

THE LAST MEETING 2ND OCTOBER '98 FROG DECLINES

It is a little like a good news, bad news joke", said Michael Mahony, from the Department of Biological Sciences, University of Newcastle, "The governor of Long Bay Gaol announces to the inmates assembled in the courtyard, "This Saturday there will be a change of underwear - block A will change with block B."

Some good news, alerts you to some bad news".

The National Parks and Wildlife Service required an assessment of the status of frog species inhabiting streams in NSW National parks and State forests. Those involved in the study included Ross Knowlles, Nick Sheppard, Mani Burghout, David Stewart and Andrew Hamer.

Eighty sites were covered including the Western and Eastern Border Ranges, Nightcap Range, Gibraltar Range, New England Range and the Dorrigo Plateau.

Tadpoles and frogs were sampled by day and night at selected streams. As well as counting numbers of frogs, measurements were made to see if both sides were symmetrical - if not was it environmental stresses or inbuilt? Strict protocols were used to stop the transmission of disease.

The Great Barred Frogs: *Mixophyes fasciolatus* are survivors - "a real goer", but was not found at high altitudes at the time of the study. *Mixophyes fleayi* was found at 4 sites in NSW and 12 in SE Queensland. A large population was found at 800 metres above sea level. *Mixophyes iteratus* was absent from most areas searched. Pearson's Tree Frog *Litoria pearsoniana* was absent at high altitudes but was found at low altitudes at 12 sites in low numbers. Tusked Frog *Adelotus brevis* was not found above 200m.

On the Dorrigo Plateau sick and dead frog were found around some ponds and streams including the Bobo river. Some ponds had associated with them, numbers of dead or dying frogs, some after amplexing - A house of horrors. Fifteen native species from Cooktown to Kosiosko have been associated with fungal contamination.

Michael displayed slides of frogs with chytrid fungus and other diseases. How did it get to Panama and Australia? What can we do about it? Nothing. - Manage the situation.

Melbourne Zoo uses an antifungicide for fish that may be suitable. NPWS collect and send sick frogs for pathology to Melbourne, but control is unlikely because it is so widespread.

Is the microflora of the frog skin aggravated by an external factor? Chytrid fungi are known in plant roots worldwide. What is the trigger that is making the chytrid fungus, (which eats away at the skin), so deadly?

Declines travelling like a wave were detected in Northern Queensland at high altitudes, but in Northern NSW declines were found as low as 10m and in a mosaic pattern.

Thank you Michael for presenting the current state of knowledge on frog declines. At least with allies like Michael Mahony frogs have a fighting chance to survive. MW

Frog Calls of the
Greater Sydney
Basin



Come with your money.
The December FATS meeting
will have terrific froggy items
for sale and auction

Our Secretary, Arthur White is selling frog call identification CD's for \$25 and tapes for \$15. Karen White (9599 1161) is selling and taking orders for beautiful frog jewellery (see this page for two samples - which don't give the pieces justice), crafted from pewter and finished off in gold, copper, a brass look of two tone matt steel with green highlights or silver and Frog calendars for \$6. Frank Lemckert displayed Alison Green's T-shirts. All great Christmas presents. These will be available for sale before and during the December FATS meeting.

Lothar Voigt, (9371 9129) is continuing to recruit anyone interested in being involved in a long term project about tadpoles frogs and suspected toxic plants such as Camphor Laurels.

Thank you to Arthur for your slides and description of the Bell colony on Broughton Island. Spawning in 25% seawater sounds pretty tenacious to me!

To everyone's delight, Martyn Robinson ran our auction and he rescued us when the projector "spat the dummy". MW

ARP CHRISTMAS PARTY

An invitation is extended to come to a Christmas Party at the stunning Australian Reptile Park near Gosford, courtesy of Robyn and John Weigel. Free admission for our financial members. Sunday, 6/12. BBQ begins around 1 or 2 pm. Bring your own salad. Some meat and soft drinks will be provided, but that may go quickly, so it is best to have some up your sleeve as well. Volunteers needed for the FATS table at Manly Ocean Care Day Sunday, 6th December So, if you are not going to the Christmas Party at the Reptile Park, what better way to spend the day? Ring Elizabeth Pidd on 9181-3073 (h) LV

Beautiful frog jewellery

for sale at the December FATS meeting



"It was a very nasty divorce.
Thanks to her lawyer, a high school
biology class is getting custody of me!"

CAMPHOR LAURELS AND FROGS

What's the Connection?

Camphor laurels are the large, bright green shade trees that festoon many Sydney streets. They were brought to Australia from China and Japan last century. They were brought in for two purposes; they were regarded as an attractive garden trees but they also had commercial value. Camphor wood has been used for centuries to make camphor boxes. These boxes were used to store clothes, linen and bedclothes. The perfume of the camphor wood proved to be an effective deterrent for clothes moths and other insects that are prone to eat cotton and other clothing fibres.

In Asia, the research into the substances produced by camphor laurels revealed that these trees were capable of manufacturing a suite of rather nasty and toxic chemicals. In the days prior to synthetic chemicals, camphor laurels were regarded to be a treasure trove of chemicals that could be easily extracted from the camphor wood. Camphor trees were not just a source of camphor. Benzene derivatives, such as turpene and naphtha were particularly valuable for insect control. Camphor laurels were selectively bred to produce trees with higher yields of camphor and naphtha.

Unfortunately, these ornamental trees also produce edible berries which are eaten by native birds. From many small piles of bird dung have sprouted majestic trees. Camphor laurels are now found in many parts of eastern Australia, particularly along the north coast of New South Wales. In this area, Camphor Laurels have sprouted along many of the wet gullies and in rainforest pockets. They are now a common sight in the northern forests but their impact it has only recently been considered.

If camphor laurels produce so many toxic chemicals, do they have an effect on the wildlife? Birds eat the berries, so does this mean that the berries are safe? What would happen if native animals ate the leaves of camphor trees? Does the distinctive smell of camphor deter most creatures from feeding on them and so they have little effect in native ecosystem, other than occupying a site that a native plant could have used? What happens when camphor leaves fall into creeks? Are they a problem or are they a harmless new member of the wet forests?

The evidence against Camphor Laurels

The suspicion that camphor laurels were not harmless plants was first raised by farmers many years ago. With the extensive clearing of land in the northern rivers region of northern New South Wales camphor laurels were given the opportunity to grow in clearings and to quickly spread into wet forest. Farmers reported that they were unable to grow crops on soil that had previously supported camphor laurel trees. These observations were not given much credence as camphor trees were not common in agricultural land.

