

FROG CALL



NEWSLETTER No. 78
August 2005

THE FROG AND TADPOLE STUDY GROUP OF NSW INC

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Photo :- *Litoria caerulea* Green Tree Frog from environmental campaigners Bernie and Dot Laughlan <http://www.adisite.org>

7PM 16 AUGUST 2005 AGM

FATS will hold our AGM at the Australian Museum followed by a guest speakers, frog slides, door prizes and light refreshments

You are invited to our next FATS meeting
at 6.30 pm for a 7.00 pm start

Tuesday 16th August 2005

Australian Museum, Sydney, William St entrance

MEETING FORMAT for 16th August 2005

- 6.30 pm Lost frogs need homes - White Lips, *Litoria infrafrenata* Green Tree Frogs *L. caerulea*, *L. peronii* and *L. gracilentia* are ready to collect from the Frog Rescue Service. Please bring your FATS membership card & Amphibian Licence.
- 7.00 pm AGM
- 7.30 pm Main Speaker: - Gerry Marantelli - Releases of Corroboree and Spotted Frogs in NSW
Grant Webster - Frogs of Canada
- 8.30 pm 5 Favourite Slides. Anyone wishing to speak about their recent frogging trips or experiences is most welcome to tell all. If you have slides or other images, bring them along as well.
- 8.45 pm Drawing of door prize and light refreshments in the lobby.

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Alistair welcomed everyone and explained what the FATS group does, including our publication FrogCall. New field trips will be organised in the spring; the FrogMobile is out and about and working bees have been active at Rosebery.

Don't forget that Amphibian licences and renewals need to be submitted in August.

Australians are well known for championing the underdog and Arthur White proved no exception when he went into bat for the "Wonderful World of Toads".

The FROGS GOOD - TOADS BAD association seems to have arisen in 16th Century France where frogs immersed in water acted as a preservative to meat but toads resulted in poisoning. Frogs in general are smooth skinned and hopped whereas toads are lumpy, bumpy and crawl.

Toads (*Bufonidae*) are a distinct family of frogs with characteristics such as paired parotoid glands, overlapping shoulder girdles, spool-shaped vertebrae, dry skin and short hind limbs. They are related to the Variegated Frogs and Arrow Poison Frogs, which are both highly coloured.

There are 17 genera and 200 species worldwide with the greatest diversity present in the warmer lands. The genus *Bufo* has 150 species ranging from 2.5 cm to 28 cm in length, and are found in a wide range of habitats from deserts to forests. Their reproductive strategies vary from laying thousands of eggs in long strands to one species that uses internal fertilisation and the bearing of live young.

Toad eggs hatch in 8-12 days and develop through the tadpole stage within three months. Juvenile toads are about 1/20th the size of adults. They are poisonous at all stages of development.

Arthur amused us with the description of the "Bee test" used to compare the intelligence of *Bufo marinus* with Green tree frogs when feeding on bees. Toads also showed the tendency to appraise their prey before feeding and to induce the prey to move. The toad's homing instinct enabled 100% of released toads to return to a pond over 2 km's distant within 48 hours. Toads can hibernate and may do so communally.

Arthur displayed images of toads from around the world. Golden Toads, *Bufo peregrinus* from cloud forests of Costa Rica and Bolivia are now thought to be extinct. No known cause as these forests were untouched. Cricket voiced toads of Philippines. European Green Toad, *Bufo viridis*. Crested Toad, *Bufo marginata*, an arboreal toad from Brazil. Angle-headed Toad uses head like a log splitter to extract insects from wood.

The history of the Cane Toad in Australia was then explained. In 1910's 4 species of sugar cane beetles from Brazil were in cane growing around Innisfail. In the 1920's the sugar cane crops were failing and most of the Queensland economy was dependant on sugar. Qld decided (against scientific advice) to release Cane Toads in mid 1930's. Currently the most southerly permanent population is Port Macquarie. The current methods of control are manual capture to prevent the large scale build-up of toads in new areas in September before breeding commences in October and to remove dead toads to prevent poisoning of native fauna.

A new infiltration in the form of *Bufo melanostictus*, a black spined toad from New Guinea, may be in next wave of toads to colonise Australia.

Thank you, Arthur, for an informative talk about toads.
Wendy A Grimm

FATS AGM NOTICE FOR 16 AUGUST 2005

The Frog and Tadpole Study group of NSW inc (FATS) will hold our Annual General Meeting at the Australian Museum 7pm Tuesday 16 August 2005. We encourage you to consider standing for any of the committee positions. We welcome a fresh approach and new ideas. Anyone interested in nominating for any positions is greatly encouraged to do so, as the committee is always short at least a couple of positions. Nomination forms are available from our current president Arthur White, our secretary Wendy Grimm
MW



Neobatrachus sudelli

O'Reillys are holding their 11th Annual Frog week from the 4th to the 9th of December this year. This is held at a beautiful guesthouse in the Border Ranges of the NSW/Queensland border. Overall, it is very spectacular just to stay in the area, but it is a great chance to see a whole range of frogs and meet a few frog experts with a whole lot of stories. Last year's Frog Week had over 20 different species sighted and was apparently fantastic. Anyway, more details on this can be found on the O'Reillys Website at <http://www.oreillys.com.au>.

Cheers Frank Lemckert

THE WORMING OF THE TOAD

FATS freezes feral frog fiends – well, Cane Toads anyway. (We do fridge them first before we freeze them, less cruel that way.) They arrive in Sydney in all sorts of low-lying produce and building materials. Those that get discovered by the public are either done in on the spot (no doubt together with many innocent look-alikes) or they get reported to FATS or to DEC where at least we can clearly identify them first. And those that are not discovered by the public? That is the time bomb that everyone is waiting for.

