, and really caught attention, a very soft "ork" sound coming from the bank of the stream. I knew immediately it was *Philoria richmondensis* although after about an hour of lifting rocks and digging through mud it was not to be found, so close yet so far. Having gone to sleep very disappointed we thought we'd have another crack at them in the morning. Walking along the stream again, this time not one frog was to be heard, just about to give up I heard another soft "ork" from the bank. This time it was coming from directly under a small rock on the bank. Lifting up the rock revealed a small, non-descript, brown frog in a small clay burrow, I could have fallen over in excitement. After spending about an hour photographing this rare frog it was time to move on.

Another long day of driving, our destination today was Washpool National Park (near Glen Innes) – which was one of the destinations on the FATS bus trip. The current dry spell seemed to have little effect on the Washpool rainforest, the creeks were flowing rapidly (and one of the bridge crossings had been destroyed by heaving rain during winter). A species of green stream frog (*Litoria barringtonensis*) was heard calling by day and it seemed as if it would be a promising night. However, when darkness set in we other frogs in mind.

The lure of looking for an "extinct" frog can be very tempting, as pointless as it may seem. The Peppered Tree Frog (*Litoria piperata*), not seen since the 1970's occurred in this area. Diehard Creek, near Glen Innes is a known historic site for this species and we thought maybe it was worth a look. We arrived at the creek, a rapidly flowing and boulder strewn torrent with extremely steep banks. Moving along the stream was slow going and with just the odd Common Froglet (*Crinia signifera*) calling here and there not much else was happening. Then I picked up the eyeshine of what looked like a small tree frog sitting in streamside vegetation, stumbling awkwardly towards it at my fastest possible running speed, it was indeed a small tree frog, *Litoria verreauxii*. Not giving up yet it wasn't long til I picked up another small tree frog eyeshine, again rushing towards it, this time

it was a *Litoria subglandulosa*, which we found further down stream in quite good numbers.

No piperata to be found and after finding a pair of amplexing Sandpaper Frogs (*Lechriodus fletcheri*) it was time to head back to Washpool. Returning to Washpool the creek was alive with frogs, there was so many pairs of amplexing *Litoria barringtonensis* you had to watch which rocks to step on and which to avoid. Also along the stream Stuttering Frogs (*Mixophyes balbus*) whose tadpoles were also present in large numbers, could be heard calling. An unexpected find there, *Litoria subglandulosa*, was also calling along the creek. And with that it was time to call it a night.

The next morning we were awoken to the sound of raindrops falling on the tent. The early morning rain had woken up another frog – the chorus of Pouched Frogs (*Assa darlingtoni*) through the forest was almost deafening. Having not allocated enough time (or money) to stay another day we had to return home. It poured the entire drive home, a successful trip but as almost always happens with frogging, the rain certainly came. A day late.



*Mixophyes balbus*

# Cape York Frog Magic - a trip to remember! *Marion Anstis*



*L. longirostris* male

Early in October 2009, I set off on one-off trip to Cape York after tadpoles of some rare species for my book. During the wet season from January to March, tadpoles tend to get washed downstream in the flooded streams, and if they don't, the waters are so muddy you can't see them anyway. So spring was the time to try, before the roads became impassable. The first day we headed north from the Atherton Tableland to Coen, halfway up the Cape York Peninsula road. After checking in with the rangers and showing our permits, we headed into the National Park, and after three more hours of the bumpiest 30 km of off-roading I have ever done, we reached the end of the track in the rainforest. From here we needed to carry our gear in on foot through the rainforest for another 2 km, where we made camp.



*Rana daemeli*

Our target species were *Litoria longirostris* (Sharp-snouted frog), *Litoria eucnemis* (Northern green-eyed tree frog) and *Cophixalus crepitans* (Rattling nursery frog). We were also looking for eggs and tadpoles of *Hylarana daemeli* (Wood Frog). After two dry nights of frogging in magnificent rainforest streams, we had some good success, finding tadpoles of three out of the four species and egg clutches of the Wood frog and the Sharp-snouted frog. The latter is a special little frog only known from populations in this area, and has the unusual habit of laying its pale green eggs on leaves or tree trunks above the water level in densely vegetated stream pools within the rainforest, where they hatch and drop into the water.