In more recent years there has been some evidence presented that some birds are adversely affected by eating camphor berries. In 1997, tests of scrub turkeys that had been eating camphor seeds on a regular basis showed that the birds were sterile. Similar tests on fruit-eating pigeons revealed sterility in many of the birds.

Perhaps the most damning evidence comes from studies on rainbow fish. In these studies it was found that rainbow fish were killed quickly if camphor leaves were placed in an aquarium with the fish. The death rate was accelerated if the leaves were crushed first.

In 1998 Joe Friend duplicated the fish experiment using tadpoles as the test animals. He tested bark, crushed leaves, root scrapings and the juice from the berries. All of the pieces of the camphor laurel tree proved to be lethal; root scraping were the most toxic while bark was the least toxic. These experiments were carried out because of his observations that tadpoles were absent from creeks that were lined with camphor trees.

Is the evidence conclusive?

All good science needs to be thorough. The evidence that camphor laurel trees produce toxic compounds is overwhelming. The evidence that in aquaria or glass containers, fish and tadpoles are killed by plant extracts is also fairly convincing. What is missing is proof that in the wild, camphor laurels kill these animals. It can easily be argued that in a flowing creek, the toxins produced by camphor laurels are dispersed and may have no and minimal effects on the fish and tadpoles in the stream. Similarly, it can be argued that the concentration of leaves, bark or root extracts that were used in field trials were not representative of the levels that occur in nature. Many would argue that tadpoles and fish would not stay in creek water that was laden with plant toxins, but would swim to clearer areas in the stream. And surely, wouldn't each flood or period of high water flow flush the toxins away?

If the situation described above was a murder trail, camphor laurels would be a prime suspect. They might even be charged with murder but they would be acquitted because the evidence is circumstantial. For this reason, it would be presumptive to blame camphor laurels on fish or tadpole deaths. To date, no-one has seen dead fish or dead tadpoles in camphor lined creeks.

What needs to be done?

Clearly there is a case to be made against camphor laurels. Conclusive experiments need to be carried out. These experiments would include placing fish or tadpoles in cages in creeks where Camphor Laurels occur. Some of the cages could be placed upstream of the camphor trees (these would be the "control" or test cages for the general water quality and health of the fish. Other cages would be placed below the camphor trees while other would be placed downstream, where presumably the toxins would be at different concentrations. If the tadpoles in the cages near the Camphors died while those above survived, the case against Camphor Laurels becomes more binding.

If the conclusive trials are done and the Camphor trees are shown to be responsible for tadpole deaths in the wild, government agencies would need to be notified of these effects. If it can be shown that endangered frog species are affected, Camphor Laurels could be listed as a "threatening process" and thus be dealt with by local planners and agencies.

Do camphor toxins affect all frogs?

The issue of the toxicity of Camphor Laurels (and other introduced plants) is an issue that is relevant to all fish and frog enthusiasts. FATS has decided that it may be able to help in accumulating data about the sensitivity of tadpoles to plant extracts. Recently, FATS applied for grant money to test a range of exotic plants on a range of tadpoles. These tests may explain why some backyard ponds fail to attract frogs and why spawnings don't succeed. We all know that frogs and tadpoles are sensitive creatures but our judgements about what is good for these animals should be based on hard evidence. To modify habitats without this evidence may be more dangerous to the animals that we seeking to protect than doing nothing at all. **Arthur White 22 October 1998.**

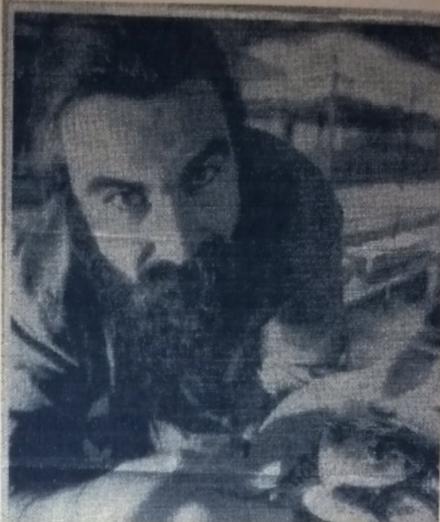
A PART from the peeling paint and an unruly garden, it could be any other weatherboard house in the street. But inside a Coburg garage, surrounded by gurgling banks of glass and plastic, an unlikely farmer is busy tending a unique laboratory - a home away from home for 10,000 tadpoles and 2500 frogs, all but a handful raised in captivity.

Welcome to the Amphibian Research Centre. Here, plump larvae are raised beneath a 1000 watts of artificial "sunshine", their delicate lips sucking at curled leaves that drift across the surface of a broth-colored cistern.

The centre offers temperate lodgings for burrowing arid zone species and ground-dwelling rainforest frogs, an outdoor sanctuary for growing grass frogs and a tropical room that is humidified and air-ree conditioned to suit climbing green tree frogs of northeastern Australia.

So what makes someone devote such hours to keeping amphibians?

According to Marantelli, his life-work began with the responsibilities of childhood. "At the age of three or four I had some uncles who were in the fruit transportation business. They would find green tree frogs and give them to me," he says. "With a tank full of these stray banana-box frogs, I had to run around the garden catching insects for them."



JUST DON'T CALL HIM MR TOAD

"After a trip to the supermarket for yet more surgical gloves, the groom of Australian frog husbandry won't see bed tonight until after 4am The Amphibian Research Centre has probably produced more frogs in the past two years than any zoo in Australia" Apologies to Gerry For the crease in the photo.

He says many amateur keepers have a stamp-collecting mentality. His university studies - he graduated in zoology from Melbourne University - provided him with a more scientific approach where observations were followed with some form of sound reasoning. He worked for Melbourne Zoo for about three years in the early '90s.

After three years' work at Melbourne Zoo, which included research with romer's tree frog - successfully bred and returned to



Hong Kong - and a last-ditch effort to save north Queensland's sharp-snouted day frog - now presumed extinct - Marantelli left to start a business in frog breeding.

"The zoo industry ... exists for the purpose of educating the public, which is obviously an important part of conservation, but not for things like pure research," he says. "I wanted to marry the two."

While surplus creatures are often a hindrance to exhibit-based collections, the science of animal hus-

"I'm not a big believer in the Noah's ark-type mentality of captivity being this salvation of declining species, but it is certainly a tool that can be used in the process of aiding species recovery."