In February, when a 500 g monster Bufo was brought in from Engadine, Bexley had to go. Bexley had nice colours but Engadine was so enormous, and we can keep only one at a time.

Engadine turned out to be a poor eater, a non-eater in fact. She inherited Bexley's worldly possessions, her mealworm bowl and her tinned dog food bowl, but not a crumb went missing. Popping her into a feeding cage overnight with a counted number of woodies or crickets didn't do it either; it just stressed her out and left her oozing with that white poison juice. Hasn't lost any weight yet, though.

By the book, the next step should be to check her fresh poo for worms and worm eggs. To date, and it is July, she hasn't been yet. Right, you might say, then you stick something up her cloaca and get them out yourself. Well, then maybe you do it. There are few things this gentleman is not prepared to consider, this being one of them. Not when she's got huge poison sacs so turgid they're about to pop. Same reason I wouldn't fancy force-feeding her. I can hardly go near the monster without her lathering herself in bufotoxin. Never seen a toad like her.

So I wormed her anyway.

And I threw all the woodies in that I had, straight into her cage from where they would disperse themselves right through the kitchen – if I hadn't done the Vaseline bit.

Don't do this at home, if you're keeping tree frogs; they mess themselves up with the Vaseline. But for ground frogs and toads, a 4 cm wide rim of Vaseline, just under the cage lid, will stop woodies and crickets alike. Use masking tape for a non-messy edge. And put a piece of fruit for the insects in an open part of the cage: the nocturnal ambush arena.

Now about this worming business. It appears that most frogs have some worms that don't bother them most of the time. But when worms get out of hand, the frogs typically won't eat and get thin and finally get fatal organ damage. Provided you take some frog poo to your vet that is still steaming fresh, the vet will be able to tell you whether froggy is heavily infested. Vets with reptile experience will be able to treat frog in the same way, only frog won't need to be injected – the medication gets dripped onto the skin and frog just soaks it up. You can do that yourself, but you must be

certain that you are dosing the right amount. There is very little leeway for error, and too much wormer kills worms and froggy alike.

This is what I do: I buy from the vet a measured amount of Ivomec, also called Ivermectin – and I check that it's the 10% solution (not the 1% solution and not the paste). I buy 1 ml in a small syringe. Then I go to the chemist and buy 100 ml of propylene glycol to dilute the Ivomec with – it doesn't mix well with water. I squirt my 1 ml of the 10% stuff into the 100 ml p.g., which gives me a 1:1000 ratio of Ivomec to p.g.; and that after I have shaken it is going to be my stock solution. You need 0.2 mg of pure Ivomec to treat 1 kg of animal, or 0.2 ml of that stock solution per kg (1 ml being around 1000 mg).

Then I fill 0.2 ml stock solution into another small syringe with a fine needle, and I count the number of drops this would yield. At room temperature, my syringe did 62 tiny droplets of the sluggish liquid, but you'd have to check your syringe yourself. 62 drops per kg, or 1 drop for a medium-large 16 g frog. Straight onto the back, and don't let it roll off. In 2 weeks time do it again but then leave them alone.

What if you have a 5 g frog, or a 10 g one? That's where some extra p.g. comes handy, so you can also dilute it further to make up a lesser strength stock solution. (There is also an ancient handbook of frog diseases by Reichenbach-Klinke [worth googling] that recommends only half the label strength of any medication if frogs are being kept unheated. But I keep frogs warm anyway, because of chytrid alone, and I would certainly keep a sickly one warm and fed during winter.)

But does Ivomec work? It looks that way. With the FATS Green Tree Frogs and White-lips, last month I wormed the whole lot, all 27 of them. Global worming! No signs of discomfort, though. There were three thin ones amongst them that I could only keep going by pushing an unfrozen pinkie down their mouth from time to time. Those three are beginning to look better. (Obviously, once a frog's too far gone, any treatment could push it over the edge. Ivomec in particular is a horse cure – literally.)

And Engadine is eating again. I must show her to my chemist who has long stopped believing me what I need all those syringes for. His suspicion started years ago when I once stupidly asked for a douche with an extra long tube, about this long, I said. Because I had to rehydrate a very large snake, maybe I should have explained. And once FATS-founder Harald Ehmann and I had extracted a small pile of frogs' livers from road kills, ready for preserving in alcohol for DNA testing. I think the chemist would have given me the alcohol if I hadn't said it was for pickling our livers in.

But that's another story. L.V.

These are the questions we plagued the poor little Year 5/6 kids with at Warringah Council's World Environment Day Youth Expo in Dee Why. They were really, really good, and they got half their workshops in the marquee and the second half around the Frogmobile. L.V.