*L. longi*



Cape Melville boulders

The Rattling nursery frog is also only known from this area and rarely encountered, but we were lucky enough to find two, although there were no eggs in their nursery homes at the bottom of palm fronds! The male calls from the base of palm fronds or other low-growing clumping plants, and when the female arrives the large white eggs are laid in the nest and develop right through to tiny frogs within the jelly capsule. The male keeps watch over his nest until they hatch.

After spending our last morning with the aboriginal children at the Public School in Coen, who were very excited to see our photos and some live tadpoles, we headed off on the next long leg of the journey to try to find *Litoria andirimalin*, the Cape Melville tree frog and the Cape Melville nursery frog, two frogs



*Cophixalus crepitans* male

which are endemic to the massive granite boulder hills in the Cape Melville National Park. While we were very lucky to see the stunning Cape Melville tree frog in its maze of cavernous crevices within the massive boulders (beneath which creeks run), but unfortunately it was too early for the breeding season. The area is inaccessible by road during the wet season when they are most likely to breed, so their breeding biology may remain unknown for some time to come. *Cophixalus zweifeli*, the Cape Melville nursery frogs were also sighted. This is another special frog which guards its eggs until they hatch, but nothing is yet known of its eggs. Overall, the trip was not very successful and a great experience for all involved.



*L. eucnemis*

# CLAUDE NEARLY SELLS AN OVERBOX *Lothar Voigt*

Claude!! What are you doing down there? Who are you hiding from this time? From your probation of ficer again?

Je suis only under this box because it fell on me. C'est un overbox, Madame. Et Madame, you look magnifique!

Claude, I have come to ask you about frogs.

J'adore frocks, Madame.

I want to display mine properly. I want a nice set-up. A beautiful piece of nature.

Naturellement. You are tres formidable!

With a large aquarium and lots of pretty plants and circulating water and a nice land area. But I am really worried. What if chytrid fungus gets in? How can I disinfect everything and start all over again? And wouldn't the chytrid come back again?

It probably would, Madame. You can't disinfect ze frogs completely, and maybe not ze plants either.

And ants or tiny moth flies or even your wet 'ands might bring chytrid in from some other cage. What you need, Madame, is an overbox, like the one I am now sitting under.

That horrible styro box?

It is made of styro sheeting which I 'ave 'ere on special, but you only need the overbox from time to time. Only when you need to cook your frogs. You 'eat them up ...

What!! I knew it!

... 'eat them up to 31 – 33 degrees for a few days.

Chytrid will go completely away if you keep your tank that warm. But you must keep all parts of your tank above 300, and repeat ze treatment from time to time. Use it every month or so for a week, to be safe.

So why don't I just turn up the heater in the tank and forget about your box?

Because every far corner of the tank has to be that warm. At the top, where the condensation would have cooled it, at the bottom corners under the gravel where the heat can't reach, everywhere. So I put a heated box over the whole tank. It is like putting your frog cage in a warm linen cupboard.

And this is just a box with a window in front and with no bottom? And then you put that styro lid on it?

Exactement! The overbox has to be a bit bigger than your tank, so you can fit this thermostat and thermometer in, and this heat mat which you stand up, and these short pieces of garden hose as spacers to keep the heat mat off the glass. And this aquarium air pump you stand next to your fluoro light on your tank. One outlet air hose goes into your tank, the other next to your heat mat to move the warm air around a bit. The air intake comes from outside the overbox, maybe with an activated carbon filter if you 'ave smokers or painters in ze 'ouse.

Oh dear, Claude, I don't have the space to store such a big box – especially if I need one for my 6' frog tank too.

I also 'ave deluxe overboxes you can keep over your tank permanently. Painted ones, with sandstone-looking backing. And you can put fake plants into the gap at the back: From the front you see them behind the real plants at the back of the tank, for extra depth. If you have a 15 cm gap at the front, you can reach in when the glass needs cleaning and you could keep small reptiles in that space

– it would be too damp for them with the frogs. But remember that reptiles need a thermal gradient – so take them out whenever the overbox is in cooking mode.

Won't I cook the frogs and plants as well as the chytrid?

Green Tree Frogs, White-lips and Dainties have no problem with even 330 for a week at a time, but most plants won't like it. With temperate frogs, don't go over 310 and observe them carefully. Some are not suitable for this warmth. The best plants are those they use in tanks for Discus fish which people breed at 300, and many grow nicely out of the water too. And cuttings of grape vines quickly make a thicket – and big fat frogs can't flatten vines, n'est pas?