It may take lifelong dedication, a dozen wildlife licences and much lost sleep, but the life-support system in Marantelli's garage is likely to become even more important as our natural habitats continue to come under threat. After all, he says: "If you had the last 10 emus, would you give them to an emu farmer or a zoo?"

THE GARBAGE BIN MASSACRE.

Over winter, we set up a solar heated garbage bin Home for Crickets. The boy crickets chirruped all winter and females were often observed ovipositing in the thick layer of moist sand, although we never observed hatchlings. A few ants and some small black beetles were also observed in the bin. Eventually, we fed all the crickets to The Frog. Nothing else seemed to happen over the next few weeks and we assumed that some sort of humidity or temperature problem prevented cricket egg hatching or had killed off the hatchlings. Was there another explanation?

At the last FATS meeting (October) we bought "one or two hundred" crickets from Lothar. We tipped them into the bin when we came home that night. Next morning we went to check on them. Crickets were running and leaping crazily. Close inspection showed some with ants attached to their legs ... and, ghastly to behold, on the sandy surface were scores of legless cricket torsos wriggling helplessly. Files of ants were marching around the bin carting off cricket limbs and the smaller torsos. Altogether, about half of the crickets had been dismembered completely, and many of the remainder were missing limbs due to attack by ants.

The ants in question are *Pheidole megacephala*, aka the coastal brown ant, or lion headed ant. The majority of workers are tiny (about 2-3 mm long) and brown. These "minors" are usually accompanied by a few, much bigger "majors" about 4-5 mm long with a distinctive large head (hence mega, big, and cephalo, head). The species is native to Africa, but has been transported worldwide. They live in very large colonies, with multiple nest sites and multiple queen ants.

These ants are ferocious predators. In some parts of the world, they are used as a biological control for other insect pests. In parts of the Caribbean for instance, they have been used to control fire ants, and to control certain beetle pests of potatoes. In other parts of the world (our house) they have been used as food for *Limnodynastes tasmaniensis* metamorphs (easily collect hundreds of ants using fatty bait on firm surface, then shake ants into frog vicinity).

P. megacephala can be an infuriating pest in the kitchen, invading to feast on molecules (or larger lumps) of fat, meat, and carbohydrate. We declared war some months ago. Baits were spread (special ones as suggested by the Australian Museum People Who Know This Stuff), as *P. megacephala* seemed to thrive on the borax in sugar-type baits). Round one is to us, with the kitchen currently clear ... but the cricket bin massacre shows the ants are doing well without the kitchen. We've removed the remaining crickets, and spread baits in and around the bin and are now waiting to see what next.

Post Script - one week later, what next. The ant population of the bin seems to have shrunk. And this morning I observed cricket hatchlings hopping about. Were they being eaten previously? Will the current lot survive? Will the ants in the bin die out completely and if so will it be recolonised by more ants? Could we find a biologic control for *P. megacephala*? I know that Argentine ants can successfully compete them to local extinction (not in the tropics, lucky Glebe's not tropical, eh!), and then we'll just have to get some beastie like the cane toad to deal with the Argentine ants, and then... Anne Peaston

A NEW SITE FOR THE GREEN-THIGHED FROG.

Whilst on my annual holiday to Nambucca heads, 120mls of rain fell over one weekend. After hearing a few whirring tree frogs *Litoria revelata* calling at a flooded depression one afternoon, "me and the dog" went for a look that night to see what was happening. Yes, you guessed it (it would be hard not too as I already mentioned it above), there were green-thighed frogs calling at the site (no the dog did not find them first.

What is unusual about this? Firstly, this was early September, which is as early a time of the year as has been recorded (at least as far as I know). Secondly, the flooded area was right behind the main dune on Nambucca beach. This means that it was only 30m at most from the sea. Such a coastal record for actual breeding is, I believe, a first and sets me back to re-thinking what it is these frogs do and don't need to be successful. The assumption was that they could not breed on such sandy soils because the water drained away too fast. Well, the water was still there some 6 weeks later and so this isn't always the case. Oh well, back to the drawing board on theories. Frank Lemckert

EDEN BOYS HAVE COME THROUGH AGAIN

and caught me another giant burrowing frog *Heleioporus australiacus*. This one is a male so it is not the previously tracked Emily again, although it is the same area as we caught her. The plan is to insert a transmitter into her again and follow her to see what she gets up to. With any luck we might catch a few more to keep him company.

On the subject of following frogs, it is hoped that we will be able to get a radio-tracking study of giant burrowing frogs going at West Head. If so, there will be a chance for FATS members to assist in finding and following these frogs. It just requires me to get my act into gear. When it happens, I will let you all know. Thanks to the NPWS for permission to use their lands for the study.

For anybody interested, my new son Campbell is doing just fine. I hope to take him on his first frogging adventure very soon. The Big Cheese. F L

By Robyn Asbury

Orphan School, Creek Gully, looks like a rubbish tip to some and a slice of urban paradise to others.

The secluded, tangled bushland area in the heart of the city, behind the old Camperdown Children's Hospital at Glebe, is an urban planning miracle. ☺ ☺ ☺

The striped marsh frog and the rare southern leaf-tailed gecko have also made their home in the gully between the Glebe terraces and the old hospital.

A group of residents called Friends Residents/Ratepayers of Orphan School, Creek Gully, has already raised \$3000 to fund the most significant



bush revegetation project in the Inner West. Spokeswoman for the group, Roberta Johnston, said the National Trust was supporting the bushland project. ☺



FROGS AND FISH AN AREA OF DEVELOPING CONCERN

At the Orange Institute of Freshwater Anglers meeting, guest speaker Mr Tim Fisher (Australian Conservation Foundation), will give some insight into plight of the Booroolong Brown Frog and what impact to trout fishing is likely.

The Booroolong frog, *litoria booroolongensi*, was once widespread in NSW at altitudes above about 400m. The species has become very rare in recent years, with large gaps having developed in its former distribution. The National Parks and Wildlife Service Threatened Species Committee has provisionally listed the species as endangered.

As a result of this listing, a recovery plan will be prepared for the Booroolong frog that will identify actions that can be taken to arrest and reverse the decline in its numbers and distribution. To do this, the processes causing its decline need to be identified. One of the threatening processes identified for the Booroolong frog is predation by trout on the tadpoles of this species. The evidence to support this is not strong at this stage.