FROGS AND THEIR ENVIRONMENT

Frogs of the Sydney area	Can you name a ground frog and a tree frog of Sydney?
Frog Rescue!	How do tropical frogs get into Sydney? Can they cause a problem?
Some oddball frogs	Name an "odd" frog and what's unusual about it.
From egg to tadpole to frog	What's external fertilisation? What happens during metamorphosis? What happens afterwards?
Frogs as pets	Where would you get a frog? Where would you keep it? What does it eat?
How to go looking for frogs	What's "earballing"? What's triangulation? What's eyeshine?
Different frog habitats	Why do most frog species prefer ponds and puddles to streams? How do some desert frogs get their moisture?
Frogs as environmental indicators	Why are frogs sensitive to pollution? How can you tell when frogs have gone missing? What makes taddies grow poorly?
Frog species that are disappearing	Name an endangered frog species. Name some of the threats to frogs. Are all frog species in trouble?
How you can help:	
Make a frog pond	What's a death trap pond? How would you modify a wading pool? Where can you get more frog pond info?
Adopt a wetland	Who would you tell if something happens to it? Give an example of what could happen to it.
Learn what's calling	How can you put a name (and a face) to the call? Why would you take a sound recording?
Report a Cane Toad	Whom would you call? Why were they released in Australia? Why did it backfire?
Look after your environment	What's a good way of saving water? What are drought refugia? What's a good way of reducing water pollution?
Don't become a spreader!	Why is it a bad idea to move a frog from one area to another?
Join a frog group	Which is more important to you: Learning more about frogs? Helping with projects? Going on field trips? Mixing with other frog friends?

NEW WAY TO SEE BRICK PIT

CONSTRUCTION has begun on a \$6.5 million elevated circular walkway that will allow visitors to access the Brickpit at Sydney Olympic Park from above while preserving the habitat of the endangered green and golden bell frog.

NSW Minister for Tourism, Sport and Recreation Sandra Nori last weekend unveiled the start of work which will transform the Brickpit into an ecological attraction. She said an aerial, circular walkway over and into the brickpit precinct was considered the most unique means of combining the desired outcomes for public access while complying with the ecological and public safety constraints within the Brickpit. "The Brickpit ring will open up the last remaining restricted section of Sydney

Olympic Park to the public and is expected to be completed in time for the Christmas school holidays," she said.

Plans to develop the Brickpit site as a tennis centre in the lead-up to the 2000 Olympic Games were abandoned after the discovery of an endangered green and golden bell frog on the site.

On the threatened species list, the frog had established natural habitat in the Brickpit and thrived.

"Since then the Brickpit precinct has been the subject of extensive and exhaustive review and expert analysis regarding ways to combine its unique heritage with its new role as an ecological habitat," Ms Nori said.

Built nearly a century ago, the Brickpit employed hundreds of skilled labourers and produced some three billion bricks during its operational years, providing the raw building materials for much of Sydney's suburban housing and many of the city's public buildings, from hos-

pitals to schools and civic centres. "The new ring will provide visitors with interpretive material linking the history of the Brickpit with the evolution of the green and golden bell frogs' habitat along with the unique geology and the innovative water recycling initiative at Sydney Olympic Park," Ms Nori said. "The Brickpit Ring will (allow) visitors to experience a unique ecological and historical part of Sydney."

How the \$6.5 million Brickpit Ring should look when it is completed later this year (above) and (left) the endangered green and golden bell frog.



OBSERVATION: WHICH POND FISH IS BETTER?



- Two overgrown medium-large garden ponds, similar but with different fish to control mosquitoes.
- Pond 1 has Pacific Blue-eyes. No mozzie wrigglers seen all summer long.
- Pond 2 has Spotted Livebearers (now on the noxious species list!). No wrigglers seen all summer, either.
- 5 large scoops from pond 1 netted as many tadpoles as 5 large scoops from pond 2. Lots of taddies in both ponds.
- Only 2 Pacific Blue-eyes were netted, but many Spotted Livebearers, including baby ones. Also borne out by observing the ponds during summer: The Blue-eyes eat their offspring and limit their density at a much lower level.
- In aquariums, Pacific Blue-eyes can't be kept with tadpoles (at least of the Striped Marsh Frog) unless the tads are at least 25 mm long. Spotted Livebearers leave even 10 mm ones alone.
- **Conclusion: In a well-planted frog pond, Pacific Blue-eyes are just as suitable as less aggressive fish. They control mosquitoes and do not reach high enough densities to have much effect on (Striped Marsh Frog) tadpoles.** But here's the fine print: Maybe in smaller ponds (under 2 m³) or in warmer, sunnier ponds they could have finished the tadpoles off – I don't know yet.
- P.S.: In earlier years, the same two ponds contained White Cloud Mountain Minnows, the common brown form in pond 1 and the pretty, golden variety in pond 2. The golden ones need more warmth and did not breed as readily as the common ones, stabilising at a low density, but the common ones reached very high numbers. Both ponds also produced large numbers of tadpoles – but visibly more so in pond 2. However, in aquariums, White Clouds cannot be kept with (Striped Marsh Frog) tadpoles under 15 mm long.
- P.P.S.: The Pacific Blue-eye is local to the Sydney area. It is available in pet shops but may then come from the Central or North Coast of NSW. Remember that fish that are not native to your local area should never be placed in a pond where there is a danger of them getting washed out into the wild. L.V.



PACIFIC COAST ECO
BANANAS

www.eco-banana.com

THE FUTURE OF THE DAPTF - AN EDITORIAL

The Mission of the DAPTF is to determine the nature, extent and causes of amphibian declines throughout the world, and to promote the means by which declines can be halted or reversed.

Last year's Global Amphibian Assessment (GAA) brought to the attention of the wider world what those of us concerned with amphibian declines already knew. We are faced with a major extinction event, in the light of which our current mission statement seems increasingly unrealistic. While the DAPTF can claim considerable credit for initiating and supporting research that has helped us to understand the causes of amphibian declines, real successes in terms of conserving threatened amphibian species are few and far between. Later this year, the DAPTF leadership will meet with our partners, the Global Amphibian Specialist Group (GASC), and many other herpetologists to discuss our future strategy.