My front glass will be all steamed up though, won't it?

No condensation, guaranteed, because the air space is dry and warm.

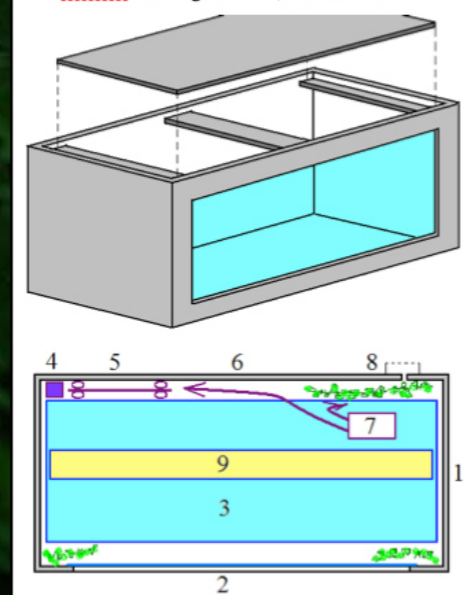
Claude, if I buy your thermostat, could you show me how to make the box myself?

Zis is so easy! You need 25 mm styro sheets, liquid nail glue and wooden skewers that you dovetail through the sheets, and a few styro corner strengtheners. Cut the window opening out, put masking tape on the inside of the cutout where the silicone later goes, and paint it with Bondcrete and then acrylic paint. For a simple sandstone effect, use beige paint, paint one surface at a time and throw dry sand of different colours against it while it's lying flat. To colour the sand, you can mix in some oxide. Or just glue some aquarium landscape backing paper at the back. Silicone 3 mm window glass at the front and let it air out for at least a week. C'est tout!

So that's it?

No, no, no, it is ze beginning. Next time I must tell you about what goes in ze frock tank. And most importantly, about ze underbox.

The overbox – with glass front, no bottom.



- 1 overbox
- 2 glass front, silicone in
- 3 aquarium, can be with glass lids
- 4 thermostat and thermometer
- 5 heat mat, vertical with spacers
- 6 1 air stream to heat mat, 1 into tank
- 7 air pump on aquarium

# FATS Contacts and Information

FROGWATCH HELPLINE 0419 249 728

## FATS CONTACTS

	phone	email
Arthur White	President ph/fax (02) 9599 1161 h	larthur@tpg.com.au
Marion Anstis	Vice President (02) 9456 1698 h	frogpole@tpg.com.au
Wendy Grimm	Secretary (02) 9144 5600 h	wagrimm@tpg.com.au
Punia Jeffery	Chairperson (02) 9969 1932 h	puniajeffery@yahoo.com.au
Karen White	Treasurer ph/fax (02) 9599 1161 h	larthur@tpg.com.au
Andrew Nelson	Membership Officer (02) 9411 6068 h	awnelson@optushome.com.au
Robert Wall	Field Trips Coordinator (02) 9681 5308 h	rjw2008@live.com.au
Brad McCaffery	Field trip assistant (02) 9876-1976 h	froggydarb@exemail.com.au
Matthew McCaffery	Field trip assistant (02) 9876-1976 h	
Grant Webster	Field trip assistant (02) 9876 5807 h	tnarg_w@hotmail.com
Alistair MacDougall	Web Master 0411 277 070 mob.	al@alphoto.com.au
David Nelson	Assistant Web Master (02) 9411 6068 h	davidavid@optushome.com.au
Phillip Grimm	Committee Member (02) 9144 5600 h	phigrimm@tpg.com.au
Lothar Voigt	Committee Member (02) 9371 9129 h	lothar@virginbroadband.com.au
Andre Rank	Committee Member	wylee_ec@hotmail.com
Sheila Briffa	Committee Member 0411 344 231	sheila99@tpg.com.au
Vicki Deluca	Committee Member 0408 231 447	delucax6@optusnet.com.au
Monica Wangmann	Editor (02) 9797 6543 h	wangmann@tig.com.au

Please send articles for the FrogCall newsletter to 38 Albert Pde Ashfield NSW 2131