However, a study by Victorian scientists has shown that trout prey more heavily on tadpoles of other river dwelling frogs than do native fish, apparently because the tadpoles have evolved over millions of years to be unpalatable to the natives. Because of the recent introduction of trout to Australia, unpalatability has not evolved in riverine tadpoles as a defence against trout predation.

The immediate impact of the listing of the Booroolong frog as an endangered species has been for NSW Fisheries to conduct a review of the locations of trout stocking. Several sites in the Turon, Abercrombie and Shoalhaven rivers have been identified as containing populations of the Booroolong frog, and as a precautionary approach, NSW Fisheries will not approve stocking of trout near these sites. Stocking will be allowed in other areas of these streams well away from the frog populations.

It is likely that there will be other frog species that will be identified as threatened by trout. Further work will be required to assess the severity of this threat in comparison with other reasons for the general decline of frogs around the world. Nevertheless, now that the threat has been identified, sensible trout management practices will be necessary to ensure that the impact of trout is minimised.

Additional proactive management of the threatened frog species may also be necessary. This may include protecting some key habitats from further decline and invasion by trout. The IFA may be able to take an active role in the recovery of these frogs to demonstrate a willingness to address the issues surrounding the introduction of trout into Australia.

The Executive has resolved to take a proactive role in this matter as this has the potential to affect all stocking programs. It further resolved to write to the Hon. Pam Allen, Minister for the Environment, requesting advice on current research and background information regarding frog populations and expressing concerns for their preservation and advice on how the IFA can assist. The IFA also requested that an identification kit be made available to its members to determine where populations of endangered frog populations exist." **Dr Andrew Sanger**

"Freshwater Fisher", The Journal of the Institute of Freshwater Anglers NSW inc Spring 1998
The Booroolong Brown frog photo G B Baker
Nature focus, Australian Museum.

Something to croak about

SHOULD we have a red-crowned toadlet eradication scheme?

I am fearful if they continue their spread through local shires. They are now seemingly found on every development site.

Is it too late for a possible sighting at East Circular Quay?

Hornsby 23/7/98 H L Jones
Advocate West Pennant Hills



Special jumper

H L Jones of West Pennant Hills (The Advocate, July 23) may have missed the point.

There is a very efficient red-crowned toadlet eradication scheme already in place: it's called urban expansion.

The red-crowned toadlet is a threatened species under the TSC Act 1995 for the very reason that it is found only in the Sydney Basin and is under considerable pressure from urbanisation.

Red-crowned toadlets appear to be considered an "inconvenience" by some.

If these landowners cannot accept the value of a species, just for its own sake, (and the red-

crowned toadlet has some amazing unique biological features), I may have to appeal to the selfish human interest and point out that this little frog contains a number of toxins which are being investigated by Italian and American pharmacologists.

Until H L Jones learns to appreciate the potential of this frog — to an understanding of evolutionary processes and perhaps to human medicine — he would be well-advised not to lick it! Otherwise he might croak!

Karen Thumm,
Hornsby Heights.

Hornsby Advocate 30/7/98

And what a Frogweek we had again! These are some of the events and phenomena that happened:

We strung up a long washing line at the Zoo, to hang all those frog and FATS posters on that didn't fit onto our panels. We moved tables, benches and even ice cream carts around to spread out all our froggy propaganda. On the Saturday, every visitor to Taronga must have noticed that something important was up. The Sunday was downright frog weather, and we had the animals at the Zoo almost to ourselves. Good weather for a chat and a cup, though. A well-deserved thanks to our volunteers (in order of appearance) Wendy Grimm, Adam Crawford, Anne Peaston, her neighbour Amanda Cheong, Monica and Katherine Wangmann, Elizabeth Pidd, Karen White, Daniel from Germany (the one who build our Web site) and Mark Avery. (Editor : and Lothar)

Taronga Zoo staff also laid on a great show of their own, with four portable display tanks and free air-brush face painting (you should have seen the adults queuing up!). And they had Mike Tyler giving a frog talk in their new Conservation Theatre.

The Australian Museum have our frog posters, newsletters, brochures and leaflets in their new Biodiversity Gallery, and they're planning to hold frog talks to mark the occasion. It is a truly beautiful gallery, yes, even without our stuff. (Editor: thanks to Lothar Voigt and Martyn Robinson)

The Australian Reptile Park set up a Frogweek display, complete with our membership forms. Punia Jeffrey's bookshop at Mosman Junction sported a Frogweek window display. If this catches on, Frogweek will be rivalling Christmas. All we need to do is pack a few hundred boxes of froggy window displays together and give them at cost to the shopkeepers.

Leading up to Frogweek were a number of other events where we represented the frogs:

Bicentennial Park on 25 October. Karen White, Wendy and Phillip Grimm, Monica and Katherine Wangmann Nicole Smyth and Adam Crawford held the fort.

Kellyville Pets animal carnival on the 11/12 September weekend. Some 4000 animal-friendly people filed past our tables. Many thanks to Monica Wangmann for all the help and to Anthony Stim, son for the licence. (Editor: and Lothar)

By Georgia Roussis

The Australian Museum has opened its \$2 million "Biodiversity: Life supporting life" exhibition which has been several years in the making.

The exhibition explores the diversity of plants, animals, insects, micro-organisms and the ecosystems they form.

It is divided into key areas such as ecosystem conservation, loss of biodiversity, extinction, the importance of biodiversity, understanding and conserving biodiversity and a section focusing on what everyone can do.

The exhibition uses the latest technology, specimens, art, habitat displays, theatrical techniques and a large cartoon in its aim to get everyone to participate.

Ku-Ring-Gai Wildflower Gardens on the 29/30 September weekend, with a whole team of Frog Explainers: Wendy Grimm, Elizabeth Pidd, Karen Thumm, Karen White and Arthur White.

Hawkesbury-Nepean Catchment Management Trust, a schools environment fair on the Richmond campus on 22/23 July. The kids had to actually read the posters and write the answers in their clip books. Most of them, of course, had never seen a live frog before.