How should biologists act in response to mass extinction? I suggest that the first thing we should do is put more effort into alerting the wider world to the significance of amphibian declines. The general public, and its political leaders, seem indifferent to amphibians and are unimpressed by statistics on threatened species, however large the numbers. We need to emphasise that amphibian declines are a symptom of a rapid decline in the capacity of the environment, especially its freshwater component, to support life. We face an uphill struggle in getting this message across. During the recent general election in the UK, every party leader repeated the mantra that climate change is the most serious issue that we face; none presented any policies that address the problem, but several that will make it worse. The recent report of 'exploding toads' in Europe was featured by newspapers, radio and TV, but was typically treated as a 'strange but true' item, relegated to the inside pages or to the filler slot at the end of a bulletin.

A number of commentators have suggested that the public, and its leaders, are in a state of denial about environmental issues. The prospect of environmental collapse is too awesome, and too remote, to think about. I suggest that we biologists engage in our own form of denial by operating within the general area called 'conservation biology'. This is a comforting, feel-good title but the results of the GAA suggest that we're not doing a very good job. I now call myself an 'extinction biologist' and find that this generates much greater interest in what I do than calling myself a conservationist. I have suggested to a number of publishers that they should launch a journal on extinction biology; this idea is politely rejected, on the grounds that the topic is too depressing. This comes from companies that publish innumerable journals focussing on the most gruesome of human medical conditions. We must face up, I suggest, to an extinction agenda. Faced with a very large number of threatened species, which ones should we seriously try to conserve? By what criteria do we choose those species? What information should we gather, for the benefit of future generations, about the much larger number of species that we will probably not be able to conserve? What would we most like to know about dinosaurs had there been eye-witnesses to their demise?

This short editorial is intended to provoke a response. In particular, we welcome your comments on these issues as we plan our discussions on the long-term future of the DAPTF. **Tim Halliday**

FURTHER EXPLORATION IN SEARCH OF *ATELOPUS VARIUS* IN COSTA RICA BY MASON RYAN, ERICK BERLIN AND RON GAGLIARDO

In December 2003 an expedition funded through a DAPTF Rapid Response Fund Grant led by Gagliardo (2004; Atlanta Botanical Garden) confirmed the existence of an extant population of *Ateopus varius* in Costa Rica, a species presumed extinct and last seen in 1996 (Bolaños pers. comm.). This expedition found three individuals in the streambed and, based on current information, there are no other populations. Hence, this small population should be of high conservation priority. Since the first expedition, efforts to establish a viable conservation plan have stalled due to the apparent remoteness of the site, a conflict of interests among some of the parties involved, and the lack of baseline data on the population size.

The extant population was found in Fila Chonta, located ~ 10 km NW of the city of Quepos (Gagliardo, 2004). This portion of the coastal mountain range is topographically rugged ranging from 400 - 1700 m elevation, and consists of 4 life zones: tropical wet forest, premontane rainforest, premontane wet forest, and lower montane rainforest (Holdridge, 1967). Due to the size and relief of Fila Chonta, it is probable that additional populations of *A. varius* may exist in streams not yet surveyed. A second population will further augment the species recovery plan, add genetic diversity, and mitigate the susceptibility to extirpation by a single, stochastic event.

On 17 February - 26 February 2005, a second expedition was organized. We surveyed Fila Chonta near Quepos Hot Springs (N 09°33.466'; W 084° 043'; ~ 255 m) for 10 days during the dry season 17 February - 26 February 2005. Quepos Hot Springs is a 600 ha property surrounded by contiguous forest within a matrix of cattle pastures, that connects

the NE and SW edges of the mountain range. Visual encounter surveys (VES) with a time constraint were used for each surveyed stream.

In 10 days a total of 93.5 person-hours were logged and a total of 12 streams were thoroughly surveyed. No new populations of *A. varius* were discovered but, due to limited time, adjacent valleys and watersheds were not surveyed and there remain a large number of unexplored streams in the mountain range. The principal field investigators (MJR and EB) identified several stream valleys that should be priorities for future exploration.

Fila Chonta has a high level of herpetological diversity with 51 species of amphibians and reptiles recorded in 10 days: 20 frogs, 1 salamander, 18 lizards and 12 snakes. Of the 21 species of amphibians, 1 is considered critically endangered (*Atelopus varius*) and 2 are vulnerable, (*Bolitoglossa lignicolor* and *Dendrobates granuliferus*). The *D. granuliferus* found in this area are green and should be of special concern because it comprises a unique race within this species restricted range to South-west Costa Rica.

We were successful in gaining an easier access route to for the existing population and verified the continued persistence of *A. varius*. In an approximately 125 m section of stream, five *A. varius* were observed: three adult males, one adult female, and one sub-adult female. Dorsal and ventral drawings were made of four individuals for future identification. Detailed notes on substrate (type and temperature), behaviour, and size were recorded (MJR unpubl.).

The persistence of this population indicates it may be self-sustaining, considering that it is small and faces numerous threats that include an outbreak of the lethal, pathogenic fungus *Batrachochytrium dendrobatidis* (Bd), catastrophic stochastic events such as landslides, and inbreeding depression, and collection for pet-trade.