**INSURANCE DISCLAIMER** FATS has public liability insurance for its various public functions. This insurance does not cover FATS members, it covers the public and indemnifies FATS. We are currently checking with insurance firms to see whether a realistic group policy can be organised to cover FATS volunteers and people who attend field trips. FATS MEETINGS commence at about 7 pm, end about 10pm and are usually held on the first Friday of every EVEN month February, April, June, August, October and December (but not Good Friday) at the Education Centre Bicentennial Park, Sydney Olympic Park, Homebush Bay. Call, check our web site or email us for further directions. Easy walk from Concord West railway station and straight down Victoria Ave. Take a strong torch in Winter. By car: Enter from Australia Ave at the Bicentennial Park entrance and drive through the park (one way road) or enter from Bennelong Rd/Parkway. It's a short stretch of 2 way road and park in p10f car park (the last car park before the exit gate). Turn off to the right if entering from the main entrance. We hold 6 informative, informal, topical and practical free meetings each year. Visitors are welcome. We are actively involved in monitoring frog populations, other field studies, 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. Material from FROGCALL MAY NOT BE REPRODUCED without the prior consent of the writer, photographer, Editor or President of FATS. Permission from FATS and/or author/s must be obtained prior to any commercial use of material. The author/s and sources must be always fully acknowledged.

## Map for Fats meetings





# FIELD TRIPS

Please book your place on field-trips; due to strong demand, numbers are limited ph. 9681-5308 . Be sure to leave a contact number. Regardless of prevailing weather conditions, we will continue to schedule and advertise all monthly field-trips as planned. It is YOUR responsibility to re-confirm, in the final days, whether the field-trip is proceeding or has been cancelled. Phone Robert on ph. 9681-5308.

## 5th December 10-3

The Australian Reptile Park, Somersby  
- Christmas Party  
Host: John Weigel

The ARP will hold its Interclub Christmas party on Sunday 5th December 2010 from 10 am to 3pm. This once a year get-together of the herpetological societies is an event not to be missed. John Weigel is likely to be Santa again and a big croc gets a Christmas treat. Us mere mortals may get a behind the scenes tour. Free entry to FATS members. Please take your current FATS membership card as proof of membership.



## 11th December 8.00p.m.

The Watagans.  
Leaders: Brad and Matt McCaffery.

Take the F3 north. Travel approximately 83km and take the Morisset / Cooranbong exit. Turn right and drive 2km to the cnr. of Mandalong Rd and Freemans Dr.

Ecological succession is an important scientific concept. Over time, especially after some major disturbance event such as fire or logging (or simply a windthrown tree in the rainforest), there is a gradual shift from bare open ground to more complex vegetation. This is often accompanied by a subtle but continual change in the local fauna. Scientists now believe that some animals, including some threatened species, are pioneer species that flourish immediately after a major disturbance event. These species may simply benefit from more open environments or may take advantage of less competition. Conversely, other animals will prefer the more densely vegetated communities that only develop over time. This weekend, we will look for evidence of ecological succession and with an emphasis on frogs, we will discuss successional stages in our bushland environment and how it influences the species we may find at a site. Brad and Matt possess a fine understanding of the different habitat requirements of frogs. Tonight they will pass on some of their vast field-work experience and will explain what to look for when searching for frogs.

**In the event of uncertain frogging conditions e.g. prolonged / severe drought, hazardous and/or torrential rain, bushfires etc. , please phone 9681-5308. Remember! - rain is generally ideal for frogging! Children must be accompanied by an adult. Bring enclosed shoes that can get wet ( gumboots are preferable ), torch, warm clothing and raincoat. Please be judicious with the use of insect repellent - frogs are very sensitive to chemicals! Please observe all directions that the leader may give. Children are welcome, however please remember that young children especially can become very excited and boisterous at their first frogging experience – parents are asked to help ensure that the leader is able to conduct the trip to everyone's satisfaction. All field trips are strictly for members only - newcomers are however, welcome to take out membership before the commencement of the field-trip. All participants accept that there is some inherent risk associated with outdoor fieldtrips and by attending agree to; a release of all claims, a waiver of liability, and an assumption of risk.**

# Thanks

Thank you to the many FrogCall supporters. Your articles, photos, media clippings, webpage uploads, membership administration, mail-out inserts and envelope preparation, is greatly appreciated. Special thanks to regular newsletter contributors, including Lothar Voigt, Robert Wall, George Madani, Karen & Arthur White, Wendy & Phillip Grimm, Brad & Matt McCaffery, Grant Webster, Marion Anstis, Punia Jeffery, Fiorella, Andrew & David Nelson, Al MacDougall and Bill Wangmann.



*L. aurea* Marion Anstis