Frogweek on the telly: Harry's Practice dug a slightly faked frog pond (but causing heaps of enquiries). Family Circle TV showed on 4th November how to make an instant frog pond for Frogweek. On 23rd November, Totally Wild screened "Mistaken Identity" (about harmless ground frog species that get clobbered for looking like Cane Toads). (Editor: thanks again Lothar)

That was just the stuff I was involved in. Many other FATS members did their bit for Frogweek. We'd very much like to hear from you about it. **Lothar Voigt**

FROGWEEK IN THE PRESS AND ON THE RADIO

Many radio stations and national and local newspapers ran articles for frog week. These include The Leader with a photo of Karen White, The Glebe and Inner Western Weekly, The District News, The Courier, 2BL, 2GO, Radio Five O Plus in Gosford. Thank you Carl Spears, Katherine Wangmann, Karen White. **MW**

FROG RESCUE AT SYDNEY MARKETS, FLEMINGTON

The FATS Group secured agreement from Flemington Markets for frog collection cages to be located there. We have also had discussions with management of a supermarket chain, and with National Parks and Wildlife Service, for their country branches to serve as frog collection points as well. We already have a few collection points for members of the public who find such translocated frogs, we also have a Frogwatch Helpline with four telephone numbers to give advice, and we have the co-operation of Taronga Zoo, the Australian Museum and other institutions.

After the frogs are collected, we quarantine them and then find suitable homes for them amongst our members. The first release of healthy frogs may occur at the February 1999 FATS meeting. **MW**

Biodiversity exhibition

There is a revolving theatre incorporating four sets which deal with a new subject and intervals in between for people to discuss issues such as reduce, reuse and recycle.

● The "Biodiversity: Life supporting life" exhibition is at the Australian Museum, 6 College Street, Sydney. Open: 9.30 am to 5 pm everyday (except Christmas). General admission: adults \$5, children \$2, concessions and seniors \$3, families \$12. Telephone 9320 6000.



HERPDIGEST JOTTINGS

ANOTHER FROG GONE FOREVER

A West Virginia professor witnesses the vanishing of a species. Tom Pauley tramps along streams and hikes up mountains in search of things that would make most folks cringe. What he is not finding has him concerned.

Species like the Blanchard's cricket frog and the Spadefoot toad seem to be disappearing.

"We spend an enormous amount of time in the field," said Pauley, a Marshall University biology professor and the state's leading herpetologist.

"I have walked literally hundreds upon hundreds of miles through this state. It is difficult for me to think we are missing these things."

Records on the Blanchard cricket frog, no bigger than a person's thumbnail, date to the mid-1930s. It lived in small ponds and swampy areas of Mason County. If it can not be found, it will be cut from the state's amphibian list.

The preservation of West Virginia's 83 species of reptiles and amphibians falls to the state Division of Natural Resources, but without accurate population counts it is hard to determine what protections are needed. The division is reluctant to impose new restrictions without public support, said Pauley.

Pauley said competition among species could keep numbers and ranges in check, but habitat changes are more devastating.

The Spadefoot toad, for example, spends a good part of its life underground. It only comes out after heavy rains. At one time, the toad could be found at several sites near Huntington. Today, the sites are parking lots.

"We've been out searching and searching and we have not been able to find them," Pauley said. "We're fearful the habitat has been pretty much destroyed."

Highway projects, clear cutting and coal mining methods that chop off mountaintops and dump dirt and rocks into streams and valleys take their toll. But to what extent?

"We've obviously done some damage to the state," Pauley said. "We have done a fair amount of work on what happens when you clear cut. It kills them ... but it does not kill them all."

They are also looking at how amphibians are faring in streams that receive state-sponsored limestone treatments to combat acid rain.

Pauley is updating "Amphibians and Reptiles in West Virginia," a guide he co-authored. It is the first revision in 11 years.

If a reptile or amphibian is not sold in a pet store or bait shop, it may end up in a jar of formaldehyde on shelves in classrooms, laboratories or museums.

Why should people be concerned about saving reptiles and amphibians? For one, they could be the perfect bellwether of the state's environmental health.

"Amphibians are great bioindicators," Pauley said. "Any change in the water or the soil ... is going to be absorbed into their body. So they are going to be able to tell us something if they start dying off."

HERPSCAM INTELLIGENCER JOURNAL SUNDAY NEWS (USA) 5-7-98.

While much of the nation was taking it easy last Sunday, hundreds of state and federal wildlife agents deferred their plans for a day of rest.

Operation Herpscam began as a crackdown on the illegal trade in reptiles and amphibians in Indiana three years ago and culminated Sunday with a nationwide sting operation involving wildlife law enforcement officials in 12 states.

Pennsylvania's part in the operation involved the arrest of John P. Tokosh, 36, of McKeesport at a McDonald's restaurant in Breezewood, Bedford County. Tokosh was charged with 15 counts of illegal possession and trafficking of reptiles and amphibians, according to Pennsylvania Fish & Boat Commission representative Dan Tredinnick.

While many species of reptiles and amphibians may be harvested, it is illegal to sell wildlife here.

The team making the arrest included Lancaster County Waterways Conservation Officer Derek Pritts, who confronted Tokosh after a PFBC undercover agent made the initial contact.

"I was happy to be part of that," said Pritts.

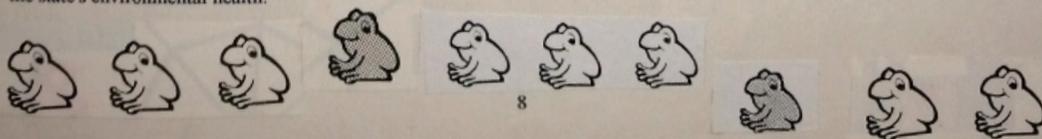
The focus of Operation Herpscam was Indiana, where about one-half of that state's Department of Natural Resources' force of 210 officers was deployed to serve search warrants on 11 residences and a regional reptile show in Indianapolis.

"It was a very successful operation," said an Indiana Department of Natural Resources Representative.

Herpdigest Editor: Allen Salzberg 5245@erols.com
HERPDIGEST is a free, electronically weekly collection of herpetological scientific and conservation news and articles from newspapers, the internet, government & non-profit press releases.

With compliments Carl Spears

SWAMP



"F. H." AT FROG HOLLOW

An update for all hanging out to know what happened to F.H., the frog with the prolapsed cloaca. Remember, this is the *L. caerulea* which had a purse string suture in its bottom to keep all the insides in. Unfortunately, it continued to prolapse occasionally after the suture was removed, sometimes to the point of needing us to put the insides back in order. Well, F.H. is fine now. Here's what happened.

At the August FATS meeting it was suggested that we feed F.H. "up" for a week, starve it for a week, then put in a purse string suture of the anus for 4-6 weeks (rather than the 2 weeks we originally tried).