In 2003, one out of three frogs captured tested positive for Bd infection (Gagliardo, 2004), yet this species has persisted with this disease present. This warrants further study as to how this population can persist with Bd while so many other populations of *A. varius* have been extirpated (Young et al., 2001; Lips et al., 2004). During the 2005 expedition one 1 dying female *Smilisca phaeota* was recovered from a neighbouring stream valley; the animal was exhibiting sloughing skin and was lethargic and unable to right itself in a manner consistent with dying with sloughing skin that is characteristic of a Bd infection (Lips, 2003) in a stream in a neighboring watershed. This animal was collected, preserved in formalin, and deposited at the University of Costa Rica for histological examination. Bd has been implicated in the decline of numerous amphibian populations throughout Central America (Young et al., 2001; Collins & Storfer, 2004; Lips et al., 2004) and its presence in this population makes disease management and mitigation a high priority.



<http://www.crea-panama.org/photopage/pages/Atelopus%20varius.html>

Yellow Harlequin Frog photo from CREA, a registered charity in the UK, USA and Panama, established in January 2003, was founded by a group of educators and scientists who are concerned about the growing global environmental and human crisis.

Populations with restricted ranges are more susceptible to local extinction than widespread populations because a stochastic event can may alter or destroy one restricted a species habitat. In this population there is a serious threat of a landslide that could inundate the section of stream inhabited by these frogs. This stream valley is extremely steep and there was evidence that a minor landslide recently occurred, and a major landslide may be imminent due to the high relief and landslide proneness of the hills in this region (Tosi et al., 1993). Presently this is the only known population of *A. varius* in Costa Rica and until a second population is discovered, we have to assume this is a closed and isolated population with no emigration or immigration among adjacent populations. This Such isolation can lead to low genetic diversity and that can result in the expression of harmful traits and may lead to an extinction vortex. Further DNA kinship analysis would be necessary to evaluate the genetic relationship of the animals in the population.

Finally, because we were able to locate an easier, alternate route to the site, it is possible that people with dubious intentions may also know of the same route. Since this population is already small, and any unscrupulous removal of individuals could further exacerbate an extinction vortex of for this population.

We propose that as a first step, a conservation management plan (CMP) be drafted and presented to all involved parties in North America and Costa Rica identifying each step of the 3-stage process: 1) establishment of a long-term monitoring and population biology study of the source population; 2) placement of individuals into an ex situ captive breeding program management of the captive breeding program in at the Atlanta Botanical Garden and other North American institutes; and 3) repatriation of *A. varius* for reintroduction and education and possible reintroduction programs in Costa Rica. Due to the threats stated above, the management plan needs to be written immediately and presented to MINAE, Costa Rican officials, and funding agencies in order to begin the implementation process. Assuming the population subsists, long-term monitoring should be implemented on a 5 to 10 year time scale in order to understand the population dynamics and monitor trends of this enigmatic and tenacious population. Concurrently, more expeditions need to be conducted in the Fila Chonta area in an attempt to locate more populations. Additional funding is being pursued to continue this project. For further information contact: Mason Ryan: barleymoe@yahoo.com or Ronald W. Gagliardo: rgagliardo@atlantabotanicalgarden.org

LETTER TO THE EDITOR FROG THREADING? WHAT HAPPENED?

Theories can be emailed to wangmann@tig.com.au or mailed to our the FATS Editor, c/- PO Box 296 Rockdale NSW2216

"Frog Threading."

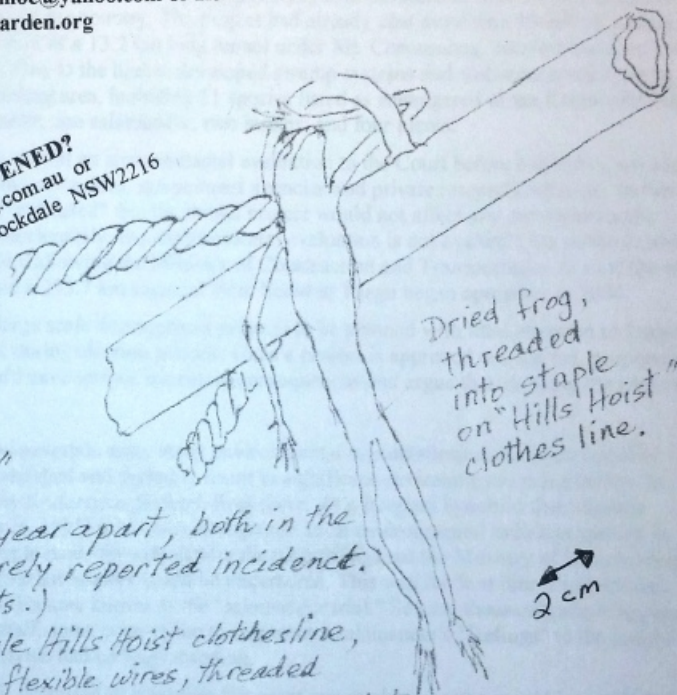
On two occasions, about a year apart, both in the warm months, I observed a rarely reported incident. (I have not seen any other reports.)

My yard contains an old style Hills Hoist clothesline, with horizontal bars supporting flexible wires, threaded through wire "U" shaped staples. The structure can rotate.

In each case, the frog was found at the southern corner of the structure. The frog was dry and hard, probably having been there for at least a day. One front leg of the frog had been pushed through the staple of the clothesline. (See sketch.) The frog had turned black and was not readily identifiable.

Possible explanations may include a meal forgotten by a bird, or a bird catch which was unpalatable. The likely predators may have been a butcher bird, magpie or currawong. It is likely that a kookaburra would not have the beak control or be able to use such a thick beak to achieve the observed result.

Since my yard is rather dry, I am wondering where the frog was collected. I am some distance from the nearest water course.



Dried frog, threaded into staple on "Hills Hoist" clothes line.

2 cm

DESPERATION FUELS HUNGER STRIKE FOR SOUTH KOREAN BUDDHIST NUN BY ROBERT KAPLAN AND DAESIK PARK, KOREAN WORKING GROUP CO-CHAIRS

A recent event in South Korea involving a salamander, a train and a Buddhist nun made international headlines and prompted us to share the story with DAPTF members and introduce the Korean Working Group of the DAPTF to interested parties. Jiyul, a 48 year-old Buddhist nun from Naewon Temple on Mount Cheonseong, northwest of Pusan, recently fasted for 100 days demanding an immediate halt to the construction of a highway tunnel. She believed that the tunnel would change underground water systems, resulting in drying of swamps and marshes and destroying plants and animals living in the area. In particular, she was concerned about the long-tailed clawed salamander, *Onychodactylus fischeri*. This national crisis soon became more than a story about the plight of the hynobiid clawed salamander. Jiyul's fast focused an entire nation's attention to the issue and provided an important insight into a culture whose values are not well appreciated on an international scale, but whose people have a long and rich tradition of protecting and preserving wildlife in the face of commonly understood setbacks. The problem is both complex (related to economics, religion, politics, and the environment) and compelling.

The story begins in 1992 with the construction of a Korean train express (KTX) system intended to save 3 hours of travel time between Seoul and Pusan, the second largest city in the country. The project had already cost more than 18 billion dollars. The 13th portion of the project required the construction of a 13.2 km long tunnel under Mt. Cheonseong, where a buddhist temple and 22 unusual mountain swamps can be found. Due to the highly developed swamp systems and well-conserved forests, many endangered species live in the Mt. Cheonseong area, including 11 species listed as endangered in the Korean Red Data Book, including two mammals, six birds, one snake, one salamander, two insects, and four plants.

In Korea, the Ministry of the Environment must submit an environmental evaluation to the Court before beginning any major construction project. Researchers are drawn from universities, government agencies and private research institutes. In this case an environmental evaluation conducted in 1994 "indicated" that the tunnel project would not affect any environmentally sensitive locations or animals living in them. Unfortunately, the environmental evaluation is not available for public review. The Ministry of Environment approved the project allowing the Ministry of Construction and Transportation to start the work. The whole rail-line was approved at that time and a 293.7 km segment from Seoul to Taegu began operating in 2004.

It has become standard procedure in Korea for large scale development projects to be planned with little attention to long-term environmental planning. This is particularly true during election periods. Once a project is approved and started, proponents routinely state that not finishing the project would have serious economic consequences and argue that stopping the project would result in the loss of jobs.

In 2001 when the construction project reached the mountain area, many environmental organizations and a local buddhist group argued that the tunnel would disrupt the watershed and probably result in significant environmental perturbation. In particular, the long-tailed, clawed salamander, *Onychodactylus fischeri*, lives there. As a lungless hynobiid that requires relatively mature forest systems to survive (Kuzmin, 1995) it has been recognized as an environmental indicator species in Korea. The members of the organizations and temple made the salamander the plaintiff against the Ministry of Environment, suing to stop the project until another environmental assessment could be undertaken. This was the first time a non-human animal was a plaintiff in a law suit in Korea and it became known as the "salamander trial." Several thousand people appeared before the court testifying on the salamanders' behalf, some even trying to represent a salamander's "feelings" to the judge. The courts ultimately decided in 2004 that *Onychodactylus* had no legal standing.

The current President Rho, as a candidate in 2002, promised that another fair environmental evaluation would be carried out and the project carefully re-considered if he were elected. The promise was not kept, however, prompting the nun, Jiyul, to get involved. She urged the government to conduct another evaluation to be undertaken by researchers selected by both the government and private environmental organizations.

Several months ago, Jiyul started her third hunger strike in front of the President's house taking only water and salt for 87 days. But when no progress was made she suddenly left the location without a word, leading people to imagine that she went off to an unknown place to die for her beloved salamanders. Huge national debates rapidly ensued arguing both for and against the nun and her salamander. After several days, a Buddhist organization found her and started to take care of her. She still refused to eat and as her condition deteriorated the national debate turned to one of questioning the impact of her death on Korean society as a whole. At the eleventh hour on the 100th day, the government relinquished and agreed to conduct another environmental evaluation within three months.

The plight of the hynobiid clawed salamander has focused an entire nation's attention and is looming large in the minds of many Koreans. An important challenge facing the country is how to continue the long and rich tradition of protecting and preserving wildlife in the face of unbridled development. **For further information please contact: Daesik Park: parkda@kangwon.ac.kr or Robert Kaplan: taricha@reed.edu Website in Korean: http://academic.reed.edu/biology/korea_dapft/**

Richard Lee was the Bushcare Officer at Blue Mountains Council who looked after a volunteer group for about 4 years, until he and his family went to NZ and set up a self-sufficient house there. He sent this photo recently about the GGGF in his dams to substantiate that Green and Gold Bell frogs can be found in just about every farm dam in NZ. Richard was sure that the calling emanated from his dam and that the frog was *Litoria aurea*. It wasn't until he found this little critter hopping through the grass that he was sure.

About four weeks ago a couple of wading birds, sacred cranes or a similar species were working the dam. Judging from the rather unpleasant sounds emanating from the dam, Richard estimates they lost about 5 or 6 of our little endangered Aussies.