So we fed it up for a week (4 or 5 mature crickets a day), and noticed no prolapses. The frog was a bit fatter though. We thought maybe the weight of all that food was holding the frog's insides inside. So we fed him up for another week. Then voila! Frog pool! First for 3 or 4 months (I'll bring it to the December meeting so you can admire it too).

Basically, since then, we've fed F. H. Frog the equivalent of or slightly less than 4 or 5 adult crickets a day (mixed diet of domestic and wild crickets, worms, slaters, flies, moths). He eliminates the remains in a nice scat every 6 to 14 days.

We observed a small prolapse after defecation about a month ago, but it was back to normal 6 hours later.

We now wonder whether part of F.H.'s problem was underfeeding, perhaps associated with some injury, leading to weak muscles of the wall of the intestine. Possibly the feeding has, by exercising them, improved their tone and strength, enabling them to stay in their normal anatomic spot. Anyone with an alternative theory?

Of course, you're all wondering why "F.H.". My niece Sophie was asked to name the frog. Since its sex is unknown (as was its future at that time) she suggested "Fondu". An excellent choice, which seemed to read well with a middle name, "Hernia".

We're sure this unusual name was at least partly instrumental in the recovery. Thank-you Sophie. (hallo Sophie, are you reading this? You're famous now!). **Anne Peaston**

Achook goes into a library and walks up to the front desk. It says 'book book book?' so the librarian gives it three books and the chook takes them away. A short while later the same chook returns and the same thing happens.

The third time this occurs the librarian, by now rather suspicious, follows the chook out of the library, over hill and dale, and ends up on the shore of a swamp where a small green frog is sitting beside a large pile of books. The chook drops the current three books in front of the frog and says 'book book book?' The frog tosses them onto the pile saying "read it, read it, read it" with compliments **Martyn Robinson**



PAPUA NEW GUINEA



A team of scientists has discovered 44 species of frogs, fish, ants, bees, wasps, reptiles and dragonflies in Papua New Guinea's Lakekamu Basin, according to a report from Conservation International's Rapid Assessment Program.

Conservation International released results from the RAP Expedition earlier this month in a working paper, A Biological Assessment of the Lakekamu Basin, Papua New Guinea. The expedition took place in October and November 1996.

Species new to science include 22 species of ants, bees and wasps, 11 species of frogs, seven species of reptiles and three species of fish. Between one and three new species of dragonflies and damselflies were also recorded. Also on this RAP expedition, more than 250 species of ants were found in a one-square-kilometer area, making the basin a record-setting site for the greatest ant diversity outside of South America.

"It's clear from the large number of new species discovered during just one month of survey that there's an urgent need for more biological inventories and taxonomic studies in this region," said Andrew Mack, CI ornithologist and leader of the RAP expedition to the Lakekamu Basin.

"While we continue to identify the species collected in the basin, areas surveyed by the RAP team are already being logged. Biological information is critical to ensuring that conservation efforts precede logging and development."

Over a four-week period, the RAP team, which assembles world-renowned experts and host country scientists, surveyed the Lakekamu Basin to create a first-cut assessment of the biological resources in this poorly known area. CI helped to establish a research station in the region which will serve as a base for further research and field training of in-country scientists.

The Lakekamu Basin is one of the largest remaining pristine lowland rain forests in Papua New Guinea, covering an area approximately 975 square miles in the Gulf Province. Virtually uninhabited, the basin has until now been spared from human destruction, offering excellent opportunities for conservation.

The RAP survey, combined with previous work in the basin, will provide essential data for guiding Papua New Guinea's development. The working paper makes recommendations for conservation measures in the basin that incorporate the economic interests of the local land owners. Like most of Papua New Guinea, indigenous people own much, if not all of the land. For more information, contact **Jed Murdoch**, Conservation International, (202)973-2248, email: j.murdoch@conservation.org. **Herpdigest**

FROGBITS AND TADPIECES

FROG WORKSHOPS

A one-day workshop in Rose Bay for the public, on whacking a decent frog pond together. Ring Lothar on 9371 9129. Also various holiday animalising workshops for young kids and their mummies, live-in ones for teenagers at the Colo, and serious ones that are no laughing matter - and with Anthony Stimson, too. He's the one with the crocs and the big feathery and furry things. LV

GOLF COURSE CHIPS IN

The *Sun Herald's* Simon Crittle recently reported on the green and golden bell frog's comeback. The hatching program at Sydney's Long Reef golf course at Collaroy has been successful. The program is between the golf course and Taronga Zoo. Australian Museum scientists released about 1,400 tadpoles in January. The course now holds about 200 adult frogs said Dr Graham Pyke. "It is a frog which likes to forage in open, grassy areas, of which a golf course is the epitome," he said. The program cost \$5 000. The tadpoles were released into reed filled ponds originally built for irrigation. LV

JUNE 1998 HERPETOFAUNA

Spare copies of the June Herpetofauna are available to FATS members who have paid \$25 this year and not received the June edition. Please contact Monica Wangmann on 9797 6543 and the June edition will be mailed out with your January Herpetofauna and Frogcall. MW

LET THEM EAT HUMBLE PIE

About 20 environmentalists threw cream pies Friday at the chief of the World Trade Organization. WTO Director-General Renato Ruggiero had just given a speech at the Royal Institute of International Affairs in London when the pies flew. More than one hit Ruggiero, said WTO spokesman Keith Rockwell. "When they have no more rational arguments, the fringe elements have to use cake," Ruggiero said in a one-sentence statement from his Geneva headquarters. In his speech, he had been defending a WTO decision to overturn U.S. attempts to protect endangered sea turtles from shrimp fishermen.

A group calling itself the Biotic Baking Brigade later issued a statement saying its pie throwers sent "a sticky message to Ruggiero and the global elite: To those who wish to dominate the world, the world replies, 'Let them eat humble pie.'"

The WTO drew the ire of environmental groups two weeks ago by ruling that the United States cannot force shrimp-exporting countries to fit their fleets with \$75 devices that protect turtles' The first thing he said was, "This is not a bad cake!" Rockwell told The Associated Press. The flavour of the pie wasn't known, he said. Herpdigest

Drive through the night and sing along with your frog tape. Pull up at every ditch and creek crossing, switch the engine off and listen out. Take a mug shot for the local media. And each time fill in a survey form - pick them up at the December FATS meeting and bring your completed ones in for the future meeting. It's that easy. LV

Dear Editor

"Some friends of mine have a family of green tree frogs living in their roof. At least two of the frogs come down every night to their outside table and chairs around 8pm to 10pm. They sit with my friends and their family and they don't mind being handled. They even go to sleep on shoulders, arms, legs, stomachs, etc. Then they leave when they want, hopping away and returning to the gutter and the roof. They are there all year round, even in the hot, hot summer months. My friends are just wondering how on earth the frogs manage to survive up in the roof in such heat. There is no obvious supply of water except from the gutters which don't have much water in them over summer. They wanted me to ask you if you have an idea how they manage to survive and why do you think that they are so tame and unscared of my friends?" Eileen aka Diefenbaker

O'REILLY'S FROG WEEK 6-11 DEC 1998

Treat yourself to a holiday awash with frog finding opportunities, tadpole surveys, photography, bus trips, walks, identification sessions, picnics, frog related activities and talks, at O'Reilly's situated in the Lamington National Park Queensland.

FROG LIST

	Common	R	Rare	RF	Rainforest	
**	Uncommon	V	Vulnerable	OF	Open forest	
***	Sparse or of special interest	E	Endangered	V	Arable valleys	
****	Rare			W	Watercourses	
	LAMINGTON NATIONAL PARK & SURROUNDS				D	Dams & swamps
Scientific Name	Common Name	Habitat	Prevalence			
Family Myobatrachidae						
<i>Adelotus brevis</i>	Tusked Frog	W-D-RF-OF-V	*			
<i>Assa darlingtoni</i>	Marsupial or Pouched Frog	RF	***R			
<i>Crinia parinsignifera</i>	Common Eastern Froglet	D-OF-V	*			
<i>Crinia signifera</i>	Clicking Froglet	W-D-OF-V	*			
<i>Kyarranus loveridgei</i>	Loveridge's Mountain Frog	RF	***R			
<i>Lechiodius fletcheri</i>	Fletcher's Frog	RF	***R			
<i>Limnodynastes ornatus</i>	Ornate Burrowing Frog	D-OF-V	*			
<i>Limnodynastes peronii</i>	Striped Marsh Frog	D-OF-V	*			
<i>Limnodynastes tasmaniensis</i>	Spotted Grass Frog	D-OF-V	**			
<i>Limnodynastes terraereginae</i>	Scarlet-spined Pobblebonk	W-D-OF-V	*			
<i>Mixophyes fasciolatus</i>	Great Barred River Frog	W-D-RF-OF	**			
<i>Mixophyes fleayi</i>	Fleay's Barred River Frog	W-RF	****E			
<i>Mixophyes iteratus</i>	Giant Barred River Frog	W-RF-OF	****E			
<i>Pseudophryne coriacea</i>	Red-backed Toadlet	OF-V	**			
<i>Pseudophryne raveni</i>	Copper-backed Toadlet	OF-V	**			
<i>Uperoleia fusca</i>	Trilling Toadlet	D-OF-V	*			
<i>Uperoleia laevigata</i>	Yellow-spotted Toadlet	D-OF-V	**			
<i>Uperoleia rugosa</i>	Red-groined Toadlet	D-OF-V	**			
Family Hyllidae						
<i>Litoria alboguttata</i>	Green-striped Frog	D-OF-V	***			
<i>Litoria brevipalmata</i>	Green-thighed Frog	D-RF-OF-V	****R			
<i>Litoria caerulea</i>	Common Green Tree Frog	D-RF-OF-V	*			
<i>Litoria chloris</i>	Orange-eyed Tree Frog	W-D-RF	*			
<i>Litoria dentata</i>	Bleating Tree Frog	D-OF	**			
<i>Litoria fallax</i>	Eastern Dwarf Tree Frog	W-D-OF-V	*			
<i>Litoria gracilenta</i>	Graceful Tree Frog	W-D-RF-OF-V	**			
<i>Litoria latopalmata</i>	Broad-palmed Rocket Frog	W-D-OF-V	**			
<i>Litoria lesueurii</i>	Stony Creek Frog	W-RF-OF	**			
<i>Litoria nasuta</i>	Striped Rocket Frog	W-D-OF-V	**			
<i>Litoria pearsoniana</i>	Mountain Stream Tree Frog	W-RF	****E			
<i>Litoria peronii</i>	Emerald-spotted Tree Frog	D-RF-OF	**			
<i>Litoria revelata</i>	Whirring Tree Frog	D-RF-OF	***R			
<i>Litoria rubella</i>	Purple Tree Frog	D-OF-V	**			
<i>Litoria tyleri</i>	Laughing Tree Frog	D-RF-OF	**			
<i>Litoria verreauxii</i>	Whistling Tree Frog	D-OF-V	***			
Family Bufonidae						
<i>Bufo marinus</i>	Cane Toad	D-OF-V	*			

Star ratings have been adopted as a guide to the prevalence and significance of frogs in the Lamington National Park area. For less common species, official QDEH status is also indicated.

After pouring over thousands of Starr investigation notes and staying up to an ungodly hour to watch Clinton video evidence, I came upon a startling bit of information. This information has been almost totally ignored by the mainstream press but it is important and I must reveal what it is. You can put the kiddies to bed if you wish.

The President's favourite animal, as backed up by a report from no less than the Guardian - one of Britain's most revered newspapers, is the humble frog. Humble President likes humble frog - figures. Now you may think that the President has been immoral lately, but whatever his private behaviour, frogs need people in high places to help save them. Therefore, to save the frog we must save Bill. A quick whip round the editorial offices at Monica's house (Wangmann not Lewinsky) for donations yielded \$4.25 and a couple of buttons. The need for a philanthropic benefactor became even more obvious.

Before we put our hard-earned pennies to Bill's (Clinton not Monica's husband) cause, I thought it might be a good idea to check the Guardian's report. So I went straight to the top and rang Bill direct on the red phone (a consequence of a dabble in folk art a couple of years ago). I rang and after a few security checks got onto Bill directly, however he seemed to not have his mind on the job. He was happy to talk, but asked if I could wait while he arranged a more comfortable position due to his bad back. "I'll be right with ya mate, I'll just get a more comfortable chair, a wine and a durry."

It was obvious that the spin-doctors had already gotten to him and told him I was from Australia. He was gone for a good ten minutes, but I could hear him in the background muttering something like, "I know it's around here somewhere, where did I leave that damn cigar?" Finally, I confirmed that he indeed loved frogs and he thought our cause a good one. He promised to send whatever he had left after court costs. "Trust me, your cheque is in the email." I have checked every day, but no show. I think that once again a politician has lied. That is it, I do not trust them anymore. Eileen

By JENNY LOCKHART
Photo: DAVID MARIUZ

IF Karen and Arthur White of Rockdale spoke an amphibian language, it surely would be with a croaky voice.