Not to worry though, there are obviously plenty left given the calling at night. The kiwi kingfishers don't mind a bit of Aussie Olympic icon either.

With compliments Alan Lane lane.king@zeta.org.au
(Editor - photo not printed due to technical difficulties)

FAMOUS FROG AMPUTEE TO BE ADOPTED

Ibrought a rescued White Lip Tree Frog *Litoria infrafrenata* to Dr Ross Perry, on Friday 19 June. It had a gangrene foot, possibly caused in transportation during his hitchhiking expedition from Far North Queensland to the Sydney Markets at Flemington.

Dr Perry treated the frog and operated at no charge. The frog's leg was amputated.

Two months later, both carer (Monica) and frog have recovered and are doing well. Due to limited rations, the Wangmann household decided against frogs legs for dinner.

Please note that if you take a sick or injured herpetological pet to a vet for treatment, you should expect to be charged for any services, advice or mediation provided.

Since the white lip frog was wild (and FATS is a "not for profit", voluntary organisation), Dr Perry chose not to charge for the care of this wild animal. Most vets do not charge for the treatment of injured wild animals.

Dr Perry also provided information on glyconutrients and transfer factors. Should you be interested in the topical anaesthetic used, surgery, after surgery antibiotic being baytril or glyconutrient immune support dietary supplements, please contact Dr Perry directly. **MW CONTACT DETAILS**

Dr Ross Perry, BVSc BSc (Vet) FACVSc (Avian Health),
Registered Bird Specialist Veterinary Surgeon,
Homebush Animal Hospital
Cnr Railway Lane and 195 Parramatta Road, Homebush
2140 Telephone 0297467615 Fax 0297468375
email birdoc@birdoc.com.au

Sri Lankan biologists have found dozens of new species of tree frog over the last decade in the island's dwindling rainforests, but warn many known species are either extinct or on the verge of disappearing because of man. Researchers from Sri Lanka's privately-funded Wildlife Heritage Trust found 35 new species of frog – increasing the number of known frog species on the Indian Ocean island by a third – but also found 19 species are now extinct.

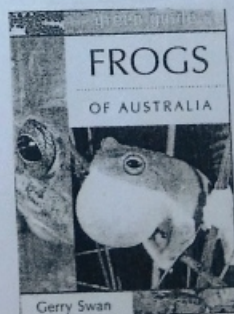
"(They) have gone extinct largely because of the loss of their habitat... The land has now been converted to other uses like tea and rubber," biologist Rohan Pethiyagoda, whose team's research has been published in the Raffles Bulletin of Zoology, told Reuters on Wednesday. "The long-term prospect is pretty bleak," he added. "We know that 11 of these species are on the brink. They are likely to disappear in the next few years unless extensive conservation measures are taken."

Asia's tsunami offered a small silver lining for the tiny frogs, which range from iridescent green to pale blue in color and cling to foliage with bulbous, sucker-like toes. The Sri Lankan government has banned rebuilding on a narrow strip of land along much of the island's coastline after December's disaster killed nearly 40,000 people here, and the new coastal buffer zone will offer some species sanctuary. "It's not going to protect the vast majority of species, but it will certainly protect 10 of them, and 10 is a big number, so it will help," Pethiyagoda said.

Sri Lanka is home to 105 species of frog, 86 of which still survive today, which compares to around 4,500 known species of frog worldwide. But most live in the largely unprotected rainforests of Sri Lanka's southwest, and not in the island's national wildlife reserves, which tend to be drier, less biologically diverse and home to large mammals such as elephants, bears and leopards.

"What is most staggering is that out of the 34 species of frogs altogether that are extinct worldwide, half should happen to be in this tiny little island," Pethiyagoda said. His team also found 17 new types of freshwater crabs, while fellow international researchers have also identified 50 new species of snail and seven new lizards.

COLOMBO (Reuters) forwarded on by Alan Conolly and Punia Jeffery



Jervis Bay National Park Camp-out.

Leader : To Be Confirmed.

The coastal heaths, woodlands & littoral vegetation of NSW have become much-threatened ecological communities. This weekend, studying the pristine & spectacular coastline of Jervis Bay, we will look at the wide variety of habitats that occur along undisturbed coastline sites & we will investigate some of the frogs that make their home here. We will also discuss the implications of extensive, & often times uncontrolled, coastal development. Against the backdrop of the awesomely beautiful Jervis Bay / Booderee National Park, members will also have the opportunity of swimming, fishing, bushwalking or exploring the nearby Botanical Gardens. We need to have bookings for this fieldtrip well in advance. For bookings & further information phone Robert (ph. 9681-5308).

Jervis Bay/Booderee National Park is a 3hr drive south of Sydney (approx 20 mins past Nowra). We will be staying at the Canberra University Field Studies Centre, which is located near HMAS Creswell Naval College. (Proceed 12km. south of Nowra along Princess Hwy, turn left into Jervis Bay Rd. Proceed on through toll gate & turn 1st left into the Creswell area. Look for the sign indicating University Field Studies centre). Accommodation is dormitory-style (2 persons per room). Hot showers & all kitchen facilities (including cutlery, crockery etc.) are available.

Since FATS are required to pay for this accommodation in full, in advance, we will need to collect all monies from members in advance. Bookings can only be made by **FORWARDING PAYMENT IN FULL, IN ADVANCE**. Once a booking is accepted, any cancellation will result in **FORFEITURE OF PAYMENT**. Send cheques etc. to **FATS Group, PO Box 296 Rockdale NSW 2216**. Clearly state your name, number of people booking & a contact number.