The couple are kept on the hop answering questions about frogs, have 12 in their backyard and are secretary and treasurer of the NSW Frog and Tadpole Study Group. With NSW Frog Week beginning last Sunday, they are keen to promote their four-legged friends. "Frogs are very attractive, harmless little animals," Arthur said.

"I am constantly surprised when people think they are slimy and will not touch them as they are only just wet.

"They make great pets and instead of having a fish pond in their backyard, people should consider a frog pond.

"The croaking from frogs can provide a pleasant sound barrier to noisy vehicles from the road and they also help keep insects away."

Arthur said his frog fascination began as a child and continued as an adult when he obtained a PhD in zoology and began work as an environmental consultant.

A lot of his work involved frog projects including the establishment of a frog habitat for the Green and Golden Bell frog at Kogarah.

He said a wetland was being established following the construction of the M5.

The couple have a variety of frogs in their backyard, including the perons tree frog, the white-lipped green tree frog and the inland burrowing frog.

They also have a variety of stick insects and turtles.

Arthur gives talks at schools to protect and promote frogs.

"It worries me that children get frightened by frogs when they are such harmless creatures," he said.

"If people grow up with an understanding of frogs, they will have an empathy to protect them in the future."

The header

Frogs are native to nearly all parts of the world, including the driest deserts. However, you will not find one in the driest desert, Antarctica.

Their eardrums are external, just behind the eyes.

The frog's tongue is attached at the front of the mouth, not the back like you and I.

Some frog's offspring avoid tadpolishness and are born as miniature frogs, known as froglets

Although they are air breathers, frogs can stay underwater for long periods, and they can breathe through the skin.

Frogs have teeth on their upper jaws (but not on the lower).

Some frog's feet are webbed with fanlike structures that enable them to parachute to the ground from considerable heights without injuring themselves; they are sometimes known as flying frogs, although they do not actually fly. With compliments Carl Spears

VIRUS FOUND IN THE CHONDRO PYTHONS

For those who continue to be interested in the virus found in the Chondro pythons:

The python virus was in the family of iridoviruses, which is the same type of virus as Bohle virus, which was found in *Limnodynastes ornatus* in Townsville. Iridoviruses have also been seen in fish in Australia. The one found in pythons is probably a new virus that hasn't been seen before, but there is work going on to see how similar it is to the others. So nothing is known about it at the moment.

The virus was only isolated from 2 snakes which died (as opposed to those destroyed by AQIS later) and thus has disease significance. It was identified on a morphologic basis by electron microscopy as an Iridovirus. On the basis of immune EM it was further characterised as a ranavirus. On the basis of sequencing of the major capsid protein it was determined that the virus was previously undescribed and differed from previously described ranaviruses more than they differed from each other.

Deborah Pergolotti frogcrusader@north.net.au

Couple knows
ribbiting way
to spend a day



Hilda back on the hop after op

THE SUN-HERALD, November 15, 1998

By SIMON CRITLLE

A FROG that had three operations to repair a shattered pelvis and was nursed back to health for six months has been returned to the wild.

The extremely rare giant burrowing frog, "Hilda", was released into the bush on Friday where she had been found almost dead by the roadside.

Members of the wildlife group SAFE Australia which co-ordi-



nated the frog's treatment set her free in the Marramarra National Park in Sydney's north-west.

SAFE Australia director Scott Cardamatis said the frog had completely recovered and recent rain had made her

restless, indicating she was ready to go home.

"She started jumping and bashing into the lid of her container, trying to knock it off," he said.

The plight of the frog began when Hilda was hit by a car on the Old Northern Road near Wisemans Ferry.

The driver, local resident Sue Hilder, left the frog in a puddle but when she returned the next day the frog hadn't moved so she alerted SAFE Australia.

To save the endangered creature - only two have been sighted in Sydney in recent years - the group recruited the help of former Taronga Zoo veterinarian Dr Howard Ralph.

Hilda travelled 400km to his Braidwood home for surgery to set a broken front right leg and to insert two tiny steel pins into her fractured pelvis.

With regular X-rays to check her bones were mending, she has recovered in a Sydney home on a diet of spiders and crickets.

Mr Cardamatis said that, in the days before her release, the frog was reacquainted to the outside world as she hopped around a garden, happily attempting to burrow into the ground.

FROGS THEY ARE FRIENDS TOO...



Freedom for frogs

Fairfield City Champion
14-10-98

AN endangered frog is responsible for a land swap involving Fairfield Council, a community association and State Government.

A parcel of land on the corner of Prairievale and Sweethaven Roads, Bossley Park was given to the South West Italo-Australian Association (SWIAA) to build a nursing home or retirement village.

After the discovery of the endangered species, a deal was done with the Department of Urban Affairs and Planning (DUAP) to exchange the site for land near Canley Vale Road and the public transport corridor.

Salter Road is to be closed as part of the council land transfer.

The exchange has been agreed to and all parties, including the endangered frog, are said to be happy with the deal.



DISTRICT NEWS, November 3, 1992

When we were kids we'd sneak off to the marshiest, reedliest piece of boggy ground we could find and listen to the frogs.

We'd try to catch them but we never knew, then, they were much cleverer than us. One leap and they didn't exactly fly over the tallest building (come to think of it, they didn't wear red and blue suits with capes either) but they left us vainly reaching out and panting.

We all enjoyed it, frogs too, and particularly the girls who always laughed at us. We didn't care for what they thought - not for another 10 years at any rate. But now no-one is laughing. Frogs are what is termed an endangered species - because humans are classified as an endangered species too.

So this week District News is pleased to record is National Frog Week. So remember it for a particularly important week. (Particularly, of course, for the frogs.)

We appreciate the information passed on to us by Mrs Monica Wangmann of Ashfield (by the way, that front page picture is of her daughter Katherine).

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Vacant	Editorial Panel		

Thank You to all those who contributed to this newsletter



with compliments
Adam Clewford

We hold six informative, informal, topical and practical meetings each year at the Australian Museum (William Street entrance) in Sydney. Meetings are held on the first Friday of every even month (February, April, June, August, Oct. and Dec.) at 7 pm for a 7:30 pm start. 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.