Ring Robert for any enquiries relating to this fieldtrip (ph. 9681-5308). Bookings will only be accepted in order of payment ('first in, first served' until fully booked). No bookings can be accepted after December 31, 2005. Tariff is \$21-00 per person per night. While we understand that some members may not be able to make it on the Friday night, a minimum of two nights must be paid for. - We unfortunately have been unable to negotiate accommodation for single nights only. Similarly, it is not possible for members to request a private room unless they are prepared to pay the tariff for two people. It may be possible for members to arrange alternate accommodation & simply turn up for evening frogging activities. Please, however, speak to Robert first - there is a limit on numbers attending frogging activities & you will need to book this. All participants please note that there may also be a charge for entry into the National Park, although this largely depends upon whether the toll booth is open or not.

FATS Fieldtrip - Smiths Lake. 7-9 October 2005.

Rates for Smiths Lake remain at \$12-00 per person per night. Bookings of either one or two nights are permitted. Limit of thirty people. Bookings for this fieldtrip can only be made by **FORWARDING PAYMENT IN FULL, IN ADVANCE**. Send cheques etc. to **FATS Group, PO Box 296 Rockdale NSW 2216**. Clearly state your name, number of people booking (& which nights) & a contact number. Once a booking is accepted, any cancellation will result in **FORFEITURE OF PAYMENT**. Bookings accepted in order of payment ('first in, first served'). We pay for this venue in advance & a no show by participants means FATS would have to make up the shortfall. The Committee feel this is not in the best interests of the FATS group. Phone Arthur or Karen (ph. 9599-1161) for all bookings or further enquiries.

***** DON'T FORGET** our specialist research field trips with Graham Pyke & The Australian Museum. Ideal for all students & serious enthusiasts. Locations at Long Reef, North Avoca & Broughton Island. Contact the Field Trips Co-ordinator for further details.

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 where specified), 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 & by attending agree to; a release of all claims, a waiver of liability, & an assumption of risk.

INSURANCE DISCLAIMER FATS has public liability insurance for its various public functions. FATS members should be aware that this insurance does not cover FATS members (it covers the public & 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.

FIELD TRIPS see pages 11 and 12

*Please book your place on field-trips; due to strong demand, numbers are limited (phone 9681-5308). Be sure to leave a contact number. Regardless of prevailing weather conditions, we will continue to schedule & 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 (ph. 9681-5308).*

September 10. 7-00 p.m.

Darkes Forest.

Leader : Ken Griffiths.

Take Princess Hwy south, then take Darkes Forest Rd turn-off. Meet 200m from corner.

Many frogs display an obvious preference for a particular aquatic environment. Tonight at this site we will look at each species & its corresponding habitat preference. We will look at the stream-dwellers & the pond dwellers. We will also look at those species that favour more terrestrial habitats. Ken is a wildlife photographer & author of 'Frogs & Reptiles of the Sydney Region' & numerous other books. Tonight he will be on hand to offer photography advice & to search out even the most elusive frogs & reptiles at this site. As our long-time members know, expect anything to turn up when Ken leads a fieldtrip !

October 7-9.

Smiths Lake Camp-Out.

Leaders : Arthur & Karen White.

An often-heard comment at FATS meetings is that it is impossible to have a poor field-trip at Smiths Lake. Karen's meticulous attention to organisational detail & Arthur's encyclopaedic knowledge of the local frog & reptile life ensures all who attend have a fantastic weekend. The holiday atmosphere of Smiths Lake guarantees everyone has a relaxed & stress free break. Come & see why this fieldtrip has become a highlight & institution on the FATS yearly calendar. Cabin/dormitory accommodation & camping sites available. All kitchen facilities/utensils/crockery supplied. Bookings only accepted with payment. Limit of thirty people. Phone Arthur & Karen directly for bookings & further details (ph. 9599-1161). See newsletter page 11 for further details.

November 12. 4-00 p.m.

Wentworth Falls / Kings Tableland.

Leader : Alan Lane.

Meet in the carpark of Wentworth Falls railway station (western side). Short convoy to site.

The geological formations of the Blue Mountains contain a treasurehouse of Australian flora & fauna. The rough, dissected terrain conceals a myriad of cool, damp places – ideal frog habitat. Tonight, Alan will show us just some of the waterfalls, hanging swamps & moister habitats of the Upper Blue Mountains. Alan completed his Masters studying the froglife of this area. At a recent FATS meeting we heard how his research has raised some paradoxical questions about the frog biology of the Blue Mountains. Tonight he will attempt to shed some light on the enigmatic behaviour of some of these species of the higher, cooler altitudes. (Note: some features of this sandstone terrain are somewhat discussed in Frogfacts Sheet # 7). **We will have a picnic meal before frogging & for those that wish, overnight camping is permitted. See next issue for further details.

Jervis Bay. 24-26 February 2006.

Special Advance Notice !!!

see page 11

The FATS Committee

FROGWATCH HELPLINE

0419 249 728



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Katherine Wangmann	(02) 9797 6543 (fax 9797 0603)	

FATS meetings commence at 7pm and end about 9pm, on the third Tuesday of every **EVEN month at the Australian Museum (February, April, June, August, October and December).** We hold six informative, informal, topical and practical meetings each year at the Australian Museum, Sydney, William St entrance. Please check this Frogcall for further FATS meeting information. Visitors are welcome. We are actively involved in monitoring frog populations and 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 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 source must be fully acknowledged. Always confirm date and location of the next meeting.